



archaeology

Oxford-Wessex Archaeology Joint Venture

## East Kent Access (Phase II), Thanet, Kent

### Post-Excavation Assessment Volume 1



Document Reference  
Draft  
Dated June 2011





# Oxford Wessex Archaeology

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Document Reference: Draft

June 2011

Date	Compiled by	Checked by	Approved by
17/06/2011	P Andrews OWA Site Director A Smith OWA Post-excavation Manager	A Smith OWA Post-excavation Manager	K Welsh OWA Lead Project Manager

#### Document Status Codes:

PRE = Preliminary (tender)

**DFT = Draft**

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**EAST KENT ACCESS  
(Phase II)**

*POST-EXCAVATION ASSESSMENT VOLUME 1*

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For

**Volkerfitzpatrick Hochtief (Joint Venture)**

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**June 2011**



**EAST KENT ACCESS (Phase II):**  
***Post-Excavation Assessment Volume 1:***

**PROJECT BACKGROUND, SITE SUMMARIES AND UPDATED PROJECT DESIGN**

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## SUMMARY

Oxford Wessex Archaeology (OWA) Joint Venture undertook archaeological investigations in advance of construction of the East Kent Access Road (Phase II), largely between November 2009 and September 2010, the initial two-month period mostly taken up with preliminary surveys comprising fieldwalking, test pitting and metal detecting, and limited evaluation trenching. Several small-scale excavations were carried out following the main phase of investigations, with all fieldwork completed by the end of May 2011.

The new road, approximately 6.5km in length, is being built on the southern slopes of Thanet, extending northwards from the Ebbsfleet Peninsula at the mouth of the former Wantsum Channel in the south ('Landscape 3'), then eastwards across the Cliffsend spur ('Landscape 2'), and finally up the scarp slope to the chalk ridge occupied by Manston Airport to the north ('Landscape 1'). A rich archaeological landscape extends across this variable topography, and at the planning stage it was recognised that the road could not be constructed without affecting known or predicted important archaeological remains and these were likely to occur over much of the route. Therefore, the decision was taken to excavate almost the entirety of the footprint for the new road, an area of approximately 48 hectares, thereby providing a substantial and unique transect across this part of Thanet – effectively an island from perhaps the Early Bronze Age to the 15<sup>th</sup> century AD. This approach has allowed a far better understanding of the sequence and nature of settlement to be gained than would have been possible through a series of individual, smaller excavations. For convenience, the route was divided into 29 archaeological 'zones' reflecting changes in topography and differences in archaeological potential.

With the exception of a few flint flakes of possible Palaeolithic date, the earliest discoveries were two Mesolithic tranchet axes and a small number of microliths and other diagnostic pieces of similar date, all probably occurring residually in later features.

Individual pits and two small groups of pits of either Early or Middle Neolithic date were recorded, and of the 12 ring-ditches excavated possibly one or two were of Late Neolithic date or originated at that time.

Most ring-ditches, however, are likely to be of Early Bronze Age date and were generally located on high ground overlooking the Wantsum Channel or Pegwell Bay. They varied greatly in diameter, from the smallest at around 4m in diameter to the largest over 40m across. Burials were found associated with a number of these monuments and one in particular contained a rich assemblage which included a unique triple Food Vessel and an amber 'button'.

Later Bronze Age activity was mainly focussed on the Ebbsfleet Peninsula and on the adjacent slopes of Cottington Hill. The remains of at least three settlements including post-built structures, enclosures and trackways were identified, along with a number of burials. Two gold bracelets and a group of bronze ingot and other fragments are

very likely to relate to several Late Bronze Age metalwork hoards that have previously been found at the neck of the Ebbsfleet Peninsula.

The Iron Age was perhaps the most extensively represented period on the scheme, and the vestiges of settlement, enclosures, field systems and trackways were widespread throughout the landscape. The most significant site, of Middle Iron Age date, lay on a promontory overlooking Pegwell Bay at Cliffs End, where a large trapezoidal enclosure with broad, deep ditches replaced a substantial palisade. Within the enclosure was a sunken-feature building (a type of prehistoric structure that appears unique to Thanet) and other features, whilst in the immediately surrounding area were post-built structures, probable grain storage pits, complexes of quarries and numerous other pits, several containing burials (including that of a horse) and all used ultimately for the disposal of large quantities of domestic rubbish.

Several Roman trackways were recorded, some probably originating in the Iron Age, and these have provided an opportunity to map the ancient routeways of this part of Thanet. Adjacent to the trackways were enclosures, field systems, cemeteries and several areas of settlement, most of which had their roots in the Iron Age. The largest and longest-lived of these settlements lay at the neck of the Ebbsfleet Peninsula, within sight of Richborough, and had a remarkable sequence that spanned the Late Bronze Age to Late Roman period. This settlement, besides trackways, enclosures, numerous pits, wells and burials, also included a relatively large number of round-houses and, later, several sunken-featured buildings. At some time probably around the middle of the 1<sup>st</sup> century BC a substantial ditch had been dug to enclose this strategically important area, and there is a possibility that this work may have been associated with Caesar's expeditions, with a later phase of ditch conceivably associated with the Claudian invasion a century later. Another, later settlement, on the chalk ridge was distinguished by comprising almost entirely of sunken-feature structures.

Two areas of Early – Mid-Saxon settlement were identified, with a dispersed group of sunken-feature buildings on the lower slopes in the Cottington Hill area probably of 7<sup>th</sup> century AD date, and a concentration of pits on the high ground to the north of Cliffs End more likely to be of 8<sup>th</sup> century date. The remains of buildings, perhaps of posthole or beam slot construction, did not survive at the latter site, but there was important evidence for large-scale shellfish processing, possibly with a link to the religious foundation at Minster. Probably associated with this settlement was a small cemetery, whilst parts of two earlier and probably larger cemeteries were excavated close to a complex of trackways higher up along the chalk ridge. A range of grave goods indicates that the use of these cemeteries spanned the 6<sup>th</sup> and 7<sup>th</sup> centuries AD.

A small, apparently isolated group of pits has been assigned a Late Saxon date, and medieval settlement appears to have been confined to the Ebbsfleet Peninsula where two or possibly three farmsteads were established, their main phase of development spanning the 11<sup>th</sup> to 14<sup>th</sup> centuries, broadly contemporary with land reclamation within the rapidly silting Wantsum Channel.

Post-medieval and modern remains were very sparse, and the latter mainly comprised a network of World War II trenches around the southern perimeter of Manston airfield.

An important part of the archaeological programme was community involvement. An extensive outreach programme was put in place which included road shows, school visits, talks, open days, volunteering opportunities in finds and environmental processing, a community excavation and a dedicated web site.

Overall, the aims and expectations of this major fieldwork project have been successfully realised, and the innovative approaches to excavation and recording fully justified.

This report presents the results of a programme of post-excavation assessment work on the stratigraphic sequence, the substantial assemblage of artefacts and the environmental evidence, and includes proposals for further analysis. The potential of further work to inform discussion of existing research aims is considered, and new research objectives suggested (based on the results of the assessment) in an updated project design. A timetable detailing these proposed works is presented, along with proposals for publication including an academic monograph and a popular publication.

### ACKNOWLEDGEMENTS

It is important to emphasise at the beginning that the successful conclusion to the major programme of fieldwork, undertaken over a remarkably short period of time, was only achieved through continuous co-operation between the principal parties involved: Oxford Wessex Archaeology, Volkerfitzpatrick Hochtief, Kent County Council, Atkins and Jacobs. Without such teamwork the archaeological investigations and road construction works could not have advanced alongside each other as they did, often with only hours or a few metres between them, at multiple locations along the route.

Oxford Wessex Archaeology (OWA) Joint Venture was appointed as archaeological contractor to the East Kent Access (Phase II) scheme by Volkerfitzpatrick Hochtief (VFH), and OWA would like to express their gratitude to VFH for their assistance and support throughout the project set-up phase and the subsequent programme of fieldwork, and also for providing site, finds and environmental processing and office facilities. Although it is not possible to name everyone here, OWA would like to highlight in particular Mick O'Hare, Matt Childs, Fred Wratten, Alex Vaughan, Alex Wenn, Sally Fallows, 'Nibs' and last but not least, Graham Timms, who worked closely with us during the latter, crucial stages of the fieldwork. The soil stripping was undertaken by D and M Plant, and we are grateful to John Clarke for co-ordinating what at times proved a complex programme, and the many machine drivers who undertook this work to a high standard. Archaeological recording necessitated by service re-routing within Manston Airport was carried out by OWA on behalf of W E Mannin Ltd, and Malcolm Jordan and Kevin Evendon are thanked for their role in this element of the scheme. An associated excavation, carried out in 2008 (by Wessex Archaeology) at Weatherlees Waste Water Treatment Works in advance of the pond relocation works, was undertaken on behalf of Southern Water and we would like to thank them for their co-operation.

OWA would also like to record their appreciation to Atkins Limited who acted as archaeological consultants for the project, particularly Andrew Holmes who was on site constantly during the main phase of fieldwork, and Janet Miller who was involved at the beginning. Chris Hatcher of Jacobs monitored the overall programme of archaeological work on behalf of Kent County Council, the clients for the East Kent Access (Phase II) scheme.

Simon Mason, Principal Archaeological Officer for Kent County Council (KCC) Heritage Team, produced the draft project design, prepared the 'archaeological model' which provided details of the archaeological background and potential for the scheme, and monitored the excavation and subsequent post-excavation work. Based on site throughout virtually all of the fieldwork, his long-term involvement with the project, local knowledge, and rapid feedback and advice at all stages has been instrumental in ensuring that the aims of the on-site archaeology programme were successfully achieved. Adam Single and Lis Dyson provided further support and information, and OWA is grateful to all of these representatives of the KCC Heritage Team for their collaborative role. This included arranging police surveillance,

undertaken by Sergeant Mark Harrison, as part of the Kent heritage protection programme to prevent, in particular, illicit metal detecting on archaeological sites.

Other statutory and non-statutory consultees provided an invaluable source of advice and information during fieldwork and OWA would like to thank, in particular, Peter Kendall (English Heritage, Inspector of Ancient Monuments) and Dominique de Moulins (English Heritage, South East Regional Science Advisor).

During the course of fieldwork, various other organisations and individuals provided beneficial advice and support to OWA, including Ges Moody and Emma Boast (Trust for Thanet Archaeology) and Nigel MacPherson-Grant. On-site sampling and advice for OSL dating, on behalf of OWA, was undertaken by Jean-Luc Schwenninger and David Peat. The forbearance of the various landowners along the route should also be acknowledged here, and we would like to thank them for their interest and the helpful information that some provided.

The members of the fieldwork team – in excess of 200 and too numerous to mention by name – are all thanked for the tremendous contribution they made to the project, many over much or all of the 11-month on-site programme, and sometimes in extremely inclement conditions, most notably during prolonged rain in late 2009 and the periods of heavy snow in early 2010. However, mention should be made of Paul Clarke, Pat Moan and Ralph Brown who spent many long days monitoring machine stripping and through their vigilance ensured that the correct levels were reached and archaeological features identified. Besides these, the supervisory team must be singled out for individual acknowledgement, given the very tough challenges they were set to achieve the deadlines for various parts of the scheme: Vix Hughes (who also ran the Community Excavation), Al Zochowski (who led the ‘burial team’), Rebecca Peacock, Jeremy Mordue, Sian Reynolds, Laura Piper, Neville Redvers-Higgins, Gerry Thacker, Jacek Gruszczynski, Olly Good, Neil Parker, Piotr Orczewski, Mike Donnelly, Mark Gibson, Rowan McAlley, Mike Green, Roberta Marziani, Chris Pickard, Rob De’Athe, and Dave Reay (Weatherlees Pond). Without their leadership and dedication the archaeological project could not have been completed to schedule. The local volunteers who undertook the metal detecting also deserve mention here, with George Rollison a regular presence in all conditions.

The survey teams were a vital component of the project, ably led by Matt Kendall and Emily Plunkett assisted by Gemma Stewart and Harriet Bloore in the field, whilst Tori Wilkinson, assisted by Dan Jackson, in the office was indispensable. Together they ensured the rapid production of site plans and report figures, essential for the smooth progress of the fieldwork. The GIS system used to such great effect was devised and maintained by Niall Donald, and the pivotal role of on-site data management was undertaken by John Powell who, in addition, contributed much to the daily running of the fieldwork; both worked well beyond the call of duty. Further survey and IT support were provided by Ruth Panes, Paul Middleton-Jones and Chris Brayne. Autumn Robson and Bron Chapman were largely responsible for context data entry, amounting to more than 28,000 individual records.

Paul Murray maintained a photographic diary of the project, and a variety of finds was photographed on site, many by Mariusz Wisniewski, and others subsequently by

Karen Nichols. The monthly fly-overs of the scheme commissioned by VFH provided a valuable and informative aerial record of the archaeological landscapes, as well the progress of the construction works.

Finds processing and recording was co-ordinated by Elina Brooke, assisted by Janice McLeish, both of whom rose to the considerable challenge and kept the lights in the finds office burning during many late nights to ensure that they were not overwhelmed by the volume of material. They were helped by Hannah Steyne and several volunteers of whom Gina Llewellyn-Jones and Margaret Symonds provided regular support. Further advice and finds identifications were provided by Lorraine Mepham, Phil Harding, Andrew Fitzpatrick, Paul Booth, Jörn Schuster and Jacqueline I McKinley. Lyn Wooten undertook the cleaning, consolidation and conservation of selected artefacts, and the metalwork assemblage has been X-rayed at the Wiltshire Council conservation laboratory at the History Centre, Chippenham.

Environmental processing was supervised by Laura Strafford, assisted by Julia Meen, who, with Christof Heistermann, undertook specialist on-site sampling. The environmental team, like the finds team, worked unceasingly, prioritising, processing and assessing the many hundreds of samples that were taken during the project. Further advice was provided by Rebecca Nicholson, with additional information from Elizabeth Stafford and Carl Champness, particularly concerning the geological, colluvial and other sedimentary sequences. Much of the processing of the bulk, artefact, marine shell and mollusc samples was carried out by Hayley McParland, Susan Rawlings, Ashley Strutt and Sophie Nias-Cooper.

The wide-ranging and very successful outreach programme was largely devised, organised and undertaken by David Crawford White, helped by various site staff during open days and other events, and supported by Hannah Brown (graphics) and Tom Goskar (website). The collaborative role of the Trust for Thanet Archaeology is also acknowledged in this respect, and the considerable support and facilities made available courtesy of the Holiday Inn, Minster were very much appreciated, particularly during the Community Excavation. Media work was undertaken in partnership by Tessa Hallett and Phil Scrivenor of Kent County Council and Andrew Fitzpatrick and Tom Goskar of OWA.

The overall fieldwork programme has been managed by Ken Welsh, a role which involved far more than a single sentence can convey, underpinned by the OWA JV Board of John Dillon and Bob Williams, with support at various times from Richard Greatorex, Roland Smith, Andrew Fitzpatrick and Dan Poore, who also oversaw the OWA Health and Safety plan. Phil Andrews directed the fieldwork, with considerable assistance from Paul Murray who undertook the day-to-day organisation of the stripping and excavation of the various zones, as well as attending to Health and Safety and numerous other fieldwork issues; his role in the project cannot be overstated. Invaluable support also came from Rob De'Athe who took over the task of preparing the Characterisation Reports and Further Archaeological Works Designs, with finds and environmental summaries provided by Elina Brooke and Laura Strafford respectively. Nathalie Anderson, Harriet Bloore, Sarah McGoldrick and Angela Batt dealt efficiently with a variety of staff and accommodation matters arising from building and maintaining a large fieldwork team.



Preliminary stratigraphic reporting was undertaken by the supervisors of the individual excavation zones, with the reports in this assessment compiled by John Powell (Zones 1 – 5 and Weatherlees Pond), Jacek Gruszczynski (Zone 6), Gerry Thacker (Zones 7 – 11), Olly Good (Zone 12), Matt Leivers (Zones 13 – 15 and 26) and Vix Hughes (Zones 17 – 24 and 29).

During excavation and post-excavation, the following specialists (in no particular order) are thanked for their contributions to the fieldwork and the assessment report: Phil Harding (worked flint), Matt Leivers (earlier prehistoric pottery), Rachael Seager Smith and Elina Brook (later prehistoric pottery and Roman pottery), John Cotter (post-Roman pottery), Nigel McPherson Grant and Paul Hart (spot-dating of pottery from Zone 6), Nicholas Cooke (Roman and later coins), David Holman (Iron Age coins), Grace Perpetua Jones (metalwork), Ruth Shaffrey (stone), Cynthia Poole (structural fired clay, fired clay objects and ceramic building material), Sue Nelson with Lorraine Mephram (beads, glass, worked bone, jet, shale, pipeclay figurines and clay pipe), Alistair Barclay (amber and scientific dating), Sam Rubinson (slag), Lyn Wooten (conservation requirements), Jacqueline I McKinley and Kirsten Egging Dinwiddy (human bone), Lena Strid (animal bone), Rebecca Nicholson (fishbone and coprolites), Greg Campbell (marine shell), Kath Hunter (charred plant remains and charcoal), Elizabeth Huckerby (pollen), Elizabeth Stafford (snails), Carl Champness (soils and sediments) and Hugh Beamish (World War II defences).

The post-excavation assessment has been managed by Ken Welsh, with the editorial assistance and input of Phil Andrews and Alex Smith, and the report illustrations prepared by Matt Bradley.

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## EAST KENT ACCESS (Phase II): POST-EXCAVATION ASSESSMENT VOLUME 1

### 1 INTRODUCTION

#### 1.1 General background

1.1.1 Oxford Wessex Archaeology Joint Venture (OWA) was appointed (in October 2009) by Volker Fitzpatrick Hochtief Joint Venture (VFH) to undertake archaeological works in advance of construction of the East Kent Access (Phase II), a Kent County Council (KCC) highways scheme.

1.1.2 The archaeological works were carried out in response to two conditions placed on the planning permission (TH/05/0964) approved by KCC, namely:

*“No development shall take place until the applicant, or their agents or successors in title, have secured the implementation of*

- i. archaeological field evaluation works in accordance with a specification and written timetable which has been submitted to and approved by the Local Planning Authority; and*
- ii. following on from the evaluation, any safeguarding measures to ensure preservation in situ of important archaeological remains and/or further archaeological investigation and recording in accordance with a specification and timetable which has been submitted to and approved by the Local Planning Authority”*

1.1.3 In accordance with the conditions placed on the planning permission (TH/05/0964), the KCC Heritage Conservation Team requested that a staged archaeological programme should be undertaken in advance of construction of the scheme, the detail for which is set out in a draft project design produced in 2008 by the KCC Heritage Conservation Team (Part 1 of *East Kent Access Phase II, Volume 2f (Archaeology)*).

1.1.4 In response to *Volume 2f (Archaeology)*, OWA produced three high-level documents for the scheme, comprising a *Project Design*, which set out the methods by which the works would be undertaken, a *Research Design* and the *Community Archaeology, Outreach and Publicity Strategy*.

1.1.5 This report provides an assessment of the archaeological discoveries made along the entire 6.5km route of the EKA (Phase II) in advance of and during the main phase of preliminary surveys and excavation between November 2009 and October 2010, with reference made where appropriate to additional small pieces of work carried out subsequently between then and May 2011 when archaeological fieldwork was completed. During this 18 month period

approximately 40 hectares of one of the richest archaeological landscapes in the United Kingdom was investigated (**Figure 1**).

## **1.2 Scope and purpose of document**

- 1.2.1 This Post-Excavation Assessment is divided into two volumes.
- 1.2.2 Volume 1 presents individual sections outlining in some detail the archaeological sequence for each of the ‘zones’ (see below) excavated along the route and a section on the potential for scientific dating. It also includes a section summarising the significance of the archaeological discoveries made along the route, an updated project design (UPD) and proposals for further analysis leading to publication.
- 1.2.3 Volume 2 presents assessments of all of the categories of finds and environmental materials (Appendices 1-26), as well as a full list of EKA (Phase II) archaeology documents issued (Appendix 27). Volume 2 also contains lists of contexts, finds and environmental samples by zone (Appendices 28-31).
- 1.2.4 This current document is the latest in a series produced in advance of and during the main phase of excavation, which was followed (in January 2011) by a summary report (EKA\_P2\_AW\_PX\_REV1).

## **1.3 Topography and geology**

- 1.3.1 Starting from close to Richborough Power Station in the south, the new road will run northwards, rising gently from the Ebbsfleet Peninsula towards Cottington Hill, and then falling again before climbing the moderate slope of Sevenscore. On reaching the summit of the east-west ridge on which Manston Airport is sited, the road will turn west, and run parallel to the runway and the A253 ending at the existing Mount Pleasant roundabout near Minster. The new road will be linked to Ramsgate to the east by a spur road that will run east from a point approximately half way up the slope of Sevenscore. This spur road will pass between Cliffs End and Foads Hill before joining the Lord of the Manor roundabout west of Ramsgate (**Plates 1 - 4**).
- 1.3.2 Over the *c.* 6.5km course of the route the ground rises from *c.* 1.5m aOD at the southern end of the Ebbsfleet Peninsula, where it lies on Thanet Sands, to *c.* 52m aOD at the western end on the Upper Chalk ridge near Minster, with the Cliffs End spur at between *c.* 20m and 30m aOD. Local geological variations and topography will be outlined in the individual sections for each of the ‘Zones’ under consideration below.

#### 1.4 Archaeological and historical background

1.4.1 The Isle of Thanet is distinctive both in its physical setting – from perhaps the Early Bronze Age to medieval periods it was an island, separated from the mainland by the Wantsum Channel - and in the range and density of its archaeological remains.

1.4.2 The area flanking the northern side of the mouth of the Wantsum, through which the proposed road will pass, also has strong associations with history and myth. From the landing of the Roman army of Claudius at nearby Richborough, to the arrival of the invading Saxons epitomised by Hengist and Horsa, then Danish raids, and the arrival of St. Augustine and his Christian mission. Today, these events and stories provide powerful connections with the island's past.

##### *Landscapes*

1.4.3 The archaeological landscapes of Thanet are recognised as being distinctive because of the ways past communities have used the different landscapes of the island, and the sheer density of remains from the Neolithic onwards. This is especially true for the Neolithic-Bronze Age and the Anglo-Saxon periods.

1.4.4 Some of the key characteristics of the landscape that make Thanet distinctive can be identified as:

- The soils of the Isle are widely regarded as having been very fertile and attractive to farming although, as elsewhere in southern England, the extensive and intensive farming of the landscapes only started towards the Middle Bronze Age;
- An increasingly intensive shaping of the landscape from the Neolithic onwards. This is reflected in the many multi-period archaeological sites;
- The development and change in ritual and funerary monuments, particularly of prehistoric date.

##### *Peoples*

1.4.5 Environmental changes, such as the rise in sea level, towards the end of the Mesolithic, gradually resulted in the creation of the Island of Thanet and this will have helped to shape its distinctiveness. The gradual widening of the Wantsum Channel would have set it apart from the mainland physically. Thus it was at the same time an extremity of Britain and the closest point to continental Europe. Some of the key issues relevant here are:

- As an island, whose size, shape and coastline all changed through time, Thanet could have served as a gateway for people and ideas moving between mainland Britain and continental Europe along the principle routes of communication;
- The relatively narrow straits of the Wantsum Channel could, together with the topographical units of the Ebbsfleet Peninsula and Weatherlees Island and the development of Stonar spit, have provided a sheltered passage and a safe harbourage for vessels travelling between continental Europe and Britain;
- Alongside the movement of people and ideas would have been the exchange of goods. It is possible, for example, that settlements at the neck of the Ebbsfleet Peninsula were engaged in trade and exchange perhaps from as early as the Late Bronze Age;
- In the Roman period the military base and port at Richborough with its associated civilian settlement (*vicus*) was one of the major gateways to Britain. More locally, its imposing structures would have dominated the entrance to the Wantsum Channel, controlling the movement of troops, traveller and traders, and exerted a major influence on Thanet;
- In historic times Thanet and the region around it have been in the forefront of invasion and defence, from the invasions of Julius Caesar and Claudius to the late Roman creation of the defences of the Saxon Shore, to, in recent times, the Battle of Britain.

#### *Background to the current work*

- 1.4.6 The Isle of Thanet has a long and distinguished history of archaeological research by individuals, notably Dave Perkins, and organisations such as the Trust for Thanet Archaeology and the Canterbury Archaeological Trust. The earlier, large-scale work undertaken along the A253 Thanet Way 7A road section between the Minster and the Mount Pleasant roundabouts, to the west of the current scheme, is particularly relevant here (Bennett *et al.* 2008). A review of the Isle up to the high medieval period has recently been published by Moody (2008) and it has also been considered in the context of a county wide survey (Williams 2007).
- 1.4.7 In combination the existing archaeological knowledge and the potential for further important discoveries as set out in the Archaeological Model (*East Kent Access Phase 2 Volume 2f*) demonstrate that, when taken as a whole, the archaeology of Thanet is of national significance, comprising a region unique in the south-east of England and the near continent.
- 1.4.8 With specific reference to the current project, Oxford Archaeology completed a study, comprising a desk-based assessment and a walk-over survey, of

known resources within the land-take of the proposed road and its vicinity (Oxford Archaeology 2003).

1.4.9 Following completion of the Oxford Archaeology study in November 2003, further important archaeological investigations, associated with other development proposals, were undertaken in the vicinity of the proposed road, and these have added significantly to the background information. They include excavations for a new service station at the Mount Pleasant (Minster) roundabout (Canterbury Archaeological Trust 2004; Gollop and Mason 2005), the Weatherlees to Margate Waste Water Pipeline (Andrews *et al.* 2009), housing development at Cliffs End Farm (McKinley *et al.* forthcoming) and, more recently, Thanet Earth (Canterbury Archaeological Trust 2010). In addition to these investigations were works connected to the development of the present scheme, comprising monitoring of geotechnic test pits (Trust for Thanet Archaeology 2006; 2008) and the excavation of a new pond at Weatherlees Waste Water Treatment Works (Wessex Archaeology 2008).

1.4.10 The results of these further works, in addition to the information included in the 2003 study, were incorporated in the second part of the *East Kent Access Phase II, Volume 2f (Archaeology)* document, issued in 2008 by the KCC Heritage Conservation Team. This comprises an ‘Archaeological Model’, which divides the route into 28 separate ‘zones’ (Zones 1 – 28; Zone 29 was added subsequently, in 2010) (**Figure 2**) and for each of these provides details of the archaeological background and potential, and follows this with a ‘Zone Archaeological Model’ which outlines the foreseeable archaeology within a particular zone. A summary of the archaeological background for each zone is included in the description of the results from the individual zones below.

1.4.11 In order to facilitate the practical implementation of the Archaeological Model in the field and during analysis, the 29 landscape-specific Archaeological Zones were grouped in the Research Design (see below) into three broad physical Landscape Zones:

*Landscape 1: Chalk ridge*

1.4.12 This is formed by a chalk escarpment that runs east to west and represents the most northerly part of the route of the new road, running between the Lord of the Manor and Mount Pleasant roundabouts. The escarpment carries the main modern route, the A253 road which might, on parts of its current route, have prehistoric origins. Some of the key topographical sub-divisions of Landscape 1 and the known archaeological sites are:

- Telegraph Hill: Zones 23, 24 and 25 (Late Neolithic-Bronze Age funerary and monumental sites / Anglo-Saxon cemetery);
- Laundry Hill: Zones 21 and 22 (Neolithic 'focus' / Bronze Age enclosure);
- Thorne Hill: Zones 19 and 20 (Late Iron Age-Roman settlement and burials);
- Base of Sevenscore scarp slope: Zone 10 (Neolithic, Bronze Age, Iron Age activity and Roman burials).

#### *Landscape 2: Pegwell Bay / Cliffs End spur*

1.4.13 Landscape 2, is formed of a spur of land behind Pegwell Bay which starts at Chalk Hill and slopes in a south-westerly direction through Cliffs End and on towards Cottington Hill. Some of the key topographical sub-divisions of Landscape 2 and the known archaeological sites are:

- Foads Hill, Zone 13 and 14 (Bronze Age burials and prehistoric funerary and monumental sites);
- Hollins Bottom, Zones 15 and 16 (Neolithic/ Bronze Age funerary and monumental sites);
- Base of Sevenscore scarp slope, Zone 10 (Neolithic, Bronze Age, Iron Age activity and Roman burials).

#### *Landscape 3: Ebbsfleet Peninsula*

1.4.14 The southern slope has three transverse spurs, composed of Thanet Beds (sands), extending southwards as the Ebbsfleet peninsula into the ancient Wantsum Channel. Some of the key topographical sub-divisions of Landscape 3 and the known archaeological sites are:

- Cottington Hill, Zones 8, 9 and 10 (Neolithic, Bronze Age, Roman and Anglo-Saxon activity);
- Ebbsfleet Valley/Saddle, Zones 6 and 7 (Bronze Age-Iron Age occupation and ritual activity, Roman settlement and occupation);
- Ebbsfleet Peninsula, Zones 1, 2, 3, 4 and 5 (Neolithic, Bronze Age-Iron Age occupation and ritual activity, Roman settlement and occupation, medieval farming).

## **1.5 Research design**

1.5.1 The *Research Design* was intended to provide a strategic framework which would provide an informed context for asking questions and making decisions

about interpretation at the start of, during and after the archaeological fieldwork.

1.5.2 The *Research Design* set out:

- to briefly characterise the archaeological significance of the Isle of Thanet;
- to identify the opportunities that the scheme presents;
- to identify research questions and assess the data sets that may be available to answer those questions;
- to outline the landscape approach that was to be used throughout the project and to identify three key Landscapes Zones;
- to promote a self-critical and reflexive approach to the archaeological works.

1.5.3 Two overarching themes – People and Place - are identified in this *Research Design*. In combination, these themes help to define what is distinctive about the archaeology of Thanet at a national, regional and local level.

1.5.4 People – movement of people, goods and ideas. Environmental changes, such as the rise in sea level, towards the end of the Mesolithic, gradually resulted in the creation of the Island of Thanet and this will have helped to shape its distinctiveness. The gradual widening of the Wantsum Channel would have set it apart from the mainland physically. Thus it was at the same time an extremity of Britain and the closest point to continental Europe.

1.5.5 Place - the archaeological landscapes of Thanet are recognised as being distinctive because of the ways past communities have used the different landscapes of the island, and the sheer density of remains from the Neolithic onwards. This is especially true for the Neolithic - Bronze Age and the Anglo-Saxon periods.

1.5.6 It was recognised that the categories of people and place are not exclusive, and that there has been continuing interplay between the physical characteristics of the landscape and how they have been changed by people. In addressing this interplay, a landscape-based approach has been adopted, facilitated by the use of a scheme GIS model during the archaeological fieldwork and analysis, the details of which are set out in the *Project Design*. This innovative approach and the self-critical and reflexive approach to the archaeological works allows comparisons within and between the three key Landscape Zones that were identified: the Chalk ridge (Landscape 1); the Pegwell Bay / Cliffs End Spur (Landscape 2); and the Ebbsfleet Peninsula (Landscape 3).



1.5.7 On the basis of a review of recent and current work and an accompanying consultation, a series of research questions that are either specific to Thanet or its contribution to the wider setting were identified:

*Place*

- How and why was Thanet distinctive from other areas?
- How has the sea influenced different forms of contact with continental Europe and the rest of Britain?
- How did the dynamic and changing coastline influence the past communities of Thanet?
- How did environmental change, both natural and caused by man, on land and at the coast influence the past communities of Thanet?
- What effects did the changing character of the Wantsum Channel have on Thanet?
- How were particular localities such as the Ebbsfleet Peninsula affected by the changing character of the Wantsum Channel?
- How, and why, did people use different parts of their landscapes?
- Have man-made changes caused earlier landscapes to be hidden or even partially or wholly destroyed?
- Were monumental landscapes for ceremony and burial deliberately created from the later prehistoric period onwards?
- Where were settlements sited, and why?
- How did economic and social factors influence the development of the landscape development as seen in land divisions, field boundaries and tracks etc. in the late prehistoric and historic periods?
- How did networks of settlement and communication influence the development of the prehistoric and historic landscapes?
- How were defensive landscapes created in the historic periods?
- How did the ownership of land influence the development of the landscape in the prehistoric and historic periods, for example through the first field systems or ecclesiastical, manorial and tied estates?
- Can the past landscapes identified in the archaeological works be understood in the context of the present landscape and its component units?
- Have wider cultural influences, for example aesthetics and recreation, influenced the development of the historic landscape?

*People: movement of people goods and ideas*

- What evidence is there for assimilation and change through migration, invasion, exchange or the adoption of new cultural norms?
- Facing the ocean: did the people of Thanet view themselves and / or the Isle as being in some way different from the mainland?
- How did religious beliefs, mortuary rituals and funerary monuments change through time?
- Are any of the mortuary rituals seen in Thanet distinctive in Britain?
- To what extent can grave good be used as indicators of ethnicity and social persona?
- Why were so many hoards of Bronze Age metalwork deposited on Thanet and in what contexts?
- Can existing later prehistoric chronological and typological sequences for Thanet be refined more closely? And if so are they applicable more widely?
- When, and if, did Thanet emerge as a key location in networks of trade and exchange?
- What were the roles of early coinages in Thanet?
- Can the settlement evidence from the neck of the Ebbsfleet Peninsula be interpreted as indicating a Late Iron Age / Early Roman settlement engaged in trade and exchange?
- What effects did the Roman military base and port at Richborough have on the contemporary settlement pattern and communications on Thanet?
- When did the Saxon settlement of Thanet take place and how does the resulting settlement pattern compare to the wider Saxon settlement pattern of East Kent?
- What was the nature of medieval settlement and farming in the area and how was this affected by the reclamation of the marshes around the Wantsum Channel?
- What changes did the defence of Britain in the two World wars cause in this area, and in particular those relating to Manston airfield?

**1.6 Fieldwork**

- 1.6.1 Because of the exceptionally high density of archaeology anticipated along virtually the entire route, the decision was made (*East Kent Access Phase II, Volume 2f (Archaeology)*) that all areas where road construction was likely to impact on buried archaeological remains would be stripped and subject to archaeological investigation, largely obviating the need for evaluation trenching in advance of area excavation. Within these areas, largely in arable

farmland, much of the archaeological resource, which included features and sites of national, regional and local importance, was likely to be lie shallowly buried, and any modifications to avoid particular monuments would almost certainly lead to an impact on other known and unknown buried remains. Preservation *in situ* of any archaeological remains was only likely to be possible in exceptional circumstances.

- 1.6.2 Furthermore, the likelihood of any significant modern disturbance, including ploughing, was considered to be generally low, and this proved to be the case when the route was stripped. The principal disturbances comprised an area of services at the north end of Zone 3 and a former pond and adjacent area at the south end of Zone 4, all of which had been subject to some previous investigation (Wessex Archaeology 1992; Hearne *et al.* 1995; Andrews *et al.* 2009), an area levelled for barn construction in Zone 5, and the trenches for twin gas pipes that ran through Zones 18 – 20 and which had also been the subject of earlier recording (Perkins 1985).
- 1.6.3 There were some changes to the footprint of the scheme following the commencement of archaeological fieldwork. In particular, Zone 10 was extended to include an adjacent area (Zone 10a) designated for a balancing pond (to replace that proposed for Zone 9), an additional area was investigated in Zone 21 to incorporate the revised location of another balancing pond, and a further area (Zone 29, within Manston Airport) was added to the programme during the course of the scheme. Zone 25, within the south-west corner of Manston Airport, was excluded from the scheme in May 2011. An area adjacent to Zone 4, referred to here as ‘Weatherlees Pond’, was excavated in 2008 in advance of the Scheme (as part of ecological mitigation works), and the results of this have been included in the Assessment Report, as agreed in the contract for the archaeological works.
- 1.6.4 Three principal stages of fieldwork were undertaken, comprising a series of *Preliminary Surveys*, followed by *Strip, Map and Characterisation* and then, where required, *Further Archaeological Works*, the latter normally comprising detailed excavation. In addition to these elements, Evaluation Trenching was undertaken in Zone 2 and Zone 26 and various Watching Briefs and Targeted Watching Briefs (the latter allowing detailed excavation where necessary) were carried out, including monitoring the removal of possible unexploded ordnance.

### *Preliminary Surveys*

- 1.6.5 The *Preliminary Surveys* comprised Surface Collection Survey, Metal Detector Survey and Test Pit Survey, undertaken in November – December

2009. These surveys covered almost the entire route, but excluded areas where they were not required (eg where the ground level was to be raised or the topsoil undisturbed) or where ground conditions did not permit (eg covered with tarmac or concrete). In addition, a topographic survey was undertaken on the known (from aerial photographs) sites of two of the ring-ditches in Zone 23 to establish whether any upstanding mound survived in either example. Full details of the methodologies for the preliminary surveys are set out in the Project Design but summaries are presented below.

- 1.6.6 Overall, the *Preliminary Surveys* provided relatively little information to supplement that obtained from the subsequent stages of fieldwork, and did not require any changes to the methodologies adopted for that work. Nevertheless, the results are presented in a series of *Preliminary Survey Reports* and were also incorporated into the GIS Landscape model. Significant finds (eg coins) have been included in the relevant assessment reports and will also be incorporated in the final publication report.

#### *Surface Collection Survey*

- 1.6.7 Collection of material was carried out on a 20m grid aligned parallel to the line of the proposed road scheme. In order to maximise the recovery of surface artefacts, two transects, set 10m apart, were walked within each collection unit.
- 1.6.8 The fieldwalking grid was set out using a differential GPS and data directly inputted into the GIS. Collection points were set every 20m and recorded using a differential GPS.
- 1.6.9 Collections within each unit comprised all material visible in a zone 1m to either side of the centre line of the two transects comprising that unit. Artefacts from the two transects were combined, bagged and labelled according to their collection unit.
- 1.6.10 All material of archaeological significance was collected and the collection policy outlined in the KCC Draft Project Design adhered to.

#### *Metal Detector Survey*

- 1.6.11 Survey transects were spaced 10m apart with individual finds bagged in individually numbered bags and recorded. Metal detectors were set to recover ferrous as well as non-ferrous metals and all materials were retained and individually bagged. Locations of finds were recorded using a differential GPS.

*Test Pit Survey*

- 1.6.12 Test pits were excavated in areas designated in the KCC Draft Project Design. They were excavated on a grid spaced at 50m intervals. The number of test pits and locations took into account the final land take and adopted a 'best fit' within the shape of the scheme.
- 1.6.13 Test pits were 1m x 1m in plan and were excavated by hand in 10cm spits to the surface of the 'natural' subsoil or to the surface of preserved archaeological deposits, whichever was encountered first.
- 1.6.14 All material of archaeological significance was collected and labelled according to pit number and excavation spit. A 30l soil sample was recovered from each spit and sieved through a 10mm mesh either on or off site. Spoil was scanned with a metal detector.
- 1.6.15 Archaeological features identified in the test pits were planned and recorded although they were not excavated unless agreed with the Principal Archaeological Officer. The depth of topsoil, nature of the underlying geology, Ordnance Datum height and location of each test pit was recorded.

*Strip, Map and Characterisation**Excavation*

- 1.6.16 The topsoil, subsoil and, where present, colluvium along the route was stripped under archaeological supervision, commencing in December 2009, except where it was agreed that, due to the limited impact of the scheme in specific areas, archaeological deposits could be preserved *in situ*.
- 1.6.17 The aim of this stage was to characterise, within each Zone or defined area, the archaeology present, and this would then enable a robust programme of *Further Archaeological Works* to be designed, approved, programmed and implemented.
- 1.6.18 The areas of proposed excavation were marked out by VFH surveyors prior to machine stripping, and any overhead or underground services identified in order that they could be avoided until removed or re-routed and the associated exclusion zones stripped.
- 1.6.19 Machine stripping was undertaken mainly by 360° tracked excavators, supplied by VFH, working under constant archaeological supervision. Successive spits of not more than 100mm were removed, to the top of archaeological levels or the top of undisturbed natural which ever was the higher. Metal-detecting was undertaken throughout stripping and subsequent

hand-excavation. All spoil was stored within the footprint of the new road, requiring that some zones (eg Zones 11 and 12) be stripped and excavated as a series of separate areas in order to accommodate temporary bunds of topsoil, subsoil and, in some cases, colluvium.

- 1.6.20 As machine stripping progressed archaeological features were mapped by either GPS or TST (Total Station), using a control framework of survey points related to Ordnance Survey, and a digital base plan generated.
- 1.6.21 The digital base plan was then used to devise an appropriate sampling strategy, which was submitted to the Principal Archaeological Officer for approval. This sampling strategy plan formed the basis of the Characterisation investigation, which aimed to establish and assess the character, complexity, preservation, extent, depth, date etc of the archaeological remains present through an appropriate number of interventions, supported by information provided through a rapid on-site assessment of the associated finds and environmental assemblages.
- 1.6.22 Throughout the archaeological works a GIS was used to map landscape and archaeological data and this information fed back to the fieldwork team in an iterative process to assist in making informed decisions in relation to the *Research Design*.

#### *Recording*

- 1.6.23 The recording system used in the programme has been developed over 15 years of Joint Ventures between OWA. The system is specifically designed to be reflexive and iterative with the GIS and Landscape model updated on a daily basis, allowing the incorporation of new data into the research and methodology to occur seamlessly.
- 1.6.24 All plans were digitised and context information entered into the scheme database which was used to support the GIS-based Landscape and Archaeological Model. Harris matrices were compiled where necessary and context grouping was carried out in parallel with fieldwork.
- 1.6.25 A complete drawn record was compiled and a full photographic record maintained, as set out in the *Project Design*.

#### Finds

- 1.6.26 All artefacts from excavated contexts were retained, except those from features or deposits of obviously modern date. In such circumstances, sufficient artefacts were retained in order to elucidate the date and/or function of the feature or deposit.

- 1.6.27 All retained artefacts were, as a minimum, washed, weighed, counted, identified and recorded. Any artefacts requiring conservation or specific storage conditions will be dealt with immediately in line with *First Aid for Finds* (Watkinson and Neal 1998). Full details of the finds procedures are set out in the *Project Design*.
- 1.6.28 Finds, discovered falling under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its revision of 2002) were reported immediately to the relevant Coroner's Office, the Kent Finds Liaison Officer (FLO), who is the designated treasure co-ordinator for Kent, the landowner and the Principal Archaeological Officer.

#### *Environmental sampling*

- 1.6.29 Bulk environmental soil samples for plant macro fossils, small animal bones and other small artefacts were taken from appropriate well sealed and dated/datable archaeological contexts. Samples of between 40-60 litres were taken or 100% of smaller contexts. Full details of the environmental sampling and processing procedures are set out in the *Project Design*.
- 1.6.30 Bulk environmental soil samples were processed on-site by flotation and a preliminary assessment for environmental potential was carried out on an on-going basis and the results fed back during fieldwork, in order to guide the course of action for further sampling.
- 1.6.31 Monolith, marine shell and mollusc samples were taken where appropriate, and a geo-archaeologist was present to record and sample any deposits of particular significance such as buried soils and advise on depositional process. Virtually no waterlogged deposits were encountered.

#### *Human bone*

- 1.6.32 All human remains were excavated under the auspices of a Home Office licence for the removal of human remains. Excavation and subsequent treatment of lifted human remains was undertaken in accordance with the terms of the Home Office licence, and full details of these procedures are set out in the *Project Design*.

#### *Characterisation Report*

- 1.6.33 Following completion of characterisation within each zone or specified area a report, the *Characterisation Report*, was prepared, except for a relatively small number of the zones where it was agreed (with KCC) that this was not required. This was most often because of the compressed timescale for

completion of the archaeological works programme, largely resulting from delays caused by inclement weather conditions during the early stages of fieldwork (**Plates 5 - 6**) which resulted, in some zones, with the archaeological investigations taking place immediately in advance of construction works (**Plate 7**). In these cases, and where *Further Archaeological Works* were deemed necessary, a back-to-back approach was adopted, with *Strip, Map and Characterisation* being followed immediately by *Further Archaeological Works*, with no break for reporting (eg Zone 4). In a few zones, where there was relatively little archaeology or it was not very complex (eg Zone 17), all excavation was completed as part of the *Strip, Map and Characterisation* phase.

- 1.6.34 The *Characterisation Report* included, as a minimum, a site location plan, a plan showing interventions and provisional feature phasing, a summary of the archaeology by period and phase, quantification tables of stratigraphic, finds and environmental data together with an explanation of how this compared with the original archaeological model for the zone, and a summary of the significance of the archaeology, related to previous understanding and evidence contained within the Landscape and Archaeological Model and to the Research Aims set out in the project's *Research Design*.

#### *Further Archaeological Works*

- 1.6.35 The *Strip, Map and Characterisation* stage allowed a revised set of Research Aims to be formulated and these were set out in a *Further Archaeological Works Design* document (FAWD). The revised set of Research Aims were generally informed by the approach and framework set out in the *Research Design*, but also included further questions that had not been set out in the *Research Design* and were only formulated at the *Strip, Map and Characterisation* stage.
- 1.6.36 The *Further Archaeological Works Design* also included a statement of the strategy proposed for addressing the Research Aims, a methodology for the *Further Archaeological Works* (FAW) and a plan showing the location and extent of the proposed works.
- 1.6.37 During *Further Archaeological Works* the archaeology was excavated and recorded in accordance with the agreed excavation and sampling strategy set out in the *Further Archaeological Works Design* (FAWD) and developed through the focus provided by the relevant (i.e. to each zone) research priorities as set in the *Research Design*. The approach was iterative with the sampling strategy being continuously developed and adapted throughout the course of the individual excavations in consultation with the Principal



Archaeological Officer for KCC and VFH's archaeological consultant (Atkins), various OWA period, finds and environmental specialists, and English Heritage (EH) representatives. The results in the field, including those from the on-site finds and environmental processing, were constantly fed back into the decision making / sampling process so that the methodological approach could be adapted to best answer the issues raised in the *Research Design*, and this also allowed research priorities to be updated and modified as the project developed.

1.6.38 The excavation normally included as a minimum:

- The investigation of the intersections of features of archaeological date to obtain a phasing of the site;
- A robust spatial framework of excavation to provide an understanding of the spatial distribution of past activities across the investigation area including any 'special' deposits and any patterning in artefact distribution. Such a framework took into account the inter-relationship of major features;
- The full excavation and recording of structural remains and other areas of significant and specific activity (domestic, industrial, religious, hearths, 'special' / patterned deposits etc);
- The full excavation and recording of all burial deposits and associated remains;
- Where appropriate, for instance where the stratigraphy was complex, single context planning was used;
- Non-structural linear cut features were sample-excavated and recorded with a sufficient number of sections to establish the feature's character, date and morphology and to provide information on activities taking place in close proximity to the feature. All terminal ends were investigated. Sections were normally at least 1m wide;
- Non-structural pits were half-sectioned unless the character, number or size of the pits made this unpractical. For instance, if a pit contained several intersections and re-cuts, it was not always appropriate to half-section it. In this situation, 'quadranting' or single context planning was undertaken. Equally if 'special' deposits were expected, pits were excavated in plan rather than being half-sectioned;
- Non-structural post and stake-holes were half-sectioned sufficiently to clarify character, relationships and chronology;
- Sometimes, further machining was necessary, beyond that undertaken as part of the initial site stripping. For example, where areas had been exposed to prolonged heavy rain or snow and had become covered with slopewash, where remnants of colluvial deposits remained, where extensive 'low grade' deposits required removal after investigation, or

where large features such as wells or ditches would benefit from further, controlled machine investigation. In these cases, strategies for such work were discussed and agreed with the Principal Archaeological Officer for KCC.

1.6.39 Site mapping and recording, finds and environmental procedures, and the approaches to the excavation of human burials adopted during *Further Archaeological Works* all followed those outlined above for the *Strip, Map and Characterisation* phase of works, and further details are provided in the *Project Design*.

## **1.7 Community archaeology and outreach**

1.7.1 Community archaeology and outreach formed a significant and integrated element of the EKA (Phase II) archaeological project, and its implementation followed the requirements set out in the project design produced in 2008 by the KCC Heritage Conservation Team (Part 1 of *East Kent Access Phase II, Volume 2f (Archaeology)*). The EKA (Phase II) provided an unprecedented opportunity to involve the community in archaeological works and provide access to their heritage, as well as leaving a legacy of an increased appreciation and understanding of their heritage.

1.7.2 In order to accommodate community archaeological works within the scheme an area of the route was designated as a community excavation site. The most appropriate area for such site, given the requirements of the earthworks programme, was within Zones 22 - 23 which was not required for release to the main contractor until June 2010. By designating a single site for community excavation, this allowed the health and safety aspects of volunteers working within a development site to be more closely managed.

1.7.3 The community excavation focussed on one of the ring-ditches in Zone 23 and an adjacent late prehistoric field and enclosure system in Zone 22. In addition, volunteers participated in finds and environmental processing work.

1.7.4 Other elements of the community archaeology and outreach programme included exhibitions, open days, visits and talks, and publicity through the media and a dedicated website.

## 2 THE EXCAVATIONS

- 2.1.1 In the results that are presented below, the archaeological sequence is presented by zone rather than by period, as it is recognised that some elements of the phasing will change as a result of forthcoming analysis.
- 2.1.2 Context and intervention totals by zone are presented in Volume 2 Appendix 28, finds totals by number and weight for each zone in Appendices 29 and 30 respectively, and sample totals by type and zone in Appendix 31.

## 3 ZONES 1 AND 1A

- 3.1.1 Zone 1 lay at the southern end of the Ebbsfleet Peninsula (Landscape 3), in a relatively low-lying location at the junction of the former Wantsum Channel and Pegwell Bay (**Figure 3; see Plate 1**). Until the medieval period it would have been surrounded by water on all but the northern side. However, as the Wantsum Channel silted up and land reclamation took place the surrounding area would have become progressively marshier until drained for agricultural use.
- 3.1.2 No previous archaeological investigations had taken place within or close to Zone 1, though earlier investigations to the north (see Zones 3 and 4) have demonstrated that the Ebbsfleet Peninsula has been an attractive location for activities dating back at least to the Neolithic period.
- 3.1.3 A narrow triangular area was left un-investigated towards the southern end of the zone due to the presence of services, though a watching brief was maintained on a new service trench which crossed this area. A watching brief was also maintained on a service trench which extended to the east of the zone, towards Ebbsfleet Lane, but no features were identified within the narrow confines of the trench.
- 3.1.4 The excavations in Zone 1 exposed a small part of the south-west edge of the Ebbsfleet Peninsula and adjacent alluvial deposits, though no significant waterlogged remains were encountered within the latter or within any of the archaeological features. The Thanet Beds forming the peninsula sloped down from *c.* 4m aOD at the north end of the zone to *c.* 1.5m aOD in the south. Deeper excavations to the west for the installation of storm-water tanks (Zone 1a) revealed almost exclusively made-ground and no deposits of palaeo-environmental interest.

### 3.2 Prehistoric

3.2.1 The Oxford Archaeology Desk Based Assessment (Oxford Archaeology 2003) identified a large, ovate cropmark interpreted as an enclosure of possible Bronze Age date, falling partly within Zone 1 (and also Zone 2). However, excavation revealed no trace of such a feature, which must now be interpreted as a reflection of some variation in the topsoil or the crop itself. One pit (133003) contained Iron Age pottery but this may be residual and be related to the Iron Age activity recorded in Zone 3 to the north. Two undated features (130004 and 139009) were located immediately to the north and south of pit 133003, and may be of prehistoric (or later) date.

### 3.3 Roman

3.3.1 Two ditches, 172195 and 172310, recorded close to the southern edge of the peninsula appear to belong to this period and may be field boundary ditches. A possible entrance, measuring *c.* 8.7m across, was recorded between them. Ditch 172310 curved from its northern terminus towards the south-east, which could suggest an area of land was enclosed to the south of these ditches. If so, the focus of the enclosure lay outside the extents of the excavated area, possibly on the tip of the Peninsula. Two small ditches, 172307 and 248129, ran north south at 90° from 172195. These ditches were only visible for *c.* 6.5m within the excavated area but probably formed part of the Roman enclosure system, though they may be later.

3.3.2 A pair of larger and more irregular east-west ditches (172210 and 172211) were recorded immediately to the north of ditches 172195 and 172310. Although a stratigraphic relationship existed between the two features (ditch 172210 cut ditch 172211) they are thought to be broadly contemporary and represent the continued use of the boundary. Towards the southern edge of the excavated area the two ditches converged and were visible as one wide shallow feature.

### 3.4 Medieval

3.4.1 The majority of the features in Zone 1 are medieval and of 11<sup>th</sup> to 14<sup>th</sup> century date, with most assigned to the 11<sup>th</sup> to 13<sup>th</sup> centuries. The features comprised a number of pits, boundary ditches, fence lines and a series of enclosures that are of more than one phase. The features were most likely associated with animal husbandry. Areas of disturbed natural were recorded adjacent to some of the enclosures and have been interpreted as animal trample; given the damp nature of the soils at the tip of the Ebbsfleet Peninsula this seems a plausible explanation for these areas of disturbance.

- 3.4.2 Why there should be such a concentration of features at the southern tip of the peninsula is currently unclear, but it may be that they were associated with a medieval farmhouse that was a precursor to Ebbsfleet House at the south end of Ebbsfleet Lane, a little over 50m to the east. Work elsewhere on the peninsula has shown that activity of all periods is predominantly focused on its east side (Perkins 1992; Wessex Archaeology 1992; Hearne *et al.* 1995; Wessex Archaeology 2004; Andrews *et al.* 2009; Wessex Archaeology 2008; Moody 2008). Much of the medieval activity recorded in Zone 1 may, therefore, be peripheral to the main area of settlement.

#### *Medieval Farmstead A*

- 3.4.3 At the southern end of Zone 1 a number of enclosures, fence lines and a structure were recorded. These features formed part of a medieval farmstead that is thought to be centred on the area to the north-east of the excavation, in the vicinity of the present day Ebbsfleet House. The farmstead had at least two phases; the earlier phase was evident as a series of small enclosures, which were later replaced by larger, rectangular fields.

#### *Small enclosures*

- 3.4.4 The smaller enclosures, 193161, comprised a series of ditches (172189, 172190, 172191, 172271 and 172276) and enclosed an area of *c.* 500m<sup>2</sup>. The earlier ditches, 172189 and 172271, formed the northern and eastern sides of the enclosure; the ditch was relatively shallow (*c.* 0.5m) and had silted up naturally. This was later replaced by ditches 172190 and 172191. These ditches formed the southern side of the enclosure and re-established the eastern arm of the enclosure. The stratigraphic relationships recorded suggest that there were several phases of cutting and re-cutting of these ditches. The ditches may not all have been open at the same time, but it is clear that they are broadly contemporary in date

#### *Larger rectangular enclosures*

- 3.4.5 The second phase of the medieval farmstead was represented by a series of larger rectangular enclosures, 193162. The enclosures were laid out on a NE-SW alignment and formed a regular grid of enclosures along the Ebbsfleet Peninsula. A possible entrance to the enclosures was recorded on the north-west side between ditches 172123 and 172125. The longest NW-SE axis of the field system was composed of 172119, 172120, 172158 and 172194, and was recorded over a distance of 140m; at its northern end the ditch turned 90° to the north-east and continued beyond the limits of the excavation. Several ditches were recorded at right angles to this axis and have been interpreted as

part of the same enclosure system. Ditch 172118 terminated 2.5m short of the NW-SE ditch 172120, and ditches 172119 and 172158 terminated *c.* 2m short of NE-SW ditch 172117. The regular nature of these enclosures supports the assumption that the majority of the ditches in Zone 1 formed part of a broadly contemporary enclosure system. The ditches recorded probably represent fields and enclosures laid out to the rear of the proposed medieval farmstead to the southern end of Ebbsfleet Lane.

### *Structures*

- 3.4.6 Two post-built structures were recorded towards the south-western edge of Zone 1. Posthole group 172112 formed a rectangular structure, which has been interpreted as an agricultural feature (possible animal pen?). A series of twelve postholes, group 172113, ran for 17m in a NW-SE alignment, *c.* 5m to the south of 172112. The postholes represent a fence line within the enclosure comprising ditches 172116 and 172194.
- 3.4.7 A small structure 172196 was located in the southern half of Zone 1. The structure was composed of a number of postholes and post-pads, two beam slots and a possible hearth. The structure was rectangular in plan and aligned roughly NW-SE. During excavation the structure was thought to possibly to have been open on the eastern side, though this may be the result of truncation. Stratigraphy indicates that this structure was later than enclosure system 193162, although the position of structure 172196 within the small enclosed area of field system 193161 suggests that it may be contemporary with that enclosure. The apparent open side to the eastern edge of the structure may be related to truncation caused by the excavation of the later field system 193162. Structure 172196 is currently interpreted as a temporary structure and was perhaps the remains of a 'fisherman's hut' given its location towards the end of the Ebbsfleet Peninsula.

## **3.5 Post-medieval**

- 3.5.1 A single post-medieval ditch, 172193, has been identified, and was located at the southern end of the peninsula. This ditch has the same alignment as the medieval ditches of enclosure 193162 and could also be a later part of that enclosure system.

## 4 ZONE 2

- 4.1.1 Zone 2 lay to the west of Zone 1, towards the southern end and on the west side of the Ebbsfleet Peninsula (Landscape 3) (**Figure 3**). Like Zone 1, it occupied a relatively low-lying location on the peninsula at the junction of the former Wantsum Channel and Pegwell Bay, with the natural Thanet Beds at a height of *c.* 1.75m aOD. Until the medieval period this part of the peninsula would have been surrounded by water on all but the northern side. However, as the Wantsum Channel silted up and land reclamation took place the surrounding area would have become progressively marshier until drained for agricultural use.
- 4.1.2 Evaluation trenching was undertaken in Zone 2 prior to stripping in order to establish the extent of archaeological deposits and, particularly, the depth of alluvial deposits on the edge of the Wantsum Channel where a proposed new barn was to be constructed.
- 4.1.3 No previous archaeological investigations had taken place within or close to Zone 2. The excavations in Zone 1 revealed a small part of the south-west edge of the Ebbsfleet Peninsula and adjacent alluvial deposits, and in Zone 2 the uppermost, slightly peaty deposits along the gently sloping western edge of the peninsula were exposed. However, no significant waterlogged remains were encountered.

## 4.2 Medieval

- 4.2.1 All dated features within Zone 2 were of medieval (13<sup>th</sup> – 14<sup>th</sup> century) date and have been assigned to Medieval Farmstead A (see Zone 1), probably forming the western edge of that settlement. Medieval Farmstead A extended across Zone 1 and Zone 2, and is thought to have been centred on the area of the current Ebbsfleet House at the south of Ebbsfleet Lane.
- 4.2.2 Three shallow ditches, 190383, 190384 and 190385, and small pit 244361 have been provisionally assigned to the medieval period and, although undated, it is possible that these features were related to an early phase of medieval field boundaries. Ditch 190383 was aligned roughly east-west and was cut at the western end by a series of medieval ditches, 193163. Gully 190385 terminated *c.* 0.75m to the south of 190383 and may be contemporary. At its eastern end ditch 190383 was cut by a short length of north-south gully 190384.
- 4.2.3 An intercutting sequence of several medieval ditches (193163) lay along the western edge of Zone 2. This boundary probably represents the edge of the

peninsula, almost certainly bounding the extent of the slightly higher, drier ground to the east, with the Wantsum Channel to the west. This ditch sequence formed the western boundary of Medieval Farmstead A that continued into Zone 1. Ditch group 193163 appears to have served as a boundary or drainage ditch rather than any form of flood defence, and the orientation is similar to that of a surviving drainage ditch to the west, which broadly defines the former edge of the peninsula in this area. The Ordnance Survey map of 1896 records a field boundary on the same NE-SW alignment as 193163, which could suggest the continued use of this field system from the medieval period into the post-medieval period. The majority of these ditches were on an approximately NE-SW alignment, though the latest ditch (190389) in the sequence was on a slightly more north-south alignment and could be of later medieval date.

- 4.2.4 Several medieval ditches were recorded at right angles to group 193163 and probably formed part of the wider field system (193161) observed in Zone 1. Two parallel, NE-SW aligned ditches (190391 and 190392) terminated, and returned *c.* 2.5m east of ditch group 193163. Pit 244367 was cut through the corner of ditch 190392 and contained a relatively substantial assemblage of high medieval pottery.
- 4.2.5 A series of postholes (190393) were located in the area of ditches 190391 and 190392, and may represent fence lines that flanked the field ditches. Similar fence lines or structures were recorded in Zone 1 to the east (172112 and 172113).
- 4.2.6 Towards the southern edge of Zone 2 was an area of flint cobbling 239238. This cobbling was similar to that seen in Zone 1 (structure 172196) and might suggest the presence of a further truncated structure within Zone 2. The quantity of pottery from nearby pit 244367 might be related to this postulated structure.
- 4.2.7 The generally low density and distribution of features in Zone 2 have confirmed the results of work elsewhere on the peninsula which have shown that activity of all periods was predominantly focused on the eastern side of the peninsula, on the slightly higher drier ground (Perkins 1992; Wessex Archaeology 1992; Hearne *et al.* 1995; Wessex Archaeology 2004; Moody 2008; Andrews *et al.* 2009).



## 5 ZONE 3

- 5.1.1 Zone 3 occupied a strip along the central ‘spine’ of the Ebbsfleet Peninsula, in a relatively low-lying location at the junction of the former Wantsum Channel and Pegwell Bay (Landscape 3) (**Figure 4**; see **Plate 1**). The Thanet Beds forming the peninsula sloped down very gently from *c.* 4m aOD at the south end of the zone to *c.* 3.5m aOD in the north, and then rose again into Zone 4; a slight knoll in the central part of the zone was at *c.* 6.9m aOD. Until the medieval period this part of the peninsula would have been bounded by water to the east and west, but no waterlogged deposits survived within any of the excavated features.
- 5.1.2 Investigations in Zone 3 and to the north (see Zone 4) have demonstrated that the Ebbsfleet Peninsula has been an attractive location for activities dating back at least to the Neolithic period (Perkins 1992; Wessex Archaeology 1992; Hearne *et al.* 1995; Wessex Archaeology 2004; Wessex Archaeology 2008; Moody 2008; Andrews *et al.* 2009). In particular, previous, limited archaeological work within or close to Zone 3 provided evidence for medieval farming activity, though it suggested that any remains would be heavily truncated (Perkins 1992). However, the EKA excavations showed this not to be the case.
- 5.1.3 In addition to excavation within the zone, a watching brief was maintained on a service trench which ran parallel to the west of and crossed the zone, but this was almost entirely devoid of archaeological features.

## 5.2 Neolithic?

- 5.2.1 A possible Neolithic monument 193165 occupied a slight knoll on the Ebbsfleet Peninsula. It comprised an outer horseshoe-shaped ditch approximately 20m across with an internal bank, and a north-west facing entrance. Within the outer ditch was a narrow, steep-sided ring-ditch approximately 8m in diameter with a small pit in the centre. Early Bronze Age pottery was recorded from the inner ditch, and OSL samples have been taken from both ditches which will aid dating of the monument. Although relatively low-lying (at *c.* 6.9m aOD), its location on the Ebbsfleet Peninsula, with open water to the east and west, would have meant that this monument would have had good visibility. Further examples of Neolithic monuments are known within the local area including a small ring-ditch of probable Late Neolithic date that was recorded in Zone 4, approximately 300m to the north (Hearne *et al.* 1995; see Zone 4 below). Two similar causewayed monuments were recorded during work in Zone 23 of the EKA, and at other sites such as Lord

of the Manor (Site 2), and Hartsdown Community Woodland, Margate (Macpherson Grant 1980; Fisk 2003; Moody 2008).

- 5.2.2 Prehistoric worked flint was recorded in several sections across the zone and included an Early Neolithic leaf-shaped arrowhead that was recovered from medieval ditch 172017 and a Mesolithic flint from ditch 172024.

#### *Outer horseshoe-shaped ditch*

- 5.2.3 The outer ditch 172040 had an internal diameter of *c.* 20.5m and a north-west facing entrance that measured *c.* 16m between the two termini. The ditch had been allowed to silt up naturally and there was evidence for an internal bank or mound. There may have been two phases of ditch, the latest represented by a possible re-cut. Following hand-excavation of approximately 50% of the ditch (including the whole of the two terminals) through a series of cross sections and long sections, the remainder was removed by machine in carefully controlled spits.
- 5.2.4 A causeway defining an entrance was recorded on the north-western side of the outer ditch. The eastern terminus (211001; 0.8m deep) rose sharply to form a rounded butt end. The western terminus (207001; 0.65m deep) had a more gentle profile in comparison. The difference in the recorded depths of the feature at the termini may relate to truncation or erosion of the monument, and the ground surface sloped away fairly sharply on the western side of the feature (a difference of *c.* 0.7m was recorded in section heights). The earliest phase of the outer ditch had a generally wide, V-shaped profile that varied between 2 and 3.5m in width and was up to 1.2m deep; however in some sections a more U-shaped profile was recorded. The ditch contained up to seven deposits that were the result of natural erosion processes. In sections excavated on the southern side deposits that may represent eroded mound material were recorded.
- 5.2.5 A possible re-cut (172041) of the outer ditch was recorded in several sections and provides some evidence of a second phase of activity. The re-cut was fairly shallow, between 0.16m and 0.4m deep, and had a varied profile, from a narrow U-shaped ditch to a wider flat-bottomed feature. However the re-cut may be a result of different infilling and silting processes rather than a distinct cut feature.
- 5.2.6 The paucity of features that cut the internal area of 193165 provides evidence that there may have been an internal mound. For example, medieval ditches 172023 and 159271 that cut across 193165 to the south and north respectively are probably part of the same boundary feature, but are truncated in the central

area of the monument. Ditch 172023 appears to terminate just inside the outer ditch on the southern edge of 193165. This terminus may be the result of 172023 rising as it cut through the internal mound. Ditch 159271 to the north may be a continuation of 172023, and the shape in plan of 159271 tapers considerably to the south, which could be related to base of the ditch rising as it cut through a mound.

### *Inner ring-ditch*

- 5.2.7 The inner ring-ditch (172039) had an internal diameter of *c.* 8m and a narrow, steep-sided, U-shaped profile, up to 1m wide and approximately 1m deep. Following hand excavation of more than 50% of the ditch through a series of cross sections, the remainder was also removed by hand. There was evidence for a re-cut recorded in the majority of the excavated sections; the re-cut was fairly shallow and may have been excavated in segments. The ditch appears to have in-filled naturally with between two and seven deposits. Early Bronze Age pottery was recorded from a lower fill (240001) on the southern side of the ring-ditch and prehistoric worked flint was recovered from various sections.
- 5.2.8 The first phase of the inner ring-ditch comprised a narrow, steep-sided, U-shaped ditch (172035) with a fairly flat base. Recorded sections show that the ditch had been allowed to silt up naturally. Generally the deposits in the ditch were derived from erosion of the edge of the feature and the surrounding land surface. It was unclear whether any of the deposits derived from a mound, but during excavation it was noted that the fills had probably formed fairly quickly and were the result of natural processes; the fills recorded in section 205007 may suggest the presence of an internal mound. The ring-ditch had been allowed to silt up and was then re-cut by a shallow ditch 172039. There was evidence that the re-cut may have been segmented, with a re-cut most clear on the south-western side of the feature, though this may be related to the formation of different deposits within the ditch rather than distinct re-cut events.
- 5.2.9 A shallow oval pit 172044 (0.3m deep) was located in the centre of the ring-ditch; the pit contained worked and burnt flint. It remains unclear if pit 172044 was directly related to the ring-ditch, but the location of the feature suggests that it was contemporary. Two further shallow oval pits (132018 and 205003) were recorded within the ring ditch. It is possible that all three of the pits had been cut through an internal mound and only the bases of the pits remained.

### 5.3 Bronze Age

- 5.3.1 A small complex of ditches, gullies and shallow pits lay towards the northern end of Zone 3; these features may all be of Late Bronze Age date. The majority of the ditches (172143, 172163, 172164 and 172165) were aligned NW-SE. Although stratigraphic relationships existed between some of the ditches they are probably broadly contemporary and represent the development of a field system.
- 5.3.2 Feature 151001, interpreted as a tree-throw pit, contained a fairly large assemblage of Bronze Age pottery and fragments of a loomweight and quernstone. Ditches 172053 and 172054 contained a dark charcoal-rich deposit with finds of prehistoric pottery, animal bone and fired clay. The dark deposits within ditch 172053 and 172054 have been interpreted as deliberate backfills and are thought to be composed of a number of discrete dumping/backfilling episodes. The quantity of finds from feature 151001 and the dark deposits within ditches 172053 and 172054 could suggest that the remains of a settlement, perhaps contemporary and broadly associated with the Bronze Age activity in Zone 4, lies to the north-east and outside the footprint of Zone 3.

### 5.4 Iron Age

- 5.4.1 Iron Age pottery was recorded from a number of features across Zone 3, although only two features are currently dated to this period, and their use may have extended into the Early Roman period. Both features are located at the southern end of the zone, and consist of circular drip gully 172034, indicative of a small structure, and a shallow gully 172021, that was located *c.* 7.5m to the south.
- 5.4.2 Circular drip gully 172034 measured *c.* 6m in diameter; the gully had a concave profile and was fairly shallow (max depth 0.12m). The drip gully was probably originally a complete circle, but subsequent truncation had removed a section of the gully on the south-eastern side. Approximately 7m to the south was a series of north-east to south-west aligned gullies, one of which (172021) contained Iron Age Pottery. Ditch 172021 provided by far the largest assemblage of Iron Age pottery from any feature within Zone 3, with 38 sherds. The drip gully and this ditch may be contemporary and together they are likely to represent a low level of agricultural activity on the peninsula at this time. Residual sherds of Iron Age pottery were recorded in features across Zone 3.

## 5.5 Medieval

### *Medieval Farmstead B*

5.5.1 Evidence of a medieval farmstead was recorded across Zone 3. The farmstead probably originated in the 11<sup>th</sup> to 12<sup>th</sup> century and perhaps continued as late as the 14<sup>th</sup> or 15<sup>th</sup> century. The main concentration of medieval features was located to the northern end of Zone 3. Sub-rectangular field ditches or land divisions, in the form of a series of poorly dated ditches and gullies, were recorded throughout the central and southern area of Zone 3, and probably marked the southern extent of the medieval settlement. The medieval ditches appeared to respect Neolithic monument 193165, which suggests the monument was still at least partly extant at this time.

#### *Southern boundary*

5.5.2 Five ditches aligned roughly NE-SW and assigned to the medieval period probably formed the southern boundary of the farmstead. The ditches were relatively shallow (ranging from 0.13m to 0.40m in depth) and were all similar in form. The group of parallel ditches suggests that the boundary of the farmstead may have been re-cut and re-established over time. The deepest ditch, 206038, was 0.4m deep, and had a wide, shallow V-shaped profile with a single, naturally derived fill. Ditches 172012 and 172013 formed a rectilinear enclosure that cut through the southern boundary ditches and may represent an expansion of the rectilinear land divisions towards the edge of the farmstead.

#### *Sub-rectilinear enclosures / land divisions*

5.5.3 The general trend of sub-rectilinear land divisions was most evident in the central area of Zone 3, where a series of ditches formed elements of a field system. Five ditches were aligned NE-SW; the ditches were relatively shallow and had wide V-shaped profiles with a maximum depth of 0.5m. Ditch 172019 contained both Roman and Iron Age pottery but this is thought likely to be residual material. Six NW-SE aligned ditches had wide, shallow V-shaped profiles, with a maximum depth of 0.9m. The general layout and lack of clear stratigraphic relationships suggests that the overall system was broadly contemporary and may have been added to and extended in piecemeal fashion rather than in episodes of wholesale replacement. It is of some interest that ditches 172016, 172019 and 206038 appear to be on the same alignment as drainage ditches visible on 1940s aerial photographs, which suggests long-lived field boundaries.

5.5.4 Ditches 172174 and 172177 towards the north end of Zone 3 continued the rectilinear enclosure pattern and can probably be seen as a continuation of ditch 159272. From the southern end of ditch 172174, where the feature had been truncated, the ditch ran on a NW-SE alignment for *c.* 20m before turning through 90° to run NE-SW and then terminating *c.* 19m to the east. A possible entrance, *c.* 6m wide formed between 172174 and 172177, led into the enclosure system to the south.

#### *Northern enclosures*

5.5.5 Towards the north end of the zone, on the west side, was a complex sequence of ditches that appeared to define separate phases of enclosures. The features, and the quantity of pottery recovered, suggest that this was the focus of the farmstead, although no structural remains were identified and it is probable that any associated buildings lay to the west.

5.5.6 Areas of trampling or disturbance (141019 and 172090) were recorded adjacent to the enclosure which probably indicates the presence of animals; similar deposits were noted in Zone 1 to the south. A series of intercutting ditches (159274) formed a NE-SW boundary that was parallel to the enclosures to the south. The ditches had similar, rounded, U-shaped profiles with naturally derived fills; finds from the features included medieval pottery (predominantly of 11<sup>th</sup> to 13<sup>th</sup> century date), fired clay and animal bone.

5.5.7 Two rectilinear enclosures (172031 and 172179) were located immediately north of the series of intercutting ditches and continued beyond the western edge of the excavated area; the areas enclosed were between 12.5m and 16m in width. Enclosure ditch 172179 was fairly substantial with a maximum depth of 0.9m, and had a wide, flat-bottomed profile. The ditch had probably silted up naturally to begin with, but concentrations or discrete dumps of material were evident within the secondary deposits. A further rectangular enclosure 172031 was recorded *c.* 3m to the north of 172179. The ditch of enclosure 172031 had a wide, flat-bottomed profile with a maximum depth of 0.55m. This had also silted up naturally, but deliberate backfills were recorded in the southern side of the enclosure. Both enclosure ditches contained large quantities of medieval pottery of 11<sup>th</sup> to 14<sup>th</sup> century date, with a focus on the earlier half of this date range. The presence of dumped material within enclosure 172179 and the large assemblage of finds from enclosure 172031 suggests that these enclosures lay close or within the settlement area.

5.5.8 A later, larger rectilinear enclosure ditch (172173) was cut through the top of the silted up ditch of enclosure 172179. This enclosure was *c.* 57m in length

and was on the same north-west to south-east alignment as the earlier enclosure. The ditch had a wide U-shaped profile and had predominantly silted up naturally, although discrete dumps of material were evident within the secondary deposits and medieval pottery came from the basal fill of the ditch (context 141018). Enclosure 172173 may represent the second phase of medieval enclosures at the northern end of Zone 3, which replaced the earlier, smaller rectilinear enclosures 172031 and 172179.

### *Curvilinear enclosures - ?medieval*

- 5.5.9 Immediately to the south of Neolithic monument 193165 was a cluster of two small enclosures defined by shallow curvilinear ditches. Dating for these features is currently uncertain. Pottery of Iron Age date was recorded in a number of excavated sections but the small quantities suggest that this material may be residual; slightly larger quantities of medieval pottery were recorded in sections to the eastern side of the enclosure. It is likely that these features are of a broadly similar phase, and are of possible medieval date, perhaps relating to an earlier phase of medieval activity, before the establishment of the larger rectilinear enclosure system. The enclosure ditches appeared to respect the Neolithic monument 193165, but cut through the outer ditch, suggesting that the monument was still extant in some form when the enclosures were created.
- 5.5.10 In plan the ditches formed a U-shaped enclosure, roughly aligned north-south, with an open end to the north, and a small C-shaped enclosure extended from the western edge of the U-shaped enclosure. The stratigraphic relationship between the two enclosures was unclear due to truncation by later features and modern land drains. The ditches belonging to both enclosures were fairly shallow, between 0.12 and 0.47m deep, and contained similar, naturally derived primary and secondary deposits. Medieval pottery was recorded in ditches 172042 and 172057, which cut a large medieval pit 146004; this relationship may provide a more secure date for the enclosures. The two small, curvilinear enclosures are most likely associated with animal husbandry.

## **6 ZONE 4**

- 6.1.1 Zone 4 occupied the central 'spine' at the neck of the Ebbsfleet Peninsula where it is joined to the Isle of Thanet (Landscape 3) (**Figure 5**). Until the medieval period it would have been bounded by water to the east and west, but as the Wantsum Channel silted up and land reclamation took place the surrounding area would have become progressively marshier until drained for agricultural use. The Thanet Beds forming the peninsula here rose steadily

from a low point between Zones 3 and 4 at *c.* 3.5m aOD to *c.* 6m aOD in the north.

- 6.1.2 Several earlier investigations both within and to the east and west of Zone 4 have revealed a substantial amount of complex archaeology, providing further evidence that the Ebbsfleet Peninsula has been an attractive location for activities dating back at least to the Neolithic period (Perkins 1992; Wessex Archaeology 1992; Hearne *et al.* 1995; Wessex Archaeology 2004; Wessex Archaeology 2008; Moody 2008; Andrews *et al.* 2009).
- 6.1.3 Archaeological excavation was undertaken in 2008 in advance of the construction of a new pond immediately to the west of Zone 4 (necessitated by the proposed EKA works) (Wessex Archaeology 2008), and a summary of the results of this are included in this assessment (see below) and will also be incorporated in the analysis and publication of the EKA project.
- 6.1.4 A large area in the central western part of Zone 4 had been impacted during construction of the Weatherlees Waste Water Treatment Works (WWTW) in the early 1990s, particularly by the digging of a large pond, several pits and the installation of services. This area was subject to archaeological investigation at the time, as was the footprint of the road to the south which provided access to the Weatherlees WWTW (Wessex Archaeology 1992; Hearne *et al.* 1995). The part of the access road that crosses Zone 4 will be built over and underlying deposits not disturbed by construction of the EKA. The southern part of Zone 4, to the south of the access road, was not fully stripped due to the presence of services, but previous work (Wessex Archaeology 1992; Hearne *et al.* 1995) has shown that this lay in a slightly lower lying 'saddle' that was probably prone to periodic flooding.
- 6.1.5 The road between Zones 4 and 5, which provided access to Ebbsfleet Farm, remained in use throughout 2010 and was not removed until May 2011. Subsequent excavation of this area revealed only a small number of additional features and no further finds of significance. This work came too late to be included in this assessment, but the results will be integrated within the main phase of post-excavation analysis and publication.

## **6.2 Neolithic**

- 6.2.1 A small ring-ditch of probable Late Neolithic date was partly investigated in advance of construction of the access road to the Weatherlees WWTW (Hearne *et al.* 1995), at the south end of Zone 4, but this feature has not been impacted on by the EKA construction works and, therefore, no further excavation was undertaken.



### 6.3 Late Bronze Age

6.3.1 The northern part of the Ebbsfleet Peninsula has been the location of several hoards of Late Bronze Age ‘Carp’s Tongue’ metalwork found since the late 19<sup>th</sup> century (Wessex Archaeology 2004; Andrews *et al.* 2009). A further small hoard of copper alloy objects and a spread of individual fragments were recovered at the north end of Zone 4 during the EKA works. In addition, a pair of a broadly similar gold bracelets, of early 1<sup>st</sup> millennium BC date, came from heavily disturbed subsoil in the same area of Zone 4, and these are also likely to represent or derive from a hoard – if so, they are the first hoard-related gold objects to be found on the peninsula. A deposit that was previously interpreted as a midden (Wessex Archaeology 2004; Andrews *et al.* 2009), and which contained at least two hoards recovered in 2004-5, has now been shown to have been a slightly lower, wetter area and this may have influenced where these hoards were deposited. Relatively few other finds were recovered from the deposits within the hollow. Overall, the Late Bronze Age features appear to represent a farming settlement, and there is no evidence for contemporary metalworking on site, despite the presence of the hoards.

#### *Early enclosures*

6.3.2 In the northern half of Zone 4 were a number of Late Bronze Age ditches, together comprising group 193169 that probably defined parts of at least two enclosures. The ditches formed a T-shape in plan; from the south, ditch 190276 ran north-south for *c.* 40m where it was cut by the Late Iron Age and Early Roman enclosure/boundary ditches (190288 and 190289). Ditch 190276 had a shallow, concave profile, with a maximum depth of 0.5m, and had been allowed to silt up naturally; it had been truncated by modern disturbance to the south. To the north of the Late Iron Age and Early Roman ditches, two Bronze Age ditches, 177269 and 280110, continued on the alignment of 190276 and met a series of east-west ditches. The easternmost ditch (280110) was relatively substantial, and had a V-shaped profile and contained two naturally derived deposits. The western ditch (177269) was shallower and had been cut by a possible storage pit of Early Iron Age date.

6.3.3 A series of short gullies and a ditch made up the east-west axis of the T-shaped arrangement of Bronze Age linear features. Ditch 190267 was the latest in the sequence; it had a shallow, rounded profile (0.23m deep) with a single, secondary fill containing pottery and burnt flint. The ditch was cut by Late Bronze Age-Early Iron Age ‘land division’ ditch 190263 but continued to the west where it terminated. Ditch 190267 cut three earlier Bronze Age ditches that were on the same alignment (190265, 190268 and 250118 - not numbered

on plan) and was the latest in this sequence prior to the establishment of the large 'land division' features 190263 and 190264.

#### *'Land Division' 190263/190264*

- 6.3.4 A later phase of Bronze Age activity (ditches 190263 and 190264) was evident in the north of Zone 4, in the form of a fairly substantial boundary aligned NE-SW. These ditches cut the earlier T-shaped arrangement of linear ditches 193169 and suggest a re-organisation of the Bronze Age field system. The new boundary was subsequently re-cut and shifted slightly to the north, with ditch 190264 replacing 190263. Both ditches had wide V-shaped profiles and had been allowed to silt up naturally. This boundary continued into and beyond Zone 5 to the north. To the south it was cut by Late Iron Age – Early Roman ditches.

#### *'Wet area' and its enclosure*

- 6.3.5 Located towards the south-eastern corner of Zone 4 was a deposit, 172262, that had previously been interpreted as a 'midden' (Wessex Archaeology 2004; Andrews *et al.* 2009). This material extended over an area of *c.* 60m<sup>2</sup> and was *c.* 0.2m deep. The deposit was hand-excavated in a grid of 1m<sup>2</sup> test pits, with bulk environmental and monolith samples taken through the deposit, and a mechanical excavator used to remove the remainder of the deposit in controlled spits; relatively small quantities of Late Bronze Age pottery and burnt flint were recovered during excavation. Deposit 172262 was a dark grey brown silty-clay and has been re-interpreted as an alluvial spread, which formed within a natural hollow. Alluvial spread 172262 represents the westernmost edge of a more extensive deposit that was investigated in earlier excavations (Wessex Archaeology 2004; Andrews *et al.* 2009). Overall this deposit covered *c.* 475m<sup>2</sup>. The current interpretation of this deposit indicates that it may have accumulated in a wet area within a shallow hollow, and possibly acted as an area for 'special deposits,' as evidenced by the two hoards of metalwork found in 2004-5. No further metalwork-related to these two hoards was found during the EKA works.
- 6.3.6 Gully 190223 recorded towards the northern extent of the layer was sealed by layer 172262. The gully was 2.5m in length and had a narrow, U-shaped profile. Earlier phases of archaeological work recorded gullies and postholes that were sealed by layer 172262, and suggests earlier settlement activity that predated the deposit, or that these features were dug to demarcate the edge of the wet/marshy area.

6.3.7 To the north-west of alluvial layer 172262 were a series of Late Bronze Age ditches (190283-6). The ditches appeared to enclose the area of the alluvial deposit and were probably part of the same phase of enclosure ditches previously recorded to the east in the Margate to Weatherlees Pipeline works (Andrews *et al.* 2009). A number of ditches formed the enclosure; the earliest phase was ditch 190284 that defined a rectilinear enclosure, with the northern arm of 190284 containing dumps of charcoal-rich material. This ditch was subsequently re-cut by ditch 190283, which extended the enclosure to the north. Ditches 190283 and 190286 possibly formed an entrance, *c.* 2.5m wide, into the enclosure. These ditches, 190286 and 190283, curved to the south-west and south-east (respectively) of the entrance appearing to enclose the alluvial layer 172262. Due to modern truncation the extent of the enclosure was largely obscured to the south, however a further length of Late Bronze Age ditch 312026, that had been re-cut in the Early Iron Age by ditch 312029, possibly formed the southern extent of the enclosure. Ditches recorded during works on the Margate to Weatherlees Pipeline (Andrews *et al.* 2009) may have formed further parts of the southern and western edges of the enclosure.

#### *Structures, pits and postholes*

- 6.3.8 Up to 64 Bronze Age pits and postholes were present across Zone 4 and add to the broad picture of settlement activity. Towards the north-eastern corner of the zone was a cluster of eight shallow pits within a rectilinear enclosure (190262). The pits were generally oval in plan and had been backfilled soon after they were cut; one pit 280119 contained dumps of fired clay, pottery and charcoal-rich deposits.
- 6.3.9 Towards the south of the zone were two possible post-built structures (127193 and 254145). Structure 127193 was rectangular in plan and composed of eight postholes; the internal area of the structure was *c.* 9.5m<sup>2</sup>. The postholes were similar in form with a maximum depth of 0.18m. A possible four-post structure 254145 (*c.* 1m x 1m) was located *c.* 10m to the north-west of 127193 and may have been contemporary. Relatively large quantities of pottery and some burnt of grain were recovered from the postholes. Located between these two structures was oval pit 254124 that contained a near-complete Bronze Age vessel and a copper alloy object.
- 6.3.10 A further four-post structure (252245) lay adjacent to Bronze Age 'land division' 190263. The structure measured *c.* 2m by *c.* 1.8m and the four postholes had a similar form, with a maximum depth of 0.45m. Animal bone, pottery and fired clay were recovered from the postholes and the environmental samples contained charred grain and chaff.

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### *Cremation cemetery 252229*

6.3.11 Towards the southern end of Zone 4 were possibly as many as 13 un-urned cremation burials or related features (Group 252229), at least one of which (252215) contained Late Bronze Age pottery. The features were located in a fairly small area (c. 20m<sup>2</sup>) and most had shallow bowl-shaped profiles and contained single fills. Ten of these features contained cremated human bone. The area immediately surrounding the cremation burials had been heavily truncated and no other features survived, though it appears that 252229 may have been a relatively isolated group.

### *Hoard*s

6.3.12 Four hoards of Late Bronze Age metalwork had previously been found in the immediate vicinity of Zone 4, and two gold bracelets, one further hoard and fragments of a possible dispersed hoard were recorded during this phase of works.

6.3.13 The hoard, comprising 16 fragments of copper alloy objects (including pieces of socketed axe and sword) and ingots, was found at the base of the subsoil towards the northern end of the zone. The nature of this findspot is similar to that of the hoards found earlier within and to the south-east of Zone 4 (Hearne *et al.* 1995; Andrews *et al.* 2009). Four further objects were recovered c. 10m to the south and west of the hoard recorded in the 1992 evaluation (Hearne *et al.* 1995) and may have been dispersed parts of that hoard. The two gold bracelets, of early 1<sup>st</sup> millennium BC date, were found unstratified at the northern edge of Zone 4, but are thought to have been a deliberately placed deposit or part of such a deposit. Unfortunately the area where the bracelets were found was heavily disturbed by modern intrusions, and whether or not they had been buried together, possibly with other copper alloy objects, is unknown. Due to the nature of the bracelets recovery it is also unclear whether they had been placed within a shallow pit or survived at the base of the subsoil, as was the case with the earlier hoards.

6.3.14 No further objects were found associated with the previously discovered hoards adjacent to the east edge of the southern part of Zone 4, at the base of the subsoil within the alluvial deposit 172262 in that area (Andrews *et al.* 2009).

## **6.4 Late Iron Age / Early Roman**

6.4.1 A substantial Late Iron Age ditch 190288 lay across the northern half of Zone 4, and at least two re-cuts (190289 and 190290) extended its period of use into

the Early Roman period. This sequence of ditches had been recorded in earlier excavations immediately to the east and west of Zone 4 (Wessex Archaeology 2008; Andrews *et al.* 2009), and it appears that the ditches were dug to cut off the southern end of the Ebbsfleet Peninsula. Further, similar sequences of east – west aligned ditches were recorded approximately 450m to the north at the northern end of Zone 6 (and extending eastwards into Zone 7), immediately to the west during the Weatherlees Pond excavations, and during earlier excavations to the east of Ebbsfleet Lane (Andrews *et al.* 2009) where they followed a north-south alignment. The stratigraphic sequence recorded reflects that observed in previous phases of work and shows that a substantial Late Iron Age enclosure ditch, which may have been partly backfilled, was re-cut by a series of large Roman ditches. There is a strong possibility that these ditches all belonged to a single, large enclosure occupying the neck of the Ebbsfleet Peninsula and this may date to the time of Caesar's invasions of 55 and 54 BC.

- 6.4.2 Late Iron Age ditch 190288 had a wide flat-bottomed profile and was a maximum of 5.95m wide and 1.85m deep. The profile and sequence of fills within the ditch was broadly similar to those observed in previous excavations to both the east and west. The lower deposits were naturally derived; the lowest fills may have been waterlain and a distinctive laminated deposit (127098) was present in the base of the ditch. Some evidence for deliberate backfilling was present in the upper deposits (127101 and 127106). Grave 147255, of probable Early Roman date was cut through the upper fill of ditch 190288, and contained two individuals. Graves were also recorded cut into this ditch in previous phases of archaeological work to the east and west (Wessex Archaeology 2008; Andrews *et al.* 2009).
- 6.4.3 The Late Iron Age ditch had been re-cut along the southern edge by two Roman ditches, 190289 and 190290. Both ditches had narrow V-shaped profiles and were up to 2.45m wide and 1.2m deep. Ditch 190290 was the earlier of the two re-cuts and had been allowed to silt up before it was re-cut slightly to the north by ditch 190289. The size and shape of these ditches suggests they may have had a defensive function. Sections excavated across this series of later Roman ditches in previous works (Wessex Archaeology 2008; Andrews *et al.* 2009) correspond well with the sequence recorded in Zone 4.

#### *Enclosure and settlement*

- 6.4.4 Further Iron Age ditches (eg 190272 and 190273) were recorded both to the north and south of the large boundary ditches and represent enclosures or field

boundaries laid out adjacent to the large Late Iron Age boundary. Two truncated possible ring/drip gullies, 190280 and 190281, and two associated four-post structures (193170 and 252185), all south of the main boundaries, may represent the remains of Iron Age settlement. The relatively large quantity of pottery recovered from ditch 190272 adds to the picture of Late Iron Age settlement activity in this area.

### *Roman burials*

- 6.4.5 Two probably Early Roman graves were present at the north end of Zone 4. Grave 147255 was dug into the top of Late Iron Age ditch 190288, and accords with previous discoveries of inhumation burials in this ditch immediately to the east and west (Wessex Archaeology 2008; Andrews *et al.* 2009). Grave 147255 contained the remains of two individuals. Grave 177322 was cut into the top of a Bronze Age pit in the north-east corner of Zone 4 and contained a single inhumation; probable coffin nails were recovered from the grave.

## **6.5 Medieval**

- 6.5.1 Currently, only one medieval ditch (190257) has been identified. Earlier work immediately to the west and the east of Zone 4 has recorded enclosure and field boundary ditches of 11<sup>th</sup> – 14<sup>th</sup> century date, some probably associated with a farmstead adjacent to Ebbsfleet Lane and others are possibly associated to a precursor of Ebbsfleet Farm (Hearne *et al.* 1995; Wessex Archaeology 2004; Wessex Archaeology 2008; Andrews *et al.* 2009).
- 6.5.2 A metalled trackway (141207) crossing the north-east corner of Zone 4 had been previously recorded to the east (Andrews *et al.* 2009), and probably represents a late medieval or early post-medieval track from Ebbsfleet Lane to Ebbsfleet Farm on the west side of the peninsula.

## **7 WEATHERLEES POND**

- 7.1.1 In the summer of 2008 Wessex Archaeology was commissioned to undertake an archaeological excavation at the Weatherlees Waste Water Treatment Works (WWTW). Proposed construction works comprised significant earthmoving and the excavation of a new pond that formed part of the advance ecological mitigation for the East Kent Access (Phase II) scheme. As part of this mitigation work archaeological strip, map and sample excavation was undertaken in the area of the new pond. The Weatherlees pond excavation was

located *c.* 30m to the west of Zone 4 (Landscape 3) and centred on NGR 633237 162986 (**Figure 5**).

- 7.1.2 An area of *c.* 0.1 hectares was stripped by mechanical excavator to the top of archaeological deposits. The excavations exposed *c.* 35m of a roughly east-west aligned sequence of large Late Iron Age to Early Roman boundary ditches and part of a medieval field system with associated pits (Wessex Archaeology 2008). The Late Iron Age and Roman ditches were also recorded elsewhere, in EKA and other excavations (see below).
- 7.1.3 Several earlier investigations to the east and south of the Weatherlees Pond had revealed a substantial amount of complex archaeology, providing further evidence that the Ebbsfleet Peninsula has been an attractive location for activities dating back at least to the Neolithic period (Perkins 1992; Wessex Archaeology 1992; Hearne *et al.* 1995; Wessex Archaeology 2004; Moody 2008; Andrews *et al.* 2009).
- 7.1.4 The area of the Weatherlees Pond occupied the central 'spine' at the neck of the Ebbsfleet Peninsula where it is joined to the Isle of Thanet. Until the medieval period it would have been bounded by water to the east and west, but as the Wantsum Channel silted up and land reclamation took place the surrounding area would have become progressively marshier until drained for agricultural use.
- 7.1.5 Considerable landscaping had been undertaken during the construction of the Weatherlees WWTW in the 1990s, including the excavation of a large pond, with the material from this used to build a substantial bund immediately to the north-west. This material was present across the majority of the area and was up to *c.* 3.5m deep on the western side of the site. Below the modern made-ground was orange-brown sandy-clay subsoil (0.3m deep) that was probably the remains of the original ground surface. The underlying Thanet Beds natural was a brownish-yellow sandy-clay; the natural ground surface sloped upwards from the south-west, from *c.* 2.1m aOD to 3.25m aOD.

## 7.2 Late Iron Age - Early Roman

- 7.2.1 A sequence of large Late Iron Age to Early Roman ditches (105, 200 and 314) were recorded crossing the stripped area for *c.* 35m. The ditches recorded within the Weatherlees Pond excavation show the same stratigraphic sequence observed in Zones 4 (*c.* 35m to the east), 6 and 7 of the EKA. The ditches were also recorded at two locations during the Margate to Broadstairs pipeline works (Andrews *et al.* 2009) *c.* 100m to the east and *c.* 300m to the north-east respectively. These ditches probably formed part of the same enclosure that

dates to the Late Iron Age and was dug to enclose an area at the head of the Ebbsfleet Peninsula.

- 7.2.2 The earliest ditch (314), in the sequence was of Late Iron Age date. The ditch was aligned roughly east-west and had a wide, flat-bottomed profile; it was up to *c.* 1.5m deep and contained a sequence of naturally derived deposits. The basal fills may have been waterlain; a laminated deposit had formed after the initial stabilisation of the sides and suggests slow silting occurred in the base of the ditch. Several secondary deposits formed above this layer and there was some (limited) evidence of eroded bank materials within the sequence. Ditch 314 was cut by Roman ditch 200; this ditch had a steep-sided, V-shaped profile and was up to 1.15m deep. It contained between two and five deposits that were naturally derived. This ditch matches well with ditch 190289 recorded in Zone 4 of the EKA. Ditch 200 was re-cut along its southern edge by a Roman ditch (105); the re-cut had a wide V-shaped profile and became broader and deeper to the west, with a maximum depth of *c.* 0.55m.
- 7.2.3 Human remains were recovered from the top of Late Iron Age ditch 314. Burials were also recorded cut into the top fills of the enclosure ditch in other phases of work and have been broadly dated to the Early Roman period. A disarticulated femur was recorded in the upper secondary fill (235) and grave 227 was cut into the upper fills of ditch 314. Grave 227 was fairly shallow (0.40m deep) and located on the north-western edge of the ditch; it contained a single inhumation and had been truncated by medieval field ditch 230 and by undated pit 232, resulting in the inhumation being fairly disturbed.
- 7.2.4 Further Iron Age features were recorded along the northern edge of Late Iron Age ditch 314; they shared the same east-west alignment and were probably contemporary. A sequence of ditches and pits were recorded, with the earliest phase represented by 155; a shallow flat-bottomed ditch with moderate, concave sides. Once ditch 155 had silted up it was re-cut to the south-west by a deeper, U-shaped ditch 110. A large pit 114 was then cut through the silted up ditches. Pit 114 was oval in plan and had steep, concave sides; it was up to 1.1m deep and contained several backfilled or dumped deposits.

### 7.3 Medieval

- 7.3.1 Clear evidence of a medieval field system, probably related to a medieval farmstead located to the north-west, in the area of the current Ebbsfleet Farm was recorded. Nineteen features were dated to the medieval period and included a number of field or enclosure ditches, gullies and pits.



- 7.3.2 The medieval enclosure ditches formed a rectilinear pattern that had a NW-SE alignment. This extended across the length of the stripped area for *c.* 40m; several phases were represented but are probably broadly contemporary. For example, ditch 276 was re-cut by 148 on its eastern side and ditch 291 was re-cut on the same alignment as ditch 241. A possible entrance, measuring *c.* 3.6m wide, was formed between ditches 276 and 376; however, the entrance may have been the result of truncation in this area. Both possible termini were shallow (*c.* 0.05m and 0.15m deep respectively) and contained naturally derived deposits. Towards the southern edge of the site was a later NE-SW ditch 243, which cut ditches 291 and 376, and represents an addition to the enclosure system. The broad pattern of medieval enclosures suggests gradual development and modification of the ditch system.
- 7.3.3 Two medieval pits, 302 and 397 were recorded in the south-west corner of the site. The pits were in close proximity, pit 302 was *c.* 6m to the south of 397, and both were oval in plan and had vertical or undercut sides; contemporary gullies appeared to drain into the pits. Pit 397 was the larger of the two (measuring 5.17m x 2.35m x 1.7m deep); waterlogged deposits were recorded in the base of the pit, and a possible posthole was recorded cut into the side. Pit 302 was smaller (0.9m deep) and a shallow gully drained into the pit from the north-east. A large piece of sandstone was recorded on the base of the feature. The function of these pits is unclear, but they may have been related to agricultural practices.
- 7.3.4 The remains of two possible medieval farmsteads were partly uncovered in Zones 1 and 3 of the EKA, and along with the results from earlier work (Perkins 1992; Hearne *et al.* 1995; Moody 2008; Andrews *et al.* 2009), have indicated a clear focus of medieval (farming) activity on the Ebbsfleet Peninsula, little evidence for which has been found on the remainder of the EKA route.

## 8 ZONE 5

- 8.1.1 Zone 5 occupied an area near to the highest point on this part of the route, on the central 'spine' at the neck of the Ebbsfleet Peninsula where it is joined to the Isle of Thanet (Landscape 3) (**Figure 5**). The Thanet Beds here lay at *c.* 5.5m aOD, but had been truncated by up to a metre at the west end of the zone (see below). Until the medieval period this area would have been bounded by water to the east and west, but as the Wantsum Channel silted up and land

reclamation took place the surrounding area would have become progressively marshier until drained for agricultural use.

- 8.1.2 Any pre-modern features in the western half of Zone 5 had been completely truncated by ground reduction for the construction of a barn associated with Ebbsfleet Farm to the west, and the access road to the farm remained in use until May 2011. Removal of the latter has allowed the archaeological features in Zones 4 and 5 to be linked, and few additional features have been revealed (see Zone 4 above).

## **8.2 Late Bronze Age**

- 8.2.1 Re-cut ditch 147206 represented a continuation of a NE-SW aligned boundary ditch belonging to the second phase of Bronze Age features recorded in Zone 4 to the south. The sections excavated in Zone 5 recorded the same sequence observed in Zone 4; an earlier, wide, flat-bottomed ditch, 147206, had been re-cut by a later, shallow, V-shaped ditch 147207. Both ditches had been allowed to silt up naturally; however, there was a large amount of pottery in the fills of the re-cut ditch, 147207, which may suggest that a degree of deliberate backfilling had occurred. This feature had been cut by a number of Late Iron Age to Early Roman ditches and pits.

## **8.3 Late Iron Age / Early Roman**

- 8.3.1 A series of shallow ditches and gullies of uncertain function reflected a northerly continuation of the pattern of boundaries and enclosures recorded in Zone 4. Two relatively substantial oval pits of Iron Age date had been deliberately backfilled (147183 and 254111) and contained large assemblages of finds including pottery and animal bone. The presence of these features reflects a continuation of the settlement recorded in Zones 4.

## **8.4 Medieval**

- 8.4.1 A relatively small, circular feature, 254106, towards the northern edge of the zone, had near vertical sides and was hand-excavated to a depth of *c.* 1.4m and augured to *c.* 5m. It contained late medieval pottery and was probably a well, perhaps associated with a precursor to Ebbsfleet Farm.

## **8.5 Modern**

- 8.5.1 A single, short line of WWII zig-zag trench survived in the north-west of the zone.

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## 9 ZONE 6

- 9.1.1 Zone 6 lay on Thanet Sands, immediately to the north of the Ebbsfleet Peninsula and to the south-west of Cottington Hill (Landscape 3) (**Figure 6**). The ground sloped gently down at a moderate angle from Zone 7 in the north, at *c.* 7m aOD, to a shallow depression in the southern half of Zone 6, the lowest point of this at *c.* 4.3m aOD. To the south of the depression the ground rose quite sharply to the south-west (to *c.* 6.2m aOD), with a summit in the wooded area immediately to the north of Ebbsfleet Farm.
- 9.1.2 Previous investigations to the west of the zone in 1990 (Perkins 1992), and to the east in 1990 and 2005 (Perkins 1992; Andrews *et al.* 2009), demonstrated the uniquely rich potential of Zone 6. This included a stratified sequence of settlement-related deposits which spanned the Early – Middle Iron Age to the Mid – Late Roman periods. The stone footings of two Roman buildings were recorded, on either side of Zone 6, but of particular interest was a sequence of substantial ditches of Late Iron Age - Early Roman date. These ditches may have defined the east side of a large enclosure at the neck of the peninsula, with other elements having been found to the south, on either side of (as well as within) Zone 4 (see above). It is possible that this postulated enclosure was initially established at the time of Caesar's expedition in the mid 1st century BC, perhaps as a temporary camp, and that it was subsequently re-established in the 1st century AD.
- 9.1.3 In addition to the main excavation area, a pipe trench along the eastern edge of the southern part of Zone 6 and the northern part of Zone 5 was subject to a targeted watching brief. A narrow strip along the verge bordering Ebbsfleet Lane at the north end of Zone 6 was excavated after the completion of archaeological work within the remainder of the zone, but the section of Ebbsfleet Lane which separates Zones 6 and 7 was retained and will be buried *in situ* as part of the EKA construction works.
- 9.1.4 Excavation was undertaken in two stages owing to the presence of what initially was believed to be a midden, covering the central southern part of the zone. However, the hand excavation of a series of test pits through this deposit showed it to be a layer of soil (170010) which had accumulated, probably largely as a result of water erosion / colluviation, in what was the lowest part of the site. Following the test-pit investigation, and the closure of a public footpath crossing this area, the soil layer was removed by machine in carefully controlled spits, with metalwork and other significant finds being 3D-recorded.

9.1.5 During the latter stages of excavation carefully controlled machining of some deposits and larger features (eg wells and the ditches at the northern end of the site) was undertaken following the completion of hand-excavation. This then allowed further and more extensive excavation and recording of these and other features which had previously been obscured (**Plate 8**).

9.1.6 The feature density recorded over much of Zone 6 decreased markedly at the extreme north end of the zone and also in the southern part of the zone. The dramatic and sharply-defined fall-off of Iron Age and Roman features in the south coincides with a field boundary indicated on the 1st edition OS map of the area, this field boundary probably a fossilised medieval (and potentially earlier) land division.

## 9.2 Phasing

9.2.1 Due to relative complexity of stratified archaeology in Zone 6 (**Figure 6**) a preliminary phasing was devised.

9.2.2 The phasing was based on available context TPQs (*terminus post quem*s) generated from date ranges supplied by preliminary dating of processed pottery (provided by Ellie Brooke and Lorraine Mephram) and on-site spot dating (provided by Nigel McPherson-Grant and Paul Hart), as well as the stratigraphic position of contexts determined by Harris matrices.

9.2.3 Eight major phases of activity were identified. In some instances a series of sub-phases were also introduced in order to illustrate the added complexity of the sequence in some areas.

9.2.4 The dating of the phases set out below is provisional and, at this stage, necessarily broad, but will be refined following further analysis, particularly of the very large pottery assemblage from the site.

Phase	Archaeological Period
Phase 1	Early Prehistoric – Mesolithic (?), Neolithic
Phase 2	Late Bronze Age – Early Iron Age
Phase 3	Early – Middle Iron Age
Phase 4	Middle – Late Iron Age
Phase 5	Early Roman
Phase 6	Middle – Late Roman
Phase 7	Medieval – Post-medieval

9.2.5 Approximately 600 contexts remain unphased, many of them postholes and most of the remainder small pits, stake-holes and miscellaneous small features. Further pottery and stratigraphic analysis is likely to allow the majority of these to be assigned to a phase.

### 9.3 Phase 1 (Early Prehistoric)

9.3.1 Phase 1 largely comprises features dated to the Neolithic period, in particular the Early Neolithic, but it also includes some currently assigned a more broadly prehistoric, pre-later Bronze Age date (**Figure 7**). The dating is based primarily on pottery, but also struck flint, where available.

9.3.2 Two discrete areas of relict subsoil (170051) survived towards the centre of Zone 6 and contained a number of struck flints of probable Neolithic date.

9.3.3 Excavation between the areas of relict subsoil 170051 revealed a scatter of four features dated broadly as prehistoric. Among them was an elongated tree-throw, 176167, which contained a significant concentration of struck flint almost certainly deposited there as a result of *in situ* knapping. It was initially believed that the flint may be of Late Mesolithic date, however subsequent identification and assessment has assigned an Early Neolithic date to the assemblage, though with a small Late Mesolithic component.

9.3.4 A number of shallow pits and postholes of probable Early Neolithic date were revealed in the southern part of Zone 6, following machine-assisted removal of colluvium layer 170010. Features located between posthole 176245 in the north-west, and pit 303074 to the south-east, appear to form an approximate NW-SE alignment. This is probably coincidental, however, as these features lie at the northern limit of colluvium layer 170010, which preserved them from later truncation.

9.3.5 At the northern end of Zone 6 an isolated and otherwise undated tree-throw 242084 contained a polished stone axe (ON3917). A fragment of another polished stone axe (ON3233) was retrieved from the fill of a medieval boundary ditch 297041 and a probably unfinished flint axe (ON3978) was recovered from the fill of Early Roman pit 132098.

9.3.6 The evidence for early prehistoric, specifically Early Neolithic activity in Zone 6 is relatively scarce and fragmentary. Sporadic shallow pits and postholes were generally rather sterile, and it is not possible to establish their function with any degree of certainty. However, they seem to concentrate in the southern part of Zone 6 and may indicate the presence of a small, possibly temporary settlement. To the north of this postulated area of settlement were

the flint scatters and *in situ* flint knapping debris, and the presence of the polished stone axe etc may be evidence of forest clearance for crop fields or pasture.

#### 9.4 Phase 2 (Late Bronze Age - Early Iron Age)

- 9.4.1 Phase 2 consists of features containing pottery assigned a broad Bronze Age and earliest Iron Age date (**Figure 7**). The dating evidence is limited, particularly from main linear features. Therefore, the main basis for assigning ditches to this phase was their east-west alignment which was consistent with that of holloway 248162, and also the stratigraphic position of these features.
- 9.4.2 The principal feature of Phase 2 was the east to west aligned holloway 248162. It was exposed over a length of 51m, was approximately 2.4m wide (however the full width is unknown due to later truncation), and its base lay approximately 0.75m below the surface of the natural brickearth. A patchy, yet consistent layer 248161 of closely packed small river pebbles was found in the base of the feature. This was in turn covered by a thin layer of silt and sand on top of which lay a series of localised patches of larger stones (248164). The stone layers indicate that the base of the holloway was deliberately metallised and occasionally repaired. The presence of a possible wheel rut (248165) suggests the use of carts. The precise dating of the feature is unclear, though some time in the Bronze Age date seems certain. Struck flints found within and above the basal metallising suggest an Early Bronze Age date, while some pottery from below layer 248164 is of Middle – Late Bronze Age date. A Late Bronze Age copper alloy pin with a slightly swollen head (ON2869) was also found in this deposit.
- 9.4.3 It is not clear how holloway 248162 fell into disuse. It was almost completely filled by a single deposit (248167), and the very homogenous character of this suggests that the holloway wasn't abandoned and gradually silted up. It also seems unlikely that it was deliberately backfilled. One possible explanation is that it might have filled as a result of a natural catastrophic event (eg. flooding). This seems the most plausible explanation, particularly as the silting was sealed by a compact layer of sandy clay (248185). This was followed by digging of two relatively large parallel ditches, 248168 to the south and 248167 to the north, located approximately 2m apart and on the same alignment as the former holloway. It seems likely that they flanked a narrow driveway, re-established on the same line as holloway 248162. The dating of the pair of ditches is unclear and based on a single fragment of Early Iron Age pot found in the upper fill of the southern ditch, and which most likely represents the *terminus ante quem* for the use of the driveway.

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- 9.4.4 Approximately 40m to the south of the holloway 248162 was a pair of large boundary ditches. Ditch 190513 and its recut 190514 ran parallel to the holloway and produced a single sherd of Early Bronze Age pottery.
- 9.4.5 To the south of ditch 190513 lay a loose scatter of 19 features dated broadly to Bronze Age. They provide tentative evidence for a Bronze Age settlement, and two large, straight-sided and flat-based pits (303217 and 170173) might have been used for storage.
- 9.4.6 Of particular note was cremation burial 170073 deposited in an inverted Middle Bronze Age collared urn. This appears to be an isolated burial, however the immediate area was heavily truncated by later, Roman activity, and the possibility that originally there might have been more burials should not be discounted.
- 9.4.7 Two further east to west aligned ditches, 170044 and 302119, lay approximately 30m and 60m (respectively) to the north of holloway 248162. These features contained pottery which has been provisionally dated to the Early Iron Age, however their alignment suggest that they respected the landscape division imposed by the Bronze Age holloway and should, therefore, belong to Phase 2.
- 9.4.8 It appears that towards the end of Phase 2 a significant change in land division took place at the northern end of Zone 6. East to west aligned ditch 302119 was abandoned and was replaced by L-shaped ditch 170084. A short section of this feature was exposed, and this followed an original east to west alignment at its northernmost extent; however after approximately 10.5m it turned to the south-east. This new alignment is mirrored by a short and heavily truncated ditch, 302125, located 1m to the north. The south-east terminus of 302125 aligned with a short exposed section of east to west aligned ditch 295096. These three ditches form a fairly complex system which might have been related to animal husbandry and stock control.
- 9.4.9 Further north, a series of NE-SW and NW-SE aligned ditches (255021, 170081 and 262217, 262236, 169001 respectively) followed the newly established alignment and seem to conform to the layout of the Late Bronze Age landscape revealed at the southern end of Zone 7. A sub-rectangular copper alloy sheet fragment (ON4347) found in ditch 262236 may be a fragment of a metal vessel.
- 9.4.10 Excavation to the west of ditch 170084 revealed a large oval feature 170085, which measured *c.* 8.3 by 5.8m in plan and was nearly 5m deep. The function of this feature is not clear, however the dimensions and sides are too steep for

a watering hole, and may suggest that it was used as a well. Pottery retrieved from the fills was dated to the Early Iron Age, which suggest that the feature was excavated at the end of Phase 2 and might have been related to the system of ditches described above and perhaps associated with possible stock management.

9.4.11 The presence of Phase 2 occupation in Zone 6 is fairly firmly established, though the dating evidence is scarce, particularly from linear features. It appears that Phase 2 can be dated from the beginning of the Bronze Age through to the earliest stages of the Iron Age, but there is currently not enough evidence to establish a comprehensive internal chronology. The focus of this period was an east to west holloway, the alignment of which was followed by the layout of contemporary land divisions. In the southern part of Zone 6 a loose concentration of pits, some of which might have been intended for storage, as well as an urned cremation burial, hint at the existence of a possible settlement. In the northern part of Zone 6 towards the end of Phase 2, in all likelihood during the Late Bronze Age – Early Iron Age transition, there is an indication of a change from an established Middle Bronze Age land division to new NW-SE alignments, which become prevalent in the next phase.

9.4.12 Colluvium layer 170010 produced a Late Bronze Age tanged chisel (ON3222), possibly part of a dispersed hoard, as well as a plate fragment (ON304) and possible metalworking debris (ON2901), which may also date to this period.

## 9.5 Phase 3 (Early - Middle Iron Age)

9.5.1 Phase 3 is represented by features dated by pottery to the Early – Middle Iron Age, but some features dating broadly to the Iron Age were also included on the basis of their stratigraphic position and spatial associations (**Figures 8-10**). A series of sub-phases (3a, 3b and 3c) were assigned in order to reflect the complexity in the system of field boundaries. These are solely based on stratigraphic relationships and no absolute chronology can be currently presented. All discrete features were assigned to Phase 3c as they appear to fit best with this field system, however some of them could have belonged to earlier sub-phases.

### *Trackway 170111*

9.5.2 The focus of the landscape in Phase 3 is represented by a SW-NE aligned trackway 170111. The feature consisted of a single layer of densely packed small river pebbles forming a metalling. In places large quantities of discarded animal bone were incorporated in the metalling, however it is uncertain whether they were laid deliberately as *ad hoc* repairs, or had become pressed



into the surface, particularly in areas where the metalling was missing. The trackway was exposed over a distance of 50m, running across the northern part of Zone 6. On average it measured 5 to 5.5m wide, however around the middle of its exposed length it extended as wide as 11.8m. It remains unclear whether this represents the original width of the trackway, prior to later truncation, or whether it was extended to this width deliberately to create a working area. It is also possible that it represents what remained of a possible branch of the trackway leading to the north-west, the remainder of which had been truncated. Another possible branch of the trackway leading to the south-east may be represented by isolated area of metalling 170130.

- 9.5.3 An area of similar metalling was present in the adjacent southern part of Zone 7. It is possible that the trackway constituted a major feature in the landscape and most likely extended further east. Although there is no archaeological evidence of its extent to the west of Zone 6, the local topography may suggest that it led towards a small inlet at the edge of the Wantsum Channel.
- 9.5.4 The trackway was stratigraphically the earliest feature to post-date the Phase 2 holloway 248162 and the east to west aligned ditches, and it is therefore most likely that it was constructed at the beginning of the Iron Age. It appears that the main part of this remained in use up until the Late Iron Age and parts of it, utilised as possible working areas, survived until the beginning of Roman period, as indicated by pottery retrieved from the metalled surface. One of the more interesting finds was a copper alloy shield binding (ON2120), and an Early Iron Age copper alloy ring-headed pin (ON3347) was also found above the trackway.

### *Phase 3a*

- 9.5.5 To the north of trackway 170111 the alignment of new ditches followed the pattern established in the final stages of Phase 2. Ditch 302120 was aligned NW-SE, and at its northern extent it turned gradually to the north-east, and subsequently returned to south-east forming a partly open enclosure, approximately 9m across. It may represent a further development of the field system represented by 302125 and 170084 in Phase 2.
- 9.5.6 It appears that this arrangement was fairly short lived and was subsequently replaced by a more substantial NW-SE aligned enclosure formed by ditches 302118 and 170087. The southern extent of 170087 probably respected trackway 170111, however this was not clear due to later truncation.
- 9.5.7 A substantial ditch, 249101, was found to the south of trackway 170111. It ran NNW-SSE for *c.* 72m, before turning ENE at almost 90°. This feature seems

to have defined the arrangement which was adopted by the following system of fields and droveways.

- 9.5.8 Parallel to the NNW-SSE element of ditch 249101 was another, heavily truncated ditch, represented by 125215 and 244251. This feature, located nearly 11m to the west, was recorded in two sections but was not clear in plan. Ditches 125215, 244251 and 249101 formed an extensive system of rectangular fields, linked to trackway 170111. The wide, linear space between the parallel ditches most likely formed a substantial droveway, which probably provided a link to the trackway, although the projected junction lay beyond the limit of excavation.
- 9.5.9 Ditch 190433 and its recut 190432 were exposed in the southern part of Zone 6, beneath colluvium 170010. Both ditches followed the new NNW-SSE alignment. This orientation is mirrored by two shallow gullies 182015 and 182017 located in the south-west corner of Zone 6. It is probable that the latter features are what remained of a larger boundary ditch, all but lost due to erosion and truncation by ploughing.
- 9.5.10 In the south-east corner of the site, within the pipe trench excavated as part of a targeted watching brief, the remains of a NNW-SSW aligned ditch, 240091, were found. The feature deviates slightly from the field system pattern seen further to the north and appeared more likely to be the continuation of Late Bronze Age – Early Iron Age ditch 147206 excavated in Zone 4 to the south. The pottery retrieved from 240091 is, however, dated to Early – Middle Iron Age, and perhaps this ditch was dug at the end of the Bronze Age and remained in use until the Early Iron Age.

### *Phase 3b*

- 9.5.11 In the northern part of Zone 6 the earlier field system was replaced by a probable droveway formed by ditches 302129, 302131 and 170094 (**Figure 9**).
- 9.5.12 Ditch 302129 aligned NW-SE was mirrored by ditch 302131 and its extension 170094, located approximately 4m to the west, together forming the postulated droveway, which joined the existing metalled trackway (170111) to the south-east. It appears that at some stage this connection may have been interrupted by NE-SW aligned ditch 170096, which was dug along the northern edge of trackway 170111.
- 9.5.13 To the south of trackway 170111 the field system underwent a further change. The earlier droveway ditches, 249101 and 125215, were largely abandoned and a new droveway was formed by NE-SW aligned ditches 249096 and

249097. These two ditches ran parallel and were 2.5m apart. To the east, ditch 249096 turned to the north-east and reused part of earlier ditch 249101. Here, ditch 249096 was paralleled by ditch 190448, located 2.5m to the south.

9.5.14 At their southern limits ditches 249097 and 190448 probably both turned SSE. This arrangement and a pair of east-west aligned parallel ditches, 170033 and 170034, further to the south and also approximately 2.5m apart, appear to have formed a further continuation of the system of droveways in this area.

9.5.15 The new layout of ditches seems to have formed a fairly complex, planned system of relatively large semi-enclosed fields and associated droveways. The main arm of the droveways appears to have lead directly from the main thoroughfare represented by metalled trackway 170111 (though the postulated junction lay outside the limit of excavation to the west), with branches to the south-east and north-east. However, there is no direct stratigraphic link to tie this system with some of the discrete Iron Age features, and so it is likely that in this phase Zone 6 remained largely unsettled, and was utilised mainly for agriculture.

### *Phase 3c*

9.5.16 Phase 3c reflects the inception of an Early – Middle Iron Age settlement, based on the same orientation established by the earlier (Phase 3b) trackway, droveways and field systems (**Figure 10**). A series of domestic enclosures and associated droveways were created at this stage, with most of the ditches from the previous phase abandoned and in some cases deliberately backfilled, though the metalled trackway (170111) remained in use, albeit probably reduced in width.

### *Enclosure I*

9.5.17 To the north of trackway 170111 ditches 302122 and 302123 probably formed part of an enclosure, the south-east side of which lay along the edge of the trackway. Ditch 302122 and its recut 302123 were aligned NW-SE and were relatively large measuring up to 3m wide and 1.6m deep. At its southern extent ditch 302122/3 turned to the south-west along the edge of trackway 170111 and terminated approximately 12m from the corner of the postulated enclosure. Ditch 170125 further to the south-west was also located along the edge of the trackway and may have formed part of the enclosure.

9.5.18 The gap, approximately 46m wide, between the termini of ditches 302122/3 and 170125, remained open and incorporated the widest part of metalled trackway 170111, which raises the possibility that the additional width of the trackway in this area may have been a later addition related to this phase.

- 9.5.19 Ditch 302128 ran parallel to 302122/3, approximately 3.5m to the west and might have formed a driveway or division along the east side of the enclosure. The existence of this, however, is dependant on the location of the bank related to ditches 302122 and 302123, for if this was on the western side, the space left for a driveway would have been minimal.
- 9.5.20 Within the putative enclosure was a group of pits and postholes, however no structures could be identified. The majority of the pits were circular, steep-sided and flat-based. The sequence of fills may suggest in most cases that they were storage pits used secondarily for disposal of domestic waste. Pit 256029 is of particular interest as it contained six triangular loomweights (ON2129, ON2130, ON2131, ON2132, ON3918, ON3919), in various degree of preservation. Fragments of quern stones were found in pits 208066 (ON3982) and 129137 (ON3368).
- 9.5.21 The finds suggest a domestic character for this enclosure, and it is likely that an associated structure was located beyond the limit of excavation to the west.
- 9.5.22 To the north-west of ditches 302122 and 302123 lay another concentration of shallow pits and postholes, as well as possible four-post structure 319054, of a type commonly interpreted as grain store. A possible storage pit 123193 reused for disposal of domestic rubbish contained fragments of a triangular loomweight (ON4057) as well as a quern stone (ON3363). This area appears to have been enclosed on the north side by curvilinear ditch 169002 and might have been part of another enclosure, perhaps on the north-eastern edge of the settlement.

#### *Enclosure II*

- 9.5.23 Ditch 302124 ran NE-SW along the southern edge of trackway 170111, approximately parallel to ditch 302123 which lay to the north. The ditch became shallower to the south-west and it is likely that it extended further, but has been lost to intensive Roman activity and truncation from ploughing. A short section of heavily truncated ditch (258087) further to the south-west may have been a continuation of this feature, and together these may possibly have defined the north-west side of an enclosure.
- 9.5.24 A NW-SE aligned group of small pits and postholes (170196) appears to have defined the approximate position of the southern boundary of this putative enclosure.
- 9.5.25 The area to the south-west of trackway 170111 was dominated by the presence of a probable post-built roundhouse 169003. The building comprised 14

postholes forming a circular structure approximately 14m in diameter, with a possible entrance located to the east. There is no evidence for any associated drip gully, but given the shallow nature of many of the postholes a high degree of truncation is probable. Several postholes may relate to internal subdivisions, however no pattern is apparent, whilst other postholes suggest alterations or repairs to the structure.

9.5.26 Immediately to the west of the roundhouse a group of postholes formed a possible fence line 170509, which enclosed an area approximately 28 x 15m immediately to the south-east of trackway 170111. The function of this putative enclosure is not clear, however it might have formed an animal paddock linked to the trackway. Several shallow pits, probably rubbish pits, were located within this area.

9.5.27 To the north of the roundhouse a large, rather irregular feature, 254056, was exposed. Its function is not clear, however it might have been a waterhole or a well. The full depth of 254056 could not be ascertained due to a high water table, and the sides were prone to collapse rendering both hand and machine excavation difficult. It seems that by the end of this phase it was abandoned and used for disposal of waste. A fragment of a triangular loomweight (ON869) came from one of the fills.

9.5.28 Between the possible well or waterhole and the roundhouse was a concentration of shallow rubbish pits. Pit 298094 produced a fragment of a burnt quern stone (ON3290), whilst pit 303171 contained a fragment of a shale bracelet (ON4076).

9.5.29 South of the waterhole a neonate burial, 174141, was placed in an abandoned posthole 176140, and overlain by a horse skull and several other animal bones.

### *Enclosure III*

9.5.30 This possible enclosure was defined by post-alignment 170193 to the west, whilst the southern boundary may be represented by a heavily truncated ditch, 137283, aligned NW-SE, and a series of pits located on the boundary line. Parallel to post-alignment 170193 was a shallow gully 190495, located 3.5m to the east and perhaps part of an entrance. No evidence survived for the northern and eastern boundaries to the putative enclosure, however it is possible that these may have been removed as a result of the intensification of activity in the following phases.

- 9.5.31 Approximately in the centre of the putative enclosure was a possible post-built roundhouse 190499, which measured *c.* 9m in diameter. Several postholes may suggest some internal division, however no clear pattern is apparent.
- 9.5.32 A large group of pits were located to the south-west of the roundhouse. The features were circular, on average 1.3-1.5m in diameter, flat-based and steep-sided. The sequence of fills was similar across the group, and may suggest that these pits were originally dug for storage, and subsequently reused for disposal of domestic waste, interspersed with periods of silting. Pit 291130 produced a fragment of a shale bracelet (ON 3968), a possible sling shot (ON3969) and a quern stone fragment (ON3971). A fragment of triangular loomweight (ON4028) was found in pit 137222 to the west. An unusual find of two disarticulated canine baculum bones was recorded in pit 302077 located in the south-western corner of the enclosure. These objects are known to be treated as charms for luck or fertility among pastoralist cultures.

#### *Enclosure IV*

- 9.5.33 The enclosure was aligned NW-SE and defined on the south and west sides by ditch 170170, and by ditch 249116 on the north side. The northern boundary appeared to be discontinuous, but it is probable that it originally extended from ditch 170170 in south-east to the limit of excavation to the north-west.
- 9.5.34 The enclosure was dominated by a centrally-located large, post-built roundhouse 190471, which measured approximately 11.5m in diameter. To the south, another, smaller post-built roundhouse 320043 was found, measuring *c.* 6.7m in diameter. Immediately to the north-east of roundhouse 320043 lay four-post structure 170165, measuring approximately 1.8 by 1.8m, and possibly used for grain storage.
- 9.5.35 A concentration of pits lay to the north-east of four-post structure 170165, with several others scattered across the enclosure. The pits vary in size and depth as well as profile, and all appear to have been used secondarily for waste disposal, however their primary function is not clear; some of them were circular, flat based and steep sided (eg. 264203), and might have been used for storage.

#### *Enclosure V*

- 9.5.36 Approximately 3.2m to the east of ditch 170170 (belonging to Enclosure IV) ran parallel ditch 170066, perhaps defining a trackway. Ditch 170066 and ditch 170035, aligned NW-SE, appear to have formed the north-eastern and south-western sides respectively of what may have been a semi-open

enclosure. The area within the postulated enclosure was largely empty except for scatter of rubbish pits and postholes. The only exception was north-south posthole alignment 190479, approximately 25m to the south of the southern corner of Enclosure IV. The function of this isolated arrangement is not clear, and its alignment is at odds to the established pattern of settlement in this phase.

- 9.5.37 The comparatively low density of features and lack of structural remains in this area may suggest that it might have had an agricultural function.

#### *Open Area*

- 9.5.38 To the north-east of ditch 170035 (on the north-east side of Enclosure V) ran parallel ditch 170036, these ditches together possibly defining a narrow 1.7m wide trackway. The area to the north of this putative trackway and east of Enclosures II and III remained open and largely devoid of features, with the exception of occasional scattered postholes and shallow pits. However, two inhumation burials were also located in this area, neonate 278272 and the grave (292075) containing the partial skeleton of a sub-adult, 292076, in a crouched position.

- 9.5.39 Alongside grave 292075 were two parallel, L-shaped post-alignments, 190507 and 190508, forming a structure or enclosure of unknown form and function. East of the post alignments lay four-post structure 170194, measuring approximately 2.4 by 2.4m. This group of structural remains may hint at the presence of other structural remains to the west beyond the limit of excavation.

#### *Summary*

- 9.5.40 Phase 3 is dominated by the construction of a NE-SW aligned metalled trackway, alongside which developed a system of relatively large, broadly rectangular or sub-rectangular fields and associated driveways. From this layout, which seems to have been well-established by the end of the Early Iron Age, grew a dense settlement characterised by a series of sub-rectangular enclosures linked by a network of driveways. The majority of the enclosures were dominated by one or two post-built roundhouses, sometimes accompanied by four-post structures, commonly interpreted as grain stores. Within the enclosures were scatters or groups of pits, many of them circular, steep-sided and flat-based, probably originating as storage pits but in all cases eventually used for disposing of domestic refuse. The function of an open area in the eastern part of Zone 6 is not clear, but one interpretation may be that it served as a communal area. Its location at the junction of converging driveways may hint that it could have been a marketplace, and perhaps also

associated with stock control. The artefactual evidence including pottery, animal bone, quernstones and loomweights contributes to a picture of a settled farming community, where animal husbandry, cereal processing and weaving played an important role.

## 9.6 Phase 4 (Middle- Late Iron Age)

9.6.1 Phase 4 represents a period of transition, and includes elements that clearly superseded patterns observed in Phase 3. Two sub-phases (4a and 4b) have been assigned to accommodate the changes that took place during this period (**Figures 11-12**). The main focus of the earlier (Phase 4a) changes seemingly took place in the southern part of Zone 6. It is therefore likely that enclosures assigned to Phase 3 in the north of the zone might initially have survived in major part unchanged. However, the northern part of Zone 6 saw more substantial changes in the latter part of the period (Phase 4b). Phase 4 is represented by features dated by pottery to the Middle – Late Iron Age, but some features dated broadly to the Iron Age have also been included on the basis of their stratigraphic position and spatial layout.

### *Phase 4a*

#### *Southern Area*

9.6.2 It is likely that in Phase 4a what proved to be the long-lived southern boundary to the settlement was established (**Figure 11**). However, there is no clear stratigraphic link between this and the structures and features that are thought to have been broadly contemporary. It appears that this boundary was originally formed by a line of postholes, which comprised fence-line 170181. The main posts were inserted approximately 8.5m apart, with other posts added between, although the evidence is very fragmentary due to later disturbance and truncation. The boundary was aligned NW-SE, curving slightly to the south at the south-east end, which suggests that it may have been deliberately placed at the base of a low hill which occupied the southern part of Zone 6 and extended to the south-west, in the area now occupied by Ebbsfleet Farm.

9.6.3 Fence line 170181 was probably soon replaced, at least in the north-west, by ditch 190459. To the north-east of this boundary was beam-slot 190452, approximately 3.6 long, along with shorter beam-slot (300039) at 90° to this. These beam-slots might have formed a base for a small bridge spanning the boundary ditch, and a further group of possible beam-slots and a group of stake-holes to the north-west may indicate a similar structure.



- 9.6.4 A possible roundhouse 190442 was located in the south-eastern part of the settlement. The presence of this building is suggested by an incomplete drip-gully, indicating that the structure was up to 8.7m in diameter.
- 9.6.5 The roundhouse was set within an area, possibly an enclosure, defined to the south by the settlement boundary 170181, and to the north-west by a complex system of two 'inverted L-shaped' ditches, 190451 and 190461, which were staggered in order to form a NE-SW aligned elongated entrance driveway approximately 1.5m wide. An L-shaped ditch, 190448, located to the south-east of 190461 is probably also related. The possible enclosure contained several postholes and pits, two of which contained fragments of triangular loomweights (ON4066 and ON4042), along with domestic waste.
- 9.6.6 At 90° to the southern boundary to the settlement was an alignment of pits, 190480, located approximately 3.7m north-west of enclosure ditch 190451. Within this space was a group of postholes, 190487, which appear to have formed a probable circular building, *c.* 4.7m in diameter. This possible structure appears to be too small for a roundhouse and is likely to have served some other domestic function.
- 9.6.7 Pit alignment 190480 is likely to have formed the south-east boundary of a rectangular area, defined to the south by the settlement boundary and partly to the north by NW-SE aligned L-shaped fence line 190481. Centrally located within the area was a post-built roundhouse 190477, which measured approximately 8.5m in diameter. A group of broadly concentric postholes found within the roundhouse may be evidence of additional structural supports for the roof, as well as internal divisions. The area of this possible enclosure is largely devoid of other features with the exception of probable storage pits.
- 9.6.8 North of and broadly parallel to fence line 190481 was a possible enclosure, of unusual form, possibly related to stock management. It was defined by two NW-SE aligned ditches 170101 and 170103, set approximately 6.5m apart in the north-west and diverging to *c.* 10m apart in the south-east, where they terminated. To the south-east lay curvilinear ditch 190486, located approximately 4m from the termini of ditches 170101 and 170103, partly enclosing the termini. An earlier phase of this possible enclosure is represented by ditches 170102, 170104 and 170100 (not shown on plan).
- 9.6.9 Apparently related to this arrangement was a small, elongated enclosure formed by ditch 190464, located immediately to the south-east. This may have formed an animal pen, with a line of postholes along part of the north-west side perhaps representing a fence within an entrance.

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- 9.6.10 To the east of the enclosure 190464 was a NE-SW aligned six-post structure 326023, measuring 3.4 x 3m.
- 9.6.11 Further east were two roundhouses, separated by a short section of curvilinear gully 269102. The smaller, southern roundhouse 170037 is represented only by an incomplete drip gully, which suggests that the building measured approximately 7.8m in diameter. The northern roundhouse, 190470, was post-built and measured 11.8m in diameter. It is possible that these two structures demonstrate a transition in building techniques, from one represented by postholes and characteristic of Phase 3, to a later one represented by ring-gullies and common in Phase 4.

#### *Central Area*

- 9.6.12 It appears that the central area of Zone 6 underwent a major change in the layout of enclosures and associated droveways. However, the picture is somewhat fragmentary, represented only by short sections of shallow ditches and gullies.
- 9.6.13 A possible boundary might have been formed by NW-SE aligned ditch 170159, which is likely to have joined with NE-SW aligned ditch 170160. The northern terminus of ditch 170160 was located approximately 3.2m from the NW-SE aligned section of ditch 249166, which subsequently turned to the north-east, and might have been part of the same feature as ditch 170155. These and other long, shallow L-shaped ditches in the vicinity formed a system of enclosure boundaries with staggered entrances and droveways, within which were several circular and rectangular structures.
- 9.6.14 To the north of ditch 170159 was a roundhouse (190497) which measured 8.5m in diameter and was represented by a ring-gully and a group of postholes. It appears that this building was later rebuilt on the same site and enlarged to a diameter of 9.5m. To the south-east of this was a rectangular post-built building, initially believed to comprise two NE-SW aligned buildings. However, it seems more likely that there was only one, large rectangular structure (249121), which measured 11.4 x 3.6m. The internal posts suggest that it might have been divided into three rooms, and may have had a small porch facing south-east. Another rectangular post-built building 249123 lay further to the south-east on a similar alignment, and might have been divided into two rooms. Two of the internal postholes were located centrally and could have held roof supports. This structure measured *c.* 8.9 x 2.4m. These two buildings might have been used as barns, stables or sties, built close to the round-house and in the southern part of a paddock.

9.6.15 Further to the east, adjacent to ditch 170155, was another post-built circular structure, 190472, measuring 5.7m in diameter.

9.6.16 To the north of ditch 170155 were two ditches, 170133 and 170134, apparently replacing post built L-shaped structures 190507/190508 of Phase 3. Again, the function of this group like its predecessors is not certain.

#### *Northern Area*

9.6.17 The dating evidence suggests that the northern part of Zone 6 remained largely unchanged in this phase, and only Enclosure II underwent some change, with at least two new structures appearing. Roundhouse 190503 built in the south-west corner of the enclosure was represented by a fragmentary ring-gully which indicates a building up to 8m in diameter. Phase 3 post-built roundhouse 169003 was abandoned and replaced by a structure represented by an incomplete ring-gully 297089. This roundhouse was built to the south of its predecessor and is likely to have measured up to 12.5m in diameter. Finally, a group of postholes and shallow pits, 190502, located to the west, were arranged in broadly circular manner, though it is considered unlikely that these represent another roundhouse.

9.6.18 Other pits were located across this northern area. Of note were pits which produced a fragment of triangular loomweight (ON3950), an antler handle (ON390), and a small hearth.

9.6.19 To the east of roundhouse 190503 was a possible well, 263052, which contained an incomplete disarticulated human skeleton (263050).

9.6.20 Two residual finds of copper alloy shield bindings (ON692 from Early Roman pit 170158 and ON3223 from colluvium) as well as fragment of shale bracelet (ON3296 from undated pit 128014) may be tentatively assigned to this phase.

#### *Summary*

9.6.21 In Phase 4a the settlement layout which originated in the previous phase seems to have been largely abandoned, though the metalled trackway survived. The new pattern gives the impression of organic growth, particularly in the southern part of the settlement. The southern boundary, which survived almost unchanged to the end of the Roman period, seems to have been established in this phase. The new system of enclosures, droveways, animal pens and possible barns dominated the layout and suggest that animal husbandry remained a significant feature of the settlement.

*Phase 4b*

9.6.22 Phase 4 is represented by features dated by pottery and other finds to the Late Iron Age (**Figure 12**). Some of the features, despite being spot-dated to earlier or later phases by small pottery assemblages, were assigned to Phase 4 if their position in the stratigraphic sequence or location in plan indicated this to be the case. Phase 4 reflects further and gradual development of the settlement with clear intensification of the occupation throughout Zone 6, represented by a series of enclosures with related roundhouses. The northern part of the settlement is still dominated by metalled trackway 170111, however its extent to the south-west appears have been blocked in this phase. In the central part of Zone 6 the system of boundaries shifts slightly to a north-south alignment, however the southern part is still dominated by the re-established NW-SE aligned boundary to the south. Towards the end of Phase 4 the established system of enclosures seems have been interrupted by the imposition of a very large, possibly defensive, WNW-ESE ditch located at the northern end of Zone 6.

*Enclosure I*

9.6.23 At the northern end of the site a rectangular enclosure was defined by ditch 170039 to the north-west, ditch 170091 to the south-west, and its L-shaped recut 170090 which also formed the south-east boundary, adjacent to trackway 170111. The enclosure might have extended into Zone 7, where it could be represented by a SW-NE aligned ditch 262181. The north-east boundary is not clear, however it may be represented by ditch 262243, the terminus of which aligns with terminus of 170039, forming an 8.4m wide gap, presumably constituting an entrance.

9.6.24 The interior contained a scatter of small rubbish pits, postholes and a large tree-throw pit. No evidence of structural remains was identified and it is likely that this enclosure, measuring approximately 41 x 33m, formed a field or an animal paddock located on the periphery of the settlement.

*Enclosure II*

9.6.25 This enclosure was located to the south-west of Enclosure I, separated from it by a driveway or trackway approximately 3.8m wide, and two distinct phases of development have been identified. The earlier phase is represented by an L-shaped ditch 170088 defining parts of the north-east and south-east sides of the enclosure, which lay adjacent to trackway 170111 (later recut by 170046; see below). Approximately 9.5m to the north-west of the northern terminus of ditch 170088 was ditch 170097, which continued the boundary of the

enclosure to the north-west, the gap between them probably indicating an entrance.

- 9.6.26 Ditch 170088 appears to have been a recut of an earlier boundary, 263033, which gradually tapers out to the south-west. The extent of the enclosure in this direction is uncertain, however it is probable that it originally followed the north-west side of trackway 170111, up to and beyond the limit of excavation, as no evidence of a return ditch or posthole / pit alignment forming the south-west boundary was revealed.
- 9.6.27 Associated with this stage of the enclosure is a near-complete ring-gully 169004, indicating the presence of a roundhouse, which measured up to 8.5m in diameter; a 2m-wide opening to the south-east is likely to have defined the entrance. No other structural remains or internal features were identified.
- 9.6.28 In the second stage of development the boundary of Enclosure II was recut by an L-shaped ditch 170046, which reduced the width of the north-east entrance to 4m. It appears that the new entrance was slightly more elaborate, as indicated by the addition of a NE-SW aligned shallow gully, the termini of which were marked by two large postholes.
- 9.6.29 The south-west extent of the new boundary ditch (170046) stopped short of its predecessor and curved slightly to the west. It is not clear if this change in alignment indicated a reduction in size of the enclosure, as there were no other features which continued this line. However, it is most likely that, as before, the south-east boundary extended alongside trackway 170111 as far as the limit of excavation.
- 9.6.30 Associated with this second stage was ring-gully 170086, a rebuild and enlargement of the earlier roundhouse. The new structure measured an estimated 10.5m in diameter and had a rectangular six-post porch, 169005, measuring 2.6 x 2.2m, which faced south-east.
- 9.6.31 Aside from the ring-gully, the interior of the enclosure was largely devoid of features with the exception of four-post structure 154190 and a few pits. Pit 277042 located to the north-east of this structure was a shallow, clay-lined, bowl-shaped feature which contained a large number of triangular fired clay loomweights (ON3894-3898, ON2154-2158).
- 9.6.32 Other finds of interest was a stone pestle (ON866) recovered from ring-gully 169004 and a copper alloy tankard handle (ON2180) from boundary ditch 170088.

9.6.33 A possible boundary formed by NE-SW aligned ditches 183375 and 252252 was located to the south-east of Enclosures I and II. The area defined by this boundary and the enclosure ditches appears to have formed a T-shaped junction of NW-SE and NE-SW aligned droveways which were between 2.3 and 5m wide. They possibly formed an alternative access route in a period when metalled trackway 170111 in its original form was going out of use. This gradual abandonment may be illustrated by a now isolated part of the metalled surface, 170113, located just beyond the south-east boundary of Enclosure II. It is probable that in Phase 4 this area was used for meat processing, as indicated by a concentration of animal bone, some of which bore butchery marks.

9.6.34 The extent of metalled trackway 170111 seems also to have been further reduced from the south-east, as suggested by a NE-SW alignment of ditches 170112, 258062 and 170118. Furthermore, its south-western extent in Zone 6 appears to have been at least partially blocked by the construction of roundhouse 170127 in Enclosure III, though the trackway may have skirted around the west side of the building.

#### *Enclosure III*

9.6.35 The boundary defining the tentative Enclosure III was not continuous and its existence is only suggested by a series of short and shallow ditches and gullies. The enclosure was rectangular, with its long axis aligned NNE-SSW, and defined on the east side by ditches 170123 and 190517 and to the south by gully 190489. Gully 247111, parallel to 190489, may have formed a 2.8m wide internal sub-division.

9.6.36 The interior of the enclosure was dominated by a roundhouse represented by ring-gully 170127, which measured 12.6m in diameter. Any internal structural remains or other features had been removed by the intensive activity which took place in this area in later phases.

9.6.37 To the south of the round-house were two large oval pits 170184 and 277068, which measured 6.7m and 5.5m in diameter respectively. Both features were up to 1m deep, flat-based and steep-sided. The function of the features is not clear. Both were filled with a series of deposits containing domestic waste, but no primary deposits were preserved. It is possible that they were used in some industrial process, and analysis of environmental data may clarify this. It is less likely, though still possible, that they were sunken-featured buildings.

9.6.38 Between pits 170184 and 277068 was a pit (218263) containing a complete skeleton of a young pig.

9.6.39 To the south of the roundhouse was a rectangular east-west aligned pit (164146), which measured 2.2 x 0.95m. This resembled a grave in plan, but contained only domestic refuse.

*Enclosure IV*

9.6.40 To the east of Enclosure III was another probable enclosure, defined to the east by ditch 170137, to the south by shallow ditch 299082, whilst to the north it was apparently open. Both ditches were discontinuous, probably the result of later truncation and disturbance.

9.6.41 The putative enclosure formed a narrow rectangle which measured up to 55 x 20m. Within the northern part of this were the sites of two roundhouses, indicated by ring gullies 170126 and 190505, the buildings measuring up to 7.5 and 10.5m in diameter respectively. No other structural remains or internal features remained, with the exception of 190505, where a single posthole was revealed between the termini of the ring gully in the north-east part of the feature.

9.6.42 Possible waterhole 262073 lay to the north-west of the roundhouses, whilst the area to the south was largely devoid of features with the exception of a few small rubbish pits scattered along the edges of the enclosure. Pit 302036 contained a fragment of a quern stone (ON2951).

9.6.43 To the south-west of Enclosure IV and to south of Enclosure III was another roundhouse 190496, which measured 11m in diameter. This structure was defined by a series of postholes, accompanying an interrupted ring-gully, whilst a concentric arrangement of small internal postholes is likely to be evidence of additional roof supports.

9.6.44 To the east of ditch 170137 (defining the east side of the enclosure) lay a small truncated inhumation burial 297080 (not shown on plan), containing an infant skeleton along with a possibly deliberately deposited fragment of horse skull.

*Enclosure V*

9.6.45 Enclosure V extended beyond the eastern limit of excavation and was defined by ditch 170143. This ditch ran NE-SW, then turned south-east, and subsequently returned to the north-east where it terminated just short of the edge of Zone 6, perhaps indicating an entrance here. The sub-rectangular enclosure measured approximately 20m wide and was exposed for a length of at least 35m. Ditch 170143 was subsequently recut by ditch 170144, which extended the enclosure approximately 3m further to the south-west.

- 9.6.46 The enclosure contained few features with the exception of a cluster of shallow rubbish pits and small postholes located close to the south-west boundary.
- 9.6.47 Another, probably rectangular, NE-SW aligned enclosure, defined by L-shaped ditch 190515, was located to the north of Enclosure V.
- 9.6.48 Between the two enclosures was a small possible roundhouse 123297, defined by a ring-gully with a diameter of 5.7m.

*Stock Control Area?*

- 9.6.49 The area enclosed by ditches 190515 and 170144 to the east and ditch 170137 to the west formed a likely access route leading from trackway 170111 to an open area located towards the southern part of the settlement.
- 9.6.50 At its narrowest point this driveway appears to have diverged, to the east along the southern edge of Enclosure V, and to the west where it led to a complex system of ditches and gullies. The latter branch of the route was defined by two broadly parallel curvilinear ditches 249167 and 249163, with a short length of a further ditch (178204) probably related to these. To the south they opened into a sub-rectangular area defined to the west by ditch 249167 and to the south by ditch 249124. Located to the south of 249163 was ditch 249098, U-shaped in plan. East of this and Enclosure VI, south of Enclosure V and north of Enclosure VIII was a fairly large open area.
- 9.6.51 A small, probably sub-rectangular, post-built structure 249119 was located close to curvilinear ditch 249167 and just to the north of ditch 249124 which defined the northern boundary of Enclosure VI. Structure 249119 measured 4.6 x 2.3m. To the east of this a group of postholes indicates the location of a probable small roundhouse 190483, which measured 5.8m in diameter. This structure was located just to the west of T-shaped ditch 249162 which extended south from ditch 249098 and partly enclosed this area to the east. The short east-west aligned section of this ditch lay parallel to the northern boundary (249124) of Enclosure VI and probably formed a 2.2m wide entrance.
- 9.6.52 The nature of this complex system of driveways and ditches suggests that it may have been used for stock control, where animals could be driven from the main thoroughfare formed by metalled trackway 170111 into the settlement. Small post-built buildings might have served as temporary shelter for herders or animals, or might have housed activities such as sheep shearing. Of possible



significance are three lead weights (ON3357, ON3232 and ON2168) recovered from the area by metal detecting.

#### *Enclosure VI*

- 9.6.53 This possible sub-rectangular enclosure, aligned WNW-ESE, was partly defined by a heavily truncated L-shaped ditch 249124, which formed the northern and part of the eastern boundary. The eastern boundary is completed by a short section of another shallow ditch 145264 and its recut 145263. The 2.2m wide gap between the termini of ditches 145263 and 249124 formed a likely entrance.
- 9.6.54 The southern boundary was not physically evident, however an indication of a westerly return on ditch 145264 suggests that such a boundary did exist, perhaps lost due to later truncation and disturbance by Early Roman enclosure ditches. A posthole may suggest that it was formed by a fence-line.
- 9.6.55 A line of postholes 332033 at the east end of the enclosure is likely to have formed the initial boundary at the very beginning of Phase 4, as its southern section appears to curve around ditch 190468, which formed a part of a complex enclosure in Phase 3/4.
- 9.6.56 Adjacent to the northern boundary of the enclosure was a possible small roundhouse represented by an incomplete ring gully, 170171, with a projected diameter of up to 7.5m. Several small pits containing domestic waste were also found within the enclosure.

#### *Enclosure VII*

- 9.6.57 Approximately 5m to the south of Enclosure VI, and perhaps separated from it by a driveway, was another sub-rectangular NW-SE aligned enclosure, formed by ditches 190453, 190469 and 225050. Ditch 190453 turned to the south-west to form the eastern boundary along with a similarly aligned section of a T-shaped ditch 190455, which also formed the southern boundary of the enclosure. The 2.2m wide gap between the termini of the two ditches most likely formed an entrance. The eastern boundary might also be represented by heavily truncated gully 125270.
- 9.6.58 Within the enclosure were two four-post structures, 170185 and 219110, as well as a large storage pit and two substantial rubbish pits, 176267 and 316001, both located by the northern boundary. No roundhouse was present, but this may have been located beyond the excavated area to the west.

9.6.59 As noted above, part of T-shaped ditch (190455) formed the southern boundary to the enclosure, and this ditch also defined the re-instated southern edge of the settlement, along with earlier localised recuts.

#### *Enclosure VIII*

9.6.60 North of the southern settlement boundary and south-west of Enclosure VII was another possible enclosure. Enclosure VIII appears to have been subdivided by various features including L-shaped ditch 190465, which formed part of the northern boundary to the enclosure, along with ditch 190435. Two postholes and several unexcavated features are also likely to have been part of this boundary. The 4.5m-wide area between Enclosure VII and Enclosure VIII was most likely a driveway leading from the open area in the centre of this part of the settlement.

9.6.61 The L-shaped ditch, 190465, along with ditch 190456 at 90° to this subdivided the western part of the postulated enclosure into two rectangular plots. Both areas contained groups of scattered pits and postholes, some of which might have been originally used for storage, although the majority were ultimately used for the disposal of domestic refuse.

9.6.62 Another L-shaped ditch, 190445, running parallel to 190456 was mirrored by an unexcavated L-shaped feature to the north-east, and together these formed a T-shaped junction of narrow driveways, which measured between 1.3 and 2m wide. The NW-SE aligned branch of the driveway led to a small, partially exposed ring-gully, 172283, which was up to 4.5m in diameter and set in the corner of an L-shaped boundary formed by ditches 190437 and 190436.

#### *Open Area*

9.6.63 To the north of Enclosure VIII, east of Enclosure VI and south of Enclosure V was a relatively large, unenclosed area located in the centre of the exposed part of the settlement. Amongst a scatter of small rubbish pits and postholes was a post-built roundhouse 190476, which measured 11.8m in diameter. Another roundhouse was partially exposed in the south-eastern corner of the exposed open area and was represented by two concentric ring-gullies 170030 and 170031. It is possible that external gully 170131 represents a rebuild of the roundhouse, though this may have been a drip gully contemporary with 170030 which was possibly a foundation trench for the walls of the roundhouse. The building would have measured 11.6m in diameter (or up to 12.8m for the possible rebuild). To the north of this was a possible four-post structure measuring 3.5 x 3m.

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*Defensive ditch / military base (?)*

- 9.6.64 A large east-west aligned ditch 170082 cut through the boundaries of Enclosure 1, probably towards the end of Phase 4 (**Plate 9**). The ditch measured 4.1m wide and was over 2m deep, though it appears to have been subject to some truncation as a result of later activity.
- 9.6.65 Ditch 170082 had a U-shaped profile with a flat base. It was filled by a series of primary and secondary fills, however the upper fills appear more mixed and likely to be a result of deliberate backfill. No *in situ* bank survived, but the fills appeared to tip from the southern edge, which are likely to indicate that a (internal) bank was located on this side of the feature.
- 9.6.66 It is likely that a causeway or crossing place coincided with the point where trackway 170111 met the ditch, but this area lay between Zones 6 and 7, beneath the modern surface of Ebbsfleet Lane which was to be left *in situ*.
- 9.6.67 Excavation did not provide much dating evidence for a feature this size, which may suggest that it was comparatively short-lived. Pottery has been dated to a period from Middle – Late Iron Age to Early Roman. It seems very likely that the earliest pottery is residual, and the backfill deposits contained mainly Late Iron Age sherds, whereas Early Roman pottery appeared to concentrate in the uppermost tertiary fills. Other finds included a spearhead (ON3292), a bone handle (ON3293) and a stone spindle whorl (ON671).
- 9.6.68 The ditch and accompanying bank undoubtedly formed a substantial (defensive) barrier which, based on evidence from Zones 4 and 7 as well as earlier excavations in 2005 (Andrews *et al.* 2009) and 2008 (Wessex Archaeology 2008), enclosed a large area at the neck of the Ebbsfleet Peninsula. The available, albeit tentative dating of the feature to the final part of the Late Iron Age may link it to the period of Caesar's invasions in 55 and 54 BC.
- 9.6.69 The probably associated ditch recorded in Zone 4 lay approximately 450m to the south of ditch 170082 at the north end of Zone 6, and 140m south of the well-established boundary of the settlement, represented by Phase 4 ditch 190455 in Zone 6. Contemporary features within this postulated enclosure remain to be identified through further analysis, but it might be noted that the area south of the settlement boundary (ditch 190455) remained almost completely devoid of archaeological features throughout this and the following phases. This contrasts with the quantity of finds, particularly metalwork including spearheads, retrieved from the colluvium deposit 170010, which covered the majority of the area. This raises the possibility that the enclosed

area, which extended on to a small hill at the neck of the peninsula (now occupied by Ebbsfleet Farm), might have been used as a temporary military base.

#### *Summary*

- 9.6.70 Phase 4b is characterised by a further intensification of occupation, first observed in the earlier stages of the Iron Age, and large enclosures of Phase 3 were subdivided into smaller parcels. The main part of the metallised trackway remained in use, however its importance appears to be reduced, and its alignment slightly changed in the southern part. A new NNW-SSE alignment of boundaries came to dominate the central part of the settlement, with a new north-south thoroughfare, and in connection with this reorientation a complex system of droveways, enclosures, small paddocks and an open area developed, perhaps as a result of a growing significance of animal husbandry and stock control.
- 9.6.71 The change in the alignment of the enclosure boundaries observed in this phase might suggest that the Late Iron Age settlement developed radially from a central focus, possibly located *c.* 100-140m to the west of Zone 6.
- 9.6.72 Towards the end of Phase 4b a substantial, possibly defensive ditch was imposed across the northern part of the settlement, and a temporary base may have been established to the south. These changes possibly took place during a period which included Caesar's invasions of the mid-1<sup>st</sup> century BC, and the possibility that these were linked will require further analysis of the site, finds and other evidence.

### **9.7 Phase 5 (Early Roman)**

- 9.7.1 Phase 5 is represented by features dated by finds to the Early Roman period (**Figures 13-14**). Some of the features, with small pottery assemblages, were initially ascribed a broad Late Iron Age - Early Roman date, but have been re-assigned to this phase if their position in the stratigraphic sequence or layout indicates that this should be the case.
- 9.7.2 Two sub-phases were distinguished in order to more clearly illustrate the changes observed in the settlement's development. Phase 5a represents the boundaries which originated directly from the layout in Phase 4, and which were abandoned during the development of Phase 5. Phase 5b represents the final development of the boundary system within the settlement observed in Zone 6.

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*Phase 5a*

- 9.7.3 To the north of earlier trackway 170111 the Phase 5a activity was limited to the area south of the boundary of Enclosure II of Phase 4 (**Figure 13**). The possible butchery area (170113) appears to have been abandoned and a series of rubbish pits were dug, containing large amounts of domestic rubbish. Pit 256062 contained a Nauheim derivative brooch (ON 130012) dated to the 1<sup>st</sup> century AD, probably post-dating the Claudian conquest.
- 9.7.4 The majority of activity attributed to this phase took place to the south of the line of earlier trackway 170111, which may have continued in use, but at a reduced level. Along its southern surviving edge a series of irregular ditches was dug. At the north-east end ditch 170115 seems to have replaced a similarly shaped ditch 170114, and was subsequently replaced by a particularly irregular ditch 170116 aligned broadly NE-SW. Close to its northern end were two smaller irregular ditches, 170121 and its recut 170122. All these features were very irregular and varied in depth, width and plan. They superseded the use of Enclosure III from Phase 4, but their function is unclear.
- 9.7.5 Ditch 170115 contained a two-piece Colchester fibula (ON3966), which suggests that the changes might have taken place around the time of the Claudian conquest.
- 9.7.6 The southern part of Enclosures III and IV of Phase 4 was overlain by a group of ditches comprising 190512, 190491 and 190493, all aligned NNE-SSW and indicating further division of this area. These probably lay immediately to the east of a major new trackway (see below) which began to develop in Phase 4, and became fully-established in Phase 5, which ran north-south through this part of the settlement.

*D-shaped enclosure*

- 9.7.7 Ditches 249100, 249099 and 249120 formed a new D-shaped enclosure. The southern boundary of the enclosure was shared with the re-established boundary of Enclosure VI from Phase 4, in the form of ditch 249117.
- 9.7.8 The D-shaped enclosure appears to have had two entrances, located at the corners of the southern boundary. The eastern entrance was formed by a long and narrow (up to 1.3m wide) driveway created by parallel ditches 249117 and 249120. The western entrance was located between the southern terminus of ditch 249100 and ditch 249117.

- 9.7.9 A sub-rectangular area measuring c. 15 x 14m in the north-west corner of the enclosure was defined by ditches 170166 and 185151. Ditch 170166 was relatively deep with a steep-sided, narrow profile, and 185151 may have originally been similar but had been truncated. To the south of this was ditch 137284, also aligned east-west.
- 9.7.10 The function of the D-shaped enclosure is not clear. The interior appears to be devoid of any other, discrete features, and one possibility may be that it was an animal corral.
- 9.7.11 The D-shaped enclosure appears to have been mirrored by another curvilinear boundary to the east, on the opposite side of the new trackway, the ditch largely represented by its final recut 170147. This ditch succeeded ditch 170149, and it is likely that a short length of ditch, 190473, formed the southern boundary, at least in the early stage of enclosure's development. Interrupted ditch 137270 is likely to have formed an internal division.
- 9.7.12 To the north, Phase 4 Enclosure V appears to have been abandoned and its boundary recut by north-south ditch 170142, parallel with ditch 249099 to the west. Together these ditches defined a new 6.5m-wide, north-south aligned trackway, which formalised to a degree the thoroughfare which had begun to develop in Phase 4 and a direct predecessor of the trackway which became fully established in Phase 5B.
- 9.7.13 Ditch 170032 in the south-east part of Zone 6 formed a boundary to another enclosure, which extended beyond the limit of excavation. The northern boundary to the enclosure was subsequently extended, represented by recuts 190486 and 190485.
- 9.7.14 The western boundary of Phase 4 Enclosure VIII was re-established in Phase 5a by ditch 190466, and the alignments of this and ditch 170032 may have further defined elements of the new trackway. Short, curvilinear ditches 190444 and 190467, of unknown function, also appear to belong to this phase.

#### *Defensive ditch*

- 9.7.15 The northern part of Zone 6 was dominated in Phase 5a by the presence of a large defensive ditch 170041, which was a re-cut of earlier, Late Iron Age ditch 170082. Ditch 170041 was broadly V-shaped, approximately 4.8m wide and in excess of 3m deep. A smaller ditch, 242046, along the outer edge of ditch 170041, may represent a localised re-cut.
- 9.7.16 No *in situ* bank material was found, but an apparently blank area approximately 11m wide between ditch 170041 and Enclosure 1 to the south

(see below) may reflect the presence of a bank. Furthermore, the majority of the secondary fills in ditch 170041 appear to have been deposited from the southern edge, indicating the former existence of an internal bank, though the possibility of an additional, smaller, counterscarp bank cannot be ruled out. Some significant silting was also apparent, and this was followed by a sequence of domestic waste dumps and deliberate backfills.

- 9.7.17 The vast majority of the pottery retrieved from the fills has been dated to the Early Roman period, along with some residual Late Iron Age and Middle Iron Age sherds. The uppermost fill (242050) also contained Middle Roman pottery dating to *c.* AD 150-200.
- 9.7.18 As may have been the arrangement in Phase 4, it is likely that a causeway or crossing place coincided with the point where the successor to trackway 170111 met ditch 170041, but this area lay between Zones 6 and 7, beneath the modern surface of Ebbsfleet Lane which is to be left *in situ*.
- 9.7.19 Where exposed to its full depth the ditch proved to have V-shaped profile with its northern edge slightly stepped (in the western excavated section). The northern side also appears to have been dug at a shallower angle was more eroded along the top, probably a result of increased erosion of the fills of earlier ditch 170082.
- 9.7.20 The stepped outer edge of the ditch may indicate the presence of some sort of revetment, but there was no further evidence for this. Fill 255039 contained a dump of iron nails (ON647-669), but whether this was what remained of some sort of wooden structure dumped (or collapsed) into the feature after it fell into disuse is uncertain.
- 9.7.21 Ditch 170041 was a substantial, probably defensive feature which may have been dug at the beginning of the Roman period, replacing Late Iron Age ditch 170082, also interpreted as a defensive feature. The size, profile and date of ditch 170041 might link it to the Claudian conquest in AD 43, perhaps a re-establishment of the earlier enclosure. However, the evidence needs to be further analysed and the relationship of the enclosure to the other Phase 5 settlement requires clarifying.

### *Phase 5b*

#### *Enclosure I*

- 9.7.22 There were some changes in the area at the northern end of the site, between earlier metalled trackway 170111 and the re-cut, probably defensive ditch 170041 (**Figure 14**).

- 9.7.23 In Phase 5 Enclosure I was re-established, with curving ditch 170089 defining it to the south-west and east. This ditch terminated approximately 16m from the southern edge of ditch 170041, providing evidence for the presence of a substantial associated bank (see above).
- 9.7.24 Several rubbish pits lay in a line along the south-western edge of the enclosure, and an isolated posthole in the south-east corner contained a fragment of a quern stone (ON3366) which was re-used as post-packing.
- 9.7.25 The enclosure also contained well 176147, which was probably lined with roughly hewn chalk blocks and flint nodules, though these had largely been robbed. The full depth of 5.7m below the ground level was established by augering, but no waterlogged deposits appeared to have been preserved in the base.

#### *Enclosure II*

- 9.7.26 This enclosure was defined by a series of ditches following the alignment established in Phase 4. Ditches 170093 (and recut 170045) and 170097 formed parts of the north-east boundary. A 6.4m-wide gap between the north end of ditch 170093/170045 and the terminus of ditch 170097 to the north-west formed an entrance in the north-east side. A gap between this and ditch 170089 on the south-west side of Enclosure I probably defined a narrow driveway between the two enclosures.
- 9.7.27 A second entrance, located in the south-east side, lay between the southern terminus of 170093/170045 and ditch 170109, which probably extended beyond the excavated area to the south-west. The entrance was 3.1m wide and appears to have been divided by shallow ditch 256051 at 90° to the entrance.
- 9.7.28 A further L-shaped ditch, 170047, which superseded ditch 170093 and extended Enclosure II to the south-east, appears to have been dug to partly enclose well 269061. The final fill of this well contained a fragment of clay pipe figurine (ON873) which is dated to the late 1<sup>st</sup> - early 2<sup>nd</sup> century AD. This episode, however, was short-lived and the enclosure boundary was restored to its original plan by ditch 170045.
- 9.7.29 The enclosure was subdivided at some point by L-shaped ditch 170049, which re-cut the southern part of ditch 170109 on the south-east side, and this phase of re-cutting was subsequently extended to the north-east by a more substantial ditch 170038.



9.7.30 A four-post structure 262165, tentatively dated to this phase, lay adjacent to the south-east side of the enclosure, and several rubbish pits were found elsewhere, with pit 170021 containing a decorated bronze hairpin (ON614).

#### *Enclosure III*

9.7.31 This triangular enclosure lay within the junction between Trackways I and II (see below), with Enclosure IV to the south. Its boundary was formed by discontinuous ditches 170050 and 170117 to the north-west, 170124 and its recut 240111 to the south, and 240054 and its recut 240057 to the east.

9.7.32 Enclosure III contained a large number of pits of varied size and depth, the majority of which were located close to the north-west boundary. The features contained comparatively few finds and their function is at present unclear. Nearby lay well 132144, augered to a depth of 3.2m, and it is possible that large features 258088 and 317102 in the same area might have a function other than simply rubbish disposal.

#### *Enclosure IV*

9.7.33 Enclosure IV was located to the south of Enclosure III and west of Trackway II. This enclosure was rectangular, with its main axis aligned NW-SE, and measured approximately 29 x 20m. It was formed by four sets of ditches suggesting at least two phases in its development. The western boundary was defined by ditch 170128, re-cut by ditch 170131, the southern boundary by ditch 190510, the eastern boundary by ditch 170164, and the northern boundary by ditch 170124 and its recut 240111.

9.7.34 The 9.7m-wide gap between the termini of ditches 240211 and 170164 in the north side is likely to have formed an entrance.

9.7.35 The principal feature within the enclosure was a sub-rectangular possible sunken-feature building, 170175, located in the south-eastern corner. This contained a large quantity of pottery, animal bone and oyster shell, as well as a clay spindle whorl. To the north of this feature were two large oval pits, filled with domestic rubbish.

#### *Enclosure V*

9.7.36 Enclosure V was a small, possible sub-enclosure located in the north-western corner of Enclosure VI and to the south of Enclosure IV. It was defined to the east, south and west by ditch 190492. Towards the end of Phase 5b the southern boundary appears to have been re-cut by steep-sided ditch 190494

(not shown on plan). In the south-east corner of the enclosure was four-post structure 170195, possibly a grain store.

#### *Enclosure VI*

9.7.37 Enclosure VI was located to the west of Trackway II, north of Enclosure VII and to the south of Enclosures IV and V. This large, sub-rectangular area measured at least 73 x 38m and contained several scattered groups of pits. The largest of the features were up to 6m across and usually flat-based and vertically-sided. The fills consisted of a series of fairly uniform deposits containing large amounts of pottery, animal bone and shell, presumably domestic refuse, though the function of the pits is not clear. Other, slightly smaller pits were located near a probable four-post structure 170157 in the southern part of the enclosure, but no other structures were identified within the area exposed.

9.7.38 The emerging picture suggests that the northern part of the enclosure might have been related to an as yet undefined settlement or 'industrial' activity, whereas the southern part, containing relatively few features, could have been a storage area. The stratigraphic sequence clearly demonstrated that the ditches of the D-shaped enclosure, which occupied this area in Phase 5a, had been infilled by Phase 5b and the enclosure gone out of use.

#### *Enclosure VII*

9.7.39 To the south of Enclosure VI lay small rectangular Enclosure VII. This enclosure was defined by a sequence of near-continuous ditches with an entrance in the north side. There were two phases of development, with the earlier stage represented by ditch 170098, which defined an area 24 x 17.7m with a 7.3m-wide entrance located off-centre in the northern side. In the second phase, represented by ditch 170099, the enclosed area was reduced in size to 20.8 x 14m. The entrance was also made smaller, measuring 2.3m wide, and moved to the centre of the northern side of the enclosure.

9.7.40 The interior appears to have been devoid of any features which could be confidently assigned to Phase 5.

9.7.41 The eastern side of the enclosure formed an integral part of the western boundary of Trackway II. Furthermore, trackside ditches 170140 and 190454, to the north and south respectively, respected Enclosure VII, indicating that the creation of this enclosure preceded the establishment of the trackway in this area.

9.7.42 The function of Enclosure VII remains uncertain. It may have served as an animal paddock or a corral, though it might have been the location of a building of which no evidence has survived.

*Enclosure VIII*

9.7.43 Enclosure VIII was located to the south of Enclosure VII. It was defined on the south-east and south-west sides by ditch 190454, which also formed the western boundary to the south-west branch of Trackway II.

9.7.44 Within the enclosure was sunken-featured building 130227, which was particularly well-preserved. This was oval in plan, measuring a maximum of 5.9m in length, with a slightly angled arrangement around the north-east facing entrance formed by a ramp flanked by two postholes. There were no other internal features. The fills of the feature contained a large quantity of domestic rubbish which included a clay spindle-whorl (ON3900) and a fragment of shale bracelet (ON3901). A bone awl (ON3891) came from a nearby ditch.

*Enclosure IX*

9.7.45 Enclosure IX was located within the triangular area between the two southerly branches of Trackway II, and bounded to the south by ditch 170178, which formed the southern boundary to the settlement in Phase 5.

9.7.46 The northern part of the enclosure was separated from the remainder of the area by ditches 190457 and 190447. The terminus of ditch 190447 was aligned with the terminus of the trackside ditch, the 13.8m-wide gap between them probably forming an entrance. The area enclosed by these ditches contained a number of small, shallow pits filled with a series of deposits containing domestic waste.

9.7.47 The remaining area, to the south, was also accessible from Trackway II, and was subdivided further along the southern boundary by two ditches, 190462 and 190441, at 90° to this boundary. A group of three large pits may have preceded this subdivision.

*Enclosure X*

9.7.48 Enclosure X was located to the south of Enclosure XI and adjacent to the south-east branch of Trackway II. This extended beyond the limit of excavation, but was defined to the south-west and north-west by L-shaped ditch 190484, which also formed the boundary of the eastern boundary of the south-east branch of the trackway.

9.7.49 The enclosure contained several pits filled with domestic waste, the largest group located in the northern part of the enclosure.

*Enclosure XI*

9.7.50 Enclosure XI was located along the eastern side of Trackway II, some of its features mirroring those in Enclosure VI located on the opposite side of the trackway. However, an uncertain part of Enclosure XI lay beyond the limit of excavation to the east.

9.7.51 The enclosure was defined to the west by ditch 170141, the southern arm of which turned to the east to form the southern boundary along with east-west aligned ditch 190475. The 1.8m wide gap between the termini of the two ditches formed an entrance linking Enclosure XI with Enclosure X to the south.

9.7.52 An L-shaped ditch, 170145, appeared to divide the enclosure into two parts, the southern of which was almost devoid of features, whilst the northern area contained the most of the features including two large sub-rectangular pits and several other rubbish pits.

9.7.53 A large, sub-rectangular pit, 170136, initially interpreted as a possible sunken-featured building, is more likely to have been a 'working hollow' or similar. Amongst its charcoal-rich fills were two fragments of copper alloy bracelet (ON3983) as well as other unidentified bronze fragments. These may suggest that the postulated working hollow might have been related to non-ferrous metalworking, but no *in situ* hearths or ovens were found in the vicinity.

9.7.54 Another elongated, sub-rectangular pit, 132098, lay to the north of pit 170136. Of similar size and with a somewhat irregular profile (like 170136), pit 132098 might also be tentatively interpreted as a 'working hollow'. The charcoal-rich fills yielded various metal objects, including a piece of iron bar (ON 2107), which may also suggest the connection with metalworking, though no slag was present.

*Trackway I (NE-SW trackway)*

9.7.55 The south-east sides of Enclosures I and II, and the north-west side of Enclosure III, located *c.* 9m apart, formed a substantial NE-SW aligned trackway. Its alignment generally followed that of trackway 170111 which originated in the Early Iron Age, though there was no evidence of any surface surviving in use, unless it had been lost to truncation by ploughing.

*Trackway II (north-south trackway)*

- 9.7.56 The enclosure system in Phase 5B was dominated by the presence of an important trackway which originated as a thoroughfare in Phase 4, developed in Phase 5a, and was formally established in Phase 5b. The newly established trackway crossed the settlement in this area from north to south, branching southwards from Trackway I (the junction lay just outside the eastern limit of excavation). This trackway extended as far as the settlement's southern boundary, at a distance of nearly 200m, bifurcating just to the north of this boundary, but with neither branch certainly extending beyond it (see below). The trackway was defined by pairs of ditches flanking its edges to the east and west.
- 9.7.57 As noted above, Trackway II divided into two branches towards the southern end of the settlement. Possibly coincidentally, the south-eastern branch of the trackway appears to align with the course of Ebbsfleet Lane shown on the 1<sup>st</sup> edition OS map. This might suggest that at least this part of the Roman trackway became fossilised in the landscape of Ebbsfleet and possibly extended at least as far as the neck of the Ebbsfleet peninsula in Zone 4.
- 9.7.58 The south-western branch of the trackway aligned with an opening in the southern boundary ditch of the settlement, reinstated in Phase 5b by ditch 170178, but did not appear to extend beyond it. No features assigned to Phase 5 were identified south-west of this boundary, and the function of this 'archaeologically sterile' area remains unclear.
- 9.7.59 The trackway width varied from 3m to over 10m in the area of the southern junction, but the majority of it was approximately 3.5m wide. Isolated patches of metalling (170152) survived, formed of densely packed gravel, with occasional burnt flint, animal bone and CBM fragments. This survival may be the result of later truncation and ploughing, though it might reflect the consolidation of isolated soft spots.
- 9.7.60 Pottery retrieved from above the cobbled surfaces and the upper fills of the flanking ditches suggest that the trackway might have remained in use into the final decades of the 2<sup>nd</sup> century AD.

*Summary*

- 9.7.61 The most striking feature of Phase 5 was the large, probably defensive ditch, 170041, at the northern end of Zone 6, which is likely to have been related to a similar ditch recorded in Zone 4 to the south and in earlier excavations to the east (Andrews *et al.* 2009). This ditch, which replaced a similarly aligned Late

Iron Age ditch, may have enclosed the settlement and extended west to the Wantsum Channel. The available dating evidence and strategic location may indicate a connection to the Claudian invasion and the Roman fort at Richborough, though this and its function remains to be established through further analysis.

9.7.62 The internal system of land divisions within the settlement is dominated by the re-established NE-SW aligned Trackway I and the formal establishment of north-south, Y-shaped Trackway II. These two trackways dictated the orientation and arrangement of a number of the enclosures constituting the settlement in Phase 5.

9.7.63 With the exception of two sunken- featured buildings, 170175 and 130227, and a small number of four-post structures, there was a lack of structures, and no roundhouses have been assigned to this phase. There also appears to have been a general decrease in number of discrete features during this phase, suggesting an overall reduction in the intensity of occupation. However, the large number of enclosures may have been associated with settlement, as well as animal husbandry, and perhaps the construction methods used (eg mass-walling) have ensured that evidence for structures has survived less well during this phase. The possibility that several large features, possibly ‘working hollows’, were associated with metalworking has also been raised, though there is no clear evidence which would support this interpretation.

## 9.8 Phase 6 (Middle - Late Roman)

9.8.1 Phase 6 is represented by features dated by pottery and other finds to the Middle – Late Roman period (**Figure 15**). Some of the features, despite being assigned to the Early Roman period, usually on the basis of small pottery assemblages, were subsequently re-assigned to this later phase on the basis of their stratigraphic position.

9.8.2 The sequence of fills and available dating evidence from the substantial Phase 5 defensive ditch, 170041, at the northern end of Zone 6, suggests that it had been largely backfilled by Phase 6. To the north of this was a new enclosure defined to the south and west by L-shaped ditch 170040. This enclosure probably extended into Zone 7, where there were several ditches of broadly similar date and on similar alignments. Immediately to the south of and parallel to infilled ditch 170041 was ditch 170083, which may have formed the northern boundary to a large enclosure or field, the southern boundary perhaps defined by NE-SW aligned ditch 170048.

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*Settlement*

- 9.8.3 The land division recorded in Phase 6 represents a significant change from the layout established in the Iron Age which lasted into the 2<sup>nd</sup> century AD. Small, generally sub-rectangular enclosures disappear almost completely, and the only new major boundary was formed by NE-SW aligned ditch 170048. To the south, the long-established southern boundary to the settlement was re-cut by NW-SE aligned ditch 190450/190449. It is possible that this new arrangement was related to two probably rectangular buildings, the rubble foundations of which were found in trenches excavated earlier to the east and west of Zone 6 (Perkins 1992). Within Zone 6 two sunken-featured buildings were found.
- 9.8.4 Sunken-featured building 170132 was located to the south-west of a small cemetery, on the western limit of excavation. This building, which measured approximately 7.9 x 5.6m, formed an irregular oval in plan with a possible entrance to the south-east, indicated by a shallow, stepped hollow. It appears that the building went out of use some time during Phase 6, however the hollow remaining was re-used and an oven constructed in the abandoned building. The oven (176181) was sub-circular in plan and measured approximately 1.45m in diameter. The floor was formed by closely-packed chalk blocks, whilst the walls were formed from clay, subsequently heat-affected. The oven opened to the north-east, where an elongated stoke-hole was located. Subsequently, the oven was largely demolished and its entrance blocked with sandstone slabs and clay.
- 9.8.5 Among the finds retrieved from fills of the sunken-featured building was a twisted wire bracelet (ON3218), a possible mirror fragment (ON628) and two iron rings (ON2127 and ON3216).
- 9.8.6 Probably related to the sunken-featured building was a group of rubbish pits located directly to the north-west. To the south of the building was a large feature, 247100, provisionally interpreted as a waterhole, which seems subsequently to have been used for the disposal of domestic waste.
- 9.8.7 To the east lay sunken-featured building 170135, which was sub-rectangular in plan and measured approximately 5.7 x 4.4m. Although no evidence of an entrance was revealed, it is likely that it was located on the south-east side. Opposite the putative entrance was a clay-lined oven, 246245. To the north of sunken-featured building 170135 was a group of pits, the largest of which, 132126, had a flat base and could be interpreted as a 'working hollow'. A large rubbish pit, 243093, which contained a set of bronze tweezers, lay to the south-west and cut through earlier Trackway II.

- 9.8.8 To the south of both sunken-featured buildings, in the centre of the site, was a small enclosure defined by a substantial elliptical ditch, 170163. The enclosure had a *c.* 4m wide-entrance in the north side, and it might have served as an animal corral. Immediately to the north of the ditch was a large rubbish pit 254104.
- 9.8.9 To the west of elliptical ditch 170163 was a shallow, north-south aligned ditch 170161. The function of this feature, which appears to be out of place in Phase 6 is not clear. Its location suggests that it might have been an abandoned attempt to re-establish the earlier north-south trackway, which had certainly gone out of use by Phase 6.
- 9.8.10 Further to the south was sunken-featured building 170168, which was oval in plan, measuring 5.5 x 4.8m. A shallow pit, 264196, was located adjacent to the north-east inside edge of the building. Directly to the south-west of the building was a group of large, flat-based and vertically-sided pits, which might have originally been used for storage, though they were subsequently backfilled with domestic rubbish. A similar, but more extensive cluster of pits lay further to the east, dug in an area previously occupied by Trackway II.
- 9.8.11 Approximately 8m west of the sunken-featured building was well 248026. This was only partially hand-excavated, although augering revealed that it was over 4.5m deep, and this was subsequently confirmed by controlled machining. The way in which the upper fills had slumped into well 248026 suggested that originally it had some form of lining. Two other large wells lay further to the south. Well 153123 was probably lined with organic material, however no waterlogged remains were retrieved. Nearby well 170167 was lined with carefully laid flint nodules and sandstone blocks and occasional reused fragments of quern (ON3378-3379, ON4487 and ON4505). Both wells were partly hand-excavated and then reduced by machine to a depth of *c.* 2.5m below the ground level, but neither was bottomed.
- 9.8.12 These wells are likely to have provided a source of fresh water for the nearby buildings, including the excavated sunken-featured buildings, as well as the structures which lay beyond the limits of excavation to the east and west.
- 9.8.13 In the south-eastern corner of Zone 6 was a shallow ditch 170029, which defined an area where large pits 216097 and 156222 were located. These pits were oval and measured between 5.6 and 6.1m across respectively. Their function is not clear. Initially they were interpreted as quarry pits, however they appear to be too regular for this purpose. The pits were filled with a large amount of domestic rubbish, including a significant amount of burnt material.



9.8.14 The southern part of the settlement was covered by a substantial layer of 'dark earth' / colluvium, 170028, up to 0.3m deep, which extended across a somewhat irregular area approximately 85 x 60m, the limit to the south clearly corresponding with the southern boundary of the settlement. The deposits contained moderate amounts of pottery, animal bone, CBM, coins and other metal finds ranging in date from the Bronze Age to the Late Roman period. It was initially believed that the layer formed as a midden, however specialist advice and a series of hand-dug test-pits and subsequent machine interventions indicated this not to be the case. Although the precise origin of this layer is not certain, it appears that its formation was a result of several factors. The most important is probably that the area covered by the deposit is located in the lowest part of the site, where domestic waste and other material may have settled as a result of slopewash and colluviation, and then remained undisturbed and protected from ploughing and truncation.

### *Burials*

9.8.15 To the south of ditch 170083 was a small cemetery which comprised four scattered and poorly-preserved inhumation burials, 136191, 207049, 246148 and 254020, all aligned WNW-ESE. The bodies, all adults where age could be determined, were laid in an extended, supine position with the head to the west. Graves 136191 and 254020 contained a number of iron nails, interpreted as coffin fittings. A small, near-complete pottery vessel (ON634) came from grave 254020.

9.8.16 Further to the south was a shallow, east-west aligned, sub-rectangular pit 258025, which may have been the base of a further grave. The feature was, however, heavily truncated by ploughing and disturbed by a modern field drain and no skeletal remains were identified.

9.8.17 Remains of another possible disturbed grave were found on the surface of the uppermost fill of ditch 170048, represented by a disarticulated adult human skull, 136101.

9.8.18 To the south of ditch 170048 was a group of three further graves, 126238, 176106 and 260117. All of the graves were sub-rectangular in plan and aligned NE-SW, at 90° to a short length of ditch, 170188, which may have formed the southern boundary to the cemetery. Graves 126238 and 176106 both contained male burials in an extended supine position, with head to south-west. A group of iron nails in grave 126238 suggests the presence of a coffin. Grave 260117 contained a single fragment of human bone found within a rectangular arrangement of iron nails. Posthole 260025 located to the south-west of grave 260017 may have held a grave marker. Two small, oval graves

(297120 and 297092; not shown on plan) were located to the east of the other three graves and contained an infant and a neonate respectively.

9.8.19 Three other burials were found dispersed across the southern part of the settlement. Burial 176030 was a juvenile buried approximately NE-SW in a supine position in the uppermost fill of ditch 170147; no grave cut was apparent. Similarly aligned burial 132157 occupied a sub-rectangular grave cut, 132156, dug into the top of abandoned boundary ditch 170032. The burial was in an extended position, with head to the north-east. The third burial, 153096, was found in a heavily disturbed NW-SE aligned grave 153095, located in the southern part of the former settlement.

## 9.9 Phase 7 (Medieval – Post-medieval)

9.9.1 Phase 7 comprised a series of ditches at the southern end of Zone 6 which formed a new field system believed to be of medieval or post-medieval origin. The features were largely sterile and contained only a small number of almost certainly residual Roman pottery sherds. However, the ditches were the only features to cut colluvium 170010, which supports a post-Roman attribution, and their layout closely reflects some elements of the field boundaries depicted on the 1<sup>st</sup> Edition OS map.

9.9.2 Ditches 190460 and 297041, the northernmost and southernmost respectively in this system, were located approximately 68.5m apart, which in imperial units is close to 13 rods. The typical width of a long medieval field is equivalent to 4 rods or a furlong. Therefore, the area between the two ditches would have been three times the usual width of a medieval field. However, midway between these two ditches was a 1 rod (*c.* 5m) wide trackway defined by ditches 190440 and 297033, leaving fields or strips 6 rods wide on either side. The track appears to have formed a boundary which still existed in the 19<sup>th</sup> century and appears on the 1<sup>st</sup> Edition OS map.

## 10 ZONE 7

10.1.1 Zone 7 lay to the north-east of Zone 6 and occupied a gentle to moderate slope on the south-west side of Cottington Hill (Landscape 3) (**Figure 16**). The Thanet Beds here slope upwards from *c.* 7m aOD at the south end adjacent to Ebbsfleet Lane to *c.* 12m in the north on Cottington Hill.

10.1.2 The part of Ebbsfleet Lane which separates the Zones 6 and 7 has been retained and will be buried *in situ* as part of the EKA construction works. The

feature density recorded over much of Zone 6 decreased dramatically at the extreme north end of that zone and this is reflected in the generally lower density of features recorded in Zone 7, which continued into Zone 8 approaching the top of Cottington Hill. However, the density was substantially greater than found during earlier pipeline works less than 100 m to the east (Andrews *et al.* 2009), perhaps reflecting the slightly lower position of the latter and its proximity to what would have been marsh bordering Pegwell Bay until drained for agricultural use.

## 10.2 Bronze Age

- 10.2.1 Within the broad span of the Middle to Late Bronze Age periods two distinct phases have been identified. The first, and potentially the earliest, consists of two sides of a possible enclosure orientated NW-SE, defined by pairs of parallel ditches (ditches 201130, 201129, 278102, 201094), potentially trackways, although in places the gap between them was only 1.2 m. The ditches appear to have been highly truncated. Within the possible enclosure was a curvilinear ditch (201096), which enclosed an area containing several unphased short lengths of curving ditches, a few small pits and a tree-throw pit. No discrete features have been ascribed to the earlier Bronze Age, suggesting that any focus of settlement during this period was located elsewhere.
- 10.2.2 The alignment of the northern enclosure ditches is paralleled further north, where four ditches probably represent field boundaries aligned in a NW-SE direction. Ditch 201102 was the largest, perhaps a significant boundary, and may have had a bank on its north-eastern side. Ditch 270060 was located around 20m uphill to the north-east, and terminated near the north-western limit of excavation. To the north-east, ditch 193095 ran through an area of intercutting ditches, and was truncated by ditches of both Late Bronze Age and Iron Age date. The final ditch of this phase within the zone was segmented and represented by ditches 135086, 201151, 216058 and 201150. Whether the segmentation was an intentional feature of the boundary or a function of truncation is unclear, although the latter is perhaps more probable. The system of field boundaries continued into Zone 8 (see below).
- 10.2.3 Ditch 193095 was truncated by a sequence of two ditches (193100, 159252), both firmly dated to the Late Bronze Age. Further towards the north-east of the zone, and in the line of ditch segments 216058 and 201150 (above), were three pits individually interpreted as a fire pit, rake-out pit and central flue. Pits 303046 and 303049 both contained charcoal, but also burnt daub suggestive of a collapsed clay superstructure, perhaps belonging to an oven.

The two pits were connected by a shallower pit 303052 interpreted as a flue. Only pit 303049 contained pottery, two sherds of Late Bronze Age date.

### **10.3 Late Bronze Age – Early Iron Age**

10.3.1 Towards the south of Zone 7 was a substantial double-ditched enclosure and other features, which may have post-dated the field system described above. Only the northern corner of the enclosure was revealed within the limits of excavation, comprising ditches 186236 and 186231 to the north-east and ditches 186229 and 186154 to the north-west. It is probable that the latter ditches continued south-west beneath Ebbsfleet Lane into Zone 6 as 262217 and 262236. It seems likely that these ditches demarcate droveways through which the movement of livestock could be easily controlled, and all were re-cut during their lifespan. An entrance trackway into the enclosure was noted on the north-west side leading south-east, with an offset trackway continuing away from the enclosure to the north-west.

10.3.2 Within the enclosure a series of shorter lengths of ditch sub-divide the area into small fields or paddocks, with ditches 201091 and 201092 defining a further internal trackway. The outer ditches all exhibited episodes of re-cutting suggesting a certain longevity to the enclosure. The majority of the pottery recovered from the ditch fills dates to the Late Bronze Age to Early Iron Age.

10.3.3 A cluster of pits and postholes of Late Bronze Age to Early Iron Age date were located towards the north-east of the zone, within and around the area later occupied by a Late Iron Age roundhouse (see 201103 below). While this was clearly an area of activity at this time it is unclear how these features relate to other foci of activity during this phase, which may be a consequence of the large number of later Iron Age features obscuring earlier features of Bronze Age date. Of particular interest were two large postholes, 178173 and 178169, both of which contained 18 sherds of pottery, possibly deliberately placed. Other postholes located within the arc of roundhouse 201103 (below) may represent an earlier structure, with many containing varying quantities of pottery of Late Bronze Age or Late Bronze Age to Early Iron Age date. Five pits within the immediate vicinity are also associated with this broad phase, all containing Late Bronze Age material, with pit 179117 containing 110 sherds of pottery.

### **10.4 Iron Age**

10.4.1 The main Iron Age phase of activity was focused in the north-east of the zone, and comprised a group of post-built structures and a cremation burial contained within an area bounded by two trackways. To the south of the zone

was another trackway of possible Iron Age date, along with patches of cobbled surface that are likely to represent a further trackway, the majority of which was uncovered within Zone 6 to the south-west.

- 10.4.2 The two main trackways in the north of the zone were defined by sets of parallel ditches aligned NW-SE and extending beyond the limit of excavation in both directions. The southernmost of these trackways consisted of ditches 201147 and 201149 which were situated 2m apart. The northern trackway ditches (165067 and 165068) were located within Zone 8 and are described within that section (see below). Parallel to the southern trackway a narrow L-shaped ditch (201160) further delineated an area of post-built structures. An entranceway in this ditch may have contained a gate or barrier, as indicated by two stake-holes. The area enclosed between the trackways was further subdivided by ditch 165056, which ran in a NE-SW direction.
- 10.4.3 To the south-east of ditch 165056 at least four distinct posthole groupings were present. Adjacent to the south-eastern limits of excavation were two rectangular four-post structures, with one (201174; 1.9m by 1.1m) being considerably smaller than the other (201175; 3m by 2.2m). To the north a six-post structure, 201173, was parallel to 201175 and measured 3.2m by 2.4m. Again broadly parallel and of a similar size (3.5m by 3m) was feature 201172, represented by five postholes, which between them contained two sherds of pottery dated to the Middle to Late Iron Age. All of these structures broadly respect the alignment of the trackways and other ditches assigned to this phase.
- 10.4.4 To the north-west of ditch 165056 a group of eight postholes (201171) are difficult to interpret, and may in be a palimpsest of more than one structure, or potentially a partially truncated building. Of these postholes only two contained any dating material, 201172 containing two sherds and 201171 one sherd of Middle to Late Iron Age pottery.
- 10.4.5 To the west of the post-built structures a single cremation burial, 179102, was situated adjacent to L-shaped ditch 201160. No cremation urn was present, but three sherds of pottery recovered from amongst the cremated human bone also dated from the Middle to Late Iron Age. South of the southern trackway ditches were two adjacent inhumation burials, 136137 and 136139, orientated NE-SW. The southernmost grave (136137) was truncated by a rectangular enclosure of Late Iron Age/Early Roman date (201137; see below). The preservation of the bone in both graves was very poor, but a copper alloy ring survived within grave 136139, as did three sherds of Early Iron Age pottery. A

third grave in the vicinity, but on a different orientation, is likely to be Roman in date (see 267091 below).

- 10.4.6 Further towards the to the south-west of the zone, and truncating the north-eastern enclosure of Bronze Age date, a NW-SE aligned pair of parallel ditches may represent a further trackway of Iron Age date. The southernmost ditch, 201099, contained a single sherd of Late Bronze Age to Early Iron Age pottery, while the northern ditch, 201100, which was considerably wider and deeper, contained six sherds of Roman date. Both ditches extend beyond the limits of excavation and were truncated by ditch 201101, assigned to the Late Iron Age-Early Roman phase.
- 10.4.7 To the south of the zone several small irregular areas of cobbled surface were present, a continuation of trackway 170111 within Zone 6 (above), which ran in a NE-SW direction. The largest concentration was located to the south-east (262210), and consisted of four discrete patches of cobbling which were undated, but sealed a ditch (262207) of possible Early Iron Age date which may relate to ditch 170096 within Zone 6. A smaller patch of cobbling (287046) measuring around 2m by 2m was situated further to the north-east and ran beneath the eastern edge of the excavation. This surface was, in addition to cobbles, constructed of pot sherds, burnt flint and animal bone. In total over six kg of Middle to Late Iron Age pottery (504 sherds) was recovered during excavation. This surface was truncated by a ditch (159247) and two inhumation burials of Roman date (see below).
- 10.4.8 To the north of the trackway surfaces were two NW-SE aligned ditches (201083 and 201085) that are likely to be field boundaries, with the former truncated at either end by ditches of Roman date. Ditch 201083 contained four sherds of Middle to Late Iron Age pottery. Both termini of ditch 201085 were present within the excavation area, and the ditch contained a single sherd of Early Iron Age pottery. This ditch may relate to ditch 169001 in the north of Zone 6.

## **10.5 Late Iron Age – Early Roman**

- 10.5.1 During the later Iron Age to Early Roman period, activity remained concentrated in the north-west of the zone, just south of the main focus of earlier Iron Age activity described above. Features of this phase comprised a series of NW-SE aligned ditches, including a possible holloway that lay just to the south of a sequence of enclosure ditches, and a roundhouse which appears to have been the main focus of domestic activity.

- 10.5.2 The main ditch sequence comprised at least ten ditches, broadly aligned in a NW-SE direction, which crossed the site in a swathe that measured over 30m wide. Clearly a significant boundary, the majority of the ditches were of Late Iron Age or Late Iron Age to Early Roman date. There was some difficulty establishing the number and sequence of ditches as a layer of material (185111), potentially colluvial in origin, sealed the sequence, possibly becoming trapped in a hollow resulting from settling of the ditch fills. The largest of these ditches (193096) was up to 12.2m wide and 1.15m deep and was possibly a substantial holloway, perhaps a continuation to the south-east of the line of Ebbsfleet Lane. This was one of the later ditches in the sequence and contained four sherds of Late Iron Age pottery.
- 10.5.3 To the north-east of the ditch sequence was a group of ditches which seem likely to represent an area of settlement of Late Iron Age date. The earliest ditch, 201169, ran in a NW-SE direction, terminating just within the excavation area, and running to the south-east beyond the limit of excavation. This ditch was cut by a curvilinear 'horseshoe'-shaped ditch (159246), the northern arm of which extended several metres to the south-west, and was possibly related to curvilinear ditch 201145 to the south-west. These ditches are likely to be of Late Iron Age date, although very little datable material was recovered from the fills.
- 10.5.4 An enclosure ditch (201137), potentially rectangular in plan (but extending beyond the limit of excavation to the east), truncated 'horseshoe'-shaped ditch 159246. The enclosure measured approximately 50m across, the ditch between 1 and 2.5m wide and 0.4 and 1.1m deep. Nine sherds of pottery of Late Iron Age date were recovered from the ditch infill. A NW-SE aligned ditch (201132) terminated just short of the western corner of enclosure 201137, and may form a field boundary related to this phase.
- 10.5.5 Enclosure ditch 201137 was in turn cut by a circular ditch interpreted as a drip gully for a roundhouse. This gully (201103) was between 0.1m and 0.3 m deep had a diameter of 9.5 m with a possible entrance to the south, although this gap in the ditch was only 0.5m wide. A series of postholes (201142) were located around the internal edge of the gully and may have held structural timbers relating to the building. To the south-east the gully was overlain by a layer of dark silt (201141), rich in both charcoal and artefacts. Pottery recovered from the layer spans the Early Bronze Age to Late Iron Age, although stratigraphically a Late Iron Age (or later) date is probable.
- 10.5.6 A larger enclosure ditch (201143), morphologically similar to ditch 201137, was located 5m to the north-west, and probably enclosed roundhouse 201103.

The majority of this enclosure is likely to lie to the east beyond the limit of excavation. The southern arm of ditch 201143 is probably represented within the sequence of ditches to the south-west, and further analysis may be able to identify it. The ditch respects its predecessor 201137 to such a degree that some remnant, perhaps an associated bank, is likely to have been visible when it was constructed.

- 10.5.7 To the south of this focus of later Iron Age/Early Roman activity were further features thought to be of the same phase. Ditch 201101 ran from the western limit of excavation in a NW-SE direction before turning to the north-east. The ditch, which contained a few sherds of Roman pottery, may have been related to enclosure ditch 201143 (above). At the extreme south end of the zone other ditches (262181, 178381, 178385) likely to be of Late Iron Age date are difficult to interpret as the zone narrows considerably and truncation by features of Roman date is greater.

## 10.6 Roman

- 10.6.1 With the exception of a few pits, a possible well and a single isolated inhumation burial the majority of activity of Roman date is focused in the south-western corner of the zone, and relates to that within Zone 6 to the south-west. There are at least two phases of Roman activity, likely to be agricultural in nature, although part of a small cemetery was also present.
- 10.6.2 A significant boundary (comprising ditches 201079-81, 201124 and 185062) was observed along the south-eastern limits of the excavated area, running on a NE-SW alignment before turning westwards and continuing as ditch 170040 in the north of Zone 6. Together with ditch 201084, these seemed to form an enclosure, *c.* 30m across. Just to the south was a large ditch (193131) aligned in a NW-SW direction, which is probably the same as ditch 170041 to the west in Zone 6. In addition to Iron Age pottery the ditch contained a single sherd of 2<sup>nd</sup> century Roman pottery, quantities of animal bone and 28 fragments of disarticulated human bone. To the south-east, ditch 193131 was truncated by ditch 159247, likely to be of Middle Roman date. A ditch to the north-west (201086) that cut 201079 is also likely to be of Middle Roman date.
- 10.6.3 Ditch 201080 was partially cut by a NE-SW aligned inhumation burial, 150083. The burial was supine and the grave fill contained, in addition to residual Iron Age pottery, three sherds of Roman date. To the south-west a similarly aligned grave (297022) was truncated by a ditch of middle Roman date, which had removed the left arm and leg of the skeleton. Two further NE-SW aligned burials a few metres to the east cut Iron Age cobbled surface



287046. The northernmost of these burials, 248103, was in a prone position. The skull of the second burial to the south (297017) did not survive, and the body was placed on its right side facing west.

- 10.6.4 The northern limits of the main area of Roman activity appear to have been defined by NW-SE orientated ditch 201090. The ditch truncated a pit of Iron Age date (210054) and three of the ditches belonging to the Late Bronze Age enclosure. To the south of this ditch were several pits and an unevenly shaped spread of charcoal-rich soil which sealed the junction of three of the ditches of Late Bronze Age date. This deposit, 239051, had a recorded depth of 0.08 m and is likely to have been a sequence of similar several layers of Roman date. To the west a sub-rectangular pit (274022) contained a group of stake-holes that may be the remnants of a timber structure. Adjacent to this was a group of three intercutting pits, two of which contained Roman material.
- 10.6.5 Away from the main focus of Roman activity in the north-eastern part of the zone, a single NW-SE aligned burial (267091) was in a supine position in a steep sided rectangular grave cut. The grave contained a quantity of iron nails thought to derive from an associated coffin. A small ceramic jar of 2<sup>nd</sup> or 3<sup>rd</sup> century date was adjacent to the right knee of the skeleton.
- 10.6.6 The only other notable feature of Roman date was a pit, possibly a well, located near the western edge of the excavation towards the centre of the zone. The feature (303005) contained no lining and had vertical sides and a diameter of c. 1.3m. Excavated to a depth of 0.8m, where the water-table was reached, only a single backfill was observed, which contained pottery of late 1<sup>st</sup> to early 2<sup>nd</sup> century date.

## 11 ZONE 8

- 11.1.1 Zone 8 lies close to the low summit of Cottington Hill, on the brow of the hill and extending down the gentle south-west facing slope, from c. 15.25m to c. 12m aOD (**Figure 16**). Most of the summit and the north-east facing slope was not excavated, as this part of the zone was designated for filling for construction of the Cottington Lane overbridge. The features in Zone 8 represent a clear continuation of the pattern seen in Zone 7 (Landscape 3), with some evidence for the influence of topography. Previous work has identified 'the greatest concentration of surface finds in Thanet' (Perkins 1992), with much of this being of Early Iron Age date, but also including some Anglo-Saxon and medieval material, along with post-medieval building remains.

- 11.1.2 The most prominent features comprised the double ring-ditches probably defining a pair of adjacent Bronze Age barrows of apparently similar size and construction on the brow of Cottington Hill. To the south-west of the barrows was a continuation of the probable middle – late Bronze Age field and enclosure system recorded in Zone 7, while ditches extending from each of the outer ring-ditches are likely to represent elements of one or more broadly contemporary boundaries which incorporated the monuments as markers within the system. At the south end of Zone 8 were several ditches probably forming part of a Roman field system which may have extended northwards over Cottington Hill.
- 11.1.3 Despite the results of earlier work, no evidence for post-Roman activity was identified, and the presence of several sandstone ‘doggers’ on the highest part of Cottington Hill at the northern end of Zone 8 appear to be a natural occurrence (possibly deposited during an early Holocene storm event) which has been noted previously in this area (Perkins 1992).

## **11.2 Bronze Age**

- 11.2.1 Two pairs of double ring-ditches were situated close to the summit of Cottington Hill, and were interpreted as round barrows. In both cases the outer ring-ditch was substantially larger than the inner, and both barrows would have been clearly visible from the south. One of the barrows was almost wholly exposed, but only approximately one third of the second lay within the excavation area. Dating was sparse, and neither of the monuments produced any associated burials. An early Bronze Age date is considered likely, although a small quantity of Neolithic pottery was recovered from the outer ditch of the southern barrow.
- 11.2.2 Approximately 50% of the exposed double-ditches of both ring-ditches were excavated by hand in a series of longitudinal sections and, following recording and sampling, the remaining sections were removed by machine in carefully controlled spits.
- 11.2.3 The southern barrow consisted of an external ditch 273092 and an internal ditch 273014. The external ditch may have been re-cut as ditch 273013, with possible evidence for a terminus being noted in one section; however, no corresponding terminal was identified. The external ditch had a diameter of 19.95m, the internal ditch 14.10m. The outer ditch was up to 1.7m wide and 0.8m deep, the inner ditch varied in width between 0.75m and 0.9m and in depth between 0.23m and 0.31m. Several features were present within the area enclosed by the ditches, but these did not appear to form a coherent group,

rather a mixture of shallow pits, tree-throws and natural features, at least one of which contained a sandstone 'dogger'. Pit 122060 to the north of the inner ring-ditch contained 12 sherds of Bronze Age pottery, but none of the other features were dated. There was no evidence for any central burial.

- 11.2.4 The second, northern barrow, was only partially uncovered, the majority lying beyond the eastern limit of excavation. The barrow was likely to be of similar size to its southern counterpart. The outer ditch, 144097, was also up to 1.7m in width with a depth that varied between 0.55m and 0.75m. The inner ditch 144111 was between 1.2m and 1.4m wide and 0.4m and 0.52m deep. The outer barrow ditch cut a curvilinear ditch (165052) which remains undated, but is presumed to be of early Bronze Age date.
- 11.2.5 To the south, the southern barrow was cut by a WNW-ESE orientated ditch (165018) which terminated between the two ring- ditches. The ditch fills contained 40 sherds of pottery dating to the Late Bronze Age. A possibly related ditch (165074) was present immediately to the south of the barrows and ran in a NE-SW direction before kinking to the west; it appeared to have been truncated at both ends.
- 11.2.6 A further ditch (165054) has been included within the Bronze Age phase, mainly on stratigraphic grounds as it was cut by ditch 165056 (see Zone 7) of likely Iron Age date. However, if this relationship is incorrect then ditch 165054 would fit better in terms of orientation within the sequence of Roman field boundaries in the immediate vicinity.

### 11.3 Iron Age

- 11.3.1 In the south-west of the zone a pair of parallel ditches (165068 and 165067) may have formed a trackway orientated NW-SE, which has been tentatively phased as Iron Age, although the presence of three tile fragments within the fills might suggest that the ditches were Roman or later. The potential trackway is cut by a Roman field boundary ditch (165069 below), and follows an alignment of probable Early Iron Age date that continues to the south-west into Zone 7.
- 11.3.2 It seems likely, given the relatively large number of discrete features of Iron Age date present in the north of Zone 7, that several pits and postholes in the south of Zone 8 that are currently unphased will fall within this period.

## 11.4 Roman

11.4.1 All of the ditches attributed to the Roman phase are orientated NW-SE or at 90° to this, and all are likely to be components of field systems. Given that the ditches are often in close proximity to each other it is likely that more than one phase of Roman activity is represented, but direct dating was scarce, and where pottery was recovered the dating is not precise enough to distinguish between the phases on this basis. Two ditches in the north of the zone probably belonged to this field system, while towards the south-west end of the zone were five similar ditches. The general lack of finds from the ditches is likely to be indicative of their use as field boundaries, at some distance from the focus of any related settlement.

## 11.5 Unphased

11.5.1 A probable structure (165075) represented by four postholes lay between two of the Roman field ditches, although it did not share their orientation. None of the postholes yielded any finds, although structural arrangements of a similar type in other zones date to the Iron Age or early Roman period.

11.5.2 A curvilinear ditch (165062) and possibly related ditch 165065 are problematic to phase as although 165062 contained a single sherd of Bronze Age pottery, 165065 appears to cut Roman ditch 165066. Either the two ditches are unrelated with 165065 belonging to a later phase of the Roman field system and 165062 being Bronze Age, perhaps relating to ditch 165074, or the ditches are related and both are Roman or post-Roman in date.

11.5.3 Other features currently unphased include a small number of pits, postholes and two short lengths of ditch. None of these appear key to a general understanding of the zone, and are most likely to relate to the Iron Age activity in the north of zone 7.

## 12 ZONE 9

12.1.1 Zone 9 lay on the gentle north-east facing slope of Cottington Hill (Landscape 3), extending on to the lower ground at the base of this slope adjacent to the railway (**Figure 17**). None of this zone was designated for open area excavation as it was to be filled for construction of the Cottington Lane overbridge. However, geotechnic test pits were monitored (Trust for Thanet Archaeology 2006) and limited trenching was undertaken in advance of the installation of services and other works associated with bridge construction.

One area was excavated to the north of the zone, and two smaller linear trenches were situated to the south. The Thanet Beds at the south end lay at *c.* 10.3m aOD, the lowest area in this part of the route, and all of the trenches remained constantly flooded (and therefore required pumping), though no waterlogged archaeological deposits were encountered, probably due a fluctuating water-table.

- 12.1.2 Although the features recorded in the three excavated trenches were somewhat disparate and difficult to interpret, most are certain to form part of the Late Iron Age and Roman field and enclosure system seen at the southern end of Zone 10 and in adjacent Zone 10A, as well as in earlier work immediately to the east of Zone 9 (Andrews *et al* 2009). There are, in addition, three possible hearths and several postholes in the northern trench which, along with the earlier discoveries, confirm settlement of Iron Age and Roman as well as Saxon date in the vicinity.

## 12.2 Iron Age

- 12.2.1 Three ditches have been phased as Iron Age on the basis of orientation, stratigraphic relationships and, in one case, pottery. Ditch 135094, which ran NE-SW, turned to the north-west at its north-eastern end. It was heavily truncated by a similarly aligned Roman ditch (135090). To the south was an irregular west-east aligned linear feature (135089), but any relationship with ditch 135094 had been removed by the later Roman ditch. A short (3.8 m) length of ditch (135091) has also been phased as Middle to Late Iron Age, although only a single sherd of pottery was recovered from the fill. The ditch was orientated NW-SE, also the prevailing orientation for the field systems of Iron Age and Roman date in the vicinity. To the east of the trench was a slightly irregular ovoid fire pit or hearth (197095) that contained 17 sherds of Early Iron Age pottery. A large pit (197042) to the south contained pottery dating to the Late Iron Age.

## 12.3 Roman

- 12.3.1 Two NE-SW aligned ditches (135088, 135090) of probable Roman date were present within the northern trench and also revealed in the two trenches located to the south. A single sherd of pottery was recovered from the single fill of ditch 135090. Ditch 135090 was truncated by a NW-SE aligned ditch of later Roman date (218057), which terminated within the confines of the site.

## 12.4 Saxon

12.4.1 Adjacent to Iron Age hearth or fire pit 197095 were two features similar in size and morphology. The southernmost of the two, 197092, contained three sherds of early or middle Saxon pottery. The other hearth, 197089, contained no dateable material but truncated Roman ditch 135090, and should be considered as also of potential Saxon date. The hearths or fire pits all contained burnt clay linings and charcoal-rich upper fills that contained varying amounts of charred cereal grains.

## 12.5 Unphased

12.5.1 Several postholes within the area contained no datable material. Three clustered close together and may represent a structure (135093), while to the south of Iron Age ditch 135091, a group of ten postholes (135092) ran broadly NW-SE. A small ditch within the central trench was undated but followed the same alignment as the ditches of probable Roman date.

## 13 ZONES 10 AND 10A

13.1.1 Zones 10 and 10a lie at the base and on the lower part of the Sevenscore scarp slope (at the northern end of Landscape Zone 3) on land which rise gently to the north of the railway and Cottington Road, from *c.* 11m aOD in the south to *c.* 14.4m aOD in the north (**Figures 17-18**). Only a narrow strip of Zone 10 was excavated (for a farmers access track) with the remainder being an area of preservation *in situ*, where the ground level was to be raised as part of the Cottington Road railway overbridge works. Two trenches were, however, excavated at the southern end of the zone in the footprint of the bridge bund and bridge piling works, the latter revealing disturbed or made-ground to the depth excavated.

13.1.2 Zone 10a to the west of the southern end of Zone 10 was excavated between Late August and early October 2010, at the end of the main programme of EKA archaeological works. Zone 10a covered the footprint of a lagoon which is to replace that originally intended for the western part of Zone 9. The route of a temporary road diversion which bisected Zone 10a, and crossed the southern end of Zone 10, was investigated in late April 2011 following the road's removal, but too late to be incorporated in this assessment report. However, no unexpected discoveries were made and, apart from ditches which crossed or extended into this area, additional discrete features comprised two

further cremation burials, an oven, a small number of pits and several possible postholes.

- 13.1.3 Archaeological features were cut into Thanet Sands and towards the southern end of the area were sealed by a layer of colluvium (123008) up to 0.3m thick, which was sealed by topsoil with an average depth of 0.4 m.

### **13.2 Neolithic/Early-Middle Bronze Age**

- 13.2.1 A single, small sub-oval pit (123001), 0.27m deep, of Middle Neolithic date, lay towards the northern end of Zone 10 (**Figure 18**), within sub-oval enclosure 194091 (see below). The pit's fills contained 83 sherds of Peterborough Ware pottery and charred hazelnut shells. However, eight sherds of Middle to Late Iron Age date were also present, and although these could be intrusive an Iron Age date for the pit cannot be entirely discounted.

- 13.2.2 A large sub-oval enclosure or 'ring-ditch' (194091) was located towards the northern end of Zone 10 (**Plate 10**). Only the western half was exposed within the confines of the excavation area, making interpretation problematic. The enclosure had a diameter of *c.* 15m, with the ditch being approximately 1.8m wide and 1.1m deep with a U-shaped profile. The relatively large size of the ditch suggests that it was a significant monument, and the direction of the tip lines within the ditch infill indicate that the feature may have had an external bank. A short section of undated ditch (135079) was truncated by the enclosure, and may be a precursor to it. Although the enclosure was not directly dated, a sub-rectangular pit (227010) with a depth of 0.5m cut the enclosure ditch. Pit 227010 contained a fairly homogeneous, sterile fill which produced a single sherd of Beaker pottery. Also, a short section of ditch (194101) cut the enclosure ditch and contained pottery of Early to Middle Bronze Age date. Direct dating of the enclosure ditch fills by OSL may support the current, Bronze Age attribution, though its nature and location might be more consistent with a monument of Neolithic date.

- 13.2.3 Located towards the centre of the zone was a single ditch and its re-cut (197030 and 197028 respectively) which are also likely to be of Bronze Age date. Also in the central part of the zone was a partially truncated pit (197101) which contained six sherds of Middle Bronze Age pottery.

### **13.3 Late Bronze Age / Early Iron Age**

- 13.3.1 Towards the southern end of Zone 10, where the water-table was closer to the surface, was a large steep-sided pit (157006). The pit, interpreted as a well, had a diameter of 2.88m and was excavated to a depth of 2m. A single sherd

of Late Bronze Age/Early Iron Age pottery was recovered from the fills, though this may be residual.

- 13.3.2 Other features potentially belonging to this phase comprise an ENE-WSW orientated ditch (168008) located towards the centre of Zone 10, which was cut by features of Iron Age date. A single posthole, 167010, cut an undated prehistoric gully towards the south end of the zone and contained a few sherds of Late Bronze Age/Early Iron Age pottery.

#### **13.4 Iron Age**

- 13.4.1 The number of archaeological features present within Zones 10 and 10a increases considerably in the Iron Age period, with a series of rectangular enclosures established, presumably defining small fields and paddocks. Several four-post structures (perhaps used for grain storage) and a sequence of curvilinear enclosure ditches and gullies, probably associated with roundhouses, were also present. The majority of the features described below are of Early Iron Age or generic Iron Age date unless stated, and this phasing will be further refined in forthcoming analysis.
- 13.4.2 A small number of ditches dating to the Iron Age appear to pre-date the majority of ditches within this broad phase and exhibit a slightly different orientation. For example, ditches 249183 and 249184 formed two sides of an enclosure within the western part of Zone 10a. A gap between the ditches in the north-east of the enclosure may represent an entrance. A further ditch, 249238, shared the same alignment as 249183 and was situated in the eastern part of Zone 10a. In the southern part of Zone 10a ditch 130316/258341 formed two sides of an enclosure on a broadly similar alignment to those mentioned above.
- 13.4.3 A curvilinear ditch (249193) was located in the south-west part of Zone 10a. The ditch was part of a sequence of three, and truncated two earlier ditches. Ditch 249193 was cut by ditches of Middle to Late Iron Age date, and so an Early Iron Age date for this feature seems likely.
- 13.4.4 A curvilinear ditch (249192) in the extreme south-west of Zone 10a was likely to have formed a further enclosure, although only a portion of the ditch was present within the excavation area.
- 13.4.5 A semi-circular gully (196112), located within the confines of the excavation area under the footprint of the bridge bund, is interpreted as the drip gully for an Iron Age round house. The gully was truncated by a NW-SE orientated ditch 194080, also of Iron Age date, which probably formed part of the field



system on the same alignment as that described below. Gully 196112 was also cut by a ditch (196113) of Late Iron Age date. A second probable roundhouse gully (196111) was situated *c.* 5m to the south-east of gully 196112, although only the extreme northern part was present within the site.

- 13.4.6 Earlier Iron Age ditch 249238 (see above) was cut by a NE-SW aligned ditch, 249239, which formed the western edge of an enclosure, with ditches 249235 and 222151 forming the northern and southern boundaries respectively. It is possible that ditch 194084, within Zone 10, formed the eastern boundary, enclosing an area measuring approximately 27m by 22m. A stratigraphically later ditch (249236) may have formed a sub-division within the enclosure.
- 13.4.7 Towards the centre of Zone 10a, parallel to the southern side of the enclosure described above, were ditches 178325 and 249264 which may have delineated a trackway, measuring up to 2.5m across. It seems likely that 249264 continued to the west (beyond the temporary road diversion) as ditch 144196, which cut enclosure ditch 249184 (see above). The northern ditch of the trackway, 178325, may also have continued to the west, as ditch 244296. To the south of the postulated trackway ditches were two parallel ditches (249229 and 249251) that may have formed two sides of a small field or paddock, measuring around 10m across. Two lengths of ditch (250024 and 135058) at the south end of Zone 10, and a north-east to south-west orientated ditch (194081) within the bridge bund trench are also likely to belong to related enclosures of this phase.
- 13.4.8 In the south-west part of Zone 10a, cutting the sub-oval enclosure of possible Early Iron Age origin (249193 above), was a sequence of three intercutting field boundaries (243135, 249191 and 249190) also of Iron Age date. The relatively large size of the latest ditch (up to 1.85m wide and 0.85m deep) would suggest that this was a boundary of some importance, and was later re-cut by a ditch (135056 below) of probable Late Iron Age date. A further, smaller ditch, 249189, ran parallel and to the north of these boundary ditches.
- 13.4.9 A number of pits of Iron Age date were found across Zones 10 and 10a, while groups of postholes (247321 and 249182) may represent four-post structures.
- 13.4.10 There are other features within the southern part of Zone 10 that can also be phased as Iron Age, generally ditches that follow the alignment of those exposed within Zone 10a, and likely to have been part of the same Iron Age field system.
- 13.4.11 A few features (pits and ditches) within Zones 10 and 10a have been specifically phased as Middle Iron Age on ceramic or stratigraphic grounds.

One ditch (197031) in the northern part of Zone 10 was considerably larger than the ditches demarcating the individual fields to the south. Ditch 197031 was 4.5m wide and 1.1 m deep and is likely to represent a major boundary. Immediately to the north of this was a sequence of four large curvilinear ditches (194109, 194110, 193071 and 194108), probably part of an enclosure that continued to the west outside the confines of the excavation area. All four ditches contained pottery of Iron Age date. Two pits were present within the area enclosed by these ditches, one of which (124052) has been interpreted as a grain storage pit of possible Iron Age date.

### 13.5 Late Iron Age – Early Roman

- 13.5.1 Ditches belonging to this phase broadly followed the alignment of those in the earlier Iron Age, although some of the field boundaries were reconfigured during this phase. Ditch 249185, to the west of Zone 10a, ran NE-SW before turning to the north-west at its northern extent. The ditch enclosed a four-post structure (249180) which was situated adjacent to those described above. A single sherd of Late Iron Age/Early Roman pottery was recovered from the posthole fills.
- 13.5.2 To the south of ditch 249185 was a sequence of NW-SE ditches that appear to be spatially related, forming part of the wider network of enclosures. The largest ditch in the sequence (249188) measured up to 3.75m in width and 1m deep and contained Late Iron Age/Early Roman pottery.
- 13.5.3 A cluster of features of Late Iron Age/Early Roman date was present on the eastern side of Zone 10a, and comprised three short lengths of ditch, all cut by pit 258300 of the same broad phase.
- 13.5.4 A ditch, 249244 ran west-east across the centre of the eastern part of Zone 10a. The ditch formed part of a sequence of boundaries that were in use from the Early Iron Age through into the Roman period. Further north was an enclosure ditch (249237/194083) which cut ditches phased to Iron Age date, and was cut by an enclosure of Early Roman date.
- 13.5.5 Towards the centre of Zone 10 (**Figure 18**) was a large NW-SE aligned flat-based ditch (194104) that may have been a holloway. The ditch was 6.45m wide and 1.5m deep and contained pottery of Iron Age and Roman date. A copper alloy brooch of Early Roman date was recovered from the upper fill. Immediately to the south was a smaller, parallel ditch (194103) that may have been for drainage, as may ditch 194092 to the north. Further north, a ditch (197031) of similar size to 194104 ran on a west-east alignment and has been

included in this phase, although only a few sherds of Iron Age or Roman pottery were recovered from the fills.

### 13.6 Roman

- 13.6.1 There was a significant amount of activity within Zone 10a during the Early Roman period. Enclosure ditches, perhaps associated with livestock, sunken-featured buildings, rubbish pits and a mixed burial rite cemetery are all represented within this phase. Activity dating to the later Roman period is less well represented, though the cemetery continued in use.
- 13.6.2 A large boundary ditch (194085/249186) ran in a NW-SE direction across the north of Zone 10a, passing through Zone 10 and also present within the bridge bund trench to the east. The ditch appears to have demarcated the northern extent of the settlement and was on the same alignment as the enclosures of Iron Age date.
- 13.6.3 A rectangular enclosure (249187/249246), measuring approximately 43m by 27m, extended south from boundary ditch 249186 and continued beneath the temporary road diversion area. The only feature within the enclosure was a sunken-featured building (249233), measuring 4m by 2m, and several associated postholes. This building has provisionally been phased to the Early Roman period, although no finds were recovered from the homogeneous fills. A second sunken-featured building (249199) lay to the south and parallel with the northern building, and contained *c.* 1.5kg of Early Roman pottery. In the southern part of Zone 10a was ditch 249232 which ran in a WNW-ESE direction, cutting ditches of Early Iron Age date, and continuing to the west of the temporary road diversion.
- 13.6.4 To the south of enclosure 194085/249186 were two ditches (249234 and 135066) that formed a funnel-shaped entrance into what was presumably another enclosure, possibly originally associated with livestock control. In the western part of this southern enclosure was a small mixed-rite cemetery, the use of which appears to have spanned the Early - Middle Roman periods. The 2010 excavation recorded a total of nine inhumation burials and at least three cremation burials, some within urns, or else placed directly into circular pits, with a further two cremation burials coming from the additional work in 2011. Two of the graves were cut into the fills of Iron Age ditch 130315.
- 13.6.5 A sequence of ditches (136006/135067, 194093 and 249262/194090) running NW-SE bisected the eastern part of Zone 10a and continued through the southern part of Zone 10, in part re-establishing a boundary present in the Iron Age. The ditches possibly formed parts of additional enclosures along the

main axis of the settlement, perhaps forming part of what may have been a 'ladder' settlement. Further north, a D-shaped enclosure (194082 and 157004) extended south from the northern boundary ditch (194085) to this settlement. No features were located within the enclosure, which may have been a livestock pen. Two pits, 178371 in the south of Zone 10a and 127030 towards the southern end of Zone 10, contained large quantities of Roman pottery, and both are likely to have been refuse pits.

- 13.6.6 Ditch 194099 towards the north end of Zone 10 was of Roman date, and is likely to represent a field boundary. Beyond this was ditch 190416, also of Roman date, that formed part of a boundary that was re-established several times during the Roman period, and seems to have originated in the Iron Age. The majority of this ditch was within Zone 11 and will be discussed below in that section.

### 13.7 Saxon

- 13.7.1 A sunken-featured building (194086), aligned east to west, was located towards the southern end of Zone 10, part of its western edge extending beyond the limit of excavation. The building, which measured 3.16m by 2.93m and 0.23m deep, contained pottery of Early-Middle Saxon date, as well as some Iron Age and Roman material, and a glass bead may also be of Saxon date. Two iron knives and large amounts of animal bone and oyster shell were also recovered; fish bones were identified from soil samples. Sunken-featured building 194086 may have been part of a dispersed Saxon settlement, and two other examples were located within the eastern arm of Zone 11 to the north-east, while Saxon features have also been recorded during earlier work to the south and south-east (Perkins 1992; Andrews *et al.* 2009).
- 13.7.2 Several earlier features in the vicinity of sunken-feature building 194086 contained Saxon pottery in their uppermost fills, including ditch 178358. A small ditch terminal (174144) towards the north of Zone 10 also contained a few sherds of pottery of possible Early to Middle Saxon date.

## 14 ZONE 11

- 14.1.1 Zone 11 lay on the Sevenscore scarp slope which rises at a moderate angle to the north towards the ridge of higher ground occupied by Manston Airport. The zone (at the junction of Landscapes 1 and 3) was sub-divided into Zone 11 (north) and Zone 11 (east), reflecting the northern and eastern arms respectively of this T-shaped area (**Figures 18-19**; see **Plate 2**). The land

within this area rises from *c.* 14.5m aOD in the south to *c.* 28m aOD in the north of Zone 11 (north), but within Zone 11 (east) it remains fairly level at *c.* 15m aOD.

14.1.2 Little background information was available from the very limited archaeological work previously undertaken in the immediate vicinity of Zone 11.

14.1.3 Colluvium covered virtually the entire area to a depth of up to 0.3m and, because of the need to strip and store this material within the zone, a somewhat piecemeal approach to the excavation was adopted. Furthermore, due to several natural, albeit localised, undulations in the underlying Thanet Sands geology, additional machining was required in the central part of Zone 11 (north) to provide a coherent plan of the archaeological features. A buried electric cable ran down the eastern edge of Zone 11 (north) and constrained excavation in this area.

## **14.2 Natural Features**

14.2.1 A large palaeochannel (190425) crossed the southern end of Zone 11 (north) in a NNW-SSE direction. Palaeochannel 190425, which measured 36m across and 2.4m deep, was cut by features of Iron Age date and a late prehistoric date for its infilling cannot be ruled out. A machine-dug section through the palaeochannel was cleaned back and recorded, but no finds were recovered and environmental samples from the generally homogeneous fill were disappointing, with intrusive modern weed seeds and only small flecks of charcoal present.

## **14.3 Mesolithic**

14.3.1 A flint tranchet axe was recovered from a feature interpreted as a tree-throw pit (169009) at the western end of Zone 11 (east). The tree-throw pit was truncated by a ditch (196010) of likely prehistoric date and it is possible that the axe was residual in feature 169009.

## **14.4 Bronze Age**

14.4.1 Only a few features have been ascribed to this phase with reasonable certainty, and virtually all of these are likely to be of Late Bronze Age/Early Iron Age date, with the majority located within Zone 11 (east). At the western end of Zone 11 (east) ditch 190410 ran in a SSE-NNW direction, and was truncated by ditch 190404 of possible Iron Age date. A pit (189018) situated to the east

of ditch 190410 contained Late Bronze Age/Early Iron Age date pottery, as did ditch 190428 in the south of Zone 11 (north).

- 14.4.2 At the extreme east end of Zone 11 (east), on the boundary with Zone 12, were two ditches (135082, 147066) of Late Bronze Age date, undoubtedly associated with the Bronze Age activity at the west end of Zone 12. Immediately to the west of the terminal of ditch 147066 was pit 227001 which contained two sherds of pottery of Late Bronze Age/Early Iron Age date. To the west of the ditches was an urned cremation burial (147073), the urn of (?Middle) Bronze Age date. To the north of this was a further cremation burial (171031) which was unurned, but may be of a similar date. A third cremation burial (153017) lay towards the centre of Zone 11 (east), placed within a vessel of probable Middle Bronze Age date.

## 14.5 Iron Age

- 14.5.1 A sequence of four ditches, provisionally assigned to the Iron Age, was present in the south of Zone 11 (north), running to the west of and almost parallel to palaeochannel 190425. Ditch 190420 was the earliest of the sequence and the largest, with a width of 3.85m and a depth of 1.35m.
- 14.5.2 This ditch was re-cut in turn by smaller but still relatively substantial ditches 209027, 190419 and 194108. Pottery recovered from the fills of the latest ditch has been broadly dated to the Early Iron Age, but given its stratigraphic position in relation to the other ditches, and the later Roman re-cuts (see below), a Late Iron Age or Early Roman date for this part of the sequence appears more likely.
- 14.5.3 The sequence of Iron Age ditches ran in a broadly north to south direction, but all curved slightly to the west, potentially defining a large enclosure virtually all of which lay outside the limit of excavation to the west. A slight knoll was noticeable within the enclosed area, but no evidence for this or the enclosure is visible on aerial photographs. The postulated enclosure, which had its origins in the Iron Age, was re-established on several occasions during the Roman period (see below).
- 14.5.4 Other potential Iron Age features in Zone 11 (north) include a small number of ditches, with 183137 the latest in a sequence of small ditches in the south and 159319 in the central part of the site. Ditch 159319 probably continued to the north as ditch 159286, with the ditches forming a field boundary or enclosure, the gap between them representing an entrance. There were also two post-built structures cut into the palaeochannel, both of which have been tentatively assigned to the Iron Age. The northern structure (169007) consisted of four

postholes, and formed a square with sides of approximately 1.25m; only a single posthole contained pottery. The second four-post structure (169008) was more irregular in form. Two of the postholes contained pottery of Mid to Late Iron Age date, and two fragments of human bone were also recovered. It is possible that both sets of postholes held structural timbers associated with a grain store or perhaps an excarnation platform, and further work may refine their chronology.

- 14.5.5 In the extreme north of Zone 11 (north) was a possible holloway (159275) which ran in a NE-SW direction and may have provided access to an enclosure formed by ditches 155021/159277. An earlier enclosure of Iron Age date may have been defined by ditches 189087/159279/168037, however most of the ditches in this area contained very little if any dating material.
- 14.5.6 Within Zone 11 (east) the phasing of features to the Iron Age is more problematic, and due to the paucity of datable finds much of the phasing is based on stratigraphic relationships or on associations. The lack of finds and the nature of the archaeology (trackways/droeways and field boundary ditches) are suggestive of an agricultural landscape, with little evidence for occupation, although activity of this date increases into Zone 12 to the east.
- 14.5.7 One potential trackway or droeway was defined by ditches 190401 and 190402 which ran in a NE-SW direction, although 190401 to the west formed more of an arc, curving to the west and terminating within Zone 11 (north). Both ditches were truncated by a ditch of likely Roman date (190400) and also by a possible Late Iron Age ditch (190404). To the east, and also truncated by ditch 190404, ditches 196026 and 190411 ran parallel in a broadly north-south direction.
- 14.5.8 Other ditches in Zone 11 (east) included 189015, which cut pit 189018 of Late Bronze Age/Early Iron Age date and was in turn truncated by possible Late Iron Age ditch 190404. Further east was ditch 190414, which terminated just short of the northern limit of excavation. A large quantity of pottery (172 sherds) of Early to Middle Iron Age date was recovered from the uppermost fill at the southern end of ditch 190414. Two parallel ditches (190415 and 190405), interpreted as demarcating a trackway or droeway, were apparently cut by ditch 190414, though the relationship was ambiguous.
- 14.5.9 An enclosure formed by ditches 144028 and 209175 was located at the extreme east end of Zone 11 (east) and extended into Zone 12. There were several undated pits within the enclosure (in addition to the two earlier, Bronze Age cremation burials). The only feature of Iron Age date was interpreted as a

tree-throw (228001) which contained 26 sherds of Early to Middle Iron Age pottery.

#### **14.6 Roman**

- 14.6.1 Due to the lack of or very sparse dating evidence for many of the features in Zone 11 (north) the phasing and, to some extent, the identification of features of Roman date is problematic. In particular, some of the ditches and enclosures in the north of the zone, initially identified as Roman, are likely on balance to be of medieval date (see below), and this raises issues about the reliability of some of the inferred or tested stratigraphic relationships which will need to be addressed in the analysis stage to follow.
- 14.6.2 The archaeology of Roman date is, with the exception of the swathe of ditches in the southern part of Zone 11 (north), mainly represented by field systems broadly following a north-south to east-west alignment. The majority of the field system ditches currently have a generic Roman date though there may be a component that is Middle or Late Roman, but this is not currently supported by the available dating.
- 14.6.3 In the south of Zone 11 (north), and to the west of their precursors of probable Iron Age date, were at least 14 intercutting ditches which appeared to enclose an area to the west largely beyond the limit of excavation (see Iron Age above). The ditches varied considerably in size and depth, the widest being ditch 190418 at 10m and with a depth of 1.4m. It seems certain that this boundary was continually re-established over a considerable period of time, and further analysis of the finds should clarify this. The fills of the ditches contained, in addition to pottery, a range of finds including animal bone, marine shell, copper alloy brooches, a glass bead, an iron knife and nails, and ceramic building material, together suggesting settlement in the vicinity, perhaps within the postulated enclosure.
- 14.6.4 To the east of the sequence of enclosure ditches, a waterhole (135095) was cut into the upper fills of palaeochannel 190425. The waterhole, which measured 7.15m by 3.9m and was 0.9m deep, had a gently sloping access point to the west but was otherwise steep-sided. No waterlogged deposits survived. After initial silting, the feature appears to have been used for the disposal of domestic waste, and the upper fills contained comparatively large amounts of pottery, animal bone and some tile.
- 14.6.5 The waterhole was cut on its eastern side by ditch 159335 which formed three sides of a rectangular enclosure. Several pits were situated within the enclosure, and although all contained pottery only that from pit 134043 has



been certainly identified as Roman. This pit, which had a diameter of 2.7m, had a stepped profile and a depth of 1.55m. In addition to occasional tile fragments and iron nails the pit contained nearly 4 kg of Roman pottery. The presence of this quantity of pottery is likely to be indicative of settlement in the vicinity.

- 14.6.6 Rectangular enclosure ditch 159335 appeared to be cut by a NW-SE aligned ditch (159333), which along with ditches 159332 and 159331 to the north-east, are likely to represent a later phase of Roman field system. Ditch 159332 contained pottery, tile and two copper alloy brooches. Within Zone 11 (east) ditch 190400/190409 has been dated as Roman on the basis of a single pottery sherd and was on a similar alignment to the ditches above, perhaps representing the eastern extent of the field system.
- 14.6.7 To the north of ditch 159333 was a series of postholes that may represent an agricultural structure (190431). Post-built structure 190431 measured 12.8m by 6.1m and consisted of 13 postholes of various sizes, at least five of which had been re-cut at some stage. The majority of the pottery recovered from the fills was Roman, with a Middle Roman component, although residual Iron Age sherds were also present.
- 14.6.8 Immediately north of the post-built structure 190431 was a north-south aligned ditch (178011) cut into the top of the palaeochannel. The ditch, which was 0.5m wide and 0.19m deep, extended a short distance to the west of the structure at both ends and was of similar (albeit smaller) form to enclosure ditch 159335 to the south.
- 14.6.9 Ditch 178011 was truncated by ditch 215063, aligned WNW-ESE, which formed the southern edge of two narrow, rectangular, ditched enclosures that extended in a NNE-SSW direction. Ditch 159314 formed the corresponding northern edge to the enclosures, running in a west-east direction before turning to the south at its western extent, possibly respecting a large ditch terminal (215037, below) to the north. There were no physical relationships between any of the ditches, but ditch 215063 produced 30 sherds of Roman pottery. Ditch 159315 was situated further to the west, and three parallel ditches (159316, 159317 and 159318) ran west of this, all likely to be contemporary and perhaps forming small paddocks.
- 14.6.10 A small enclosure with an internal width of only 2m lay to the north of and on the same axis as the narrow rectangular enclosures. This enclosure was defined by ditch 159306 and may have been a shelter for livestock.

- 14.6.11 Feature 215037, interpreted as a ditch, ran west-east to the north of enclosure boundary ditch 159314 and terminated just east of the western limit of excavation. At 6.8m wide and 1.42m deep it was very large in comparison to the majority of other ditches present. The ditch is likely to have been a significant boundary, possibly related to the sequence of enclosure ditches situated to the south-west.
- 14.6.12 The central ditch (159310) of the three ditches defining the two narrow, rectangular enclosures extended further to the north than the other two ditches and may have been a more important boundary. Ditch 159310 was generally about 1m wide, but in places had a width of up to 2.27m and a maximum depth of 0.7m. To the east, parallel ditch 159321 formed the eastern side of the enclosed area, extending slightly to the north of ditch 159314, which formed the northern boundary.
- 14.6.13 Ditch 159285 ran in a north-south direction, almost parallel with ditch 159310, although it extended further to the north, and the two ditches may have formed a driveway with a width of up to *c.* 7m, although narrowing to the south close to where ditch 159285 terminated.
- 14.6.14 To the north of ditch 159314 was a cluster of features including several patches of chalk, a hearth and a number of pits which were cut into the fill of a natural hollow (137131). The areas of compacted chalk, 143024, 143025 and 143026, may have been part of the foundation layer for a building or alternatively (and most likely) areas of consolidation above hollow 137131. The chalk patches were partially overlain by a thin layer of dark soil (143023) which covered an area of 8.55m by 3.85m and contained Roman pottery, iron nails, tile and marine shell. This deposit was cut by a hearth or fire pit (143098) which was 0.09m deep, the natural brick earth beneath it being scorched red. To the north of this dark soil deposit were a number of possible quarry pits. The largest of these (262015) measured 6.1m by 4.15m and was 1.15m deep. Pottery, tile, animal bone, shell and iron nails were recovered from the fills.
- 14.6.15 The north-south to west-east alignment of enclosure/field system ditches continued to the north with a series of rectangular enclosures delineating fields or paddocks which often showed signs of having been re-cut. However, towards the north end of the zone the alignment of ditches changed to a NW-SE orientation and this may be indicative of a temporal change or be a reflection of topography. Ditches 159283, 159292, 159284 and 159289 appear likely to be of Roman date, although these are phased on the basis of their alignment and stratigraphic relationships as very few finds were recovered.

14.6.16 An apparently isolated cremation burial (147141) was located towards the southern edge of the central part of Zone 11 (east) (between ditches 196026 and 190413 of Iron Age date). Cremated bone, which was likely to have been deposited in a bag or other organic container, was concentrated in a tight cluster and surrounded by five pottery vessels. The pottery, where closely dated, is from the first half of the 1<sup>st</sup> century AD. Two copper alloy brooches were also recovered, one of which may have been used to seal the putative bag containing the cremated bone.

## **14.7 Saxon**

14.7.1 Two sunken- featured buildings within Zone 11 (east) are likely to be of Mid-Saxon date, on the basis of the small quantities of pottery they contained, some of it residual. They probably formed part of a dispersed settlement that may also have included sunken-featured building 194086 to the south in Zone 10 (see above).

14.7.2 The western building, 137083, was aligned east to west, measured 4.5m by 2.9m and had a depth of 0.26 m. The building was roughly rectangular and postholes were present at, or near the centre of each end. Two shallow scoops along the centre of the building and a further scoop to the east may represent beam slots which could have supported internal subdivisions or flooring.

14.7.3 The second sunken-featured building (196013) was located around 100 m to the east of 137083 It was slightly smaller and had a more sub-circular shape, though also aligned east to west. Postholes were present at each end, slightly off-centre and internal to the structure. Three stake-holes were located to the north-west of the building, and may represent the remains of a wind break.

14.7.4 A single pit (212022) located towards the southern end of Zone 11 (north) measured 3.8m by 2.9m and had a depth of 0.5m. Three sherds of pottery dating to the early or middle Saxon period were recovered from the fill. A second pit (278011) was located along the north edge towards the eastern end of Zone 11 (north). This was rectangular in plan and measured 7m by 3m and had a maximum depth of 1.3 m. The pit, possibly a waterhole or well, though now dry, contained four sherds of Saxon pottery, in addition to residual Iron Age and Roman material.

## **14.8 Medieval**

14.8.1 Ditches 159278 and 159282 in the north of Zone 11 (north) both contained a few sherds of pottery of medieval date. The ditches were aligned WNW-ESE, which was the prevailing alignment for ditches of Roman date in the vicinity.

14.8.2 Ditch 159280, which respected 159278 and ran at 90° to it, and ditch 159291 have also been tentatively included within this phase, although there is no clear evidence for this attribution.

## 15 ZONE 12

15.1.1 Zone 12 continued eastwards from Zone 11 (east) across the scarp slope of Sevenscore (at the junction of Landscapes 1, 2 and 3) which rises gently to the north towards the ridge of higher ground occupied by Manston Airport (**Figure 20**). The ground also rises from *c.* 15.5m at the west end of the zone to *c.* 18.8m at the east end close to the railway line and Cliffs End, and beyond this to the promontory in the eastern half of Zone 13 (which lies at *c.* 25.9m aOD). There was also a change in geology, from Thanet Sands to Chalk, which was exposed on the higher ground at the east end of the zone.

15.1.2 As with Zone 11, it was necessary to approach the investigation of this zone in a somewhat piecemeal fashion. This was largely because of the presence of substantial deposits of colluvium (up to 0.35m thick) which covered the Thanet Sands across most of the zone, and which had to be stored within the zone. The situation was further exacerbated by the initial retention of underground and overhead services at the east end of the zone and a public footpath at the west end.

15.1.3 In addition to the main area of excavation, work was also undertaken in advance of pipe-laying immediately beyond the northern edge of the zone and also extending to the south.

15.1.4 There is little background information from the very limited archaeological work previously undertaken within or in the vicinity of the zone (Trust for Thanet Archaeology 2003; Trust for Thanet Archaeology 2008a; Andrews *et al.* 2009), but excavation revealed an unexpectedly dense but coherent pattern of features spanning the Bronze Age to Roman periods. Features were concentrated in the western half of the area, particularly within a slight dip which extended into Zone 11 (east). The eastern part of the site contained relatively few features.

## 15.2 Early Prehistoric

15.2.1 There is a small assemblage of residual earlier prehistoric finds from Zone 12 which comprises three sherds of Neolithic pottery and a larger collection of struck flint including several scrapers, a number of broken blades, and flakes,

some of probable Neolithic date with the remainder likely to be Bronze Age. These finds confirm that there was some Neolithic activity within the surrounding area, the pottery and the struck flint possibly deriving from the higher ground to the north-east.

### 15.3 Bronze Age

- 15.3.1 The small number of features assigned to this period probably formed part of what is most likely to have been an agricultural settlement spanning the Middle to Late Bronze Age. The majority of features were found in the western part of the zone and comprised several ditches, gullies, pits and possibly as many as four cremation burials.
- 15.3.2 At the western end of zone were two gullies and at least three small, partly-segmented ditches. Gully 148044 curved in an arc, terminating to the east and truncated by an Iron Age ditch to the west. This gully was 14m long, 0.6m wide and 0.3m deep, and contained a relatively large amount of Middle Bronze Age pottery.
- 15.3.3 Just to the east of gully 148044 was sub-oval pit 214001, 1.7m long, 1.5m wide and 0.5m deep. It contained a similar fill to 148044 and a further 55 sherds of the Middle Bronze Age pottery.
- 15.3.4 The remaining ditches have been dated to the Late Bronze Age, the period of use of some possibly extending into the Early Iron Age. The ditches include 147006, 190179, 109181, 190185 and 175027, all at the west end of the zone. These ditches had an average width of 1.2m and a depth of 0.5m. Late Bronze Age / Early Iron Age ditch 147006 defined the western extent of the Bronze Age features, with the other Late Bronze Age features forming an apparently related group (possibly a small enclosure) approximately 30m to the east. Ditches 190179 and 190185 were both aligned north-south, the former perhaps turning to the west as ditch 190196 though this feature is undated. Ditch 190185 was cut by 156054, a short length of ditch on an east-west alignment, and this was itself cut by north-south ditch 190181. Ditch 175027 to the west was probably also part of this group.
- 15.3.5 Feature 202079 was a large sub-circular tree-throw hollow, 2.5m wide and 0.6m deep, located in the middle of zone to the east of the Iron Age holloway (190163). It contained 28 sherds of Middle to Late Bronze Age pottery. Although unclear, it is probable that Iron Age ditch 190154 terminated just short of 202079.

- 15.3.6 Pit 214076 was located towards the eastern end of the zone, along the southern edge of the site. It was sub-rectangular with a maximum length of 3.36m and 0.5m deep. Pit 214076 was initially thought to be a sunken-feature building, but after full excavation has been interpreted as a shallow pit.
- 15.3.7 There were four possible Bronze Age cremation burials (126001, 146016, 214042 and 219031) in Zone 12, three located in a group just to the west of the Iron Age holloway (190163) and one (126001) immediately to the east. Cremation burial 219031 contained 43 sherds of Late Bronze Age pottery but no cremated bone, and may have been a cenotaph rather than a burial 146016. In contrast, the other three cremation burials contained cremated human bone but no secure dating evidence.

#### **15.4 Iron Age**

- 15.4.1 The Bronze Age features were overlain by a series of Iron Age enclosures, trackways and related ditches, and a holloway which extended to the north and south of the zone. Although there were some postholes, no coherent structural plans were identified other than a single four-post structure. The arrangement of features suggests that they perhaps formed part of a 'ladder' settlement, focussed around the holloway and associated trackways.
- 15.4.2 The holloway and some of the ditches may have originated in the Early/Middle Iron Age and continued in use or were modified or replaced in the Late Iron Age. Although the layout and extent of the enclosure system wasn't modified greatly during this period, ditches were re-dug, entrances changed, divisions added or removed, particularly in the Late Iron Age.

##### *Holloway*

- 15.4.3 Just west of the centre and in the lowest part of Zone 12 was holloway 190163. This was certainly in use during the Middle to Late Iron Age, though it possibly originated in the Early Iron Age and continued in use at least into the Early Roman period.
- 15.4.4 Holloway 190163 ran across the zone (45m wide here) on a north to south alignment with sequences of flanking ditches on either side, the ditches being approximately 15m apart (centre-to-centre). The holloway was between 4m and 5m wide and approximately 0.65m deep with a thin metalled surface at its base in the centre. This surface consisted of a layer of flint gravel on top of which was a compact mid to light grey silty sand 0.1m thick, perhaps reflecting a period of rapid silting or short-term disuse.

- 15.4.5 Flanking ditch 190199 on the west side of the holloway was a recut of its predecessor (154056), of which relatively little survived, and was 1.2m wide and up to 0.5m deep. On the west side the ditch sequence was more complex and less clear, though there were at least two (and possibly as many as six) recuts. Ditch 190198 was the largest and the latest of the ditches on this side and was approximately 1.25m wide and 0.55m deep. This ditch terminated towards the northern edge of the zone and this appears to have allowed access between the holloway and a trackway (T1 – see below) to the east, though this access does not appear to have existed during some of the preceding phases, for example ditch 190156 which continued across the width of the zone.
- 15.4.6 These flanking ditches, as well as being part of the holloway arrangements, would have formed boundaries to the contemporary sequences of enclosures on the west and east sides.

*Features west of holloway 190163*

- 15.4.7 Immediately to the west of holloway 190163 was a series of enclosures and related features which have been assigned to four provisional phases (1 – 4) of Middle to Late Iron Age date.

*Phase 1*

- 15.4.8 The earliest part of the sequence is represented by north – south ditches 190187 and 190188, both approximately 0.5m deep and up to 1.5m wide, which probably defined the west side of a rectangular enclosure with a width of approximately 40m. A gap of 5m between these ditches defined an entrance towards the northern end of the west side of the enclosure.
- 15.4.9 Ditch 190195 extended east from the northern end of ditch 190187 and formed the northern boundary to the putative enclosure. For reasons that are unclear ditch 190195 increased to a width of approximately 5m to the east of the north-west corner of the enclosure, and its junction with the holloway or flanking ditch (probably 145056) to the east lay outside the excavated area. The southern extent of the enclosure also lay outside the limit of excavation.
- 15.4.10 Within the enclosure were a small number of probably contemporary features. Gully 190170, 0.75m wide and 0.3m deep, created a narrow internal division at the northern end, whilst north-south gullies 175030 and 175035 possibly formed an associated, 10m wide division on the west side. Alternatively, these gullies may have served to create an area approximately 30m square within the north-east corner of the larger enclosure. Furthermore, the gap between these

two gullies and 190170 may have formed an access point which corresponds with the entrance between enclosure ditches 190187 and 190188 to the west.

### *Phase 2*

15.4.11 There was a change in the layout and extent of the enclosures at this time, with east-west ditch 190197 and its successors (190178 and 137045) dividing the area formerly occupied by the phase 1 enclosure. These ditches were relatively small, up to 1.4m wide and 0.7m deep, but contained moderate quantities of finds, contrasting with the sparse quantities of finds recovered from most of the other ditches in this area. These and the associated ditches to the east and west created a new 55m-wide, square or rectangular enclosure extending to the north, but the situation to the south is less clear.

15.4.12 Ditch 190178 turned to the north for a short distance at the east end, leaving a gap of 3m between this and ditch 154056 which flanked the west side of the holloway.

15.4.13 To the west, the boundary of the northern phase 2 enclosure was defined by curving ditch 190191, 1.6m wide and 0.4m deep, which turned to the west and respected east-west ditch 190197 at the south end (209175 may have been a western extension to 190191). Ditch 190191 continued to the north beyond the limit of excavation, but there was no corresponding ditch to the south which would have defined the west side of an enclosure there.

### *Phase 3*

15.4.14 During this phase the arrangement of enclosures may have reverted to that seen in phase 1.

15.4.15 On the west side was a relatively substantial and sinuous ditch, 190122/190192, which terminated 7m from the northern edge of the excavation but continued beyond the southern limit. This ditch was 2.2m wide and 0.6m deep, and was subsequently partly re-cut by ditch 190193 which was only 1.4m wide and 0.5m deep. Apparently respecting the latter was east-west aligned ditch 190184, with probably contemporary north-south ditch 190166 of similar size at the east end, a gap of approximately 6m between them perhaps defining an entrance.

15.4.16 To the east, adjacent to holloway 190163, was a group of features perhaps associated with what may have been a small, semi-circular sub-enclosure that extended northwards beyond the limit of excavation. North-south aligned gully 190201, 0.7m wide and 0.25m deep, ran parallel to the holloway and probably defined the east side of the sub-enclosure. The west side of the sub-



enclosure was defined by sinuous gully 190165, which was subsequently replaced by curvilinear gully 109173, itself possibly replaced by gully 190174 (though the latter may belong to phase 4). Gully 190165 was fairly insubstantial, with a maximum width of 0.75m and a depth of 0.25m, whilst 109173 was 1m wide and 0.9m deep.

15.4.17 Within the enclosure were at least 15 postholes, including a four-post structure. These postholes had an average diameter of 0.5m and a depth of 0.4m, and contained relatively large amounts of burnt daub. No coherent plans were apparent amongst the remaining postholes.

#### *Phase 4*

15.4.18 This was the final Iron Age phase on the west side of the holloway and was represented by a further change to the arrangement of enclosures.

15.4.19 The north - south division present in phase 2 was re-established, this time defined by a more substantial east – west aligned ditch (190190) extending for approximately 50m west of the holloway. This ditch, which separated square or rectangular enclosures to the north and south, was 2.9m wide and 1.1m deep, but showed no evidence for having been re-cut.

15.4.20 Ditch 190190 extended as far as sinuous ditch 190189, 1.25m wide and 0.6m deep, which ran north-south and formed the western side of the enclosures. To the east it extended up to north-south ditch 190199, the fourth and final sequence of ditches flanking the west side of holloway 190163.

15.4.21 Within the exposed part of the northern enclosure were two smaller enclosures, in the south-east and south-west corners respectively. Both may have been associated with stock control. The larger, sub-square example in the south-east corner measured approximately 30m square and was defined by ditch 190176, which extended around the north and west sides. Ditch 190176 was 1.6m wide and 0.5m deep and was moderately rich in finds. There were gaps towards the east and south ends, probably marking entrances, and ditch 190174 may have formed an internal division in the north-east corner.

15.4.22 Ditch 190186, 17m west of 190176, ran north from ditch 190190 for 18m and then turned west for 12m before terminating. It was 0.8m wide and 0.4m deep and partly enclosed an irregularly shaped area within the south-western corner of the main enclosure.

15.4.23 Feature 145156 was an irregularly shaped pit which was cut by the southern terminus of ditch 190176. It was at least 6m long and 3m wide, had a maximum depth of 0.65m, and had near-vertical sides and a flat base. This

feature is thought to have been some form of small quarry pit, although in plan it resembles a sunken-feature building.

#### *Features east of holloway 190163*

- 15.4.24 The easternmost features comprised a group of small enclosures (designated E1 – E4) arranged around two trackways (T1 and T2) and an open area (OA). Trackway T1 ran SE-NW and probably linked to the holloway to the west, with trackway (T2) extending to the north; the open area (OA) lay at the junction of the two trackways. Most of these features extended beyond the limits of excavation, with some elements identified in the 1.8m-wide pipe trench to the north. A narrow ridge of slightly higher ground in the field to the north-west has also been interpreted as the remains of a trackway, and appears to follow the same line as trackway T1. No clear evidence for this trackway extending into Zone 11 (north) was found, though later features at the north end of the zone were on the same alignment. The enclosures to the east of the holloway were on a slightly different alignment to those to the west and the sequence was less complex, though the use of both groups is likely to have spanned the same broad period. The access arrangements to the various enclosures to the east suggest that they were associated with stock control. At least one group of postholes may provide evidence for a contemporary structure, but this remains uncertain.
- 15.4.25 The eastern end of Zone 12 was crossed by ditches 190092 and 190096, aligned NW-SE and together extending over a distance of at least 100m. The ditches had an average width of 1m and a depth of up to 0.45m, and the gaps are probably a result of truncation, rather than entrances. These ditches appear to have acted as a boundary to the Iron Age activity which lay to the south-west.
- 15.4.26 Trackway T1, approximately 5m wide and at least 55m in length, was defined by ditches 190121/19124 and 190123, with enclosures E1 and E2 to the north and E4 to the south. The ditches had an average width of 1.45m and a depth of 0.45m. There were entrances to enclosures E1 and E2 to the north, and two small offset gullies within the trackway probably held fences which enabled stock to be controlled.
- 15.4.27 Trackway T2 lay at 90° to trackway T1 and continued to the north beyond the limit of excavation. It was defined by ditches 190109 and 190100/190130 and was 5m wide, with evidence for it having been widened from an earlier, narrower form. There was access to enclosures E2 and E3 to the west and east respectively.

- 15.4.28 Both trackways met in what appears to have been a moderately large open area (OA), covering more than 700m<sup>2</sup>, which extended to the south of the zone. This area was defined by ditches 190132, 190133, 190134, 109135 and 109138, the ditches on average 1.4m wide and 0.6m deep. There was access into enclosures E2, E3 and E4 via narrow gaps between the various ditches, some with offset terminals, another probable indicator of stock control.
- 15.4.29 Enclosure E1 lay between the holloway to the west, trackway T1 to the south and enclosure E2 to the east. It was defined by ditches 190112 and 190121/190124, up to 1.8m wide and 0.7m deep, and appeared to be sub-rectangular in plan. A gully, 190126, 0.55m wide and 0.4m deep, defined part of an internal sub-division.
- 15.4.30 Enclosure E2 was one of the more complex enclosures and lay between E1 and T2 on the north side of T1, with E3 to the east. Most of it lay within the excavated area and it was defined by ditches 190112 to the west, 190132 (and its probable predecessor, 190133) to the south, and 190100/1900101 and 190130 to the east, with 190096 to the north. These ditches had an average width of 1.8m and an average depth of 0.7m, and enclosed an area of approximately 900m<sup>2</sup>. Within this enclosure were a number of smaller gullies, for example 190110 and 190117, up to 0.7m wide and 0.2m deep, both of which were probable early sub-divisions. The enclosure was subsequently divided into two areas, E2a and E2b, with access to both via an entrance from T2 in the east side; there was a second entrance to E2a in the south-west corner.
- 15.4.31 To the east of T2 was E3, the largest of the eastern enclosures. This was bounded by ditch 190092/190096 to the north-east and 190134 to the south-west, with two entrances in the west side, from T2 and the open area. This enclosure covered area of at least 3550m<sup>2</sup> and had few internal features.
- 15.4.32 Enclosure E4, like E2, was relatively complex and comprised two or more phases, with a probable entrance in the north-east corner providing access from the open area. T1 lay along the north side - ditch 190123 forming the boundary, and holloway ditch 190156 defined the west side, with ditch 190138 to the east. Ditches 190144, 190145 and 190148 appear to have been internal sub-divisions, separating E4a and E4b, which have areas of approximately 840m<sup>2</sup> and 360m<sup>2</sup> respectively. Two parallel ditches, 190146 and 190147, are later internal features within E4a and posthole group 193023 represents a structure, but its form and date are unclear. Seventeen postholes, of possibly two phases, have been assigned to this group, and these have an average diameter of 0.3m and a depth of 0.2m. Eleven further, scattered postholes lay

to the west of group 193023 and two of the larger examples, 171131 and 171129, contained Late Iron Age pottery.

## 15.5 Roman

- 15.5.1 The Iron Age holloway continued in use into the Early Roman period, and had by then developed into a substantial feature. Later, at least a dozen inhumation burials were made in the upper fills along the western edge of the holloway. Few contemporary features have been identified within the zone, but several pits within the water pipe trench to the south are of Roman date and hint at settlement in the vicinity, and the iron rim from a cart wheel came from deposits within the holloway in this area. The projected course to the south of the holloway in Zone 12 takes it to a point on the former coastline immediately south of Cliffs End, close to the projected line of the Iron Age/Roman holloway recorded in Zone 10, if it too extended as far as the coast.
- 15.5.2 There were 13 inhumation burials in Zone 12, ten of them in a group, with the remaining three being more isolated though in the same general area and probably broadly contemporary. There were also two cremation burials, of possible Iron Age rather than Roman date.
- 15.5.3 The group of ten burials were all aligned north-south and positioned between holloway 190163 and its western flanking ditches, suggesting that the holloway was still in use at this time. The burials were cut through a thin layer of dark greyish brown material which covered the holloway and its flanking ditches. They appear to run almost in line, over a distance of approximately 14m, with grave 136049 being the furthest north and 153055 the furthest south. The graves had an average length of 1.75m, a width of 0.6m and a depth of only 0.1m. Some graves intercut and the burials were generally adults, either supine or flexed, with few associated finds other than a small number of nails.
- 15.5.4 Grave 153040 was on an east-west alignment and cut through the top fill of the northern part of holloway 190163. It may have belonged to the main group of burials a short distance to the south and contained an adolescent. Grave 153028 was located to the south-west of the group of ten graves. It was also aligned east-west, contained an adult male, and cut the top fill of ditch 190190. Grave 153048, 0.2m deep and on a north-south alignment, lay to the west of grave 153028, and contained an adult.
- 15.5.5 Most Roman features (but notably few Iron Age features) were found in the 100m-long pipe trench which ran from the southern edge of Zone 12, from just

west of holloway 190163. The first 20m was 4m wide, before narrowing to 2m for 35m, then widening again to 4m for the remainder of the trench. The concentration of Roman features here, their relatively dark fills and moderate quantities of finds suggests settlement of this date in the vicinity.

- 15.5.6 In the southern part of the pipe trench was a large linear feature, 268010, a continuation of Iron Age/Roman holloway 190163 to the north. Because of the position and narrow width of the trench 268010 was caught at an oblique angle, and wasn't fully excavated here because of this and a high water table. However, a complete iron rim from a cart wheel was recovered from the upper fill of this section of the holloway.
- 15.5.7 Features within the pipe trench to the north of holloway 268010 included 239015 which was at least 0.6m wide and 0.25m deep and possibly part of a flanking ditch. Feature 239015 had been cut by two small, shallow pits, 239017 and 239021, both containing some CBM.
- 15.5.8 Further along the pipe trench, 12m north of 239015, was ditch 238017, aligned east-west and 1.4m wide and 0.45m deep. This ditch was paralleled by a smaller gully, 238015, 0.35m wide and 0.5m deep. Just to the north of these features was a large ditch, 268001, at least 2.9m wide and 0.7m deep.
- 15.5.9 Beyond ditch 268001 were four small pits, 151021, 151023, 151025 and 238010, with an average diameter of 0.7m and a depth of 0.3m, all containing similar fills containing some domestic debris.
- 15.5.10 The remaining Roman features within the northern part of the pipe trench consisted of a small ditch, 151031, 0.8 wide and 0.3 deep, and a large probable pit, 189127, 3.9m wide and with a minimum depth of 0.75m.

## 16 ZONE 13

- 16.1.1 Zone 13 lies to the east of Foads Lane on a south-west facing slope rising moderately steeply from *c.* 19m aOD in the south-west to *c.* 25m aOD in the north-east (Landscape 2) (**Figure 21**; see **Plate 3**). The eastern half of the zone is located on more gently sloping ground which forms a slight, south-facing spur or promontory with a maximum height of *c.* 25.9m aOD, though the ground continues to rise gently to the north-west beyond the zone. Chalk was exposed in the western part of the zone and on the promontory, with Brickearth covering this to the east. From the promontory there are extensive views to the south-east across the Channel to the continent.

- 16.1.2 Monitoring of geotechnical pits in the western part of the zone in 2008 (Trust for Thanet Archaeology 2008a) recorded Upper Chalk beneath up to 0.48m of ploughsoil. In one test pit (TP6301) the lower 0.14m was recorded as a possible ancient soil horizon.
- 16.1.3 Previous archaeological investigations overlapping with the western end of Zone 13 were carried out by the Kent Archaeological Rescue Unit during the installation of a gas pipe. Willson (1984) reported the discovery of a grave, a ditch and three pits south west of the junction of two gas mains. The grave, which had been partially destroyed by the gas mains, was recorded as ovoid and on a north west to south east axis. It was 0.7m wide and excavated into the chalk to a depth of 0.46m. Only the pelvic and leg bones survived in fragmentary condition. The ditch, which lay 4.7m south-west of the gas main junction, was substantial. Observed to align on a NW-SE axis the ditch was excavated into the chalk and was 3.2m wide and in excess of 1.3m deep (it was not excavated to its base) with sloping sides. No finds were recovered from its fills of chalk rubble and loam, although a single Iron Age pot sherd was found in a soil layer which sealed the ditch and the nearby grave.
- 16.1.4 The three pits were located approximately 40m to 60m further to the south-west. The largest pit was circular in plan with a diameter of 1.95m. It had steep sides excavated into the chalk to at least 0.9m (the base was below the level of the gas main excavation). It was filled by bands of loose chalk rubble and loam containing fragments of animal bone and thirty sherds of Iron Age pottery. The two smaller pits ranged between 0.39m and 0.44m in width and between 0.4m to 0.45m deep. An assemblage of nineteen sherds of Iron Age pottery and burnt flint 'pot boilers' was recovered from one of the pits. Willson (1984) suggests that the ditch he recorded may have been a section of the large ring-ditch observed on aerial photographs and the grave associated with it. The pits may have been associated with activity outside the enclosure or a nearby Iron Age settlement focus.
- 16.1.5 In addition to the Iron Age material, Neolithic flints and a Mesolithic 'Thames Pick' have been recovered during field walking in this area (Thanet SMR 171).
- 16.1.6 More significant, are the discoveries made during recent excavations at Cliffsend Farm, approximately 250m to the south of Zone 13. These have revealed six ring-ditches, three enclosures, and a unique mortuary feature of international importance, together spanning the Early Bronze Age to Early Iron Age, as well as a Saxon cemetery and a large number of pits, some rich in marine shell, spanning the 6<sup>th</sup> to 8<sup>th</sup> centuries AD (McKinley forthcoming).

16.1.7 The high archaeological potential of the zone was further confirmed by crop and soil marks visible on aerial photographs, indicating a large ring-ditch apparently overlain by a substantial trapezoidal enclosure. Most of the features plotted from these photographs were subsequently identified during excavation, although a small number proved to be absent (or elusive).

## 16.2 Bronze Age

16.2.1 The earliest archaeological features encountered which can be dated with any degree of certainty are two sets of ring-ditches most likely marking the locations of round barrows. The two lie adjacent, Barrow 1 (134097 and 193125) only 24m north-west of the larger Barrow 2 (134100 and its recut 134096). The pair were situated on a small spur or promontory of high ground above the 25m contour overlooking Cliffs End and Pegwell Bay.

16.2.2 Approximately 60% of the exposed parts of both ring-ditches were excavated by hand, mainly through a series of longitudinal sections. Following recording, the remainder of the ditch sections were carefully removed by machine in controlled spits.

16.2.3 Neither barrow had any central grave or other feature. In the case of Barrow 1, approximately half of the interior lay outside the area of excavation, so such a feature may be present. The interior of Barrow 2 was completely excavated. No traces of a mound survived in any instance, and neither a central mound nor internal or external banks can be inferred from any of the excavated ditch sections.

### *Barrow 1*

16.2.4 Barrow 1 was only partially exposed (**Plate 11**). Approximately the southern half lay within the excavated area, with another narrow strip *c.* 8m to the north-west excavated within a gas main trench. North-west of this, the barrow has been destroyed by a railway cutting. The barrow was demarcated by a pair of approximately circular concentric ditches.

16.2.5 The outer ditch (134097) had a maximum width at the top of 2.5m, a maximum surviving depth of 1.5, and an estimated external diameter of 30m. The broad tops of the ditches are largely the result of weathering back of the chalk around the original edges, and when dug the feature would probably have been a much narrower, steep-sided slot, perhaps not much more than a metre wide with a narrower (*c.* 0.30m wide) 0.30m-deep slot in the base. Six sections were hand-excavated across the line of the ditch (not all of which reached the base of the feature) followed by controlled machine excavation of

the remaining portion within the main excavation area. A general similarity of fills and sequences was apparent, suggesting a continuous circular ditch (unless a causeway lay in one of the unexcavated or destroyed areas) which had been left to fill gradually over millennia.

- 16.2.6 Very little material was recovered from the fills: the only ceramics were of Iron Age date, probably intrusive from one or more of the Middle Iron Age features cutting the ditch on the south-east side. Quantities of lithics were scattered throughout the excavated sections (mostly flakes and other debitage), but few were diagnostic.
- 16.2.7 The inner ditch (193125) was of a different character to the outer, being broad (up to 1.7m wide) and shallow (0.5m deep maximum) with a flat base. Whereas 134097 was a continuous deep slot, 193125 was penannular, with at least one break 7.5m wide on the southern side. The possibility of further breaks in unexcavated or destroyed areas must be borne in mind. Assuming a generally circular shape, the maximum external diameter would have been *c.* 16m. No material was recovered from any of the excavated segments.
- 16.2.8 Several graves which lay between the outer and inner ditches of the barrow are undated, with another grave in the same group currently assigned a Saxon date. Some or all of these burials may be of prehistoric date, but they are discussed below in the Saxon section.

### *Barrow 2*

- 16.2.9 Barrow 2 was located 24m south-east of Barrow 1. Unlike Barrow 1, Barrow 2 had a single ditch forming a complete circuit, with a maximum width at the surface of 3.2m, a maximum depth of 1.3m and an external diameter of 43m (**Plate 12**). The base of the ditch was flat and approximately 1m wide, with steep sides which splayed outwards from approximately half way up to form a broad weathering cone.
- 16.2.10A total of 35 separate interventions were hand-excavated, largely as continuous offset profiles around the circumference. Finds were limited to material from the upper fills (animal bone in quite large quantities, shell, Middle and Late Iron Age pottery and loomweights (or briquetage supports), a copper alloy buckle and a copper alloy arrowhead). This material dates the activity in the surrounding area and indicates the long period over which the barrow's ditch filled in.
- 16.2.11 In four locations an earlier ditch (134100) survived below 134096. This earlier phase appeared to share the general alignment and profile of the later barrow,



and was presumably an earlier version of it, subsequently recut or enlarged. No complete sections of 134100 survived, so its dimensions cannot be ascertained, but it seems reasonable to assume that it shared a circumference with 134096. Surviving portions were straight sided and flat bottomed. No dateable material was recovered (small amounts of animal bone, shell and fired clay were present).

### 16.3 Iron Age

#### *Early Iron Age*

**16.3.1** A single feature appeared securely dated to the Early Iron Age, though other features may be of this date. Pit 163013 contained animal bone, shell and 33 sherds weighing 1011g derived from at least four Early Iron Age vessels represented by body sherds, bases, shoulders (one with a finger pressed cordon; one with nail crescents; one with nail impressions; one stepped) and rims.

#### *Palisade ditch*

16.3.2 A linear feature (134095) oriented NE-SW entered the zone north-east of ring-ditch 134096 (see **Plate 11**). Upon meeting that feature the ditch turned south-east around it and continued for another 50m (as 134096) before turning abruptly south-westwards and terminating. After a gap of at least 6m the ditch began again on the same alignment and continued beyond the limit of excavation. A continuation of the ditch for at least 50m to the north of Zone 13 is indicated by a cropmark, but no corresponding cropmark has yet been identified to show how far it continued to the south.

16.3.3 The longitudinal sections showed evidence of withdrawn posts, irregularly spaced and of substantial size. The posts were closest together at the north-eastern end and further apart at the south-west.

16.3.4 This feature – part of a palisade of considerable size – is not very securely dated, since most of it lay beneath the ditches of a later trapezoidal enclosure. That feature provides a Middle Iron Age *terminus ante quem* while the ring-ditch around which the palisade ditch turns provides a *terminus post quem* in the Early Bronze Age. A single sherd of Early Iron Age pottery weighing 68g from the base of the palisade ditch may indicate a likely date.

#### *Other early features*

16.3.5 A number of other Iron Age features may be contemporary with the palisade, due to their direct or indirect relationship with the later trapezoidal enclosure.

Pit 168115 was cut by the first phase of the enclosure ditch (below) while pits 168135, 125063, 125053, 248027 and 125078/125081, although not cut by the enclosure, lay in a position adjacent to the ditch which would have been occupied by an internal bank, suggesting that they may pre-date the enclosure. The same is true of pit 173188 which lay just to the west of the southern terminus of the entrance through the palisade ditch and trapezoidal enclosure.

- 16.3.6 Each of these pits contained material that appeared to be domestic refuse (animal bone, pottery, fired clay, shell and pottery). Pit 125053 also contained small quantities of fuel ash slag, while 173188 contained a human cranium in its uppermost fill.

### *Middle Iron Age*

#### *Trapezoidal enclosure*

- 16.3.7 Once the posts of the palisade ditch had been withdrawn and the ditch had begun to silt up, a large trapezoidal enclosure (134099) was constructed in the angle of the palisade ditch, with a narrow entrance located at the same point as in the palisade. The north-west corner of the enclosure overlay the by now levelled mound or bank and cut the infilled ditch of Early Bronze Age Barrow 2 (see **Plate 11**)
- 16.3.8 The long sides of the trapezoidal enclosure were 83 and 81.5m long (on the north and south respectively); the short sides were 50 and 32m (west and east respectively); the southern corner of the enclosure lay just outside the excavation area.
- 16.3.9 The original ditch was a substantial feature with a steep-sided 'V'-shaped profile, typically 1.6 – 2m deep and 3m wide at the surface. Silting patterns were not conclusive, but indications were of an internal bank.
- 16.3.10 An initial assessment of the pottery in the ditch fills indicates that the lowest fills contain Middle Iron Age material, with predominantly Late Iron Age and Early Roman sherds in the upper three-quarters of the fill sequence. A Middle Iron Age date for the creation and use of the enclosure is therefore proposed.
- 16.3.11 In places, particularly on the northern, eastern and north-western portions, the ditch had been recut. Although this second phase (134101) follows the line of the original ditch for the most part, it is generally very much slighter, intermittent, and varied in width, depth and profile. As such, it is not likely to have represented a reinstatement of the enclosure for its original purpose, but may merely have made use of some conveniently-located features. There is no reliable dating evidence.

*Sunken-featured building*

- 16.3.12 A large sunken-featured building (174060), approximately 6.5m square and surviving to 0.8m below the machined surface was situated in the north-west corner of the trapezoidal enclosure and appeared to be contemporary with it (**Plates 12 and 13**).
- 16.3.13 A ramp cut from the natural chalk lead down into the interior on the south-west side. Three postholes adjacent to it (174096, 174094 and 174098) are likely to have formed an entrance structure, while similar postholes in the corners of the building (174095 and 174097) probably held load-bearing members.
- 16.3.14 At the base of the walls a gully approximately 0.5m wide and progressively shallower away from the entrance is of uncertain purpose. Possibly a drainage feature (perhaps unlikely within a building?) the gully may have been structural, perhaps a bedding trench for beams or boards.
- 16.3.15 Sunken-featured building 174060 was filled with a series of dumped layers containing refuse (pottery – predominantly of Middle Iron Age date – animal bone, shell, fired clay, one iron and one stone object). Notable among this material was a human cranium, cleanly cut from midway across the eye sockets to the rear of the head, where there is also some other possible trauma. No other human remains were present.

*Four-post structure*

- 16.3.16 South of the sunken-featured building, in the centre of the western end of the enclosure, was a four-post structure (176084). Each post was approximately 0.55m in diameter and defined a structure 2.75m square. Post 200038 contained 200g of Middle Iron Age pottery.

*Pits within the enclosure*

- 16.3.17 Within the interior of the enclosure were a relatively small number of features (primarily pits); it is uncertain how many were contemporary with the enclosure, but 200026, 173005, 168084 and 192039 all appear to be broadly so.

*External pits and other features*

- 16.3.18 West of the trapezoidal enclosure were numerous pits and clusters of pits. At the south-western end of this area, 21 pits were arranged in three broadly parallel lines (186033, 150014, 191074, 139049, 139044, 191066 and 173013;

166009, 174044 and 187007; 186052, 186114, 186072, 211067, 166012, 186013, 186018, 186021, 186020, 191054 and 166007) suggesting that they may have been dug along boundaries, or around vanished structures. Domestic activity is indicated by large quantities of animal bone and pottery along with smaller amounts of fired clay, shell, spindle whorls, loomweights (and / or briquetage) and worked stone objects.

16.3.19 Between these lines of pits and the enclosure was an area that was very heavily pitted and quarried. Extensive sequences of inter-cutting features were present, most of which were not very securely dated but which seem to be broadly contemporary with the construction and use of the enclosure. Although most of these features appear to be pits and quarries, some may have been structural. Amongst the numerous postholes present, one six-post structure (130119) was recorded, overlying the outer ditch of Barrow 1. The structure appears to have been of at least two phases, and measured 3m by 1.5m, suggesting some sort of small shed or store house or – just possibly – an excarnation platform. A number of the pits and other features east of the six-post structure contained disarticulated human remains or skeletons. Other, possibly similar structures are likely to be represented amongst the postholes in the area.

16.3.20 Towards the northern end of this area, several features contained human bone. Feature 159118 contained redeposited bone from an adult female and a neonate, while 248090, 248013, 246011, 200062 and 126127 contained crouched and flexed inhumation burials.

16.3.21 South of the enclosure, five pits (130048, 130049, 130062, 168090 and 226001) lay adjacent to its southern boundary. None contained large quantities of dateable material, although 168090 had a pair of Roman copper alloy tweezers in its latest fill. Beyond this, no features were recorded within Zone 13. Given the evidence from Zone 26 and from the earlier gas pipe rescue excavations, the apparent limits of Iron Age activity within Zone 13 do not mark the limits of activity in the wider area.

16.3.22 East of the entrance to the trapezoidal enclosure, a small group of pits is likely to be contemporary. One (248058) contained disarticulated human bone and Middle Iron Age pottery; two others (130085 and 248063) contain similar pottery. The others (130083 and the intercutting group 248065, 248067 and 248069) are undated, but are maybe Middle Iron Age by association.

16.3.23 A further extensive cluster of features lay to the north of the trapezoidal enclosure and included both rubbish and quarry pits, one of which (177193)

contained a complete horse burial (**Plate 14**). This group of features appears to have remained in use (or at least to have survived as depressions in which material was deposited or accumulated) over several centuries: the majority of the dateable ceramics are Middle Iron Age, but some features appear to be of late Iron Age and/or Early Roman date.

16.3.24 This cluster was bounded by a boundary/fence line (134104) along the north-east side (although some elements of the group cut the line, again indicating the long span of time represented). North of this fence line, a row of five pits (191225, 191221, 191229, 150030 and 248034) contained Middle Iron Age ceramics. To the north-west four much larger pits (292001, 243013, 244003 and 247004) are likely to have been Middle Iron Age quarries subsequently used for rubbish disposal into the Early Roman period.

## 16.4 Roman

16.4.1 Twelve features are dated to the Early Roman period (probably 1<sup>st</sup> century AD). Two sunken-featured buildings (191125 and 193140) formed the focus for this activity, which lay around the entrance to the Iron Age trapezoidal enclosure. One sunken-featured building (193140) was immediately outside the entrance; it had an entrance ramp and internal oven and hearth. The second (191125) lay within the enclosure.

16.4.2 Sunken-featured building 191125 was a simple rectangle 4.7m long by 2.7m wide with three postholes along the near centre-line; it contained a limited range of material (animal bone, a ceramic tile, fired clay, shell, a pair of iron tongs and Late Iron Age to Early Roman pottery).

16.4.3 Sunken-featured building 193140 was a more complex structure (**Plate 15**). A very irregular sub-rectangle in plan, 4.6 by 4.2m in maximum dimension, there was a clearly defined ramp, centrally placed, leading down onto the floor of the building from the northern edge, with a large posthole (173205) and five smaller stake-holes (173210, 173209, 173208, 173204, 173207) on either side of it, presumably forming an entrance structure. Other postholes and possible postholes (173203; 173243, 173241, 173239) were present against or cutting into the eastern wall.

16.4.4 In the building's south-western corner was a roughly circular clay-built oven (173198/168285/168286), approximately 1.9m in external diameter, 1.5m diameter internally. The function of this oven is unknown, as it had been cleaned out prior to the collapse of the roof, material from which filled the structure (173212). Beneath the oven, a possibly earlier and unrelated structure was evident in a circular arrangement of 19 stake-holes (168292, 168294,

168296, 168298, 168300, 168302, 168304, 168306, 168308, 168310, 168312, 168314, 168316, 168318, 168320, 168322, 168324, 168326, 168328) again approximately 1.5m in diameter.

- 16.4.5 East of the oven was a large shallow pit (173202), approximately 1.3m by 1m and only 0.1m deep, containing burnt material which may have been raked out from the adjacent oven. Both the oven and adjacent pit were sealed by a layer (173238) which contained over half a kilogram of pottery, along with animal bone, fired clay and shell.
- 16.4.6 The natural chalk on the southern and eastern sides of the building was very markedly worn, indicating that the chalk formed an actual floor or working surface (or that any intervening layers had worn away and were not replaced).
- 16.4.7 After its abandonment, the building filled with a sequence of layers (173199, 173237, 173231, 173229, 173233, 173236, 173232, 173200, 173289, 200092) rich in material including several kilograms of pottery, animal bone, fired clay, worked stone, shell, ceramic building material and – in the uppermost layer – a copper alloy brooch and iron sickle, strip, knife and nails. As a whole, the material represents activity in the Early Roman period.
- 16.4.8 Between and around the two sunken-feature buildings, eight pits (191140, 191134, 191136, 156146 and intercutting group 130037, 130038, 130039 and 130040) were probably contemporary and associated, as were pit 203054 and quarry 159262 a little way to the north. The latter group of features may represent settlement associated with one or more of the phases of enclosures in Zone 14 to the east.

## **16.5 Saxon?**

- 16.5.1 Grave 230115 lay between the inner and outer ditches of Bronze Age barrow 134097. Along with a very degraded neonate inhumation, the grave contained a small scrap of gold and a single small glass bead which is probably Saxon. A Saxon date for the feature is, therefore, likely, and may provide a date by association for some of the other undated inhumation burials within the area defined by the ditches of this barrow (graves 136132, 136129, 248097, 230118, 221014, 203001). However, the nature and disposition of the graves seem more likely to indicate a prehistoric, possibly Bronze Age or Iron Age date, and this will need to be clarified by radiocarbon dating.

## 16.6 Post-medieval

16.6.1 A substantial quarry cut the western edge of the Iron Age trapezoidal enclosure and another lay to the west. Although not closely dated, the quarries represent a type of feature commonly found in the surrounding area, dug to obtain the chalk which outcrops in Zone 13.

## 17 ZONE 14

17.1.1 Zone 14 lies to the east of Zone 13, its western end at *c.* 25.5m aOD sited on the same promontory upon which the cropmarks of the trapezoidal enclosure and the large ring-ditch have been recorded (Landscape 2) (**Figure 22**; see **Plate 3**). To the east the land falls away gently (where Brickearth overlies the Chalk) and then rises eastwards up a south-west facing slope of another promontory which forms the western side of the Hollins Bottom dry valley. Here, at the north-east end of the zone, Chalk was exposed and the land surface lay at *c.* 30.6m aOD.

17.1.2 Subsoil covered the Brickearth over much of the slightly lower lying central part of the zone to a depth of up to 0.3m and, because of the need to strip and store this material within the zone, a somewhat piecemeal approach to the excavation was adopted in this part of the site. Furthermore, it was apparent that some evidence of largely disturbed (by ploughing) feature fills survived within the lower part of the subsoil, particularly where these contained large quantities of oyster shell or where stone hearths were present (see below), and this necessitated a staged approach to the stripping and excavation where such features occurred.

17.1.3 Monitoring of six geotechnical test pits in Zone 14 in 2008 (Trust for Thanet Archaeology 2008a) recorded a number of archaeological features cutting into Upper Chalk or Brickearth deposits. At the western end of Zone 14, 0.37m of ploughsoil was found to directly overlie Upper Chalk (TP6500). A large feature in excess of 1.87m diameter was left unexcavated. Surface finds included burnt flint and fired clay.

17.1.4 Further east, TP6600, TP6600A, TP6700 and TP6800 all encountered Brickearth between 0.38m and 0.55m beneath existing ground level. Colluvial subsoil up to 0.25m thick was recorded overlying the Brickearth. Archaeological features were found in three of the test pits. In TP6600 was a 0.7m wide NW-SE aligned ditch with surface finds of animal bone, oyster shell, worked flints (possibly of Bronze Age date) and pieces of fired clay. In

the same test pit two conjoined pits covering an area of 1.55m by 0.65m were recorded in plan. One piece of prehistoric pottery and two flints of possibly Bronze Age date were found on the surface of the pits which were not excavated. In TP6600A a 1.35m-wide curving feature lay at 0.58m below ground level. Animal bone and charcoal was present on the surface of the feature. A further feature was recorded in TP 6700, 0.32m beneath the present surface. At the eastern end of Zone 14, a linear feature – probably a water-eroded gully - was found in TP6900. No Brickearth was recorded in this test pit which encountered chalk at 0.48m depth.

## 17.2 Neolithic

17.2.1 A group of ten small, bowl-shaped pits (136075, 173041, 186035, 186037, 191081, 191083, 191086, 191093, 191095, 191179) within the central part of Zone 14 contained struck flint and Early Neolithic pottery, decorated and shouldered rather than carinated, indicating a date around the mid 4<sup>th</sup> millennia BC. A further 13 pits (166055, 166057, 166059, 173039, 173040, 173042, 191078, 191177, 191181, 191183, 191191, 191193, 191195) had similar dimensions, shapes and fills, and may consequently be contemporary, although few if any contained any material to confirm or deny this.

## 17.3 Late Bronze Age – Early Iron Age

17.3.1 The western portion of the zone was occupied by a large double-ditched D-shaped enclosure (159222, 159223, 159235, 159236, 159237) with associated field boundaries (159228, 159238, 159240, 182142, 185056) and double-ditched trackways (191154, 202120). The elements of this enclosure system are almost entirely undated, but the western side ditch 182142 was cut by four pits (188027, 188033, 188038 and 159190) which contain Early and Early to Middle Iron Age pottery, suggesting a Late Bronze Age date for the enclosure.

17.3.2 Other Early Iron Age evidence is present to the west of the D-shaped enclosure. Ditch 159245 contained a very small amount of pottery, as did 168056, the only dated member of a group of eight ditches arranged at right angles to each other west of the enclosure system. This Iron Age material is probably the eastern limit of the systems of enclosures and fields in Zone 13.

## 17.4 Late Iron Age – Early Roman

17.4.1 A variety of ditches and gullies overlying the D-shaped Bronze Age enclosure appear to have formed a sub-rectangular enclosure possibly originating in the Late Iron Age and which continued to be used and altered into the Roman



period. More than one phase of enclosure is apparent and there were several internal divisions.

- 17.4.2 The earliest phase appears to have consisted of a series of relatively slight ditches or gullies (143170, 159220, 159242, 182140, 159243; possibly 159221, 159225, 179094, 185052, 191148, 191152). Some of these at least are likely to belong to the Late Iron Age, and ditches 159242 and 182140 both contained small quantities of Iron Age ceramics.
- 17.4.3 Within the enclosure, a small number of features may date to this first phase. Three pits (140120, 264024 and 178070/230083) were cut by later ditches (the latter also contained Late Iron Age – Early Roman pottery); four smaller pits or postholes (191122, 191124, 191144 and 191146) are dated only by extrapolation.
- 17.4.4 At the eastern end of the zone, three pits (133053, 139075 and 173064) contained very small quantities of Late Iron Age to Early Roman pottery amongst larger assemblages of animal bone and shell, though there is a possibility that the pottery was residual in some of these features.

## 17.5 Roman

- 17.5.1 The first phase of sub-rectangular Iron Age enclosure was replaced by a series of more substantial ditches including 202124, 159224 and 159241, the latter two of which cut through the existing ditches. Both 159224 and 159241 contained iron objects of unidentified type and date, and ditch 159224 also contained a copper alloy strip, glass, and Early Roman pottery in small quantities; ditch 159227 contained similarly-dated pottery. This phase in turn was cut by a pair of large ditches on the same general alignments as their predecessors on the north and west sides (159244 and 159219) of the enclosure. Ditch 159244 contained a copper alloy spur of Mid Roman date (the pottery dated from the Iron Age to the Saxon). Ditch 159233 was parallel to 159244 and may have been contemporary. Ditch 159244 was in turn cut by the ditches of a smaller sub-rectangular enclosure, itself of two phases (159230 and 159229). The possibility that this was a structural feature can probably be ruled out on the basis of its size as well as the nature and depth of the ditches.
- 17.5.2 Within and adjacent to the enclosure were 16 pits of certain or probable Roman date (230088, 264026; 145170, 145173, 145166; 121054, 121060; 219066; 185016; 185006; 139054; 258010; 143182; 279009; 125019), some in small inter-cutting groups. Few contained much dateable material, but a combination of finds (which includes some iron smithing slag) and

stratigraphy allow 139054 and 185006 to be assigned to the first phase of enclosure, 230088, 258010 and 279009 to the second phase, 121054 and 121060 to the second or third phase, and 264026 to the third phase. The remaining eight pits are provisionally assigned to the Roman period on the basis of their location and associations.

- 17.5.3 A pit (173090), ditch (139098) and posthole (176072) lay towards the east end of the zone. The pit and posthole are dated to the Roman period by ceramic building material and pottery respectively, the ditch only by association.

## 17.6 Saxon

- 17.6.1 Features have been attributed to this phase on the basis of a relatively small quantity of datable material recovered from them (including Mid-Saxon Ipswich Ware pottery), as well as stratigraphic relationships. They include an inhumation cemetery of 24 burials and various groups of pits. The features are clustered in the central region (cemetery and pit groups) and eastern region (pits).

### *Cemetery*

- 17.6.2 The cemetery comprised 24 graves orientated east-west, all containing the poorly-preserved remains of inhumations interred with the head positioned to the west (**Plate 16**). The graves overlie the eastern, curving ditches of the D-shaped Bronze Age enclosure (11 graves cut the ditches), and the distribution of these and other Saxon features suggests that elements of the later, Iron Age – Roman rectangular enclosure may still have been visible at the time the cemetery was in use, probably in the earlier part of the Mid-Saxon period. With the exception of two graves (176043 and 166032) which are 4m to the west, the graves are tightly clustered, with three rows apparent, covering an area of approximately 10m x 10m.
- 17.6.3 Each grave was spatially distinct from its neighbours, with the exception of 126057, which cut through earlier grave 126061. Disarticulated bone in the fill of 126057 is likely to have been re-deposited from grave 126061, rather than deriving from a second body buried within 126057.
- 17.6.4 Apart from some animal bone, burnt and worked flint and a few very small sherds of Iron Age and Roman pottery incorporated in the backfills, the only objects associated with the burials were an iron knife from grave 136059 and ten iron objects (seven of which were nails) from 223033. The location, layout and paucity of finds allows a late 7<sup>th</sup> or 8<sup>th</sup> century date to be proposed for this small cemetery, which would suggest different chronological foci for activity

in the immediately surrounding area. At Cliffsend Farm to the south-west, for example, an inhumation cemetery was of early 6<sup>th</sup> to late 7<sup>th</sup> century date (McKinley *et al.* forthcoming).

### *Pits*

- 17.6.5 The cemetery lay in an area relatively free of other contemporary features, with large scatters of pits and postholes approximately 10m to the north, west and east. The only features that seem likely to have been associated in some way with the cemetery is a line of three shallow pits (126034, 126036 and 126038) running westwards from the north-western corner of the cemetery, and possibly a line of five larger pits (191048, 134054, 126052 cutting 126048, and 166068) which may mark the western boundary. These larger pits contained only small amounts of material (some fragments of animal bone, some marine shell and an iron knife in 166068), suggesting that they did lay close to a settlement, and the precise chronological relationship of these and the other pits to the cemetery remains to be clarified.
- 17.6.6 West and south-west of the cemetery, 19 pits formed a diffuse group. Most contained relatively limited quantities of marine shell and animal bone, with only occasional pot sherds, metal objects (including iron knives in 202151 and 264021), fragments of daub and fired clay, stone and a glass bead (in 126040). The exception to this general pattern was pit 202128 which contained over a kilogram of animal bone and over 16kg of fired clay, along with smaller quantities of marine shell, stone and pottery. In most pits, marine shell of a variety of species was the most frequently-occurring material, suggesting that the pits were associated with the disposal of waste from the preparation of this food.
- 17.6.7 North of the cemetery, ten pits clustered between and around a pair of slab-lined hearths, with further pits to the east. The two hearths (173051 and 191119) were broad and shallow, lined with greenish-grey sandstone slabs and (in the former) flint nodules and a re-used quern fragment. Of the hearth in 191119 only the basal stone survived; in 173051 stone slabs had been roughly laid to form a floor, with stones on edge forming walls. Signs of *in situ* burning were few, though some of the stone in 173051 were discoloured, as was the lowest fill of 191119 (beneath the hearth stone), indicating a low intensity of heat. It can be noted that a moderate number of unworked but sometimes slightly burnt sandstone slabs and smaller fragments were recovered from the subsoil in this area, and a particularly large group of slabs and small boulders was recovered from one of the pits to the west.

- 17.6.8 Many of the pits surrounding the hearths contained large quantities of marine shell, again comprising a variety of species, suggesting that the hearths may have been associated with the preparation and cooking of shellfish, perhaps seasonal preparation by pickling or smoking. The uppermost fills of the relatively large, outer ditches on the north and east sides of the Roman enclosure contained large quantities of marine shell of various species (along with some animal bone), and it is thought that this material represents the remnants of what was formerly a more extensive spread of Saxon shellfish processing debris.
- 17.6.9 Lines of pits, several also containing concentrations of marine shell, particularly oyster, were found at Cliffsend Farm approximately 500m to the south-west, where they have been assigned a 7<sup>th</sup> – 8<sup>th</sup> century date, probably broadly contemporary with the activity in Zone 14 (McKinley forthcoming).
- 17.6.10 West of hearths 173051 and 191119 were several further pits and numerous small, largely undated features which were perhaps the bases of very truncated postholes (post-pipes were visible in two of approximately 20 examples). It should be noted that small negative features in this area, as well as to the east, were only visible at a higher level within the overlying subsoil if they contained moderate amounts of shell, particularly oyster shell, and many have almost certainly been truncated by as much as 0.15m during machining. If these features were postholes then they are likely to have marked the lines of fences rather than the walls of buildings or other more substantial structures. The apparent absence of structural remains, along with the general paucity of Saxon pottery and other material (a spindle whorl from hearth 191119; a loom weight from pit 203004), might suggest that the area was one given over to craft activities, specifically shellfish processing, rather than to settlement.
- 17.6.11 A third concentration comprising 17 pits (202034, 202003, 202046, 173061, 185033, 220006, 202038, 185022, 176049, 185010, 173112, 173063, 173093, 133064, 176064, 133058 and 133048) lay at the eastern extremity of the zone on the slightly higher ground on the west side of Hollins Bottom dry valley. These pits have been dated to the (Mid-) Saxon period, although there are a number of other pits in this area which currently remain undated but are also likely to be associated with this phase. The features here are thought probably to have been associated with settlement, although no structural remains have been identified.
- 17.6.12 Finds from these pits includes pottery of Early to Middle Saxon date (including Ipswich Ware), several iron knives, two large whetstones, animal bone, fired clay, marine shell, a glass bead and fuel ash slag. The pits have

been interpreted as rubbish pits and may have been associated with another significant focus of Saxon activity within Zone 14, perhaps contemporary and associated with the use of the cemetery and the shellfish processing activity approximately 250m to the west.

17.6.13 Saxon as well as some earlier material also came from the upper part of what is likely to have been a large natural sink-hole at the east end of Zone 14.

## 17.7 Medieval

17.7.1 Pit 202027 contained a fragment of medieval tile, along with some shell and animal bone. The pit lay at the western end of the easternmost concentration of Saxon features and was sealed by the same colluvial layer (184002) which sealed many of them, suggesting that the tile may be intrusive.

## 18 ZONES 15 AND 16

18.1.1 Zone 15 is located on the south and south-east facing slopes of the west side of a dry valley known as Hollins Bottom (Landscape 2). The land generally falls from *c.* 31m aOD in the west to *c.* 25m aOD in the east (see **Figure 22**). The western part of Zone 15 lies on Upper Chalk while the eastern half, in Hollins Bottom, lies on Brickearth.

18.1.2 No archaeological investigation has taken place in the area of Zone 15. However, previous work in the vicinity has indicated that the area east of Hollins Bottom is particularly rich in archaeological remains. A Neolithic causewayed enclosure occupied Chalk Hill and a possible cursus monument extended south from this towards the Lord of the Manor road junction. Numerous cropmarks indicate further probable Neolithic monuments and Bronze Age barrows in this area, several of which have been excavated to the north of the Lord of the Manor junction (Trust for Thanet Archaeology 2008; Moody 2008; Perkins 2010).

18.1.3 Extensive inhumation cemeteries of Saxon date have been identified from aerial photographs, and examples excavated on the east side of Hollins Bottom, most notably that known as Ozengell (a Scheduled Monument), a short distance to the north-east of the Lord of the Manor junction at the eastern end of Zone 15.

18.1.4 EKA improvement works undertaken at the Lord of the Manor Junction (Zone 16) immediately north-east of Zone 15 (see **Plate 3**) were relatively minor and had no impact on any archaeological remains that might be present.

## 18.2 Early – Middle Iron Age

18.2.1 A single gully (125057) at the east end of the zone contained sherds of a pottery vessel of Early-Middle Iron Age type.

## 18.3 Saxon

18.3.1 Four pits (174117, 174119, 203009 and 203011) at the west end of the zone may be Saxon. Most contained marine shell, and pit 174117 also produced an iron tool.

## 19 ZONE 17

19.1.1 Zone 17 continued northwards from Zone 11, from *c.* 28.5m aOD up the gentle to moderate south-facing slope of Sevenscore to the chalk ridge above *c.* 44.6m aOD (**Figure 23**).

19.1.2 Background information highlighted the presence of several infilled chalk quarries and associated features within and either side of Zone 17 (Oxford Archaeology 2003).

## 19.2 Iron Age

19.2.1 A series of four ditches crossed the zone in an east-west alignment and probably formed part of an Iron Age field system. These ditches, from south to north, comprised: 183012, 171012, 171016, and 143032. The four ditches were parallel to each other, spaced at regular intervals and continued beyond the limits of the excavation. They varied somewhat in depths, from 0.17 to 0.77m, but this may be a reflection of truncation and the variable nature of the geology in this zone (Brickearth to the south, Chalk to the north). There was an indication from the fills of ditch 143032 that there had been a bank on the north side.

## 19.3 Late Saxon

19.3.1 A cluster of three pits (143037, 147029 and 155014) in the middle of the zone indicated Late Saxon activity in the vicinity, possibly related to settlement; with a ditch possibly also of this date at the northern end of Zone 11. The pits, the only certainly identified Late Saxon features on the route, were all of similar size and form but varied between 0.25 and 1.1m in depth. The fills of the pits contained varied assemblages of finds including pottery, marine shell, animal bone, an iron knife and a fragment of lava quern.

## 19.4 Post-medieval

- 19.4.1 Post-medieval features comprised two large chalk quarries (135054 and 193143) and a substantial sunken trackway (147040/171021), all clearly visible on aerial photographs. A 19th century date is likely for these quarries, and they could equate to the ‘old chalk pit’ shown on the 1st edition OS mapping immediately to the east of the excavated features. However, it is possible that they may have had origins in the earlier post-medieval period. Both quarries were investigated by cutting machine sections across them, which were then cleaned back and recorded.
- 19.4.2 The sunken trackway provided access to the quarries and continued north-east into Zone 18, where it may have bifurcated. The undulating nature of the base of the trackway may reflect the use of wheeled vehicles, as well as some water erosion. An ephemeral east-west aligned feature, 147025, may be the remains of a post-medieval hedgerow, although it could be earlier and related to Iron Age ditch 183012.

## 20 ZONES 18 & 18A

- 20.1.1 Zone 18 lay at 90° to the northern end of Zone 17, and extended to the west along the chalk ridge and south of the A253 at an average height of *c.* 45m aOD (**Figure 23**).
- 20.1.2 Background information highlighted no significant potential for Zone 18, but noted a focus of Iron Age and Roman features to the west in Zone 19 (Oxford Archaeology 2003).

### 20.2 Iron Age

- 20.2.1 The earliest activity in this zone comprised a series of shallow ditches and gullies (135042, 135044, 135047 and possibly 135046) of probable Iron Age date, although dating evidence was very sparse. All except gully 135046 were aligned approximately north–south, but their function is uncertain. The features may relate either to the Iron Age (agricultural) activity identified in Zones 11 and 17 to the south-east, or perhaps to some other as yet undefined activity to the north beneath Manston Airport.

### 20.3 Post-medieval

- 20.3.1 In the east of Zone 18 was the northern continuation of the post-medieval trackway that lead south to the quarries in Zone 17 (see above).

## 20.4 Modern

20.4.1 A short length of part of a system of World War II zig-zag defensive trenches was exposed in the central northern part of Zone 18 (not shown on plan). Although relatively clear on aerial photographs, the extent and layout of these trenches were much less clear following the stripping of topsoil, and they were subject to only very limited investigation due to the presence of contaminated material in the backfill.

## 21 ZONES 19 & 19A

21.1.1 Zone 19 extended between Zones 18 and 20 along the edge of the ridge of high ground occupied by Manston Airport, and south of the A253, at heights of between *c.* 46.5m and *c.* 48.5m aOD, with Zone 19a lying south of the main excavation area (**Figure 24**).

21.1.2 Earlier excavations during the installation of the twin gas pipes along the middle of this zone revealed a significant concentration of Iron Age and Roman features, as well as cemeteries of Roman and Saxon date, all in the central part of the zone (Perkins 1985).

### 21.2 Late Bronze Age

21.2.1 The southern side of a probable oval or sub-circular enclosure was exposed along the northern edge of Zone 19, extending beyond the limit of excavation, and occupying a slight knoll of higher ground. The enclosure was approximately 65m long and defined by three sections of a segmented ditch of varying length and size (the segments up to 3m wide and 1.5m deep). Parallels might be found in the Late Bronze Age enclosures recently excavated at Cliffs End Farm (McKinley forthcoming). Several sections were hand-dug through the ditch segments and all of the terminals excavated, following which the remainder of the ditch fills were carefully removed by machine in controlled spits.

21.2.2 The three ditch sections (126229, 190382 and 126230) which defined the southern side of the postulated enclosure were separated by gaps of different size (the smallest less than 1m and the largest at least 3m wide), with the largest and possibly principal entrance on the eastern side. Deposits within the ditches possibly indicated an internal bank. Most of a disarticulated human skull was recovered from the westernmost ditch segment, and may hint at



something more than a simple domestic or agricultural function for the enclosure.

- 21.2.3 Within the enclosure, but extending beyond the limit of excavation to the north, was a large pit (217087) that contained 20 sherds of Late Bronze Age pottery. A north-south gully (126231) also contained Late Bronze Age pottery (and two Iron Age sherds), but appeared to be an earlier feature, cut by the enclosure ditch, and although it was difficult to be certain, it may have been associated with ditch 126233 to the east, though the latter may have been of Iron Age date. Both features were aligned parallel to each other.

### 21.3 Iron Age

- 21.3.1 Approximately 10m east of the Late Bronze Age enclosure was rectangular post-built structure 267045, aligned east to west and measuring approximately 5m by 3m. Structure 267045 comprised two parallel rows of four postholes, and pottery from some suggests an Early to Middle Iron Age date. The structure probably post-dates the use of the segmented enclosure, but was possibly contemporary with what appears to have been a metalled trackway (252036). This was up to 3m wide and 0.13m deep, and lay between the enclosure and the post-built structure, perhaps respecting the still-extant ditch of the earlier enclosure.
- 21.3.2 The function of the post-built structure is uncertain, though it may have been an above-ground storage structure, as commonly found in association with Iron Age settlements, rather than for domestic occupation.
- 21.3.3 A second potential post-structure, 195120, lay 40m south-east of structure 267045, and comprised six postholes in two rows with a further scatter of five postholes immediately adjacent. Several pottery sherds from three of the postholes indicate a Late Iron Age date.
- 21.3.4 A relatively large beehive-shaped pit, 205106, 0.9 m deep, was located on the northern edge of the excavation area approximately 25m east of the post-built structure 267045. The pit was probably originally used for storage and subsequently for refuse disposal, and a range of Iron Age finds were recovered from the fills. At a later date, possibly in the Late Iron Age or Early Roman period, an inhumation burial (skeleton 205108) was inserted in the pit (**Plate 17**). The skeleton was of a man aged over 40, who was laid on his back with head to the north-west and legs flexed towards the south.
- 21.3.5 Other features that are likely to belong to this phase included an L-shaped ditch, 126232, that contained a single sherd of Iron Age pottery and cut

Bronze Age pit 217087. Ditch 126133, though provisionally assigned to the Bronze Age (see above), may have been a continuation of ditch 126232 to the south.

#### 21.4 Late Iron Age - Roman

21.4.1 This phase was principally represented by two trackways (193119 and 126277) and two cemeteries (126189 and 195118), one of which was associated with a small enclosure (249029).

##### *Trackways*

21.4.2 Two trackways of probable Late Iron Age - Roman date were identified in Zone 19, with a somewhat irregular trackway (193119) possibly replaced by a more regular trackway (126277). Both trackways perhaps branched off from an early trackway which is thought to have run along the chalk ridge to the north, on a similar course to that later followed by medieval *Dunstrete*. The projected course of trackways 126277 and 193119 could have taken them to Minster, the site of a villa and earlier settlement (Moody 2008).

21.4.3 Trackway 193119 ran east to west and defined the southern limit of Roman activity in Zone 19/19a. It may have been developed through attrition and repeated use, rather than being formerly established. Trackway 193119 was between 5m and 15m wide but only 0.2m deep, forming a broad, slightly undulating linear feature. A pair of shallow wheel ruts, 1.8m apart, was apparently associated with this trackway, the dating of which is based on very sparse ceramic evidence.

21.4.4 Trackway or holloway 126277 on the eastern side of the excavation area ran NE-SW, the junction between this and trackway lying in the unexcavated strip between Zones 19 and 19a. Trackway 126277 varied in width from at least 2m in the north (though probably truncated here) to over 6m in the south, and a ditch (126276) ran parallel and adjacent to the trackway on its north-west side, perhaps acting as a drainage ditch. The northern part of the trackway was heavily disturbed by a post-medieval chalk quarry and modern service trenches.

##### *Eastern cemetery 126189*

21.4.5 The northern cemetery comprised 11 inhumation and 18 cremation burials, in addition to the five inhumation and five cremation burials recorded during earlier excavations in the 1970s and 1980s in advance of the installation of twin gas pipes (Perkins 1985). Other burials may lie beyond the limit of excavation to the north, though the east, west and southern extent of this

mixed rite cemetery seems to have been clearly established. The graves apparently clustered around the east side of a small, probably square or rectangular enclosure (249029). The mixture of inhumation and cremation burials, together with ceramic evidence suggests a period of use spanning the 1<sup>st</sup> to 3<sup>rd</sup> centuries AD, and the stratigraphic sequence for one subgroup, 126109, reflects the general pattern over time of a shift in Roman burial practice from cremation to inhumation burial.

- 21.4.6 Most of the cremation burials were urned and accompanied by one or more grave-goods. The grave-goods largely comprised ceramic vessels, though several brooches and a small number of other items were also present. Hobnails were recovered from some of the graves.
- 21.4.7 One of the cremation burials (153068) was located within enclosure 249029 and may have been contemporary with it, the pottery from the burial dated to the mid - late 1<sup>st</sup> century AD. The square grave pit was relatively substantial and located slightly off-centre in the enclosure. Along with the cremated remains, the grave contained 11 iron nails as well as an iron object, the nails suggesting that the remains had been placed in a wooden container. The surrounding ditched enclosure (249029) was *c.* 10m across, with the northern extent lying outside of the excavation area.
- 21.4.8 In addition to cremation burial 153068, a small oven or possible kiln (126175) was located within enclosure 249029 and may also have been broadly contemporary with it. However, this oven or kiln contained 1<sup>st</sup> to 3<sup>rd</sup> century AD pottery, hinting that it might be later in the sequence, and it truncated a large, shallow pit (126117) with a pottery assemblage of possible Late Iron Age to Early Roman date.
- 21.4.9 The ditch on the west side of enclosure 249029 is recorded as cutting east-west ditch 126170, although this is considered extremely unlikely as the latter ditch was associated with a Saxon – medieval trackway. Also on the western side, the enclosure ditch was truncated by a large, shallow feature, 217091, of Early – Mid-Roman date, and a large pit (217104).
- 21.4.10 Two other features apparently associated with the northern cemetery comprised pits 220068 and 193051. These contained ceramic vessels but no cremated remains, suggesting either that they had been badly truncated or (and more likely) that these features acted as cenotaphs – memorials to the deceased where no actual remains were present.
- 21.4.11 In addition to the cremation burials there were 11 inhumation burials and three ‘empty graves’ in this cemetery, all located within a fairly limited area to

the east of enclosure 249029. The inhumation burials all appeared to be broadly contemporary since they formed a relatively small group, at least within the area excavated, and all were aligned NNE-SSW, with one exception (248107), which may be slightly earlier. At least six had been buried in wooden coffins, as shown by the presence of large nails or, in two cases, clench bolts and roves indicating the possibility of planked covers to the graves.

21.4.12 Of the 11 graves with human remains, five had poor preservation or little in the way of skeletal material, five had skeletons in a reasonable state of survival, and one was a neonatal burial. Where it could be established, the bodies had been placed in sub-rectangular grave cuts, and laid in a supine extended position. Five graves demonstrated that the heads were to the north and three to the south. Most of the graves contained associated grave-goods, including pottery vessels, copper alloy brooches and bracelets and, occasionally, coins. One of the graves (126100) truncated two earlier cremations burials, 126103 and 126106, and provides a useful stratigraphical relationship.

21.4.13 Three 'grave-like' features, 126329, 126355 and 248258, contained no human remains and only two objects were recovered; a single nail each from 126329 and 248258. It is possible that any human remains once present have decomposed leaving no trace, or the graves were robbed in antiquity, or they were dug but never used. However, it is most likely that they were excavated during the earlier excavations (Perkins 1993), and this will be established by comparison of the records made then with those of 2010.

21.4.14 A single north-south aligned grave (126223) to the east lay amongst the Saxon graves, but the presence of sherds of later Iron Age and Roman pottery, which may be residual, could indicate that this was a Roman rather than Saxon grave.

#### *Western cemetery 195118*

21.4.15 The second cemetery, approximately 150m west of the eastern cemetery, lay within Zone 19A. This small group comprising nine inhumations burials lay to the north of trackway 193119 and the graves were all aligned approximately north-south. It is possible that the full extent of the cemetery was revealed within the excavation area. A further isolated burial (262065) to the east may be an outlier. All the burials were inhumations and were made within sub-rectangular grave cuts. The depth of the graves was extremely shallow, varying from 0.06 m to 0.4 m and this reflected their position immediately below the topsoil and the probable damage from ploughing. Some burials were

accompanied by grave goods, most notably copper alloy rings (graves 216013 and 262044) and a pin (grave 257016).

- 21.4.16 One grave (216013) appears to be spatially associated with a curving linear, 278061, which may have been part of an enclosure surrounding the burial, although it remains uncertain if this was contemporary. An east-west aligned ditch (262041), possibly of Saxon or medieval date, truncated the northern ends of graves 257019 and 257016.

## 21.5 Saxon

- 21.5.1 The Saxon period was represented by holloways 126226 and 126227, and at least two cemetery groups, one to the north (126228) and one further south (195119). Two further, apparently small clusters of burials lay to the west and in Zone 20 to the west (see below).

### *Trackways 126226 and 126227*

- 21.5.2 Two trackways or holloways converged close to the northern edge of Zone 19, approximately 50 m west of Roman trackway 126277, and then turned to the west and continued along the length of Zone 19a, before turning to the south-west and extending beyond the limit of excavation in Zone 20a. At the east end the trackway(s) was on the same approximate alignment as the Roman trackway(s), suggesting this route through the landscape, perhaps extending to Minster to the south-west, continued in use from possibly the Late Iron Age through to the Saxon and probably into the medieval period.
- 21.5.3 The proximity of at least two Saxon cemeteries to this route may indicate that it was both an important route and perhaps a boundary. The width and depth of the trackway varied and it followed a slightly meandering course, with some evidence for drainage ditches along the sides, particularly the southern side. Although the holloways are not precisely dated, the locations of the Saxon burials close to or alongside them suggest that they originated in the Saxon rather than medieval period, though they probably remained in use beyond this. A small quantity of Saxon and some medieval pottery was recovered from the upper fills. Other finds include six copper alloy objects (a coin and a button amongst them), ten iron objects (mostly nails, though also a horseshoe, two knife blades and a spearhead were also recovered).
- 21.5.4 In several places along the holloways were areas of metalling, representing surfaces that appear to have been deliberately constructed. There is also evidence that the earliest metallised surfaces were repaired, and there were wheel ruts worn through some of the surfaces. Towards the north-eastern end

of trackway 126227, here worn to a pronounced holloway, were two areas of metalling lying parallel to each other, and between these was a linear arrangement of 13 postholes (126222) along the middle of the holloway. One possible function is that they acted as marker posts along the trackway, though this interpretation is not overly convincing and their purpose remains unclear.

21.5.5 Associated with the holloways were three ditches, 126172, 151055 and 262041. Ditch 126172 lay parallel to, and east of, holloway 126227 and almost certainly continued to the south-west as ditch 151055. Further south of ditches 126172/151055 was a similarly aligned ditch (262041) which cut earlier Roman trackway 193119, and removed the skull of Roman burial 257018. It contained no dateable artefacts but shared a similar alignment to the Saxon holloway and stopped just east of the southern Saxon cemetery (195119).

21.5.6 Stratigraphic relationships between the trackways and the Saxon cemeteries were ambiguous, though it is likely that the two were contemporary in use if not in origin.

### *Cemeteries*

21.5.7 As in the Roman period, parts of two cemeteries were represented, neither of which was fully exposed within the excavation area. There were also two smaller groups of Saxon burials, one group less than 100m to the east of one of the main cemeteries and the other much further to the west, at the east end of Zone 20. Both of the main cemeteries lay on the southern edge of the ridge of higher ground with extensive views to the south across the Wantsum Channel and beyond, and both would have been visible from the Saxon settlement in Zones 10 and 11, though it is not certain at present that the cemeteries and this settlement(s) were contemporary.

21.5.8 Both main cemeteries contained only inhumation burials, and no Saxon cremation burials have been identified. Both cemeteries, however, extended beyond the limits of excavation, cemetery 126228 to the north-east and 195119 to the south-west, and in neither case is it clear what proportion of the cemetery has been exposed and investigated.

### *Northern cemetery 126228*

21.5.9 Along the northern side of Zone 19 was a fairly dispersed group of 28 inhumation graves, containing a maximum of 31 individuals. Most of the graves contained a single individual but one held two individuals and another three, in both cases buried side-by-side. These burials were in addition to the three recorded during the earlier excavations (Perkins 1985). The graves were

all aligned approximately east-west, broadly parallel to trackway 126227. There were no instances of intercutting graves and this might suggest that they were marked in some way or otherwise visible. In all cases, except one, and where it could be determined, the bodies were laid in an extended supine position with their heads to the west. The exception was grave 126214, which was aligned north to south, and the dating of which would seem to indicate a later Iron Age or Roman date, though a Saxon date is still considered most likely. There was a mixture of male and female burials and also a number of infant/juveniles, reflecting the individuals within a community.

21.5.10 Grave goods were present with the majority of burials, including items of jewellery, such as glass beads, bracelets and buckles, along with iron knives, spindle-whorls and occasional pottery vessels (including a Frankish bottle). There was also a single-edged sword or knife (a scramasax). The provisional data suggests a 6<sup>th</sup> to 7<sup>th</sup> century date for the cemetery, though there are a few indicators that some burials may date to the very early 8<sup>th</sup> century.

21.5.11 The two multiple graves were more unusual elements of the cemetery. Grave 136111 contained three individuals (136112, 136113, and 136115), buried side by side and seemingly interned at the same time (**Plate 18**). The group comprised an adult female and two juveniles / sub-adults. Associated grave goods included quartz beads, a copper-alloy disc and a brooch, a key, an iron knife and a sceatta dated *c.* AD 700. Grave 266018 held two individuals buried side by side, one an adult female and the other a sub-adult. There were few grave goods, a piece of worked bone, an iron knife blade and a fragment of copper.

21.5.12 In addition to the 31 inhumation burials there was a single, shallow, unurned cremation burial, 220118, but this appears to be Roman. A number of empty or robbed graves with no surviving human remains were present within the cemetery, some exhibiting extensive disturbance, perhaps indicating grave robbing in antiquity.

#### *Southern cemetery 195119*

21.5.13 The second cemetery lay to the south of Saxon trackway 126227, on the other side to the northern cemetery. The 16 graves in this group were sufficiently different as to form a distinct group. In plan the burials appear to be arranged in a slightly curving 'band', perhaps indicating the presence of some monument or other feature to the south beyond the limit of excavation.

21.5.14 The graves were all aligned approximately east-west and in at least six cases, where it could be determined, the bodies were laid in an extended supine

position with their heads to the west. The grave cuts were generally deeper and more regular than those in the northern cemetery, though the majority of the human remains were in a very poor state of preservation with the bones either having been degraded or disturbed through grave robbing. Another difference from the northern group was the relative lack of grave goods, although this may partly be a reflection of the grave robbing. The richest grave was 171171 which contained a copper alloy finger ring and fragments of a chain, a silver brooch and numerous iron objects. One of the other graves had an iron shield boss, while in another a bone comb lay on the head, perhaps originally in the hair. The grave goods generally point to a 6<sup>th</sup> century date, though some are likely to extend this date range through into the 7<sup>th</sup> century.

#### *Other burials*

21.5.15 A cluster of three inhumation graves, 126204, 126223 and 220130, cut Roman trackway 126277 in the east of the zone. The dating of the graves is somewhat problematic since diagnostic finds are few, and two graves were orientated north to south and one east to west. A Saxon rather than Roman date is considered most likely for this small group, although one burial (126223) did contain Late Iron Age and Roman pottery (see above).

### **21.6 Medieval**

21.6.1 An irregular, narrow and relatively shallow linear feature, 126281, aligned north-south, contained over 40 sherds of medieval pottery, broadly dated to between the mid 11<sup>th</sup> and the mid 14<sup>th</sup> century. There are no other features in the area dated to this period.

### **21.7 Post-medieval**

21.7.1 A north-south metalled track, 286065, towards the eastern end of the zone was at least as early as 19<sup>th</sup> century in date since its position corresponds to a linear footpath shown on the 1st edition OS. This track may have provided access between a precursor to the existing A253 to the north and Thorne Farm or its predecessor to the south.

### **21.8 Modern**

21.8.1 Towards the western end, in the northern half of Zone 19, and continuing west into Zone 20, were the remains of several features that formed part of a series of World War II defensive features. These defences, visible on aerial photographs, were located on the on the south side of Manston Aerodrome and were associated with its defence, protecting it against landward attack from the



south. The group of features included zig-zag trenches of at least two forms, extending over 400m east and west from a possible command bunker along the crest of the hill. Limited investigation indicated the presence of contaminated deposits and the trenches were subject to further recording during decontamination works, showing the surviving trenches to be relatively narrow and deep, less than 1m wide and up to 1m deep.

## **22 ZONES 20 & 20A**

22.1.1 Zone 20 extended between Zones 19 and 21, at a height of *c.* 48m aOD (slightly lower than Zone 19) along the edge of the chalk ridge of high ground south of Manston Airport (**Figures 25-6**).

22.1.2 Earlier excavations during the installation of twin gas pipes along the middle and northern part of Zone 20 revealed a significant concentration of Roman features (Perkins 1985). These indicated a settlement towards the western end of the zone, probably focused on the postulated junction of a trackway extending to the south-east towards Cottington (and the Roman settlement in Zones 10/10A) and the presumed course of *Dunstrete*, a medieval route with probable Roman or earlier origins which ran east- west along the ridge to the north.

### **22.2 Early Bronze Age**

22.2.1 At the eastern end of Zone 20A, in the southern gas trench, was a single isolated pit (228052) containing a relatively substantial quantity of pottery dated to the Early Bronze Age. This was the only feature attributed to this period.

### **22.3 Roman**

22.3.1 Some features assigned to this period require more precise dating, though the majority are of Middle Roman date and assigned to the 2<sup>nd</sup> – 3<sup>rd</sup> centuries AD, with a smaller number assigned to the Early Roman period. Three provisional sub-phases have been constructed based on ceramic, spatial and stratigraphic evidence, although these are likely to overlap and form a single sequence.

#### *Sub-phase A*

22.3.2 At the western end of Zone 20 was a 3m-wide, curving, metalled trackway (249061), broadly aligned NW-SE, with evidence for Roman settlement on either side, which may belong to a slightly later phase of activity (see sub-

phase B below). Excavations in Zone 29, within the southern boundary of Manston Airport, confirmed that the trackway and settlement continued onto the higher ground to the north-west (see below). A similar Roman settlement was excavated during 1994-5 on the chalk ridge to the west of the EKA, in advance of construction of the Monkton dual-carriageway (Bennett *et al.* 2008).

- 22.3.3 The trackway contained well defined, and in some places fairly deep wheel ruts, approximately 1.2m apart. Sections of associated trackside ditches (252018, 249267) were revealed in parts of the excavated area (Zone 20) with another, larger ditch on the eastern side (252059), probably a trackside ditch as well as a field boundary. Following disuse of the trackway, sometime in the later Roman period, material accumulated within the hollow over the existing metalled surface. Further south (in Zone 20A), there appeared to be a junction with another metalled trackway, on a north-south alignment.
- 22.3.4 On the northern side of the trackway 249061, and broadly aligned to it, were a series of sub-rectangular small fields or enclosures, part of what could be a 'ladder' settlement. It is unclear if the trackway came first or if it developed after the enclosures had been established, but it is more likely that the settlement was secondary (see sub-phase B below). The enclosure ditches were narrow and relatively shallow, suggesting that they had been truncated, and they may originally have been associated with upstanding boundaries of some form, such as hedges.
- 22.3.5 A large, shallow, circular ring-ditch (249060), 20m in diameter, was located just below the brow of the slope on the northern side of Zone 20. It lay adjacent to trackway 249061, which cut the edge of it, though the trackway and ring-ditch are likely to be broadly contemporary. The fills of the ditch contained a small quantity of Roman pottery, but its function remains uncertain; an animal corral is a possible interpretation.

### *Sub-phase B*

- 22.3.6 This sub-phase comprised settlement and funerary features that were seen to respect the earlier trackways and boundaries.

#### *Settlement*

- 22.3.7 Structural evidence was provided by a group of five sunken-featured buildings (SFBs) within the area of the enclosures to the north of trackway 249061. Four examples lay close together and comprised SFBs 249049, 249081, 249082 and 249083, with another (249085) a short distance to the west. These SFBs were

of various shapes (generally sub-rectangular, with vertical sides) and sizes (up to 1.5m deep) and had been truncated to a greater or lesser degree by ploughing and in three cases by the installation of services. Only two SFBs (249083 and 249085) had associated postholes, presumably relating to the superstructure. Four of them (249049, 249081, 249083 and 249085) had hearths or ovens in their base, with that in 249085 being carefully constructed of stone. Two smaller sub-rectangular pits may represent ancillary structures whilst several others are certainly rubbish pits, one of which was sealed by a yard surface associated with one of the structures. At least one large, flat-bottomed pit recorded in the earlier excavations in the vicinity (Perkins 1985) is also likely to have been a sunken-feature building, and a comparable but larger group were excavated further to the west during the Monkton dual-carriageway works in the 1990s (Bennett *et al.* 2008).

22.3.8 Finds from the fills of these SFBs included quantities of pottery, animal bone and burnt daub - probably relating to their superstructure - along with several iron and copper alloy objects, and a number of fragments of copper alloy sheet, overall indicative of domestic waste. There were also several human infant or neonate burials, in SFBs 249083, 249081, and 249049, with the three in 249081 all neonates.

22.3.9 Another probable SFB, 228059, 0.48 m deep, was located at the western end and on the northern edge of Zone 20, 120m west of the others. The feature had been heavily disturbed by services and contained a circular oven, constructed largely out of chalk. This oven had been truncated by a later (sub-phase C) rectilinear enclosure 249051 to the north. The fills of SFB 228059 contained significant quantities of pottery, but there was no evidence that the oven was a small pottery kiln.

#### *Cemetery 249089*

22.3.10 Immediately to the east of the main group of SFBs, within an adjacent trackside enclosure, was a small cemetery that consisted of three inhumation burials (182241, 198300 and 216094) and three cremation burials (215193, 215195 and 215199). The three inhumations were all interred in coffins and laid in an extended, supine position, in graves of varied orientations. All six burials were accompanied by pottery vessels and four were present with cremation burial 215199.

22.3.11 Approximately 50m to the south-east of this group were another three graves, located at the corners of two fields just north of trackway 249061. Two of the graves (252066 and 252068), adjacent to one another, contained urned

cremation burials, accompanied by a variety of grave goods, including bracelets and a finger ring. The third grave was an inhumation burial (128084), with the body laid supine and with the head to the south-west. Within the grave were a number of coffin fittings as well as three complete pottery vessels.

22.3.12 Approximately 400m to the east was an apparently isolated group of three north-south aligned graves (**Figure 25**) containing inhumation burials (250055, 126066 and 267003). There was little associated dating evidence, but some hobnails were present in one of the graves.

### *Sub-phase C*

22.3.13 A number of features were stratigraphically later than trackway 249061 and some other elements of the settlement, yet are also of Roman date. An L-shaped ditch (257050) cut trackway 249061 and SFB 249085, and may have formed part of an enclosure. It was similar in form to U-shaped enclosure 249051, further to the west, and the two may be related, perhaps representing a phase of re-organisation in the local Roman landscape. Enclosure 249051 may have extended beyond the limits of the excavation area to the north, although the ditch termini both appeared to be purposefully finished, possibly to create opposing entrances. The enclosure ditch truncated the oven within probable SFB 228059 (see above), and was itself cut by a late Roman pit, 251005, on the north-eastern side. This pit contained a significant amount of pottery, iron objects, animal bone, shell and CBM, and the assemblage is consistent with rubbish. A similarly large, shallow pit (279028), with a comparable finds assemblage, lay a few metres to the west.

### *Unphased Roman*

22.3.14 There are a number of features which have no stratigraphic relationship to any others but from the finds assemblages and their spatial associations are broadly dated to the Roman phase.

22.3.15 Two parallel north-south ditches (279040 and 249047) in the south-western corner of the zone contained pottery and a small amount of animal bone. A small number of discrete pits were located in the same area, extending in a band northwards to rectilinear enclosure 249051. The pits contained similar finds assemblages of pottery, animal bone and marine shell. One pit (228055) contained a distinct layer of oyster shells, indicative of a single episode of deposition. Similar deposits were seen in the sequence of fills in pit 215231, near SFB 249085. Much of the material would appear to reflect general domestic activity in the vicinity, and the location of the pits to the south-west

of the settlement might be indicative of rubbish being disposed of away from the main area of occupation.

- 22.3.16 An exceptionally large feature (217056=286018), measuring approximately 17m by 10m and about 1m deep, lay to the south-west of ring ditch 249060. It was thought to be a possible solution hole but is more likely to have been a large pit, or perhaps a small chalk quarry. There were at least six fills and it feature contained a relatively small assemblage of unremarkable finds.
- 22.3.17 In the north-western part of Zone 20A was a section of substantial ditch (217122), aligned north-south, but this did not extend as far south as Zone 20 and must have terminated before that point. The ditch fills contained a range of pottery, bone and a copper alloy ring, again suggestive domestic debris.
- 22.3.18 In the eastern part of Zone 20A were a series of ditches which are currently problematic to phase. East-west aligned shallow ditch 252001 was on the same general alignment and lay immediately north of Saxon trackway 126227, with which it may be related (see below). However, the only dating evidence was a small quantity of Late Iron Age / Early Roman pottery. No stratigraphic relationships were established to confirm the relationship of these features. Probably related to ditch 252001 and at 90° to it were three short lengths of north-south ditches and a parallel east-west ditch (252004), 8m to the north. These ditches may have been part of an associated field system, but they produced only a single sherd of Roman pottery, making secure dating difficult.

## 22.4 Saxon

- 22.4.1 Trackway 126227 revealed in Zone 19A continued on its broadly east to west alignment for approximately 150m through the eastern part of Zone 20A, before veering slightly to the south-west down the gentle slope in the direction of Minster, perhaps to the early monastery established there in the 8<sup>th</sup> century AD. A pair of shallow, parallel gullies in the central part of Zone 20 probably indicates its continued course approximately 200m to the west. As in Zone 19A the width and depth of the trackway varied and it took a slightly meandering course. A deliberately laid cobbled surface was still present in places. The trackway truncated several undated ditches which are, however, most likely to be Saxon or medieval rather than of earlier, Roman date. To the south of the trackway, and again continuing westwards from Zone 19A, was an accompanying ditch (151055), which appeared to pre-date three graves, part of cemetery 195116 (see below).

*Cemetery 195116*

- 22.4.2 A small cluster of five east-west aligned inhumation burials were revealed in the eastern part of Zone 20A, three of which cut ditch 151055 associated with Saxon trackway 126227. Other graves are likely to exist to the south, beyond the limit of excavation.
- 22.4.3 The graves were in general quite deep and in at least one case the body had been buried in a coffin. Four of the burials had grave goods, three accompanied by glass and other types of bead, in one case numbering almost 200 and belonging to a necklace. Other objects included a comb, copper alloy brooches of different types, a copper alloy ring, a ceramic spindle whorl, an iron spearhead and a knife, all probably of 6<sup>th</sup> – 7<sup>th</sup> century date. The burials were an entirely separate group to those to the east in Zones 19 and 19A, but their location and alignment further support a Saxon origin for trackway 126227. An additional isolated grave (262061) within Saxon trackside ditch 151055, 150m to the east (not shown on plan), may have been an outlier to this group or the southern cemetery 195119, in Zone 19A.

**22.5 Modern**

- 22.5.1 A further 250m-length of zig-zag trenches and related features that formed part of the World War II defences associated with Manston Aerodrome lay at the eastern end of the zone and were a continuation of those recorded in Zone 19 (see Zone 19 for further details).

**23 ZONES 21 & 21A**

- 23.1.1 This zone extended along the chalk ridge either side of Wayborough Hill, at a height of *c.* 50m aOD (**Figures 26-7**). The background information indicated a moderate potential largely based on cropmark evidence, which suggested the presence of an extensive prehistoric landscape (Oxford Archaeology 2003; Moody 2008; Perkins 2010). This included ring-ditches within the zone as well as a substantial sub-rectangular enclosure (Scheduled Monument (Kent 262)) of likely Bronze Age or Iron Age date immediately to the south of the zone.
- 23.1.2 A substantial, shallow dry valley ran north-south across the central area of the east half of Zone 21, becoming wider and deeper to the south but not extending as far north as Zone 21A. This and a large shallow, hollow to the west have been sampled for environmental data, though no buried soils were

evident within either and the dry valley appeared to be filled with colluvial deposits.

## 23.2 Bronze Age

- 23.2.1 Ring-ditches 194137, 232168 and 216090 (from east to west), all likely to represent barrows of Bronze Age date, lay wholly or partly within the zone, only one of which, at the west end of the zone, appeared as a cropmark. Another cropmark which was thought to indicate a ring-ditch, immediately to the west of the dry valley in the central part of the zone, was shown to be a natural hollow.
- 23.2.2 Approximately 60% of ring-ditches 194137 and 216090 were hand-excavated, through longitudinal sections dug along their lengths, and the remainder of the fills were then removed by machine in carefully controlled spits. Smaller ring-ditch 232168 was entirely hand-excavated, also through longitudinal sections dug along its length.
- 23.2.3 Ring-ditch 194137 was located on the west side of the southern extension to the zone, east of Wayborough Hill. Only the east half of the ring-ditch was exposed, the remainder lying outside the limit of excavation, but it was estimated to be approximately 15m in diameter. The ditch was relatively narrow and deep, up to 2.9m wide and 1.6m deep, and contained a similar depositional sequence throughout. The single, shallow grave (132095) which was exposed contained crouched, unaccompanied inhumation burial 132096. The grave was positioned slightly off-centre to the north, and there may have been other burials within the area enclosed by the ring-ditch which have not been exposed. A second, possibly contemporary feature (132093) within the ring-ditch comprised little more than a shallow scoop.
- 23.2.4 Ring-ditch 216090 lay at the west end of Zone 21, but only the northern two-thirds lay within the excavated area. The ring-ditch, which enclosed four inhumation burials, was 22.5m in diameter, over 2.7m in width and up to 1.4m deep, with broadly similar sequences along the excavated length. The four graves within the area exposed comprised 126004, 216091, 246134 and 246139. All of bodies were in flexed or crouched positions, and they included at least one sub-adult. Grave 216091 was the most central of the burials and could have been the primary inhumation. The other three graves could have been inserted at the same time or later, and one of the graves, 246134, contained a crouched burial, laid on its right side and accompanied by a triple miniature Food Vessel positioned by the right elbow, a conical amber 'stud' and what may have been the remains of a copper alloy pin, together indicating

an Early bronze Age date for this burial. The three other graves were unaccompanied.

23.2.5 Ring-ditch 232168 lay to the north-east of ring-ditch 216090 and was much smaller. It had a diameter of only 6m and the surrounding ditch was narrower and shallower than the other ring-ditches. In the centre was grave 126180 containing an unaccompanied inhumation burial.

23.2.6 North of ring-ditch 194137 was a group of seven unaccompanied inhumation burials (195117) that lay in a NE-SW alignment, which probably continued beyond the northern limit of excavation. None of the burials intercut, and one lay a short distance to the north-west, and perhaps their arrangement reflected the existence of a hedge or bank of which no evidence has survived. All the burials were flexed, though there was no other consistent pattern to the arrangement of the bodies, and all were unaccompanied. A single sherd of pottery dated to the Middle Bronze Age was found within the fill of grave 220051, indicating a Bronze Age or later date for the group of burials, with a Bronze Age date considered most likely.

23.2.7 A further grave, 125220, lay 10m to the south-west of inhumation burial group 195117. Although disturbed by badgers this grave contained a cremation burial, placed within a Middle Bronze Age urn. The grave appeared to be part of the same alignment as the inhumations, though this may be coincidence and there may have been no chronological link between the two.

23.2.8 In addition to the ring-ditches and other burial-related features, there was an isolated pit, 171252, containing 65 sherds of Early Bronze Age pottery at the west end of Zone 21A and several poorly defined ditches, including 193087, in the western part of Zone 21. Ditch 193087 almost certainly continued to the south-west, into Zone 22, as ditch 181012 (see below). These may be the remains of prehistoric boundaries, although they contained no datable finds, and there was a moderate scatter of struck flint in the general area, which appear to date to the Neolithic and Bronze Age.

### **23.3 Medieval**

23.3.1 A shallow, rectilinear ditch, 194136, cut Bronze Age ring-ditch 194137 and may have formed the north-east corner of a field or enclosure. The ditch fill contained high medieval pottery and CBM.



## 24 ZONE 22

- 24.1.1 Zone 22 extended between Zones 21 and 23, at a height of *c.* 51.7m aOD, on the Chalk along the southern edge of the ridge of high ground occupied by Manston Airport (**Figure 27**).
- 24.1.2 Features in the western half of the zone were wholly or partly investigated as part of the EKA Community Excavation undertaken in May and June 2010.
- 24.1.3 Background information indicated a moderate potential largely based on cropmark evidence, which suggested the presence of an extensive prehistoric landscape (Oxford Archaeology 2003; Moody 2008; Perkins 2010). Features within this landscape included ring-ditches as well as an oval enclosure of possible Beaker date a short distance to the south, the latter the subject of earlier evaluation (Boast and Gibson 2000). Two small pits found close to the southern edge of the zone during this earlier evaluation were assigned a Neolithic date, though the work in 2010 identified no features of this period in this area.

## 24.2 Iron Age

- 24.2.1 Although dating evidence was sparse, it is likely that most of the features in Zone 22 belong to the Iron Age. They comprised gullies and ditches associated with several phases of field system, with possible evidence for animal husbandry represented by a small horseshoe-shaped enclosure in the corner of one of the fields. However, the shallow nature of the features makes the confident assertion of stratigraphic relationships difficult.
- 24.2.2 The horseshoe-shaped enclosure, 290420, was a shallow feature which, although clear in plan, did not show up as a crop mark. The overall enclosure had a maximum diameter of 19m, enclosing an area of 270m<sup>2</sup> with the entrance on the southern side. Its eastern and northern sides were recut on several occasions. The size of the ditches (and an accompanying bank) would not have been sufficiently substantial to act as a boundary on their own and, therefore, there may also have been a hedge or other barrier to contain animals.
- 24.2.3 To the west of horseshoe-shaped enclosure 290420 was a substantial, shallow, north-south ditch (290571), recut on a number of occasions, which represented the western boundary of Iron Age activity. It is possible that feature 290571 may have been a trackway, rather than a sequence of ditches, though this is perhaps less likely. To the east of the horseshoe-shaped enclosure 290420 were two parallel, east-west aligned shallow ditches (290573-4), 1.5m apart,

which extended over a distance of 150m and apparently ended at Laundry Lane, as they did not extend in to Zone 21 to the east. Ditch 290574 truncated the latest ditch of horseshoe-shaped enclosure 290420, but also terminated there, suggesting that the features were broadly contemporary. Ditches 290573-4 may have represented two phases of field boundary or perhaps, though less likely, a narrow trackway. Approximately 20m to the south was another pair of shorter, east-west aligned parallel ditches (290594-5), also respecting horseshoe-shaped enclosure 290420.

24.2.4 Further east a north-south ditch (290572) cut both east-west ditches, 290573 and 290574, and may represent a later Iron Age sub-division of the landscape. The pottery from all three ditches was broadly dated to the Middle- to Late Iron Age. Apart from one discrete pit 127071 towards Laundry Lane, there were no other confirmed Iron Age features in Zone 22.

24.2.5 The eastern extent of the Iron Age activity may have been defined by an early precursor to Laundry Lane, as the few linear features in Zone 21, to the east of this, were on a different alignment to those in Zone 22. Horseshoe-shaped enclosure 290420 may, therefore have been located at a junction of fields and trackways, but there was no evidence for settlement, and there was very little domestic debris deposited within these, which suggests that the associated settlement lay at some distance perhaps the settlement found earlier at the Minster Services site (Canterbury Archaeological Trust 2004; Gollop and Mason 2005).

### **24.3 Unphased prehistoric**

24.3.1 A number of ditches are poorly dated or undated, specifically 290581-3 at the western end and 181012 and 290575-6 at the eastern end of Zone 22. However, these are believed to prehistoric and potentially earlier than the other, identified Iron Age activity. Amongst these, ditch 181012 appears to have been a south-westerly continuation of ditch 193087 in Zone 21 to the east.

### **24.4 Roman?**

24.4.1 There were two or three features in Zone 22 that might be of Roman rather than prehistoric, though a medieval date cannot be ruled out. A shallow L-shaped ditch, 290584, cut the latest phase of horseshoe-shaped enclosure 290420 on the south-east side. The second feature was a pit, 290181, that truncated the south-west corner of the enclosure and contained mussel and oyster-rich fills. A second, smaller pit, 198269, to the east also contained an

oyster rich fill. Nearby medieval ditch 195053 also contained some oyster shell, but similar fills were recorded in Roman features in Zone 20, to the east.

## 24.5 Medieval

24.5.1 A few sherds of medieval pottery were recovered from the surface of several of the features making up the Iron Age field and enclosure system, and a moderate quantity of medieval pottery was also recovered during fieldwalking in this zone. Although this is most likely to be a result of the manuring of fields it could derive from some other medieval activity in the vicinity not represented by surviving features.

24.5.2 Nevertheless, two shallow ditches, 195053 and 193085, were assigned to the medieval period as they contained a moderate amount of medieval pottery. These two north-south aligned ditches extended across the southern third of the excavation area, and it appears that they terminated rather than having been truncated to the north.

## 25 ZONE 23

25.1.1 Zone 23 extended between Zones 22 and 24 along the edge of the ridge of high ground occupied by Manston Airport (**Figure 27**). Chalk was exposed over virtually the entire zone, at a maximum height of *c.* 50.5m aOD, though some Brickearth was present overlying this in the south-west corner. Background information based on cropmark as well as excavated evidence suggested a high potential for Zone 23, with the presence of an extensive prehistoric landscape including several ring-ditches (Oxford Archaeology 2003; Bennett *et al.* 2008; Moody 2008; Perkins 2010). One of these ring-ditches had been the subject of limited earlier excavation undertaken in advance of the construction of the Minster Services immediately to the south-west (Canterbury Archaeological Trust 2004; Gollop and Mason 2005). These investigations also revealed an important Middle and Late Iron Age site as well as a group of Roman burials in the area now beneath the new services. Also, documentary evidence pointed to the likely presence of remains related to the Thanet Union Workhouse, shown on the 1st edition OS maps.

25.1.2 The EKA excavations revealed three ring-ditches, 195004, 195005 and 193123, arranged in a SW-NE alignment and between 35 and 50m apart. All were apparent on aerial photographs and, in the case of 195004, also known from the earlier investigations. For ease of reference the ring-ditches are termed the Western Barrow 195004, the Central Barrow 195005, and the

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Eastern Barrow 193123. The Eastern Barrow, 193123, was largely investigated as part of the EKA Community Excavation undertaken in May and June 2010.

## 25.2 Neolithic / Early Bronze Age

25.2.1 No Neolithic features have been confirmed, but it is possible that at least two of the ring-ditches may have originated as Late Neolithic monuments. In the case of both the Western and Eastern Barrows, there were earlier pits cut by the ring-ditches, though the date of these pits is not yet clear. Pit 290206 pre-dated Eastern Barrow 193123, and two large pits (198145 and 198189) lay on the north-east side and were cut by the ring-ditch of Western Barrow 195004. Within the southernmost of these pits, 198145, a possible line of five later postholes appears to have been inserted into the fills, while a posthole was also recorded cutting the fills of northern pit 198189.

25.2.2 The earliest phases of both the Central and Eastern Barrows comprised large penannular ditches with north-east- and east-facing entrances respectively, and both were later modified to create ring-ditches. Samples for OSL dating have been taken from all three ring-ditches and earlier pits, and the results may clarify the chronology of the various sequences.

25.2.3 Although the exact date of origin of the three barrows remains to be determined, it seems reasonably certain that by the end of the Early Bronze Age all three would have been in existence, and all were of similar overall dimensions. The Western Barrow was approximately 25.5m in diameter (between the centre lines of the ring-ditch), the Central Barrow 22m, and the Eastern Barrow 24m. The widths and depths of the ditches varied slightly and the fill sequences were also, in general, very similar within each of the ring-ditches. The three barrows were located along the brow of the east-west chalk ridge and would have commanded an extensive vista south across the former Wantsum Channel and, conversely, these and similar monuments would have been visible against the skyline from the lower land to the south.

### *Western Barrow 195004*

25.2.4 The northern two-thirds of the Western Barrow lay within the EKA scheme, the remainder outside to the south. An evaluation trench had been hand-dug across the northern part of the ring-ditch in 2004, as part of the Minster Services excavations, though the bottom of the ditch was not reached, and limited investigation was also undertaken within the interior, which suggested that some of mound material might survive (Canterbury Archaeological Trust 2004; Gollop and Mason 2005). Subsequently, the evaluation trench was

backfilled, the entire area covered with plastic and soil placed on top, as this area was to be excluded from the proposed new development.

- 25.2.5 In 2010, as part of the EKA investigations, the soil and plastic were removed, the evaluation trench re-excavated and recorded to the base of the ditch, and two further sections dug across the north-east and the west sides of the ring-ditch. Following completion of these sections and investigations within the interior, the area was carefully backfilled and the remaining archaeological deposits preserved *in situ* beneath the formation level for a new access road. A watching brief was maintained during the construction work for this road, and new services were laid through already excavated areas or re-routed to avoid surviving archaeological deposits.
- 25.2.6 The ring-ditch was substantial, approximately 25.5m in diameter (30m between the outer edges of the ring-ditch), and between 3.5m and 5m wide and 1.55m to 1.8m deep. The inner profile of the ditch had a slightly shallower gradient, and the base was approximately 1m wide and flat. There were at more than 14 identified fills within the ring-ditch, of a generally consistent sequence, with no distinct tipping lines to indicate the direction of infilling, though an inner mound is assumed. Of particular interest were two large pits (198145 and 198189) which were cut by the east side of the ring-ditch and may be of Late Neolithic or earlier Bronze Age date (see above). Both pits seem to have been partly infilled before the ring-ditch was dug, and their function remains uncertain.
- 25.2.7 Barrow 195004 had the largest associated finds assemblage of the three, with material including the fragmentary remains of a Late Bronze Age jar from the upper fills of the north-eastern ditch section and another from the west side. The pottery and a Late Bronze Age pin from near the top of one of the large pits show that the ditch was still partly open in the Late Bronze Age, and a Roman coin (SF 912) was found in the uppermost part of the top fill, showing that the uppermost part of the ditch probably still survived as a hollow in the Roman period.
- 25.2.8 No graves were found within the exposed part of the central area, and it seems certain that continued medieval and later ploughing of the area has completely obliterated any remains of the mound (*contra* Canterbury Archaeological Trust 2004). However, across much of the central area within the ring-ditch were thin remnants of a buried B-horizon, layer 141094, which has been sampled for environmental purposes.

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*Central Barrow 1950054*

- 25.2.9 The Central Barrow comprised three features: a large, outer ring-ditch (195007), a smaller, inner ring-ditch (195006) and a central burial (141083), all of which had been truncated by ploughing. Test-pits dug in advance of machine stripping indicated that no extant mound material survived.
- 25.2.10 Initially, 50% of the outer and inner ring-ditches were excavated by continuous running sections of offset quadrants. Following completion of these sections, a further 10% or more of the fills of both ditches was removed, and the remaining archaeological deposits preserved *in situ* beneath the formation level for a new access road (which crossed the Western Barrow). A watching brief was maintained during the construction work for this road, and new services were routed through already excavated sections of the ring-ditches.
- 25.2.11 Initially the monument was thought to have been a double-ditched round barrow, but subsequent investigations suggested that the two ring-ditches were not of the same date and that at least two phases were represented. The sequence outlined below is provisional.
- 25.2.12 The initial phase saw outer ring-ditch 195007 originate as a ditch with a north-east facing entrance, possibly Late Neolithic in origin (see above). The outer ditch was approximately 22m in diameter (25m between the outer edges of the ring-ditch), 4.3m wide at the top, 1m wide at the base, and between 1m and 1.3m deep, with a symmetrical profile. The two ditch termini were well defined, one with an almost square end and the other more rounded, formed an entrance approximately 10m wide.
- 25.2.13 The second phase saw the insertion of a small, central grave, 141083, dug into the natural chalk, but heavily truncated such that only the base survived. This contained the remains of a unurned cremation burial.
- 25.2.14 Possibly associated with the central burial was the second, inner ring-ditch, 195006, approximately 7m in diameter, 0.8m wide and up to 0.3m deep. This may have been excavated to provide the mound material to cover the central burial, as well as to surround the grave. It was noted that the depth of the inner ring-ditch was consistent with the level at which there was a change from a more friable, weathered chalk, to the lower solid chalk. The upper fill contained nearly all of the scarce finds assemblage, including the fragmentary remains of an Early Iron Age cup, suggesting that the ring-ditch had become largely infilled by this period.

25.2.15 The third and final element of the monument's construction was the completion of the outer ditch, with a further section of ditch being dug to link the two original termini, converting the penannular ditch to a ring-ditch. This joining section of ring-ditch was approximately 4m wide, similar to the remainder of the ditch, but was much shallower, only 0.6m deep, and there is a possibility that it was never completed; certainly, one end of it, to the north-west, appears unfinished.

25.2.16 Within the outer ring-ditch were the remains of a pot (SF 910) which had been placed upright approximately 0.15m from the base. There were no obvious signs of a cut, and no heat affected material or human remains associated with it, and the pot is provisionally dated to the Late Bronze Age / Early Iron Age. Overall, the small finds assemblage suggests that both ditches were still open but becoming infilled in the Late Bronze Age and Early Iron Age.

#### *Eastern Barrow 193123*

25.2.17 There were two phases of construction to the Eastern Barrow, and test-pits dug in advance of machine stripping indicated that no extant mound material survived.

25.2.18 The initial, penannular ditch, 195070, was approximately 24m in diameter (28m between the outer edges of the ditch), 2.5m wide at the top and 1m at the base, and between 1.3m and 1.45m deep. The two termini formed an entrance that was approximately 20m wide, leaving about a third of the arc open on the eastern side. Although it remains uncertain it appeared that the lower ditch fills may have accumulated from a predominantly external position, which suggests the possibility of an outer bank. One noticeable trend in the fills was a concentration of unworked flint nodules and smaller pieces along the western side, predominantly occurring in the middle and upper ditch fills. These may have been associated with some flint-working activity, but it is perhaps more likely that they derived from eroded bank or mound material, which may have contained more flint in this area.

25.2.19 During the second phase the penannular-ditch was re-cut and converted to a ring-ditch by digging a further length of ditch (193118) between the two terminals on the east side. Ditch 193118 was approximately 0.7m deep, about half the depth of the remainder of the ring-ditch, possibly indicating that the ditch was only cut to the level to which the existing part had already become infilled.

25.2.20 On the southern side of the ring-ditch, within the area of the original terminus, was an anomalous sequence of fills. This may have resulted from the presence of an earlier pit (290206) in this area, which may be of Late Neolithic or earlier Bronze Age date (see above). The modified ring-ditch probably functioned as a funerary monument, although no graves or contemporary features were found within the interior. An inhumation burial (290428) inserted into the ring-ditch on the north-east side is thought most likely to be of Iron Age date (see below).

### **25.3 Iron Age**

25.3.1 Few possible features of this phase have been identified, but the proximity of Iron Age settlement in Zone 24 and in the earlier excavations (Canterbury Archaeological Trust 2004; Gollop and Mason 2005) to the south of this show that there was settlement in the vicinity. Furthermore, a small quantity of Early Iron Age pottery came from the upper fills of all three ring-ditches.

25.3.2 An unaccompanied inhumation burial, 290428, inserted into the upper fills on the north-east side of the Eastern Barrow ring-ditch 193123, is currently undated but may belong to this phase. The body appears to have been placed in a shallow depression in the ditch fill and material mounded over it, rather than being in a deliberate cut.

25.3.3 A shallow pit-like feature, 290001, also north-east of Eastern Barrow 193123, contained a truncated but nearly whole pot (SF 915) that has been dated to the Late Iron Age. The location of the pit, outside the terminus to the northern end of the penannular ditch, may be significant.

### **25.4 Roman**

25.4.1 On the southern side of Eastern Barrow 193123 was a sequence of pits (290306, 290449 and 290305), the precise dates of which are unclear, due to a paucity of finds, although relative dating was possible through stratigraphic relationships. The largest pit, 290305, was almost certainly of a later date and the upper fills contained a small but distinct cluster of Roman pottery. The cut itself was large and deep, and it truncated the ring-ditch beyond its full depth, but whether it originated in the Iron Age or later in the Roman period is unclear.

### **25.5 Modern**

25.5.1 A small three-sided, sub-rectangular foundation trench (141092) lay within the centre of the Western Barrow (195004). These insubstantial remains were



associated with an outbuilding in the extreme north-eastern corner of the grounds of the Isle of Thanet Union Workhouse, as shown on the 1st edition OS map. Although no structure is illustrated on this map, the foundation was probably associated with the small Fever Hospital thought to have been in this location.

- 25.5.2 Also assigned to this period are two brick and brick and concrete lined wells, which may have provided an independent water sources for the Workhouse and fever hospital. Two modern animal burials were also found on the southern side of ring-ditch 195004.

## **26 ZONE 24**

- 26.1.1 Zone 24 lay along the edge of the ridge of high ground occupied by Manston Airport at the extreme western end of the EKA route, with the ground surface here at *c.* 47m aOD (**Figure 27**). Background information based on excavated as well as cropmark evidence suggested a high potential for Zone 24. The presence of an extensive prehistoric landscape was indicated, and investigations undertaken in advance of the construction of the Minster Services immediately to the south revealed an important Middle and Late Iron Age site as well as a group of Roman burials (Canterbury Archaeological Trust 2004; Gollop and Mason 2005). However, the current excavations have indicated that this focus of activity only extended a short distance north into Zone 24, and more recent excavation undertaken by MoLA to the south of the CAT excavations have confirmed a continuation of the Iron Age and Roman activity there.

### **26.2 Bronze Age**

- 26.2.1 Part of a large feature, 141137, exposed during earlier excavations immediately to the south of this zone, was further investigated. The feature represented the northern limit of a large, steep sided pit, which was over 1.1m deep, and presumed to be part of a more extensive quarry, for the purpose of extracting chalk. Feature 141137 was not bottomed, but three of the sequence of six fills contained Late Bronze Age pottery.

### **26.3 Iron Age**

- 26.3.1 There were several clusters of postholes that were similar to groups found during the earlier excavations to the south, on the Minster Services site. The postholes are all likely to have been part of the same Middle Iron Age

settlement excavated at the latter site, though there was no dateable material from the postholes in Zone 24. These postholes appear to define the northern and eastern limits of the settlement as no further features were found beyond the south-west corner of Zone 24. The most coherent group was a probable 6-post structure, 195121, measuring approximately 4m by 2.5m. Similar rectangular post-built structures, 195120 and 267045, were identified in Zone 19 to the east.

- 26.3.2 A single, unaccompanied inhumation burial, 198245, may be of Iron Age or Early Roman date, probably part of a small group recorded during earlier excavations to the south (Canterbury Archaeological Trust 2004; Gollop and Mason 2005).

## 27 ZONE 26

- 27.1.1 Zone 26 consisted of a narrow strip (up to 20m wide) along the proposed route of a sewer outfall (Landscape Zone 2) (**Figure 21**). This route extended south-eastwards from the west end of Zone 13 (at *c.* 21.5m aOD) to Cliffsend Road just east of Cliffs End Cottages, where the route turned north-east along the north side of the road as far as the junction with Sandwich Road and the northern end of Zone 28 (at *c.* 19m aOD).
- 27.1.2 Cropmark evidence for a large Bronze Age ring-ditch and Iron Age enclosure in Zone 13 to the north and the Bronze Age ring-ditches, enclosures and mortuary feature and Saxon cemetery and pits at Cliffs End Farm a short distance to the south (McKinley forthcoming) indicated a high potential for significant archaeology in the zone. Furthermore, the Brickearth which covered this area was known to have potential for important Pleistocene deposits, particularly in the vicinity of Pegwell Bay.
- 27.1.3 An evaluation was undertaken along the length of Zone 26 prior to excavation. This demonstrated that the eastern half of the zone was devoid of archaeological features, though two possible palaeochannels were identified. On the basis of this evidence, colluvium/subsoil was not stripped from the eastern half of the route, though a watching brief was maintained during excavation of the pipe trench in this area. Visibility of the trench sides was restricted by the necessity to maintain box shoring within the deep and relatively narrow pipe trench, but no deposits of palaeo-environmental interest were identified.

## **27.2 Neolithic**

27.2.1 A single pit (213018) contained six sherds of decorated Early Neolithic pottery. Two other undated neighbouring pits may be contemporary (40316 and 213021), although only proximity suggests this. No other contemporary features were encountered in the zone, the nearest contemporary material being the pit group 370m to the north-east in Zone 14 (although a similarly small quantity of Early Neolithic pottery was recovered 200m to the south-west at Cliffs End Farm (McKinley forthcoming)).

## **27.3 Bronze Age**

27.3.1 Two small pits (213001 and 222001) towards the northern end of the zone each contained a truncated Middle Bronze Age pottery vessel, but no human bone was present to indicate that these were urned cremation burials.

27.3.2 At the southern end of the zone a single ditch (201062) crossed the trench from north to south. While its dating is uncertain, one of the lower fills contained five sherds of Middle or Late Bronze Age pottery (other fills contained only very small crumbs of later material).

27.3.3 Elements of a Late Bronze Age or Early Iron Age field system were present in the centre of the zone, consisting of part of a possible enclosure (201052) dated solely by its stratigraphic relationships with Iron Age features, and short lengths of ditch aligned approximately east-west (201049) or NW-SE (201047) perhaps broadly contemporary with the D-shaped Bronze Age enclosure in Zone 14. Undated ditches 201045 and 201046 are likely to be contemporary.

27.3.4 At the north end of the zone, pit 158029 contained substantial quantities of Late Bronze Age or Early Iron Age pottery along with shell, animal bone, fired clay and other apparently domestic waste. A second pit (188014) which cut ditches 201047 and 201045 contained Late Bronze Age pottery.

## **27.4 Iron Age**

27.4.1 A series of Iron Age gullies and ditches possibly represent a continuation of the settlement and field system associated with the large Middle Iron Age trapezoidal enclosure in Zone 13 and with the activity seen to the west during rescue excavations associated with the laying of a gas main (Willson 1984). It is also likely that some of the undated linear features are of this date and, though relatively small, two of the undated ditches apparently correspond with

parts of a cropmark which appears to define a large sub-rectangular enclosure extending to the north of Zone 26.

- 27.4.2 Ditches 201040, 201041 and 201042 were aligned roughly north-south, the latter two approximately 2.5m apart and possibly forming a double-ditched trackway. The former was a narrow slot, approximately 0.15m wide, possibly a post or fence line, with a V-shaped upper profile widening to approximately 0.8m. Only a single small sherd of Iron Age pottery was recovered, but the feature is probably Middle or Late Iron Age by association. The pair of possible trackway ditches were broader and U-shaped, 201041 0.4m deep, 201042 0.2m deep. The latter contained small quantities of Middle Iron Age and Late Iron Age to Early Roman pottery, while the former was undated.
- 27.4.3 Between the single ditch and trackway, pit 240011 contained approximately a kilogram of Middle Iron Age pottery. Adjacent to it, pit 213029 contained a further 59g of contemporary pottery.
- 27.4.4 East of the double-ditched trackway and at 90° to it another pair of ditches (201043 and 201044) formed a second, slightly narrower trackway. Ditch 201043 was approximately 0.2m wide and deep, and contained small quantities of Iron Age pottery. Ditch 201044 was broader and U-shaped, and contained a larger amount of Middle to Late Iron Age pottery. It was cut by undated pit 240007. To the south, another pit (157036) contained Late Iron Age pottery.
- 27.4.5 Approximately 60m to the south were a third pair of parallel east-west ditches (201056 and 201057) likely to mark another trackway. The former was a steep-sided and flat bottomed, approximately 0.75m wide and deep; it is undated but is likely to be Iron Age by association. Ditch 201057 was smaller, 0.5m wide by 0.3m deep, and contained small quantities of Iron Age pottery.
- 27.4.6 Between these two east-west aligned trackways was ditch 201048, approximately 37m long and aligned NW-SE. Although broad (2m on average) the feature survived to a depth of no more than 0.2m. Fifteen sherds of Middle to Late Iron Age pottery were recovered from this ditch. A similarly shallow (although narrower) slot 201050 ran parallel along the western edge of ditch 201048, starting further south and continuing beyond the limits of excavation. Although undated, it may be contemporary.
- 27.4.7 Other possible Iron Age features include pits 201164 and 236001 (containing 43 and 153g of Middle Iron Age pottery respectively) and very short lengths of ditches 121039, 201061, 40508 and 40705 only dated by very small

quantities of pottery. Ditches 201063, 201067 and 235019 crossed the zone but were not securely dated.

### **27.5 Roman**

27.5.1 Three features were dated to the Roman period, primarily on the basis of stratigraphic relationships. Ditch 201054 was probably the eastern end of a rectilinear enclosure visible (but not clearly identifiable) on aerial photographs. The excavated sections were generally of a shallow flattened V-profile, with a simple sequence of two or three fills which had most probably accumulated naturally over time. Within the possible enclosure, ditch 201055 appeared to be a segment of a ring ditch. Undated, this feature consisted of a shallow broad U-shaped ditch, up to 1m wide.

27.5.2 South-east of the possible enclosure, ditch 201060 was aligned roughly north-south across the width of the excavated area. In profile a steep V-shaped slot approximately 0.75m wide, the feature had a single fill containing a very small quantity of pottery, most of which was Roman.

### **27.6 Undated (?prehistoric)**

27.6.1 Several features were undated by finds, although some stratigraphic relationships indicate a prehistoric date. At the north end of the zone, a group of layers and ditches (261009, 134098, 222033, 235029 and 201039) were earlier than Middle Iron Age ditch 235019 but were otherwise undated.

27.6.2 Elsewhere, pits 40213, 121041, 213026 and 188003 and ditches 201051, 201058, 235008, 201064, 222025, 201065, 201165, 201066 and 40808 were similarly undated (and not necessarily prehistoric).

### **27.7 Undated (post-Roman)**

27.7.1 Ditch 201053 cut through the fills of the Roman possible enclosure ditch 201054. The only material recovered from its fills was a very small quantity of shell. Ditch 201059 cut Roman ditch 201060 on a very similar alignment, but no dateable material was recovered.

## **28 ZONE 28**

28.1.1 Zone 28 comprised the final sections of the relatively narrow route of a sewer outfall pipe which originated in Zone 13, passed through Zone 26, crossed the Sandwich road and then continued downwards along the line of the access

road to the former Hoverport site on the coast at Pegwell Bay (Landscape 2) (see **Figure 2**). Zone 27 comprised an easement associated with Zone 28, and was not subject to any construction-related impacts.

28.1.2 The archaeological potential of this zone was generally limited, and this potential was further reduced because the pipe trench was a maximum of 2m wide and the upper part lay within varying depths of road formation and made-ground deposits. Nevertheless, the brickearth at the cliff edge was highlighted as this has the potential to contain important Pleistocene deposits, and such deposits have been recorded in a cliff face exposure a short distance around the coast to the north-east.

## 28.2 Results

28.2.1 A watching brief was maintained during the excavation of the pipe trench in Zone 28 where it crossed the brickearth cliff, but no Pleistocene deposits were identified in this section. Because of this, monitoring elsewhere along the route was maintained at a minimal level. Furthermore, visibility of the trench sides was restricted by the necessity to maintain two stages of box shoring within the deep and relatively narrow pipe trench.

## 29 ZONE 29

29.1.1 Zone 29 was an addition to the original programme of archaeological investigations and lay entirely within the southern boundary of Manston Airport, north of the A253 and parallel to Zone 20 and the eastern end of Zone 21 (**Figure 26**). The work comprised a targeted watching brief on an approximately 900m long, 1m-wide trench dug for an electricity diversion related to the EKA construction works.

## 29.2 Roman

29.2.1 There was only one concentration of features and this represented a northern continuation of the Roman settlement recorded at the western end of Zone 20, over 35m to the south. As far as could be ascertained within the confines of the trench, most of the 20 or so features comprised ditches, gullies and pits, with two cremation burials also present. Trackway 249061 recorded in Zone 20 was not certainly identified in Zone 29, but may be represented amongst the plethora of features and not recognised within the confines of the narrow trench. The location of the features shows, however, that the Roman settlement and landscape was organised on a NW-SE orientation, and was

perhaps focussed on the junction of trackway 249061 and a postulated Roman precursor to medieval *Dunstrete* which ran east to west along the chalk ridge.

- 29.2.2 There were three instances where features intercut and it was possible to demonstrate that there were at least two phases. How these correspond to the sub-phases A, B and C in Zone 20 remains unclear, but this may be clarified if closer dating of the pottery is possible.
- 29.2.3 The earlier features comprised ditch 159035, cut by ditch 159033; ditch 159039 and pit 159043, both cut by pit 159041; and ditch 159062, cut by ditch 159115.
- 29.2.4 There were several large features (159027, 159053 and 159047) which shared some similarities to the sunken-featured buildings in Zone 20, but the constricted nature of the works in Zone 29 meant it was not possible to confirm this.
- 29.2.5 Feature 159061 was a layer of consolidated chalk and flint, similar to deposits 215228 and 215208 in Zone 20, and may have been a yard surface.

### **30 STATEMENT OF POTENTIAL**

- 30.1.1 The archaeological discoveries made over a total area of approximately 40 hectares along the entire 6.5km-long route of the EKA (Phase II) between November 2009 and May 2011 have generally matched what was anticipated (*East Kent Access Phase II, Volume 2f (Archaeology)*) in terms of their distribution, date, nature and significance. They have confirmed that the Isle of Thanet and, specifically here, the south-facing slope overlooking the Wantsum Channel and Pegwell Bay, is one of the richest archaeological landscapes in the United Kingdom (Moody 2008).
- 30.1.2 Although a linear scheme, the width (up to 120m) of the stripped area on the EKA (Phase II), and the fact that virtually the entire length was excavated, rather than a series of separate sites, meant that a complete transect could be investigated across the three Landscape Zones (Landscape 1: Chalk ridge; Landscape 2; Pegwell Bay / Cliffs End spur; Landscape 3: Ebbsfleet peninsula). This approach allowed investigation of the intervening spaces between the main areas of settlement and burial, revealing very few 'empty' areas, and a full picture of the settlement history was thereby obtained within the transect.

- 30.1.3 The archaeological works have provided a substantial body of recorded archaeological site data (over 28,000 individual contexts; **Appendix 27**) and large assemblages of material remains, both artefactual (**Appendix 29 - 30**) and environmental (**Appendix 31**), ranging in date from the Palaeolithic to the modern period.
- 30.1.4 The principal findings are outlined by period below, however a brief summary is given here. Early Bronze Age funerary monuments were well represented, including one example of probable national importance (Zone 21), and there is a significant amount of later Bronze Age settlement evidence. Remains of Iron Age settlement were also fairly ubiquitous, particularly from the Middle Iron Age onwards, and a large trapezoidal enclosure of Middle Iron date is certainly of regional importance (Zone 13). Roman activity was represented by several rural settlements, one with a potentially continuous history that extended from the Late Bronze Age to the Late Roman period (Zone 6) and is also of regional importance. The same settlement also had evidence for some major defence works, the earliest phase possibly attributable to the period of Caesar's expeditions of 55 and 54BC. In addition to the settlements, there was also a range of Roman cemeteries, spanning the Early to Mid-Late Roman periods. Parts of two Mid-Saxon settlements were recorded, one with possibly unique evidence for shellfish processing, and there were three cemeteries of Early – Mid-Saxon date. Medieval settlement was generally sparse, and largely confined to the Ebbsfleet Peninsula, and virtually no post-medieval features other than several chalk quarries were present. World War II defensive features comprise the only modern remains of interest.
- 30.1.5 The potential of the evidence to add to the corpus of archaeological knowledge for Thanet, and more broadly in East Kent, is discussed below by period and related to the relevant Landscape Zone where appropriate. This evidence can certainly address a number of issues and questions raised in SERF, the South East Research Framework. Currently, the Resource Assessment for this framework is available on line in the form of a series of discussion papers, and is to be published in the near-future, but the Research Agenda has yet to be set out.

## **30.2 Summary of archaeological potential by period**

### *Palaeolithic - Mesolithic*

- 30.2.1 A few flint flakes are of possible Palaeolithic date, and these may provide an interesting supplement to the small number of pieces already known from Thanet. There are in addition several pieces of possible Late Upper



Palaeolithic date, which would be potentially significant in terms of re-colonisation after the Last Glaciation, for which evidence is scarce in the region.

30.2.2 Otherwise, the earliest discoveries were two Mesolithic tranchet axes, tranchet axe sharpening flakes, and a small number of microliths and other diagnostic pieces of similar date, all probably occurring residually in later features. However, the tree-throw on Zone 6 which produced the two microliths may contain further material that is potentially Mesolithic in date (most diagnostic material from this feature is currently assigned to the Early Neolithic). If so, this would provide an important addition to our knowledge of Thanet where diagnostic artefacts but no flint working sites have been identified. Further hints at the distribution of Mesolithic activity on Thanet may be provided by the distribution of blades and blade cores within the overall struck flint assemblage.

### *Neolithic*

30.2.3 A cluster of small pits in Zone 14, on the Pegwell Bay / Cliffs End spur, contained notable concentrations of Early Neolithic pottery and struck flint, and their location, not far from the causewayed enclosure at Chalk Hill (Shand 2000), is likely to be significant, reflecting broadly contemporary settlement, though the precise nature of this is currently unclear. A further, smaller group of Early Neolithic pits was recorded on Zone 6.

30.2.4 As for the Mesolithic, the distribution of blades and blade cores within the overall struck flint assemblage may hint at the distribution of Early Neolithic activity, particularly when linked to the preferential use of Bullhead flint for their production. A range of Early Neolithic retouched tools was recovered, almost all redeposited in later contexts, but the tree-throw on Zone 6 (which produced the two microliths) was marked by a concentration of flaking debris which is likely to be *in situ* and thus an important assemblage in the context of Thanet.

30.2.5 Two pits produced Middle Neolithic pottery, one in Zone 10 the other in Zone 19, and together these add useful new evidence on the distribution of Mortlake and Fengate-type Peterborough Wares in North-East Kent, and Thanet in particular.

30.2.6 No Late Neolithic pottery has been identified. However, there is a possibility that one or more of the four large penannular / C-shaped, horseshoe-shaped or sub-circular / oval monuments that have been recorded in various topographic locations, in Zones 3, 10 and 23, are of Late Neolithic date, or had their origins

in that period. None of these monuments are currently securely dated and await radiocarbon or OSL determinations to be undertaken. The oval monument in Zone 10, on the lower slopes of Sevenscore, is, on its form, perhaps the most likely to have had a Neolithic origin, whereas the other three monuments could all be of Early Bronze Age date. The two monuments on the Chalk ridge in Zone 23 had been modified, probably also in the Early Bronze Age, when the C-shaped ditches were converted to ring-ditches. The horseshoe-shaped ditch in Zone 3, on the low-lying Ebbsfleet Peninsula, was also modified, by the addition of a small inner ring-ditch. A Neolithic origin has been postulated for a small number of other monuments in the southern part of Thanet, for example at Lord of the Manor (Trust for Thanet Archaeology 2008b), and the EKA (Phase II) examples, if proven, would provide a significant addition to this important group.

### *Early Bronze Age*

- 30.2.7 Surprisingly perhaps, no Beaker burials were present, and only very small quantities of Beaker or possible Beaker were recovered. Previous investigations, particularly on the Chalk ridge, have located a relatively large number of Beaker burials (Moody 2008), and in one case possible Beaker settlement (Boast and Gibson 2000), and the absence of features, particularly burials, on the EKA (Phase II) is most likely to have been fortuitous.
- 30.2.8 Twelve ring-ditches or similar monuments were either fully or at least half exposed on the EKA (Phase II), and together comprised the largest group to be excavated on a single excavation in Kent, and thus excavated in a consistent fashion. Most of these monuments lay on relatively high ground in various parts of the route and were probably barrows of Early Bronze Age date, though the possibility that perhaps as many as four may have had Late Neolithic origins has been highlighted above. The ring-ditches occurred in Zone 8 on Cottington Hill (two examples), in Zone 13 on the Cliffs End promontory (two examples, one particularly large with a diameter of approximately 40m), with a further six on the Chalk ridge to the north, in Zones 21 (three examples, one of relatively small diameter) and 23 (three examples). In addition to these ten was the oval monument in Zone 10, on the lower slopes of Sevenscore, and the horseshoe-shaped ditch (and inner ring-ditch) in Zone 3, on a small knoll on the low-lying land of the Ebbsfleet Peninsula. As noted above, several of the monuments showed evidence for modification and to these should be added the two in Zone 8 on Cottington Hill, both of which comprised two concentric ditches.

- 30.2.9 Only seven of the ring-ditches had associated burials, in Zones 13 (two examples), 21 (three examples) and 23 (two of the three examples), in all but one case (in Zone 23) represented by inhumation burials. Some of the burials were not primary to the monuments (both examples in Zone 13) and few of the burials were accompanied by grave goods. However, one of the graves in Zone 21 contained three conjoined miniature Food Vessels and an amber 'button', making the ring-ditch, which contained at least two other burials, of national importance.
- 30.2.10 Several of the ring-ditches on the Chalk ridge contained fairly large assemblages of struck flint indicating flaking activity within the vicinity of the barrows, some material apparently *in situ* and other groups possibly representing dumped waste. Environmental remains in the ditches were generally poorly preserved, but there is some potential from the land snail evidence and monoliths to reconstruct their sedimentary histories and relate these to the contemporary landscape.
- 30.2.11 Whatever the date of the 12 ring-ditch monuments, they demonstrate a range of locations, sizes, forms and burial practices (and possibly functions), and provide a significant addition to and will allow comparison with those already recorded in Thanet (eg Bennett *et al.* 2008; Trust for Thanet Archaeology 2008b; Perkins 2010; McKinley forthcoming).
- 30.2.12 Apart from the ring-ditches only a single pit (in Zone 20) has produced Early Bronze Age pottery, and there is no evidence for early field systems of this date such has been identified recently nearby at Minster (Martin *et al.* forthcoming).

#### *Middle - Late Bronze Age*

- 30.2.13 Evidence for settlement and burial spanning the Middle – Late Bronze Age period was recorded in several locations on the EKA (Phase II) route, but is largely absent on the Chalk ridge except in Zone 19. The sequence requires further clarification, particularly the chronology and development of individual settlements, but the evidence overall has significant potential for understanding the increasing intensity of land-use at this time and the distribution, extent, layout and nature of the associated enclosures, field systems etc.
- 30.2.14 Middle Bronze Age activity is largely represented by flint-tempered bucket-shaped jars belonging to the Deverel-Rimbury tradition, some of which contained cremation burials. A small number of ditches may also belong to

this period, representing the first evidence for ditched land divisions within the area investigated.

- 30.2.15 Clear evidence for settlement appears to belong mainly to the Late Bronze Age, probably in the 11<sup>th</sup> – 9<sup>th</sup> centuries BC. Small enclosures and / or field systems, sometimes with associated trackways or more substantial holloways (Zone 6), were present in Zones 6 and 7, to the south of Cottington Hill. Few structural remains survived, but some four-post structures were identified. Further scattered and fairly isolated groups of apparently unenclosed remains were spread over the lower slopes and base of the Chalk ridge in Zones 10 and 12. To the east of this, on the Pegwell Bay / Cliffs End spur (in Zone 13, 14 and 26), was a larger group of features dominated by a D-shaped enclosure, probably lying within a system of trackways and fields.
- 30.2.16 Part of what appears to be a Late Bronze Age enclosure, defined by a segmented or interrupted ditch, occupied a high spot on the Chalk ridge in Zone 19, with a small number of possibly contemporary features nearby. Within one of the ditch segments was a human skull, and the function of the postulated enclosure is uncertain. However, it shows some similarities to a group of other Late Bronze Age enclosures excavated at Cliffs End Farm which appear to have served a domestic purpose (McKinley *et al.* forthcoming).
- 30.2.17 Further evidence for possibly slightly later settlement was recorded in Zones 3, 4 and 5 at the neck of the Ebbsfleet Peninsula, towards the southern end of the route, in an area where similar remains have been found previously (Andrews *et al.* 2009). At least two phases of ditches, small enclosures, pits, structural remains and a cluster of cremation burials were recorded, which form an important group that can be linked to the previously excavated features. Of added significance is the several Late Bronze Age metalwork (Carp's tongue) hoards have been previously discovered in this area (Andrews *et al.* 2009), to which can be added one further, scattered hoard, elements of possibly others, and two gold bracelets which are also thought to have derived from a disturbed hoard. These new discoveries, and the extent of the EKA (Phase II) excavations in this area, will allow the context of the earlier hoards to be better understood. It is clear now, for example, that some did have a damp if not watery place of deposition.
- 30.2.18 Fairly substantial assemblages of finds, particularly pottery, were recovered, and the Late Bronze Age material offers the opportunity to extend the important radiocarbon-dated sequence at Cliffs End (McKinley *et al.* forthcoming) into the Early Iron Age.

30.2.19 The assemblage of animal bone from this period is also relatively substantial, and important because of the absence of published material of this date from East Kent, and it has the potential to inform discussion on husbandry strategies at this time. Fewer charred plant remains were recovered from this period, but they still have the potential to contribute to an understanding of the development of arable agriculture at this time.

#### *Early / Middle Iron Age*

30.2.20 Early - Middle Iron Age settlement was best exemplified on Zone 6 where a complex sequence of field systems and trackways, subsequently replaced by a series of enclosures and round-houses, succeeded the Late Bronze Age layout. This sequence was continued into Late Iron Age and Roman periods and together represents the most complete and best-preserved example of settlement development on the route, and an important sequence not only for Thanet but also for East Kent; it is certainly of regional importance. There were relatively large, stratified finds and environmental assemblages, and the site provides an excellent opportunity to examine the development of this rural settlement which shows clear evidence for planning in its layout. The round-houses are the first structures of this form to be found in Thanet, and are the earliest found on the EKA (Phase II) route. Why such structures have not previously been found on the Isle requires further consideration.

30.2.21 An equally significant, regionally important, but very different type of site was investigated in Zone 13 on the Cliffs End / Pegwell Bay spur. Here, a monumental palisade, of uncertain function, was replaced by - or partly incorporated in - a substantial, trapezoidal enclosure of Middle Iron Age date. This enclosure, on a small promontory with views across Pegwell Bay to the Continent, overlay the site of an Early Bronze Age barrow which had presumably been levelled to allow the enclosure to be constructed. Within the enclosure, which had wide, deep ditches and a single entrance, was a relatively small number of probably contemporary features. These included a substantial sunken-featured building, a form of structure which appears unique to Thanet in this early period (a modified form of this structure occurs in Thanet in the Middle - Late Roman period and again, more widely, in different forms in the Saxon and medieval periods). A similarly early example was excavated in earlier excavations on the Chalk ridge immediately beyond the west end of the route (Canterbury Archaeological Trust 2004). Around the outside of the trapezoidal enclosure were several large clusters of probable grain storage pits, rubbish pits and shallow quarry pits, as well as a few, small post-built structures. The pits and quarries contained large and well-sealed groups of finds including pottery, loomweights or (more probably) briquetage supports,

and animal bone. Several also contained inhumation burials and one of the quarry complexes had a horse buried in the base. The artefactual and associated charred plant remains provide sufficient material to undertake meaningful analysis which is likely to inform on the function and use of the trapezoidal enclosure. Some form of defended domestic enclosure might be postulated, with possible continental links. The significance of this enclosure is further increased by the earlier discoveries made nearby at Cliffs End Farm, where a quarry pit contained a remarkable sequence of burials of people of various origins spanning the Late Bronze Age and Early Iron Age, and the Late Bronze Age pottery sequence has been verified through radiocarbon dating (McKinley forthcoming). The Iron Age pottery from Zone 13 may provide an opportunity to extend this sequence.

30.2.22 A small number of Early – Middle Iron Age features were also recorded in Zone 24 on the Chalk ridge at the west end of the route, on the north-eastern periphery of a previously investigated settlement (Canterbury Archaeological Trust 2004; Gollop and Mason 2005). A further part of this settlement was excavated to the south in 2010 (Adam Single pers comm.), and the probably still extant Bronze Age barrows in Zone 23 may have served to define the extent of this settlement to the east.

### *Late Iron Age*

30.2.23 Late Iron Age remains were generally ubiquitous in all areas but the Chalk ridge and all represent rural settlements, ranging from small farmsteads to the ‘village’ in Zone 6. The general absence of later Iron Age settlement on the Chalk ridge is further demonstrated by a similar absence recorded earlier to the west towards Monkton (Bennett *et al.* 2008).

30.2.24 The dense and well-preserved sequence of Late Iron Age settlement on Zone 6 represents a continuation of that recorded for the Early and Middle Iron Age, with no currently detectable evidence for any hiatus within this broad period. There was further development of the layout of enclosures and associated trackways, and new roundhouses and four-post structures replaced their predecessors. No major changes are apparent, except for the establishment of a southern boundary to the settlement, defined variously by fence lines and ditches in the succeeding phases. The reason for the location and alignment of this boundary is currently uncertain but, interestingly, it seems to have survived as a field boundary as late as the 19<sup>th</sup> century AD. As before, there were large assemblages of associated pottery, animal bone and charred plant remains, providing opportunities to clarify and refine the ceramic sequence, and examine the environment and economy of the settlement. In this respect

the relatively large number of quernstones, some spinning and weaving equipment, and a significant coin assemblage (mostly potins) will be able to contribute to an overall discussion of the development of the settlement.

- 30.2.25 Elsewhere, in Zones 3, 4, 7, 8, 10/10a, 11, 12, 13, 14, 17, 19, 22 and 26, enclosures and field boundaries of varying extent and complexity, sometimes with associated trackways and settlement remains, were identified. Further analysis of their chronology, layout and associated finds and environmental assemblages will help place these various groups of remains within the wider pattern of settlement hierarchy in this area, in particular, and Thanet more generally.
- 30.2.26 In Zones 3 and 4 on the Ebbsfleet Peninsula, a dispersed pattern of field and small enclosures were associated with the slight remains of at least three roundhouses and several four-post structures.
- 30.2.27 In Zones 7 and 8, on the south side of Cottington Hill, part of an enclosure containing at least one roundhouse lay next to a substantial holloway and succeeded an earlier field system.
- 30.2.28 At the south end of Zones 10 and in Zone 10a the first phase of what may have been a 'ladder' settlement was established, including several four-post structures, and this continued in use into the Roman period. Further north and extending into Zone 11 were field boundaries, a substantial holloway, and the eastern edge of the earliest, pre-Roman phase of what appears to have been a large sub-circular or oval enclosure extending beyond the limit of excavation.
- 30.2.29 In Zone 12, a complex sequence of enclosures flanked another substantial holloway. This and the other Iron Age (and later) trackways and holloways recorded on the EKA (Phase II) scheme (as well as during earlier work), will allow a tentative plan of the early network of routes in the southern part of Thanet to be developed, perhaps showing how settlements were linked with each other and the coast.
- 30.2.30 The Late Iron Age remains elsewhere were generally more dispersed and comprised largely elements of field and enclosure systems, some of which developed from earlier layouts, and occasional pits, with little evidence for contemporary structures.
- 30.2.31 Returning to Zone 6, there is a possibility that a sequence of very substantial ditches recorded here (at the northern end), in Zone 4, at Weatherlees Pond, and at two places to the east during earlier excavations on the Margate to Weatherlees Waste Water pipeline (Andrews *et al.* 2009), may represent parts

of a large, mid 1<sup>st</sup> century BC enclosure at the neck of the Ebbsfleet Peninsula. This postulated sub-rectangular enclosure would have measured approximately 600m north-to-south and 450m east-to-west, have incorporated an area of high ground (on which the present Ebbsfleet Farm is situated), and faced the Wantsum Channel to the west, perhaps being open to the water on this, more sheltered side to allow boats to be beached. A tentative hypothesis has been advanced (by Andrew Fitzpatrick) that this enclosure may have been a base associated with Julius Caesar's expeditions in 55 and 54BC. Identifying features and finds that may have been contemporary with the postulated enclosure will be an important part of determining its precise date and function, though proving a direct link to Caesar is likely to be impossible, at least on the basis of the evidence from the EKA (Phase II) and earlier excavations. However, any future work, particularly in the vicinity of the former shoreline, is likely provide further evidence that may allow the hypothesis to be supported or refuted.

### *Roman*

- 30.2.32 The large, probably defensive ditch at the northern end of Zone 6 (see above) was recut, and corresponding re-cuts were present in the ditch sections in Zone 4 and Weatherlees Pond, as well as in the sections recorded during earlier work to the east (Andrews 2009). There is a possibility that this episode of re-cutting might be linked to the Claudian invasion of AD43, but demonstrating this with any certainty is likely to prove impossible.
- 30.2.33 Many of the areas with Late Iron Age features had, unsurprisingly, evidence for activity continuing into the Early Roman period, and a variety of rural settlements have been identified over the entire route, though only one on the Chalk ridge. Together these will provide a fuller understanding of the distribution and development of Roman rural settlement in the southern part of Thanet, which can be assessed against the background of earlier work (Perkins 2001; Moody 2008). Continuity was most apparent in Zone 6 where the dense and complex pattern of Late Iron Age rural settlement was maintained and remodelled, with occupation extending into the 3<sup>rd</sup> and probably the 4<sup>th</sup> centuries AD, though apparently on an increasingly reduced level.
- 30.2.34 In Zone 6, the recutting of the defensive ditch appears to have caused some disruption in the sequence, with an apparently reduced level of activity evident, but this was followed by the re-establishment and extension of the earlier trackways and enclosure system, this time associated with several sunken-featured buildings, with little or no evidence for roundhouses. This apparent change in building tradition, at least in Zone 6, will require further



consideration. As in the earlier, Iron Age phases there are large assemblages of associated pottery, animal bone and charred plant remains, which will provide an opportunity to examine the environment and economy of the settlement. A slightly increased range of finds includes some evidence for small-scale metalworking.

30.2.35 The Middle – Late Roman phase on Zone 6 is represented by several wells and pits (some of them large) alongside various linear features, occurring at a much lower density than seen in earlier phases. Indeed, the earlier layout of trackways and enclosures had largely disappeared by this stage, representing a significant change in this aspect of the settlement. It will be important here to try and correlate this change with the sequences recorded during earlier investigations to the east and west, where two rectangular buildings with rubble footings were found (Perkins 1992), and with another further to the south (Hearne *et al.* 1995), all of which appear to belong to late in the sequence.

30.2.36 Towards the end of or following the abandonment of the Roman settlement in Zone 6, a colluvial / ‘dark earth’ deposit accumulated in the lowest part of the site, towards its southern end. This deposit contained a chronologically mixed but relatively rich assemblage of finds, particularly Iron Age and Roman coins and metalwork, which will repay further study.

30.2.37 Evidence for some degree of Late Iron Age / Early Roman continuity was also recorded at the south end of Zone 10 and in Zone 10a where the possible ‘ladder’ settlement underwent considerable development, with two possible sunken-featured buildings and a small mixed-rite cemetery being associated with it. Further elements of this settlement were recorded to the east in Zone 9 and during earlier excavations for the Margate Weatherlees Waste Water pipeline (Andrews *et al.* 2009).

30.2.38 Several Roman field and possible enclosure boundaries in Zones 7 and 8 succeeded the Iron Age arrangements, and in Zone 11 the series of Late Iron Age ditches possibly defining a large, sub-circular enclosure to the west of the excavation area (see above) were re-cut. To the north of this postulated enclosure were a series of enclosures that probably formed part of a Roman farmstead on the lower slopes of Sevenscore, whilst to the east, in Zone 12, Early Roman settlement developed alongside a major holloway established in the Iron Age.

30.2.39 Elsewhere, new Roman settlement developed in Zone 13, probably in the 1<sup>st</sup> century AD, and here included two sunken-featured buildings. To the east, in

Zone 14, a rectilinear enclosure was established, though this possibly had Late Iron Age origins, as did elements of several Roman fields or enclosures in Zone 26 to the south.

30.2.40 The most significant area of new Roman settlement investigated was in Zone 20, on the Chalk ridge, where a complex of remains has been broadly dated to the 2<sup>nd</sup> – 3<sup>rd</sup> century AD. This complex comprised a trackway, which extended to the north-west into Zone 29, with a series of sunken-featured buildings, pits and enclosure/field boundaries on either side, and two small groups of associated burials. This settlement shows many similarities to that recorded in earlier excavations to the west further along the Chalk ridge (Bennett *et al.* 2008), with topographic location and date a common factor between the two.

30.2.41 Roman burials were recorded in several zones, normally in small groups or singletons, with their date range spanning the Early to Middle Roman period, with a small number of Late Roman date. Small groups of inhumation burials were found in Zones 4, 6, 7, 12 and 19, many alongside trackways, whilst small mixed rite cemeteries were present in Zones 10a and 20. The largest, mixed rite cemetery was excavated in Zone 19, apparently associated with a small enclosure, and also close to a trackway which may have led to the Abbey Farm villa at Minster (Perkins and Parfitt 2004). The large overall size of the Iron Age and, particularly, the Roman human bone assemblage will make an important contribution to osteological data from Kent, and presents a rare opportunity to undertake comparative studies between closely contemporary and adjacent rural population groups

### *Saxon*

30.2.42 Anglo-Saxon cemeteries are a notable feature of Thanet's archaeology but evidence for settlement is rare. The discovery of two settlement sites on the EKA (Phase II) is, therefore, a significant addition to the current evidence and will allow further consideration of the distribution, date, nature and economy of these sites, and will also enable comparisons to be made between their associated finds and environmental assemblages.

30.2.43 Evidence of possibly a single, dispersed or shifting Mid-Saxon settlement, represented by three sunken-featured buildings, at least one pit and a well, was found in Zones 10 and 11, between the lower slopes of Sevenscore and Cottington Hill. Ceramic evidence indicates a 7<sup>th</sup> century AD date, and a further element of this settlement is probably represented by a sunken-featured building of similar date excavated on the north side of Cottington Hill in 2005 (Andrews *et al.* 2009). These sunken-featured buildings, in sight of the cemeteries on the chalk ridge in Zones 19 and 20 to the north (see below), may

have had some link to them, particularly as burials were being made at least up to *c.* AD 700.

- 30.2.44 Clusters of Mid-Saxon pits in Zone 14, some containing Ipswich Ware, are likely to indicate 8<sup>th</sup> century AD settlement, although no structural remains survived, perhaps because buildings were of shallow beam-slot rather than posthole construction. Of particular interest are the substantial dumps of marine shells, of several species, in various features, along with some hearths, a number of iron knives and a few whetstones, which together suggest large-scale processing of shellfish (perhaps by smoking or pickling), rather than feasting. Nearby, at Cliffs End Farm, were lines of Saxon pits also containing dumps of marine shell (McKinley forthcoming), and the overall scale and extent of this activity suggests that it was well organised and possibly controlled by or linked to the early abbey at Minster.
- 30.2.45 A small cemetery, comprising approximately two dozen inhumation burials, was also investigated in Zone 14, and is thought to have been broadly contemporary with the settlement there. The burials were tightly clustered in rows and grave goods were virtually absent, suggesting an 8<sup>th</sup> or 9<sup>th</sup> century date, but this will need to be confirmed by radiocarbon dating. The juxtaposition of settlement and burial, if demonstrated, would be of considerable interest, particularly if it can also be linked to the shellfish processing, as finding such closely related elements is rare and illustrates various changes in settlement and burial that were taking place between the 7<sup>th</sup> and 8<sup>th</sup> centuries AD.
- 30.2.46 Earlier cemeteries were found, and the inhumation burials in Zones 19 and 20 on the crest of the Chalk ridge were probably parts of two or more broadly contemporary cemeteries, established alongside an important trackway, and probably in use throughout most of the 6<sup>th</sup> and 7<sup>th</sup> centuries AD. These graves contained a range of grave goods and some showed evidence of having been re-opened or robbed in antiquity, a feature of several graves previously excavated in Thanet (Hearne *et al.* 1995) and also a widespread Merovingian custom, suggesting a continental link, which has been the subject of recent research (Alison Klevnäs pers comm.).
- 30.2.47 Overall, the cemeteries in Zones 19 and 20 have considerable potential for comparison with others in Thanet, particularly those at Sarre and Lord of the Manor (Richardson 2005). This will principally on the basis of grave good assemblages as the human bone from Saxon cemeteries in Thanet is generally poorly published, or not all, though analysis of the range of EKA (Phase II) material will go some way to redressing this situation.

30.2.48 The Saxon trackways in Zones 19 and 20 appear to have been significant features in the landscape, following the chalk ridge and probably linking the coast with the abbey at Minster and perhaps a crossing place on the Wantsum Channel. These trackways are likely to have perpetuated (at least in part) an earlier Roman route, itself with probable origins in the prehistoric period. As noted above, from these and other trackways and holloways recorded on the EKA (Phase II) scheme as well as during earlier work, it will be possible to develop a tentative plan of the early network of routes in the southern part of Thanet, with particular interest attached to where these would have met the coast.

30.2.49 Evidence for Late Saxon activity was limited to a small number of pits of probable early 11<sup>th</sup> century date in Zone 17. The significance of these is difficult to ascertain, but they are likely to indicate a minor settlement, possibly a farmstead, nearby, and analysis of their contents might provide further information in this respect.

### *Medieval*

30.2.50 Medieval activity was confined almost entirely to the Ebbsfleet Peninsula, in Zones 1 - 5 and the Weatherlees Pond site, though the Saxon trackways in Zones 19 and 20 continued in use into the medieval period.

30.2.51 In Zones 1 – 3 at the southern end of the peninsula were elements of probably two broadly contemporary farmsteads, together spanning the 11<sup>th</sup> – 14<sup>th</sup> centuries AD. Two separate sequences of enclosure ditches and field boundaries were recorded, some likely to have been associated with animal husbandry, but the principal structures probably lay just beyond the limits of excavation.

30.2.52 In Zones 4 – 5 and the Weatherlees Pond site were a further sequence of field boundaries and a well, this group of features of slightly later date than those to the south, and probably spanning the 13<sup>th</sup> – early 15<sup>th</sup> centuries.

30.2.53 Together, these groups of features, the associated finds and environmental assemblages, and the results from adjacent excavations undertaken in 2005 (Andrews 2009) provide an opportunity to examine the nature and development of medieval settlement on the Ebbsfleet Peninsula. This can be put into the wider context of contemporary land reclamation around the peninsula and to the west in the Wantsum Channel.

### *Post-medieval*

30.2.54 Few post-medieval features were identified, and most comprised chalk quarries, with two examples in Zone 13 and another two in Zone 17, the latter with an associated trackway providing access.

30.2.55 Most of the area covered by the EKA (Phase II) was given over to arable agriculture at this time and it appears that hedges rather than ditches defined fields. Historic maps provide further information on land-use in this area in the post-medieval and modern periods.

### *Modern*

30.2.56 Modern features of interest comprise the World War II defences associated with Manston aerodrome recorded in Zones 18, 19 and 20, and the short length of zig-zag trench in Zone 5. Although very little of these defences could be excavated, their layout and variation in type can contribute to a wider understanding of the defensive arrangements associated with an important World War II airfield. This understanding can be enhanced through wartime map, air-photographic and published evidence, including that recorded in recent excavations nearby (Andrews *et al.* 2009).

## **31 SCIENTIFIC DATING**

31.1.1 The purpose of this section is to outline the potential for scientific dating in relation to the updated research questions (see below).

### **31.2 Radiocarbon dating**

31.2.1 This can be used to date material of otherwise unknown age (eg unaccompanied human burials and animal burials) and to provide a refined chronology for archaeology events using the Bayesian approach to radiocarbon modelling (eg the establishment and duration of a settlement; the interval between two episodes of cemetery use; the construction date and use of a monument).

31.2.2 The Bayesian approach to archaeological dating has been outlined by Buck *et al.* (1996) and Bayliss *et al.* (2007). Whereas radiocarbon dating will simply return the calendar age of the submitted sample, the Bayesian technique will provide estimates of actual archaeological events. This is achieved by combining known stratigraphic (prior) information with radiocarbon dates to produce age estimates (posterior density). Overall the method tends to produce

chronologies that are routinely more precise than conventional radiocarbon dating. The technique allows the following to be generated and measured: start and end dates; first and last; duration (span); and interval (hiatus in activity). It can also be used to estimate events within a radiocarbon dated sequence (eg date of construction). Date estimates for archaeological events can also be compared. The OxCal programme can also be used to order radiocarbon dates eg to sequence burials within a Saxon cemetery or a prehistoric barrow (Barclay and Marshall forthcoming; Marshall and Barclay forthcoming).

### *Previous work*

- 31.2.3 Close to the eastern end of the EKA (Phase II) route, and south of Zones 13 – 15, are two sites, Chalk Hill (Bayliss *et al.* forthcoming; Whittle *et al.* forthcoming) and Cliffs End Farm (Marshall and Barclay forthcoming), that have been the subject of extensive radiocarbon dating programmes that provide existing well-dated sequences for the local Early Neolithic and later prehistory, respectively. Using the Bayesian modelling approach to date events rather than simply providing radiocarbon dates for individual samples Bayliss *et al.* indicate that the Chalk Hill causewayed enclosure was in use for *45 to 175 years (95% probability) or 60 to 120 years (68% probability)* with construction occurring within *3775-3675 cal BC (95%)*.
- 31.2.4 Over 100 radiocarbon dates were obtained for Cliffs End on charred pottery residue, human bone, animal bone and charred plant remains to address various site-related research questions. One aim was to provide a series of dates for a well stratified assemblage of Late Bronze Age and Earliest Iron Age pottery that was associated with a midden deposit, enclosures and a complex sequence of inhumation burials. The modelled results indicate that our present understanding of Late Bronze Age pottery chronology is in need of revision with developments in forms and decoration occurring 100-200 years earlier than generally accepted. Decoration may happen at an earlier date too and that the division into plain and decorated phases may not be valid. Another aim of the Cliffs End project was to provide dates for a series of burial events. The remains of approximately 24 individuals were represented in a cemetery that contained inhumation burials and mortuary deposits of distarticulated human bone. Originally these were phased as probably Late Bronze Age. However, detailed modelling identified three phases of burial activity belonging to the 9<sup>th</sup>, 5<sup>th</sup> and 4<sup>th</sup> centuries BC respectively.

### 31.3 Optically Stimulated Luminescence (OSL) dating

31.3.1 The ditches of ten of the 12 barrows investigated on the EKA (Phase II) project were sampled for OSL by David Peat of the Luminescence Dating Laboratory, RLAHA, University of Oxford. The aim was to sample those barrows and ring-ditches that could not (at the time of sampling) be dated using artefactual evidence and/or by obtaining radiocarbon dates for associated human remains. In Britain ring-ditches are known to occur from at least the mid-4<sup>th</sup> millennium until the mid-2<sup>nd</sup> millennium BC and therefore it should not be assumed that ring-ditches always belong to Early Bronze Age barrows. A number of Early to Middle Neolithic ring-ditches are known from the Thames Valley (see Healy 2008, SERF seminar paper) and, therefore, it is possible that some of the ring-ditches on the EKA are of a similar early date. At least four of the excavated ring-ditches are of possible Neolithic form. These include the U- (or horseshoe-) shaped ditch from Zone 3, a probable oval enclosure from Zone 10 and two (initially) C-shaped enclosures from Zone 23.

31.3.2 OSL dating of samples of ditch fill can be expected to return results with errors of 5-10%. In other words a monument that is 3800 years old (before AD 2000 or 1800 BC) can be expected to have a luminescence age of 3800±190 with a 95% calendrical bandwidth of 2180-1420 BC, while one that is 5500 years old (or 3500 BC) is likely to return a bandwidth of 4050-2950 BC (English Heritage 2008, table 1). This level of precision means that the technique can be used to determine whether a monument is of a mid-Neolithic (3400-2900 BC) rather than an Early Bronze Age date (2100-1600 BC).

### 31.4 Potential questions

#### *Barrows and funerary deposits*

31.4.1 A total of 12 barrows/ring-ditches were excavated along the EKA (Phase II) route. With the exception of a barrow in Zone 21, with a Food Vessel associated burial, none had good artefactual evidence (eg grave goods or placed ditch deposits) that would provide independent dating evidence. However, a further six (two in Zone 13, two others in Zone 21, and two in Zone 23) had associated burials that can be radiocarbon-dated.

31.4.2 Can OSL be used to identify ring-ditches of earlier Neolithic date or to confirm that the more unusual C- and U-shaped ditches are varieties of Early Bronze Age barrows? Is there any evidence that monuments of Neolithic date were transformed into Early Bronze Age Barrows (eg the Zone 3 U-shaped

ditch and the inner ring-ditch with possible central pit – Early Bronze Age pottery came from the base of the inner ditch)?

*Later prehistoric field systems and settlements*

- 31.4.3 What is the date of the Bronze Age settlements in Zones 4, 6/7, 12 and 14? Were these contemporary, short-lived and / or sequential settlements?
- 31.4.4 What is the date of the Iron Age settlements in Zones 6, 10/10a and 13 and to what extent are these contemporaneous with the fields and enclosures in Zones 12 and 22?
- 31.4.5 Modelling the likely age spans, start and end dates for these elements could contribute to a better understanding of contemporary settlement patterns and how they developed and shifted in later prehistory.
- 31.4.6 The radiocarbon dating of key groups of pottery (direct dating of charred residues) may enable a more refined characterisation of Later Prehistoric pottery (forms, fabrics and other diagnostic traits) for the 5<sup>th</sup> to 1<sup>st</sup> centuries BC in particular.
- 31.4.7 The radiocarbon dating of disarticulated human bone, skull fragments in particular, but not exclusively, can assist in understanding mortuary practice and the circulation of curated and relic material (eg as identified at Chalk Hill and Cliffs End).

*Late Iron Age ditch and burials*

- 31.4.8 Can radiocarbon dating be used to date the construction and use (including secondary) of the large enclosure earthwork identified in Zones 4, 6 and Weatherlees Pond? There is good potential to produce a precise model if the right samples exist within the sequence of earlier features, intercutting ditch cuts and later burials. Additional useful data that might improve the model could come from adjacent excavations of the same features (Andrews *et al.* 2009).

*Significant undated (or not closely dated) burials*

- 31.4.9 Can a variety of undated and poorly-dated, isolated and grouped human burials, spanning a potential date range of Early Bronze Age to Mid-Saxon, be more closely dated? Radiocarbon dating of a selection of these cremation and inhumation burials is proposed and will be used to place these (and any associated burials) within the correct phase and, where applicable, be used to further understand the sequence and duration of mortuary events.



### 31.5 Proposed methods

- Agree dating questions to be addressed and produce contextual information for potential sample selection;
- Review of potential sample material and generation of simulation models to test how many samples are required and whether the outcome of modelling is worthwhile;
- Submission of radiocarbon and OSL samples;
- Review of results, final modelling and report.

## 32 UPDATED PROJECT DESIGN

- 32.1.1 In preparing this Updated Project Design a range of works has been consulted and other re-visited, in particular the unpublished assessments which make up the Resource Assessment for the South East Historic Research Framework. On the basis of the information provided in these works, a review of the research themes set out in the Project Design for the EKA (Phase II) scheme, and the results from the excavations themselves, which are set out in this Assessment Report, a further series of more detailed scheme-wide research questions have been developed and these are set out below. It is considered likely, on the basis of the information provided by the stratigraphic, finds and environmental assessments in this document, that there is a realistic possibility of answering the majority of these research questions, facilitated by the use of the scheme GIS model that has been developed during the archaeological fieldwork and assessment.
- 32.1.2 Further stratigraphic analysis will be undertaken for all of the zones to clarify certain parts of the sequences which currently remain uncertain, particularly in Zone 6 and to a lesser extent in Zone 13, and this analysis will be co-ordinated with scientific analyses, specifically dating, and with the analyses of the finds, human bone and environmental remains, whose potential and proposals for analysis are set out in Volume 2. The results from the latter analyses will be used to inform the stratigraphic analysis (and vice versa) and significant or relevant information incorporated into the stratigraphic reports.
- 32.1.3 In order to address the scheme-wide research questions the publication of the results will be by period, and within this by Landscape Zone, to allow an examination of how past landscapes were created and used, not only at a broad level, but through transects across distinctive landscape zones and their component units. Summaries of the finds, human bone and environmental remains will accompany the site reports by period, and will also be subdivided, where practicable, by Landscape Zone, or other defined areas. Detailed specialist reports will be published separately in an accompanying volume. A series of period overviews will also be included, integrating all the relevant evidence from the scheme and putting it into the wider context of Thanet, East Kent and South-East England and the Continent where appropriate. This will allow broad questions outlined in the Research Design to be addressed, in particular how and why was Thanet distinctive from other areas, how has the sea influenced different forms of contact with continental Europe and the rest of Britain, and how did the dynamic and changing coastline influence the past communities of Thanet?

32.1.4 By answering the additional, more detailed as well as scheme-wide research questions that are set out, it will be possible to contribute to a discussion of these broader themes.

### **33 RESEARCH FRAMEWORK**

#### **33.1 Palaeolithic and Mesolithic**

33.1.1 How do the few isolated flint flakes of possible Palaeolithic date add to the evidence from the small number of pieces already known from the area?

33.1.2 How do the Palaeolithic flints relate to the geological deposits of the area and especially in relation to findings at the Kent International Business Park, Manston and at Pegwell Bay? In particular the relationship to loess and / or redeposited loess should be explored.

33.1.3 Can a Late Mesolithic element be confirmed within the struck flint assemblage (particularly that from Zone 6) and, if so, how does the distribution of material relate to the topography and what is currently known about Thanet in this period?

#### **33.2 Neolithic and Early Bronze Age**

##### *General*

33.2.1 What are the topographic and other factors which determined the distribution of ring-ditches and other monuments within the EKA (12 examples) and surrounding area, and why do some areas of Thanet have major monuments and others do not?

33.2.2 Are different forms of monument found in different aspects of the landscape?

##### *Chronology*

33.2.3 Does the principal struck flint assemblage in Zone 6 (from a tree-throw) belong to the end of the Mesolithic or the Early Neolithic? If Early Neolithic how does this assemblage compare with others, for example those from Zone 14 and Chalk Hill, Ramsgate?

33.2.4 Does the date and distribution of the struck flint from the preliminary surveys correspond with or provide a reliable guide to the results obtained from the larger, excavated assemblages?

- 33.2.5 Is the apparent absence of Beaker burials (and settlement) from the EKA genuine, or are some of the currently undated, unaccompanied inhumation burials (eg. in Zone 21) of this date?
- 33.2.6 Can the chronology of the ring-ditches and other monuments, including their often complex sequences of development (eg. in Zone 23), be refined and better understood through a combination of radiocarbon and OSL dating?
- 33.2.7 What are the origins of the possible oval monument in Zone 10, the penannular-ditched monument in Zone 3, and the two penannular-ditched monuments in Zone 23, later converted to ring-ditches?
- 33.2.8 How do the forms, function and chronology of the ring-ditches and other monuments compare with each other and also with other excavated sequences, in particular the monuments at Lord of the Manor and at Cliffs End Farm?
- 33.2.9 How long did the ring-ditches and other monuments remain extant or visible in the landscape?
- 33.2.10 How were the monuments perceived and used in later landscapes?

#### *Landscape and land-use*

- 33.2.11 Can the environmental sequences taken from the monument ditches aid in environmental reconstruction and, for example, provide any evidence for the date of tree clearance?
- 33.2.12 How do the sequences and character of monument construction and depositional events at the monument groups relate to their immediate surroundings and wider landscape context?
- 33.2.13 What and from where are the earliest cereal and faunal remains on the EKA?
- 33.2.14 Is there any change in the cereal and faunal remains over time?

#### *Settlement*

- 33.2.15 Do the small groups of Early Neolithic pits (and associated pottery and struck flint) in Zone 6 and Zone 14, and the Middle Neolithic pit in Zone 10, represent settlement activity, possibly over a short period or repeated use over a much longer period?
- 33.2.16 How do these groups of Neolithic pits relate to what is currently known on Thanet (eg. Lord of the Manor and Chalk Hill)?

33.2.17 How might any evidence for late 3<sup>rd</sup> and early 2<sup>nd</sup> millennium settlement, broadly contemporary with the Early Bronze Age monuments, be identified within the EKA route?

33.2.18 Some of the groups of struck flint in the ring-ditches (particularly those in Zone 23) indicate flaking activity in the immediate vicinity, but do other groups in these ditches represent debris dumped from elsewhere and if so, why?

#### *Links to further afield*

33.2.19 What evidence is there for potential long-distance trade at this time through, for example, stone axes, the Food Vessel and the amber button?

33.2.20 Could isotope analysis of human remains contribute to wider debates on population movement in the Neolithic and Early Bronze Age?

### **33.3 Later Bronze Age and Iron Age**

#### *Chronology*

33.3.1 When were field and enclosure patterns established in the Bronze Age, how long did they last, what forms did they take and can their purposes be established (eg. for crops or animals)?

33.3.2 What was the chronology of the different areas of Bronze Age settlement, particularly those in Zones 4, 6/7, 12 and 14, and how did any succeeding Iron Age settlement relate to this?

33.3.3 What was the chronology of the different areas of Iron Age settlement, particularly those in Zones 6, 10/10a and 13, and how did this relate to the broadly contemporary systems of fields and enclosures, for example in Zones 12 and 22?

#### *Landscape and land-use*

33.3.4 How far do the distribution, nature and extent of the later Bronze Age fields and enclosures reflect differing geologies / soil types and topographies (including the coastline and the edge of the Wantsum Channel) within the EKA? How does this match with previously excavated evidence in the area?

33.3.5 What was the relationship between the fields and enclosures, areas of settlement and communications routes (eg. the trackway on Zone 6)?

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- 33.3.6 Can specific elements or groups of enclosures and field systems be linked to either arable or pastoral agriculture, in order to define the composition of the farmed resources?
- 33.3.7 There is probably insufficient material from the later Bronze Age, but is there any evidence for changes in animal rearing strategies and the balance of primary and secondary products from pastoral agriculture in the Iron Age? In particular, are there differences between the large, predominantly Middle Iron Age assemblage from Zone 13 and the mainly later Iron Age assemblage from Zone 6?
- 33.3.8 Can changes in consumption and the scale, methods and social context of arable and pastoral agriculture be identified between the later Bronze Age and the later Iron Age, again from analysing and comparing the assemblages of animal bone and charred plant remains from Zone 6 and Zone 13?
- 33.3.9 Can the date of introduction of new domestic species, in particular fowl, be established?
- 33.3.10 How much evidence is there for the exploitation of marine resources, particularly shellfish, beginning in the earlier prehistoric period and apparently increasing in the later Iron Age?

### *Settlement*

- 33.3.11 How can the later Bronze Age settlements (eg. in Zones 4, 6/7, 12 and 14) be characterised according to their date, form and function, and what part did topography play in their location and distribution?
- 33.3.12 Is the later Bronze Age enclosure in Zone 19 likely to have been settlement-related or did it serve some other function?
- 33.3.13 What evidence is there for settlement shift between the later Bronze Age and the later Iron Age, and what might be the reasons for the increase in intensity and diversity of settlement?
- 33.3.14 In the Iron Age various types of settlement are represented on the EKA, including scattered farmsteads (eg. in Zone 22), a possible 'ladder settlement' (in Zone 10/10a) and a 'nucleated village' (in Zone 6). How might these be characterised according to date, form and socio-economic function, and what part did topography play in their various locations? How does this match with previously excavated evidence in the area?
- 33.3.15 What was the purpose of the substantial palisade in Zone 13 and how did this articulate chronologically and physically with the Middle Iron Age trapezoidal

enclosure which replaced (part of) it? Is there any continuity of use or adaption between these and the earlier ring-ditch?

33.3.16 The large Middle Iron Age trapezoidal enclosure in Zone 13 is a unique feature on the EKA. Can its function be established through a study of the ditch fills, analysing the nature and contents of associated pits, identifying other related features (probably including a sunken-featured building), and a consideration of its topographic setting?

33.3.17 Does the large, Middle Iron Age trapezoidal enclosure in Zone 13 have any contemporary parallels in Britain or on the Continent, and does its presence have any connection to the earlier sequence (including an important Late Bronze Age – Early Iron Age ‘mortuary feature’) at Cliffs End Farm to the south-west?

### *Structures*

33.3.18 Late prehistoric structural remains included roundhouses (the first clearly evident examples in Thanet), four- and six-post structures, and sunken-featured buildings (SFBs), most of these structures of Iron Age rather than Bronze Age date. What can be established about the chronology and function of these structures, particularly the SFBs which appear to be unique to Thanet and lay at the beginning of a tradition which continued throughout much of the Roman period.

33.3.19 Does a presence (or absence) of various types of structure reflect a difference in nature between settlements?

33.3.20 How did the density, morphology and function of pits vary between and within settlements?

### *Material culture*

33.3.21 How does the newly-discovered Late Bronze Age hoard material (probably including a pair of gold bracelets) in Zone 4 relate to the previously discovered hoards on the Ebbsfleet peninsula? Does this provide any further information on the detailed context of this material in terms of its place of deposition, the nature and date of the hoards, and why this area was a particular focus of deposition?

33.3.22 How far can the large assemblages of Iron Age pottery from Zones 6 and 13 allow exploration of the chronology of changing pottery fabrics and forms, particularly with respect to the Late Bronze Age – Early Iron Age sequence at

Cliffs End Farm to the south-west and other published Iron Age assemblages from east Kent?

### *Crafts, trades and industry*

33.3.23 There is relatively little evidence for crafts, trades and industry, but some further consideration of the evidence is required to establish, for example, if the loomweights / oven bricks from Zone 13 were associated with salt production rather than textile working.

33.3.24 Analysis of the large deposit of animal bone recovered from the surface of an Iron Age trackway in Zone 6 and its overall distribution may establish if this was an area of specialised butchery.

33.3.25 Is the absence of late prehistoric burnt mounds typical of Thanet and beyond?

### *Communications*

33.3.26 Certain or probable pre-Roman trackways, some of which continued in use into the Roman period, have been identified in various areas (Zones 6, 7, 10, 12 and 19). It will be important to understand the development and use of this network in terms of the development of the wider landscape of Thanet and also to try to predict their likely course and extent (eg. links to the coast).

### *Burial and ritual*

33.3.27 Where are burials placed on the landscape? Specifically, what is the frequency of cremation and inhumation burials in earlier monuments, boundaries, fields, pits and settlements, and how does this change from the later Bronze Age to the later Iron Age?

33.3.28 Are there any differences in sex, age and health between the individuals buried in these different locations?

33.3.29 Given the internationally important studies of the human remains at Cliffesend, is there evidence of similar movement of peoples in the Early and Middle Iron Age human remains in Zone 13 and elsewhere?

33.3.30 Does the occurrence of skull fragments in some Iron Age contexts indicate a particular mortuary ritual of this date?

## **33.4 Later Iron Age and Roman**

### *Chronology*

33.4.1 Zone 6 contained a range of well-preserved features and deposits of both Late Iron Age and Roman date. How far can continuity of local traditions be



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demonstrated both here and elsewhere on the EKA route, particularly during the 1<sup>st</sup> century BC to the early 2<sup>nd</sup> century AD, in terms of the location, layout and function of the settlements, structural forms, the material culture and the agricultural economy?

- 33.4.2 What was the chronology of development and abandonment of the different areas of Roman settlement, particularly those in Zones 6 and 20, and how did this relate to the use of field systems and enclosures elsewhere, for example in Zones 10/10a, 11 and 14?
- 33.4.3 Is there any evidence for Roman activity continuing in to the early 5<sup>th</sup> century AD?
- 33.4.4 What periods of use can be assigned to the various cremation and inhumation cemeteries, and how do these relate to other possible groups or individual burials?
- 33.4.5 Can the large enclosure at the neck of the Ebbsfleet peninsula (in Zones 4, 5 and 6) be assigned a construction date in the mid 1<sup>st</sup> century BC, broadly contemporary with Caesar's invasions, and when did it go out of use? (see also *Military Installations* below)

#### *Landscape and land-use*

- 33.4.6 Is there any evidence for changes in the location of settlements and the layout of trackways, enclosures and field systems between the Late Iron Age and Early Roman period, and did this change from the preceding period? Can these changes be ascribed to changing uses of the different landscape zones (and their associated soil types), perhaps linked to environmental changes, either natural or man-made?
- 33.4.7 What evidence (eg. trackways) is there to demonstrate the physical placements of the Roman settlements, in particular those in Zones 6 and 20, in the wider landscape? How does such evidence help assessment of the relationship of the sites to other components of the rural settlement pattern, for example the villa at Minster and the settlement at Monkton, as well as the significant military (and later civil) presence at Richborough?
- 33.4.8 Is there any evidence for a military use of part of the landscape, specifically the early enclosure in Zone 6, and how did the imposition of this enclosure affect the preceding settlement and that which followed?

- 33.4.9 The settlements in Zones 6 and 20 produced large quantities of animal bone and charred plant remains. How far can this material provide information about the agricultural economy and diet?
- 33.4.10 Can anything further be learned about the chronology, layout, extent and function of the large Late Iron Age – Roman ditch sequence on the west side of Zone 11, which possibly defined a substantial enclosure?
- 33.4.11 Can specific elements or groups of enclosures and field systems be linked to either arable or pastoral agriculture, in order to define the composition of the farmed resources?
- 33.4.12 What evidence is there for the exploitation of fish and shellfish, which may help us to understand the connections between coastal and inland settlements of different types?
- 33.4.13 How much evidence for diet can be obtained from the animal bone, marine shell, charred plant remains and material culture?

#### *Settlement*

- 33.4.14 Is there any evidence for changes in the location of settlements and the layout of trackways, enclosures and field systems between the Late Iron Age and Early Roman period, and did this change from the preceding period? Can these changes be ascribed to changing uses of the different landscape zones (and their associated soil types), perhaps linked to environmental changes, either natural or man-made?
- 33.4.15 For the settlement in Zone 6, in particular, several avenues of research might be pursued which will contribute further to understanding whether the settlement had any unusual status, or whether it represents a type of settlement, with round-houses, not previously encountered in Thanet. For example:
- How did the trackway system develop?
  - Was occupation continuous?
  - Did the various compounds or enclosures persist over time?
  - Were some enclosures associated with structures and other with stock?
  - How much evidence is there for crafts and ‘industry’ (in addition to agricultural production)?
  - What were the uses of the pits?
  - Why did the south-west boundary of the settlement remain so clearly defined and apparently fixed over time – was it an enclosed settlement or only periodically so?

*Structures*

33.4.16 Roman structural remains included roundhouses, post-built structures and sunken-featured buildings (SFBs), similar to the structures of Iron Age date. No substantial rectangular timber buildings or buildings with stone or rubble footings were found, though several with rubble footings were recorded in the vicinity of Zone 6 during earlier investigations. What can be established about the chronology and function of the structures, particularly the SFBs which appear to be unique to Thanet, and did the presence (or absence) of various types reflect the differing locations, dates and nature of the settlements? For example, the mid-Roman settlement in Zone 20 appeared to comprise entirely SFBs, as did a similarly located (on the Chalk ridge) and dated settlement excavated earlier to the west at Monkton.

*Military installations*

33.4.17 Can the function of the large enclosure at the neck of the Ebbsfleet peninsula (in Zones 4, 5 and 6) be determined through reviewing its topographic location, identifying any contemporary features, and further examining the finds assemblage from the area, specifically the coins and the metalwork, which may contain related artefacts? In particular, can this enclosure be identified as a base associated with Caesar's invasions in 55 and 54BC?

33.4.18 How did the layout of this enclosure articulate with the specific topography of this part of the Ebbsfleet peninsula?

33.4.19 Why was there apparently more than one phase to this enclosure, and is there any evidence that could indicate that the ditches were deliberately backfilled? Can a later phase of the enclosure ditch be linked to the Claudian invasion of AD 43?

33.4.20 Is there any evidence that might reflect the significant (and later civil) presence at Richborough, and did this have any impact at all, particularly on the settlement in Zone 6?

*Material culture*

33.4.21 How far can the nature and distribution of objects, including pottery and coinage, provide information about the socio-economic nature of individual settlements and related sites, enabling them to be placed within a settlement hierarchy?

33.4.22 How did everyday life (in terms of material culture) change with the arrival of the Romans?

33.4.23 How far can the identification and chronology of the later Iron Age and Early Roman pottery be advanced through analysis of this material, particularly the large assemblage from Zone 6?

33.4.24 Does the assemblage of Iron Age coins from Zone 6 reflect the composition of the previously studied metal-detected assemblage from the surrounding area?

#### *Crafts, trade and industry*

33.4.25 There is relatively little evidence for crafts, trade and industry, but some further consideration of the material is required. For example, how much evidence is there for textile-working, how significant is the shale-working and are the Greensand querns likely to be sourced from Folkestone? This will be particularly relevant for Zone 6, where the nature and context of a small quantity of material associated with iron-smithing and another group possibly associated with gold working also needs also to be reviewed.

33.4.26 Is there evidence of early contact and trade with the Roman world?

33.4.27 What evidence is there for butchery and cereal processing, and where is this located?

#### *Communications*

33.4.28 Certain or probable pre-Roman trackways, some of which continued in use into the Roman period, have been identified in various areas (Zones 6, 7, 10, 12 and 19). It will be important to understand the development and use of this network in terms of the wider landscape of Thanet and also to try to predict their likely course and extent.

#### *Burial and ritual*

33.4.29 Did burial location change over time and, if so, how does this correspond with previously excavated evidence in the area?

33.4.30 Are there any differences in sex, age, health and socio-economic status between the individuals buried in different locations?

33.4.31 What evidence is there for changing burial rites over time?

33.4.32 Is there any evidence for post burial rituals?

33.4.33 What evidence is there for 'structured deposits', in particular animal bone?

33.4.34 Can individual cemeteries be linked to particular settlements?

33.4.35 Can the burials be related to incomers or native populations?

### 33.5 Saxon

#### *Chronology*

- 33.5.1 There appears to be no evidence for settlement or burial in any part of the EKA route during a period which may have spanned most if not all of the 5<sup>th</sup> century and perhaps the first half of the 6<sup>th</sup>. Can this be confirmed by, in particular, closer dating of the grave goods?
- 33.5.2 How can the lack of Early Saxon remains be reconciled with the tradition that this area saw the arrival of the earliest Saxons as celebrated with the Hengist and Horsa story?
- 33.5.3 Can the sequence of settlement activity (in Zones 10, 11 and 14) which together probably spanned the 7<sup>th</sup> and early 8<sup>th</sup> centuries be confirmed and refined by further pottery analysis? In particular, can the settlement in Zone 14 be shown to be later than that in Zones 10 and 11?
- 33.5.4 Can the sequence of burial activity (in Zones 14, 19 and 20) which together probably spanned the later 6<sup>th</sup>, 7<sup>th</sup> and early 8<sup>th</sup> centuries be confirmed and refined by, in particular, closer dating of the grave goods?
- 33.5.5 What elements of the settlements and cemeteries may have been contemporary and perhaps associated (eg. the settlement and cemetery in Zone 14)?

#### *Landscape and land-use*

- 33.5.6 Evidence for probable (Early-) Mid-Saxon settlement was confined to Zones 10 and 11 on Sevenscore and Zone 14 on the Pegwell Bay spur, with only very limited evidence for Late Saxon activity also coming from Sevenscore. Is the distribution of Saxon settlement related to geology / soil types and topography, and is this distribution confirmed by what is known from elsewhere in the southern part of Thanet?
- 33.5.7 Were the cemeteries on the Chalk ridge (in Zones 19 and 20) associated with the trackways?
- 33.5.8 In the absence of field and enclosure boundaries (rare in this period), and given the relatively small assemblage of animal bone, can any information be derived from the environmental samples which might provide an indicator of the nature of land-use, the patterns of exploitation and the agricultural practices of the wider area?

33.5.9 What (if any) connection was there between the locations of settlements and cemeteries and elements of the earlier Roman (eg. trackways) and prehistoric (eg. extant barrows) landscapes?

*Settlements and structures*

33.5.10 What information about the status and economy of the settlements can be derived from the pottery and other finds, animal bone and charred plant remains, and does this differ between Zones 10 and 11 and the probably slightly later settlement in Z14? How does this compare with the few other settlement sites known in Thanet, particularly that at Manston Road, Ramsgate?

33.5.11 Are the SFBs in Zones 10 and 11 likely to have belonged to a single dispersed (or shifting) settlement, further evidence for which has come from earlier excavations to the south around Cottington Hill?

33.5.12 The settlement in Zone 14 was represented by pits only, with no structures having been identified. Is this likely to reflect the former presence of posthole or beam slot structures, evidence for which has not survived?

*Material culture*

33.5.13 How far can the nature and distribution of objects, animal bone and charred plant remains provide information about the socio-economic nature of individual settlements?

*Crafts, trade and industry*

33.5.14 There is relatively little evidence for crafts, trade and industry, but some further consideration of the material is required to establish, for example, how much evidence there is for textile working.

33.5.15 The substantial quantity of marine shell from Zone 14 is currently interpreted as indicating the presence of significant processing activity there, rather than on-site consumption. Various questions can be formulated, for example:

- What were the likely sources of the range of shellfish represented and what does this imply in terms of harvesting strategies?
- Can it be confirmed that the marine shell is waste from processing rather than on-site consumption?
- If processing, can the nature of this be ascertained (eg smoking or pickling)?
- Can an estimate of the scale of production be made?
- Can the various hearths, knives and whetstones be linked to this activity?
- Was the processing associated with the settlement there?

- How does the evidence relate to the broadly contemporary but smaller quantity of marine shell from Cliffs End Farm?
- Can the processing activity be linked in any way to the presence of an early monastery at Minster in Thanet?
- Was the settlement and cemetery in Zone 14 associated with the shellfish processing community?

33.5.16 What evidence is there for potential long-distance trade at this time through, for example, jet beads, Ipswich-ware and Frankish pottery?

#### *Communications*

33.5.17 At least one trackway has been identified, on the Chalk ridge (in Zones 19 and 20), and this appears to have originated in the Saxon period and continued in use into the medieval period. It will be important to understand the development (from a pre-existing Roman system?) and use of this network in terms of the wider landscape of Thanet and also to try to predict the likely course and extent of these routes (in this case perhaps providing a link to the early religious centre at Minster).

#### *Population*

33.5.18 Where did the Saxon settlers originate from?

#### *Burial and ritual*

33.5.19 How and why did cemetery location change over time?

33.5.20 Can individual cemeteries be linked to particular settlements (eg. the settlement and cemetery in Zone 14), and how are these likely to have been associated topographically?

33.5.21 Are there any differences in sex, age and health between the individuals buried in these different locations?

33.5.22 Do any of these differences correspond with different levels of status as represented by assemblages of grave goods, both between and within cemeteries?

33.5.23 What evidence is there for changing burial rites over time, and how is this also reflected in the layout and nature of graves and the associated assemblages of grave goods?

33.5.24 What evidence is there for coffins, and can the clenched bolts and roves in some graves be interpreted as the remains of sections of ships planking re-used as grave covers?

- 33.5.25 What evidence is there for the re-opening or robbing of graves in antiquity?
- 33.5.26 How do the cemeteries compare with other excavated examples, for example at Lord of the Manor and Sarre, in terms of their date, location, size, layout, population, grave assemblages etc?
- 33.5.27 Bearing in mind the arrival of Augustine in this area and the establishment of the early religious centre at Canterbury is there any evidence for early Christian influence and practices?

### **33.6 Medieval**

#### *Chronology*

- 33.6.1 How does the mid-11<sup>th</sup> – 14<sup>th</sup> /15<sup>th</sup> century span of the probable farmstead-related settlement on the Ebbsfleet peninsula relate to the sequence of medieval land reclamation within the Wantsum Channel and in the immediate vicinity (eg. the construction of the Boarded Groin and the Monks Wall)?
- 33.6.2 Was there a hiatus in settlement after the late medieval period or did settlement contract and become more focussed (eg. at Ebbsfleet Farm)?

#### *Landscape and land-use*

- 33.6.3 Evidence for medieval settlement was largely confined to the Ebbsfleet peninsula (Zones 1 - 3). Is its presence here related to geology / soils and topography, and is this distribution confirmed by what is known from elsewhere in this part of Thanet?
- 33.6.4 There appears to be no connection between the location of medieval settlement and the earlier, Saxon settlements. What reasons might be suggested for this contrasting pattern and how does this correspond with the broader pattern of medieval settlement in this part of Thanet?
- 33.6.5 What was the chronology of development, character, extent and function of the enclosures and field systems (for animal husbandry)?
- 33.6.6 No substantial structural remains were identified, but the various features are currently interpreted as representing parts of two (or possibly three) farmsteads. Can this interpretation be sustained?
- 33.6.7 What was land other than on the Ebbsfleet peninsula utilised for, given the apparent absence of field and enclosure boundaries (were there hedges?)?
- 33.6.8 What was the nature of the area immediately surrounding the Ebbsfleet peninsula at this time (was it marsh with reeds, for example?), where were



contemporary high and low tide levels, and is any part of the peninsula likely to have been subject to periodic flooding?

- 33.6.9 Can any further information be gathered concerning the silting up of the Wantsum Channel?

*Status and economy*

- 33.6.10 What information about the status and economy of the farmsteads can be derived from the pottery and other finds, animal bone and charred plant remains?

- 33.6.11 Is there any evidence to indicate an involvement of the farmsteads in fishing or the harvesting of marine shellfish?

**33.7 Post-medieval and Modern**

- 33.7.1 Why is there a total lack of post medieval evidence including land division?

- 33.7.2 How do the World War II features (in Zones 19 and 20) relate to the wider network of defences associated with Manston Aerodrome?

**34 OUTLINE PUBLICATION SYNOPSIS**

- 34.1.1 As specified in 18.2.4 of *Volume 2f (Archaeology)*, the 'Full Report', on the work will be published as an Oxford-Wessex monograph.

- 34.1.2 It is proposed that the East Kent report be published in a way that will ensure the widest possible public audience. This will comprise a synthetic research driven publication incorporating much illustration and selected specialist input, but without the high levels of specialist technical detail as normally found in standard archaeological monographs. However, it is still intended that this volume will contain sufficient technical detail to stand alone.

- 34.1.3 In addition to the above book, a second volume will present all detailed specialist reports. This volume will have a reduced print-run, compared to the first volume, but will also be available as a PDF on the Oxford and Wessex websites. In addition, as the book will be printed digitally, further printed copies can easily be produced as and when they are needed.

- 34.1.4 An outline synopsis is presented below:

---

**DIFFERENT LANDSCAPES AND CHANGING LAND-USE:  
A TRANSECT ACROSS THE SOUTH OF THANET  
The Archaeology of the East Kent Access Road**

**PROVISIONAL LIST OF CONTENTS (Volume 1)**

List of figures  
List of plates  
List of tables  
Acknowledgements  
Summary

**Chapter 1 Introduction**

Project background  
Geology and topography  
Archaeological background  
Aims of the project  
Preliminary surveys  
Excavation methodology  
Scientific dating  
Format of the reports

**Chapter 2 The first settlers: Early prehistoric settlement and burial**

Introduction  
Palaeolithic and Mesolithic [Z6]  
Neolithic  
    Zone 6 [E Neo]  
    Zone 14 [E Neo]  
    Zone 10 [M Neo]  
    Other sites and finds  
Early Bronze Age  
    Zone 3  
    Zone 8  
    Zone 10  
    Zone 13  
    Zone 21  
    Zone 23  
    Other sites and finds

*Dating, finds and environmental summaries*  
*Scientific dating*  
*Early prehistoric worked flint and utilised stone*  
*Early prehistoric pottery*  
*Other early prehistoric finds*  
*Human bone*  
*Animal bone*  
*Charred plant remains and charcoal*  
*Snails and soil micromorphology*

**Chapter 3 Expansion and consolidation: Later prehistoric land-use**

## Introduction

## Middle Bronze Age

Various sites and finds (incl. burials)

## Late Bronze Age – Early Iron Age

Zones 3, 4 and 5

Zones 6 and 7

Zones 9, 10 and 11

Zone 12

Zones 13 and 14

Zone 19

## Middle - Late Iron Age

Zones 3, 4 and 5

Zone 6

Zones 7 and 8

Zones 9, 10 and 11

Zone 12

Zones 13 and 14

Zones 17, 18 and 19

Zones 22, 23 and 24

*Dating, finds and environmental summaries*

*Scientific dating*

*Late prehistoric worked flint and utilised stone*

*Late prehistoric pottery*

*Late prehistoric metalwork*

*Late prehistoric fired clay objects*

*Late prehistoric structural fired clay*

*Other late prehistoric finds*

*Human bone*

*Animal bone*

*Charred plant remains and charcoal*

**Chapter 4 Conquest and change: The Roman period**

## Introduction

The principal sites: settlements, cemeteries [incl grave catalogues], trackways and defence

Zones 4, 5 and 6, Weatherlees Pond

Zones 7 and 8

Zones 9, 10 and 11

Zone 12

Zones 13 and 14

Zones 18 and 19 Zone 20  
Zones 22, 23 and 24

*Dating, finds and environmental summaries*

*Scientific dating*

*Late Iron Age and Roman coins*

*Late Iron Age and Roman pottery*

*Late Iron Age and Roman metalwork and metalworking debris*

*Late Iron Age and Roman fired clay objects*

*Late Iron Age and Roman structural fired clay*

*Late Iron Age and Roman ceramic building material*

*Late Iron Age and Roman utilised stone*

*Other Late Iron Age and Roman finds*

*Human bone*

*Animal bone*

*Marine shell*

*Charred plant remains and charcoal*

**Chapter 5 A new phase of settlement and burial: The Saxons arrive**

Introduction

The settlements

Zones 10 and 11 [C7]

Zones 14 and 15 [C8]

Zone 17 [C11]

The cemeteries [incl grave catalogues]

Zones 19 and 20 [C6/7]

Zone 14 [C8]

*Dating, finds and environmental summaries*

*Scientific dating*

*Saxon coins*

*Saxon pottery*

*Saxon metalwork*

*Saxon fired clay objects*

*Saxon structural fired clay*

*Saxon utilised stone*

*Other Saxon finds*

*Human bone*

*Animal bone*

*Marine shell*

*Charred plant remains and charcoal*

**Chapter 6 Farming, caring for the sick and defence: The medieval, post-medieval and modern periods**

Introduction

The medieval and post-medieval settlements

Zones 1, 2 and 3

Zones 4 and 5, Weatherlees Pond  
Other sites and finds  
The fever hospital  
Zone 23  
World War II defences  
Zones 5, 18, 19 and 20

<p><i>Finds and environmental summaries</i> <i>Medieval and later coins</i> <i>Medieval and later pottery</i> <i>Medieval and later metalwork</i> <i>Other medieval and later finds</i> <i>Animal bone</i> <i>Marine shell</i> <i>Charred plant remains and charcoal</i></p>
--

## **Chapter 7 The changing uses of an island landscape: the south of Thanet from the early prehistoric to the modern period**

Early prehistoric  
Later prehistoric  
Romano-British  
Medieval and post-medieval

## **Bibliography**

## **Index**

## **PROVISIONAL LIST OF CONTENTS (Volume 2)**

### **Finds and Environmental Reports**

Coins  
Metalwork  
Slag  
Earlier prehistoric pottery  
Iron Age and Roman pottery  
Post-Roman pottery  
Worked flint and burnt flint  
Utilised stone  
Ceramic building material  
Structural fired clay  
Fired clay objects  
Beads  
Glass  
Jet, shale and amber  
Worked bone objects  
Pipe clay figurines

Human remains

Animal bone

Fishbone

Marine shell

Charred plant remains

Charcoal

Snails

Soil micromorphology

## 35 RESOURCES AND PROGRAMMING

### 35.1 Project team structure

35.1.1 The project team is set out in the table below

Name	Organisation	Responsibilities
Ken Welsh	OA	Overall Project manager
Phil Andrews	WA	Project Manager, analysis and interpretation
Alex Smith	OA	Publications Manager, Editor
Andrew Fitzpatrick	WA	Project Monitor, analysis and interpretation
Paul Booth	OA	Analysis and interpretation
Leigh Allen	OA	Finds Management
Lorraine Mepham	WA	Finds Management
Niall Donald	WA	Database and GIS Management
Jacqueline I. McKinley	WA	Human Remains management and analysis
Rebecca Nicholson	OA	Environmental Management and Fish analysis
Alistair Barclay	WA	Radiocarbon modelling
Jacek Gruszczyski	OA	Stratigraphic analysis
Gerry Thacker	OA	Stratigraphic analysis
John Powell	WA	Stratigraphic analysis
Oliver Good	WA	Stratigraphic analysis
Matt Leivers	WA	Stratigraphic analysis, Early prehistoric pottery
Cynthia Poole	OA	Fired clay, briquetage, CBM
Ruth Shaffrey	OA	Worked stone
John Cotter	OA	Post-Roman pottery
Rachael Seager Smith	WA	Iron Age and Roman pottery
Samantha Robinson	WA	Slag
Phil Harding	WA	Worked flint
Nicholas Cooke	WA	Coins
Ian Scott	OA	Metalwork
Sue Nelson	WA	Other finds
Kath Hunter	OA	Charred plant remains
Denise Druce	OA	Charcoal
Lena Strid	OA	Animal bone
Elizabeth Stafford	OA	Land snails
Greg Campbell	External	Marine shell

## 35.2 Task list

Year 2011/12			
Task	Task description	Performed by	Days
<b>1000 Management and general tasks</b>			
1001	Management	Ken Welsh	30
1002	Management/monitoring/liaise with PO & specialist OA	Alex Smith	24
1003	Management/monitoring WA	Andrew Fitzpatrick	12
1004	Management/liaise with specialists and POs WA	Phil Andrews	30
1005	Finds Management OA/WA	L Allen/L Mepham	12
1006	CAD/illustrator admin OA/WA	PM	6
1007	Database/IT support	Niall Donald	15
1008	Transport of finds and technical assistance	Technician	12
1009	Burial management and review	Jacqueline I. McKinley	4
1010	Environmental Management and review	Rebecca Nicholson	10
1011	Preparation and modelling for C14 dating programme	Alistair Barclay	8
1012	C14 dating x 25 @£350/sample	lab	25
1013	OSL dating	lab	4
<b>2000 Stratigraphy: Landscape Zone 3 (Zones 1-9)</b>			
<b>Zones 1-3 (1539 contexts so far)</b>			
2001	Full stratigraphic analysis	John Powell	4
2001	Prepare narrative and draft figures	John Powell	6
2002	Produce plans and sections	Illustrator	6
<b>Zones 4-5 (910 contexts so far)</b>			
2003	Full stratigraphic analysis	John Powell	3
2003	Prepare narrative and draft figures	John Powell	5
2004	Produce plans and sections	Illustrator	4
<b>Zone 6 (5976 contexts so far)</b>			
2005	Full stratigraphic analysis	Jacek Gruszczyski	25
2005	Prepare narrative and draft figures	Jacek Gruszczyski	25
2006	Produce plans and sections	Illustrator	20
<b>Zones 7-9 (1950 contexts so far)</b>			
2007	Full stratigraphic analysis	Gerry Thacker	6
2007	Prepare narrative and draft figures	Gerry Thacker	10
2008	Produce plans and sections	Illustrator	5
<b>2000 Stratigraphy: Landscape Zone 2 (Zones 10-16, 26-8)</b>			
<b>Zones 10-11 (2009 contexts so far)</b>			
2009	Full stratigraphic analysis	Gerry Thacker	6
2009	Prepare narrative and draft figures	Gerry Thacker	10
2010	Produce plans and sections	Illustrator	6
<b>Zone 12 (1817 contexts so far)</b>			
2011	Full stratigraphic analysis	Oliver Good	6
2011	Prepare narrative and draft figures	Oliver Good	10
2012	Produce plans and sections	Illustrator	6
<b>Zones 13 and 26 (3165 contexts so far)</b>			
2013	Full stratigraphic analysis	Matt Leivers	8
2013	Prepare narrative and draft figures	Matt Leivers	12
2014	Produce plans and sections	Illustrator	10
<b>Zones 14-15 (1629 contexts so far)</b>			
2015	Full stratigraphic analysis	Matt Leivers	4

2015	Prepare narrative and draft figures	Matt Leivers	6
2016	Produce plans and sections	Illustrator	6
<b>2000</b>	<b>Stratigraphy: Landscape Zone 1 (Zones 17-25)</b>		
2017	Full stratigraphic analysis	Gerry Thacker	6
2017	Prepare narrative and draft figures	Gerry Thacker	15
2017	Produce plans and sections	Illustrator	8
<b>3000</b>	<b>Finds and human remains</b>		
3001	Structural fired clay/briquetage	Cynthia Poole	40
3002	Structural fired/briquetage clay illustration	Illustrator	6
3003	Fired clay objects	Cynthia Poole	4
3004	Fired clay objects illustration	Illustrator	2
3005	CBM	Cynthia Poole	11
3006	CBM illustration	Illustrator	2
3007	Stone	Ruth Shaffrey	30
3008	Stone illustration	Illustrator	10
3009	Pottery (post Roman)	John Cotter	39
3010	Pottery (post Roman) database support	Niall Donald	1
3011	Pottery (post Roman) illustration	Illustrator	15
3012	Pottery (post Roman) scientific analysis	External	
3013	Pottery (earlier prehistoric)	Matt Leivers	80
3014	Pottery (earlier prehistoric) illustration	Illustrator	10
3015	Pottery (earlier prehistoric) scientific analysis	External	
3016	Pottery (earlier prehistoric) Radiocarbon dates	External	10
3017	Pottery (IA and Roman)	Rachael Seager Smith	130
3018	Pottery (IA and Roman) sorting	Technician	6
3019	Pottery (IA and Roman) illustration	Illustrator	40
3020	Pottery (IA and Roman) Samian	External	20
3021	Slag	Samantha Robinson	0.5
3022	Worked flint	Phil Harding	40
3023	Worked flint illustration	Illustrator	10
3024	Human remains	Jacqueline I. McKinley	173
3025	Human remains isotopes	External	
3026	Human remains Radiocarbon dates	External	25
3027	Coins	Nicholas Cooke	5
3028	Metalwork	Ian Scott	80
3029	Metalwork consultation	Andrew Fitzpatrick	2
3030	Metalwork consultation	Grace Jones	1
3031	Metalwork illustration	Illustrator	30
3032	Metalwork conservation	External	15
3033	Other finds	Sue Nelson	11
3034	Other finds illustration	Illustrator	17
<b>4000</b>	<b>Environmental</b>		
4001	CPR	Kath Hunter	77
4002	Charcoal	Denise Druce	40
4003	Animal bone	Lena Strid	144
4004	Animal bone	Technician	8
4005	Snails	Elizabeth Stafford	12
4006	Snails	Technician	12
4007	Micromorphology	External	
4008	Fish	Rebecca Nicholson	7.5



4009	Marine shell	External	29
4010	Marine shell	Technician	39
<b>ALL SITES</b>			
<b>6000 Production of report</b>			
6001	Compilation of report and intro chapter	Phil Andrews	12
6002	Chapter writing Prehistoric	Andrew Fitzpatrick	25
6003	Chapter writing Roman	Paul Booth	25
6004	Chapter writing Saxon/Med	Phil Andrews	17
6005	Publication figures	OA Illustrator	12
6006	Bibliography	Paul Booth	2
6007	Edit report	Alex Smith	18
6008	Referee	Ext	
6009	Deal with Ref comments	Phil Andrews	6
6010	Copy-edit	Senior Editor	15
6011	typeset & amendments	Illustrator	32
6012	Proofs	Senior Editor	8
6013	Cover	Illustrator	3
6014	Index	OA	4
6015	Print	Ext	
6016	Distribution	OA	2

### 35.3 Archive preparation and deposition

- 35.3.1 The archive contents are summarised in Appendices 27 to 31 of Volume 2. It has been catalogued, indexed and cross-referenced and checked for consistency and is currently stored at the offices of Oxford Archaeology (Oxford South, Oxford) and Wessex Archaeology (Salisbury).
- 35.3.2 A microfiched security copy of the indexed archive will be deposited with the National Monuments Record. The digital archive has been prepared in accordance with the current guidelines of the Archaeology Data Service (ADS) and will be deposited with the ADS and made generally available via the Internet.
- 35.3.3 The archive will be stored until the effects date for the remainder of the project (60 months after the Completion of Section 1) or until the 'Publication' is published, whichever is the shorter period. The archive will then be deposited with the approved repository.

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oxfordarchaeology



*Wessex Archaeology*

Oxford Archaeology

Janus House, Osney Mead, Oxford, OX2 0ES  
t: 01865 263800 e: oasouth@oxfordarch.co.uk



Wessex Archaeology

Portway House, Old Sarum Park, Salisbury, SP4 6EB  
t: 01722 326867 e: info@wessexarch.co.uk



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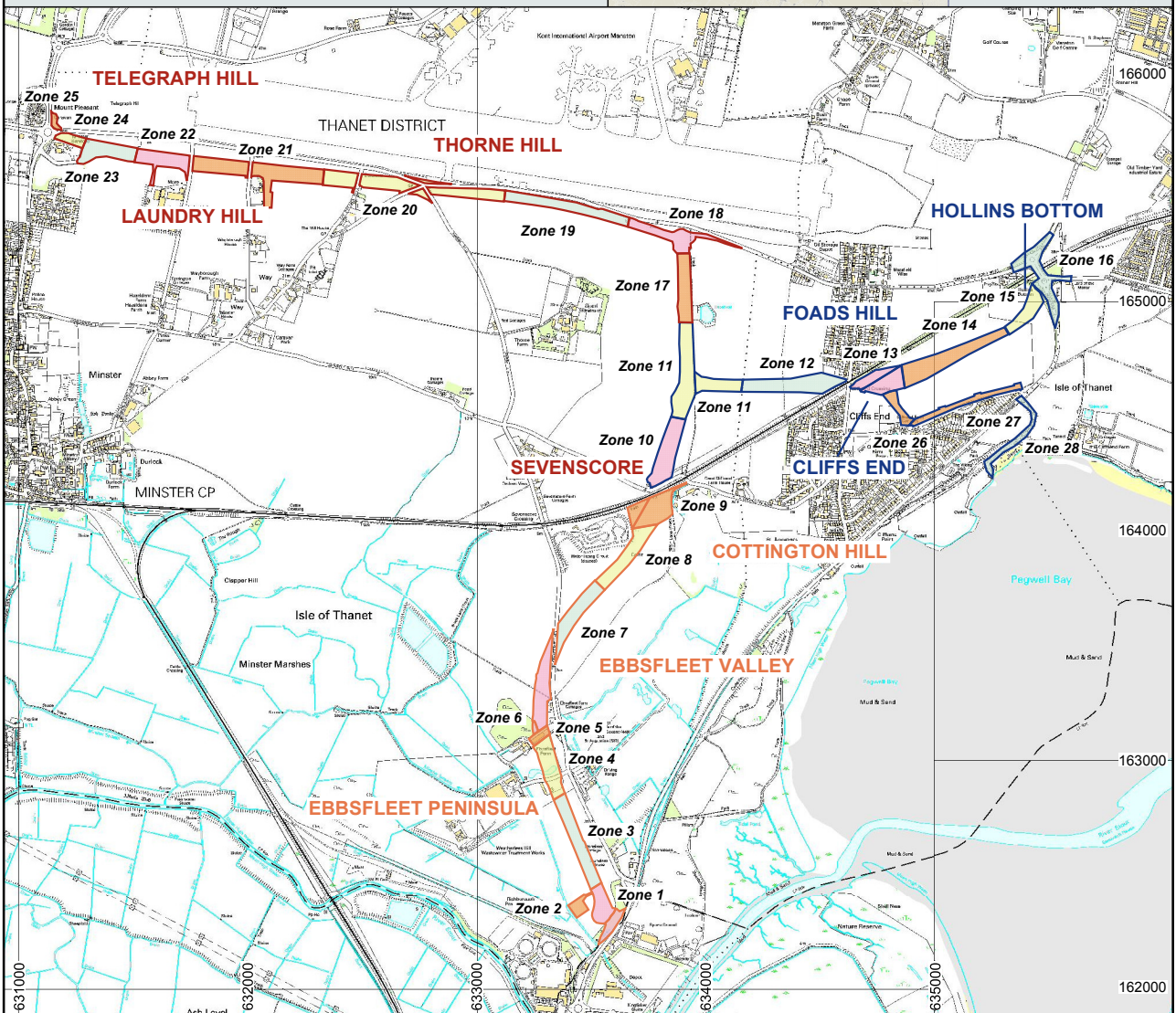
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## **East Kent Access (Phase II), Thanet, Kent**

### **Post-Excavation Assessment Volume 1 Figures and Plates**



**Document Reference  
Draft  
Dated June 2011**



Archaeological Model Zones  
 Landscape 1  
 Landscape 2  
 Landscape 3

**Oxford-Wessex Archaeology**  
**Joint Venture**

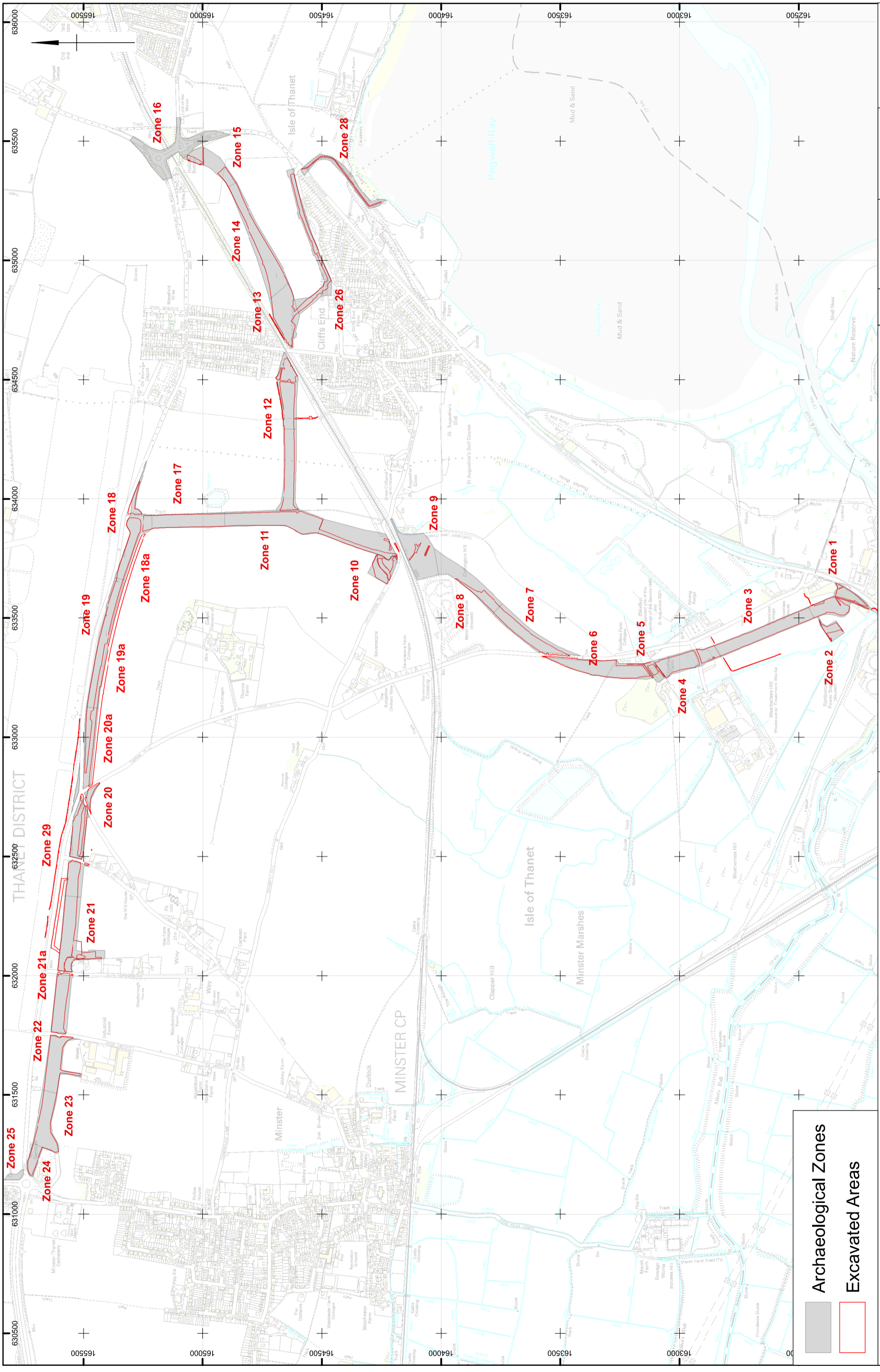
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Site location plan

Figure 1





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**Archaeological Zones**  
**Excavated Areas**

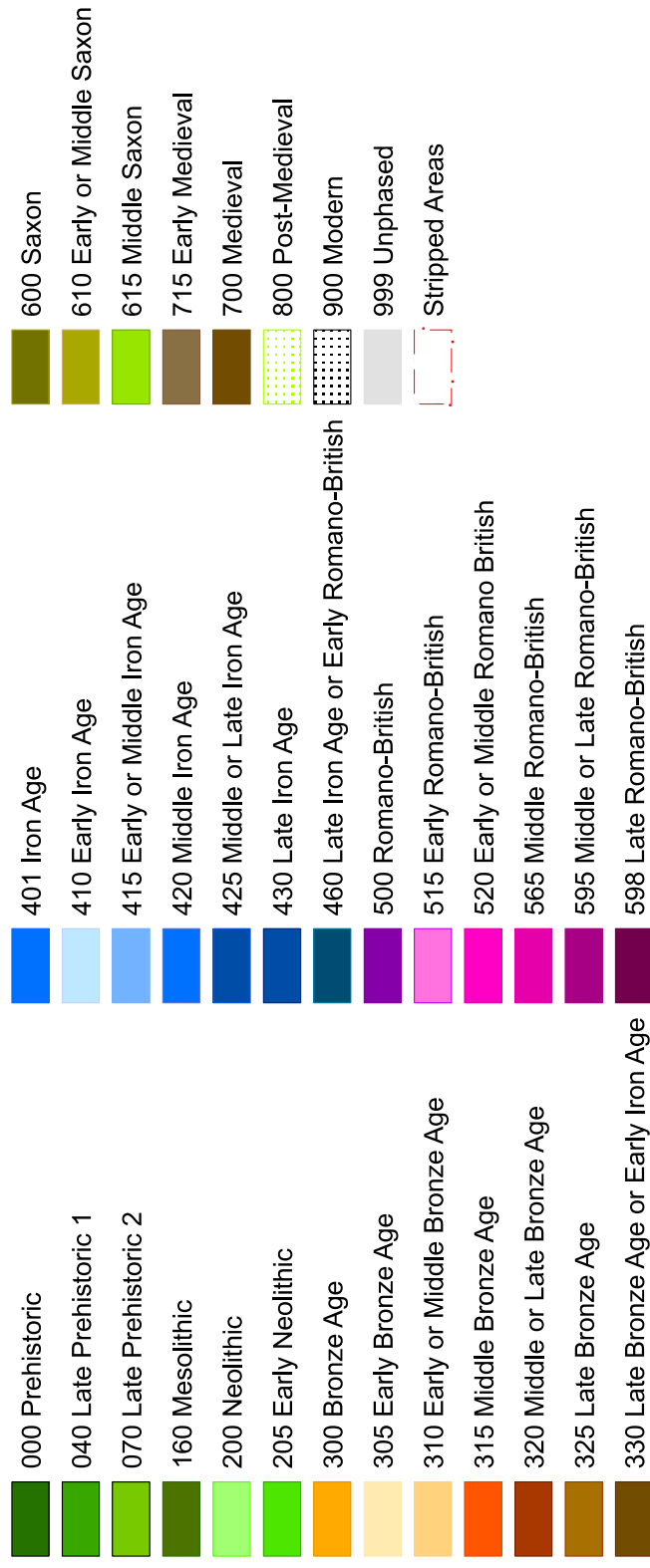
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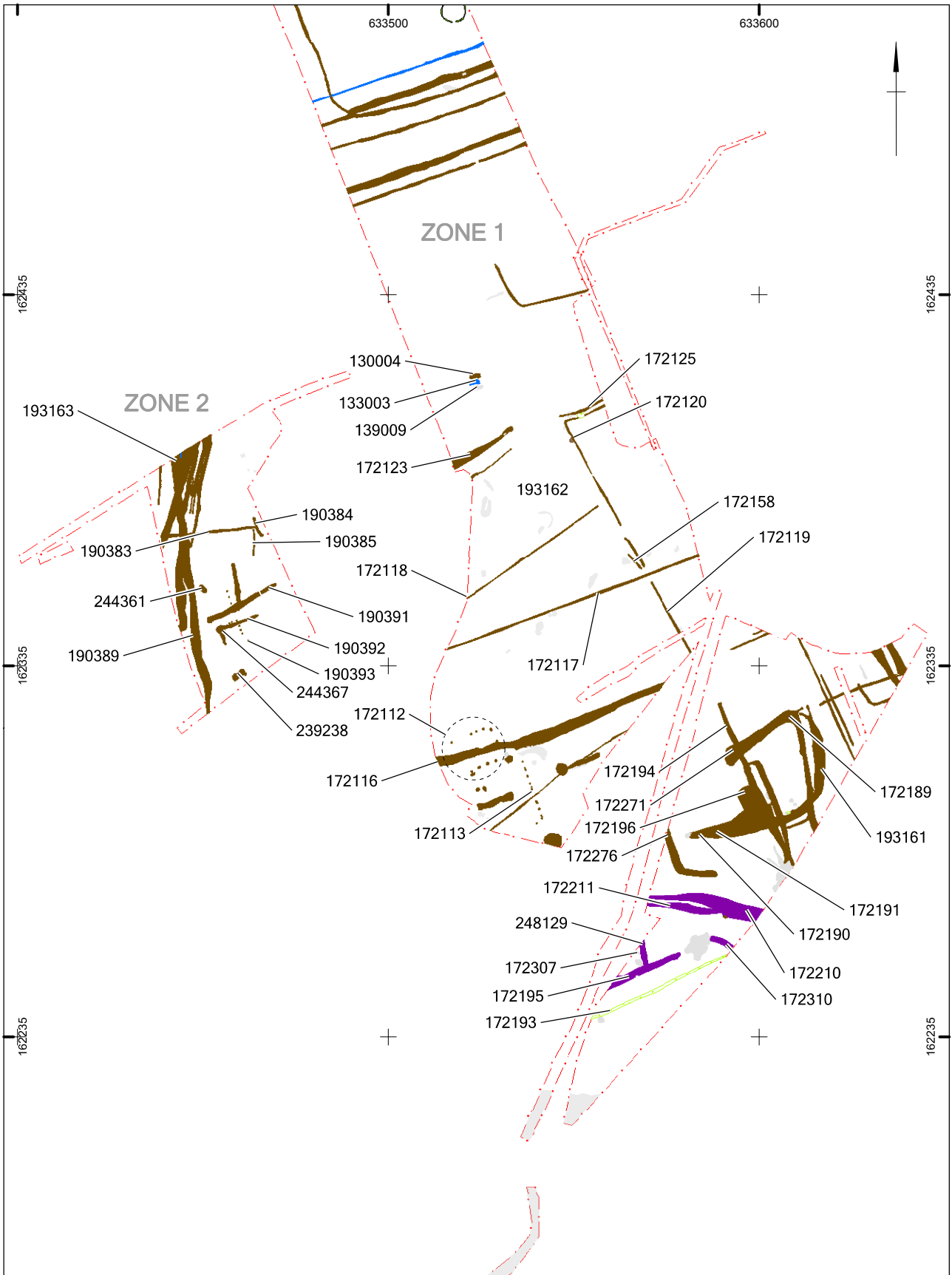
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Location of Zones Figure 2

## Key to Phasing





**ZONE 2**

**ZONE 1**

162435

162435

162335

162335

162235

162235

633500

633600



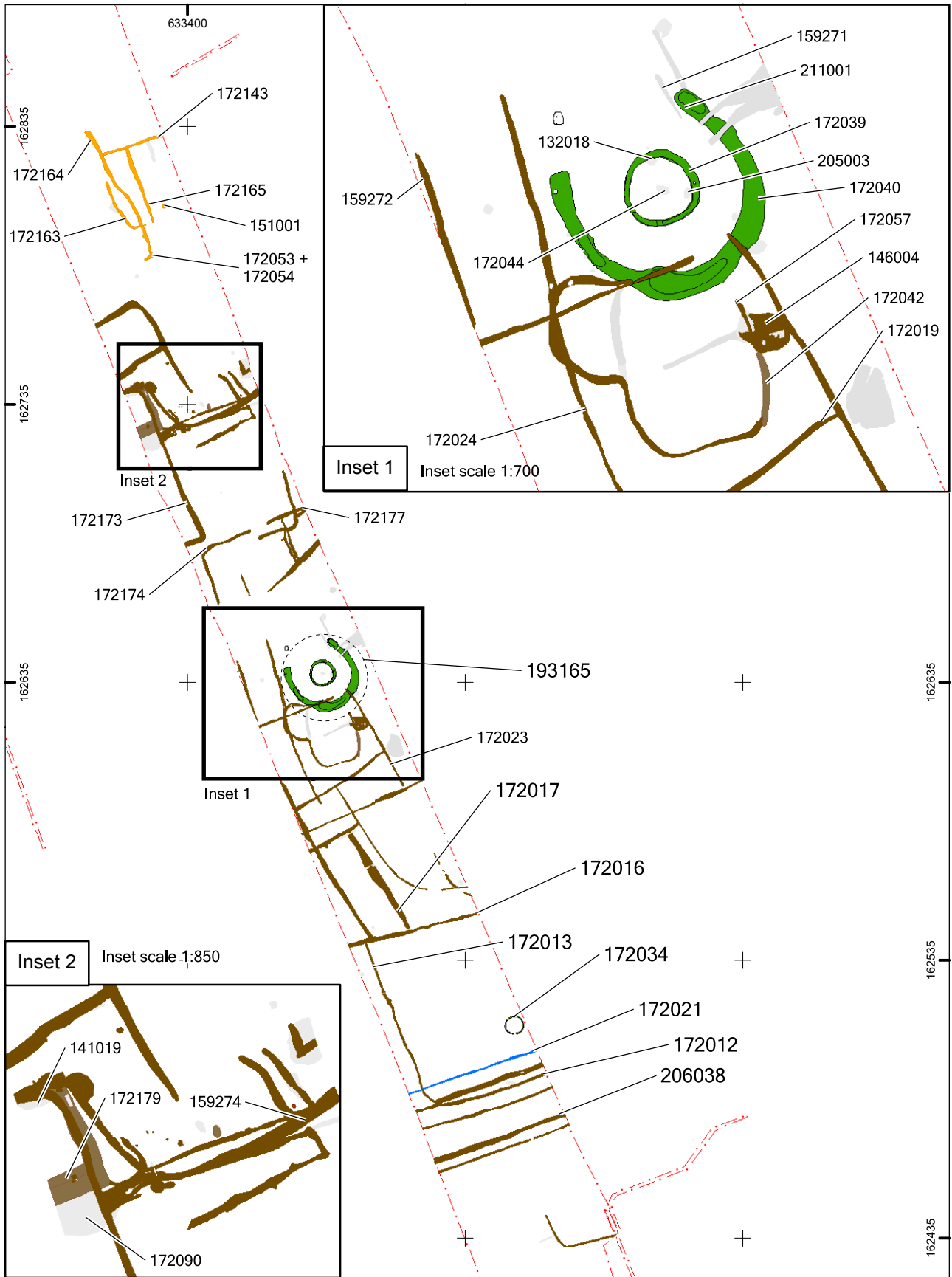
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Zones 1 and 2

Figure 3



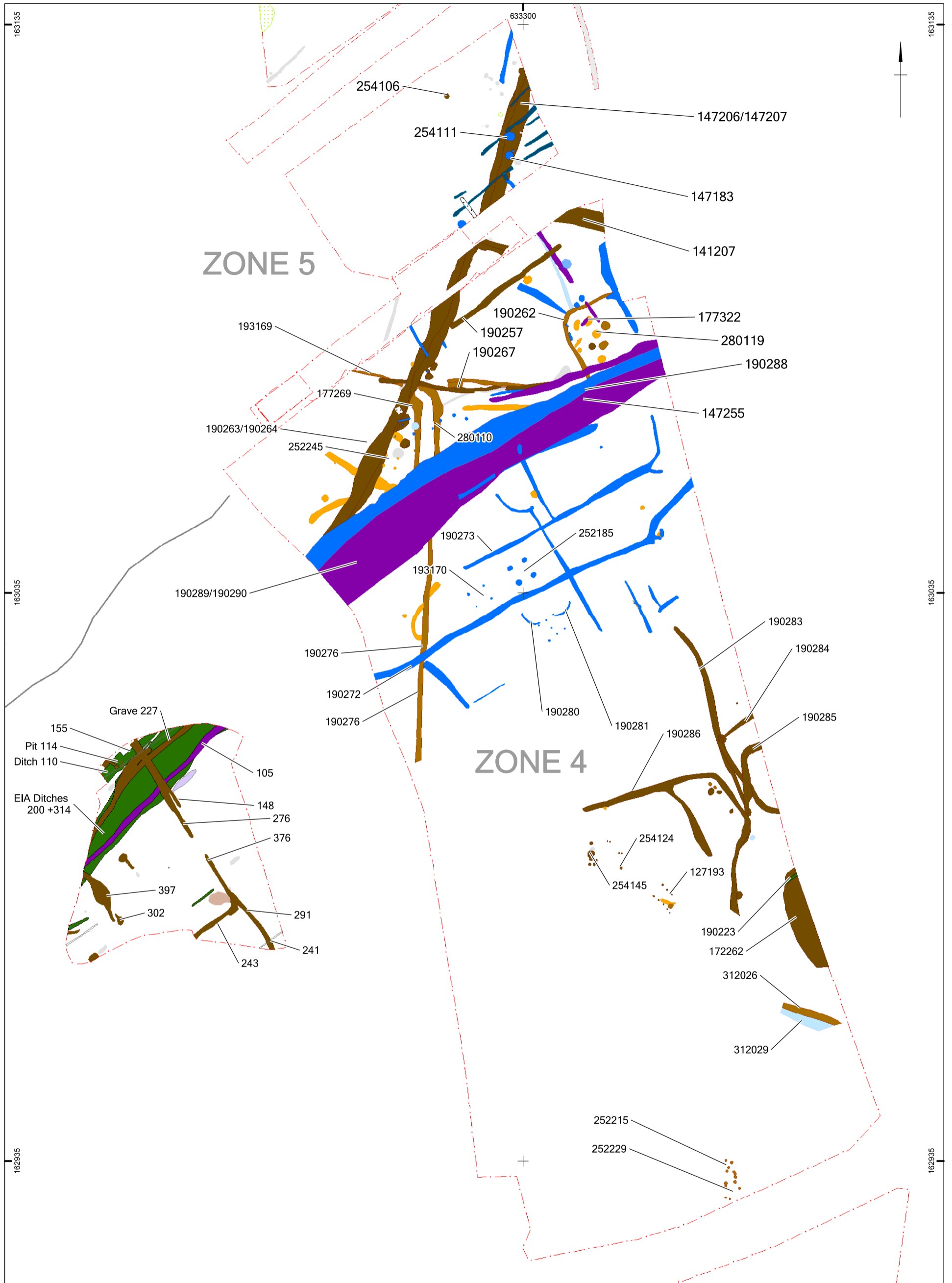
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Zone 3

Figure 4



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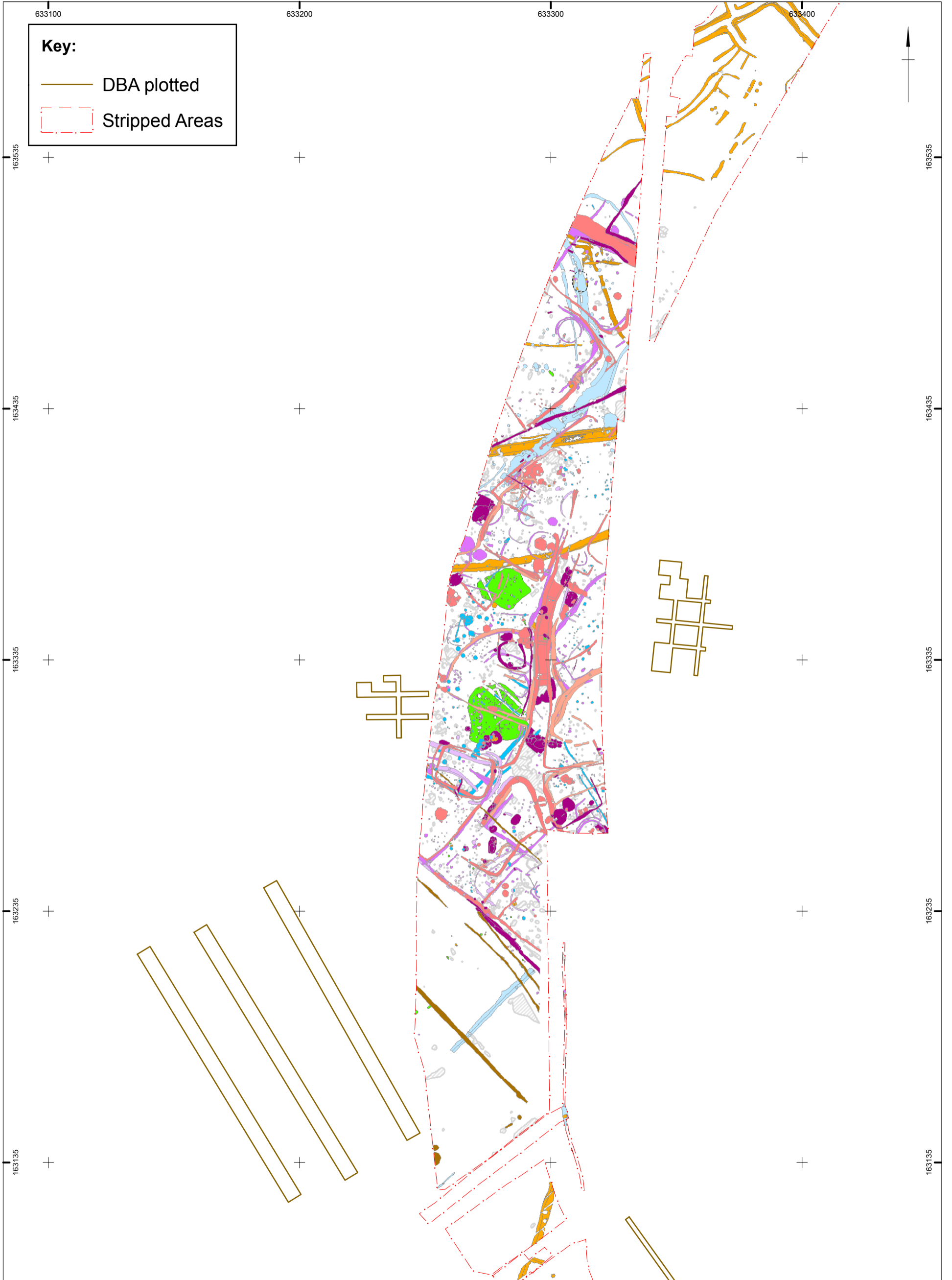
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Zone 4 and 5

Figure 5



**Key:**

- DBA plotted
- Stripped Areas



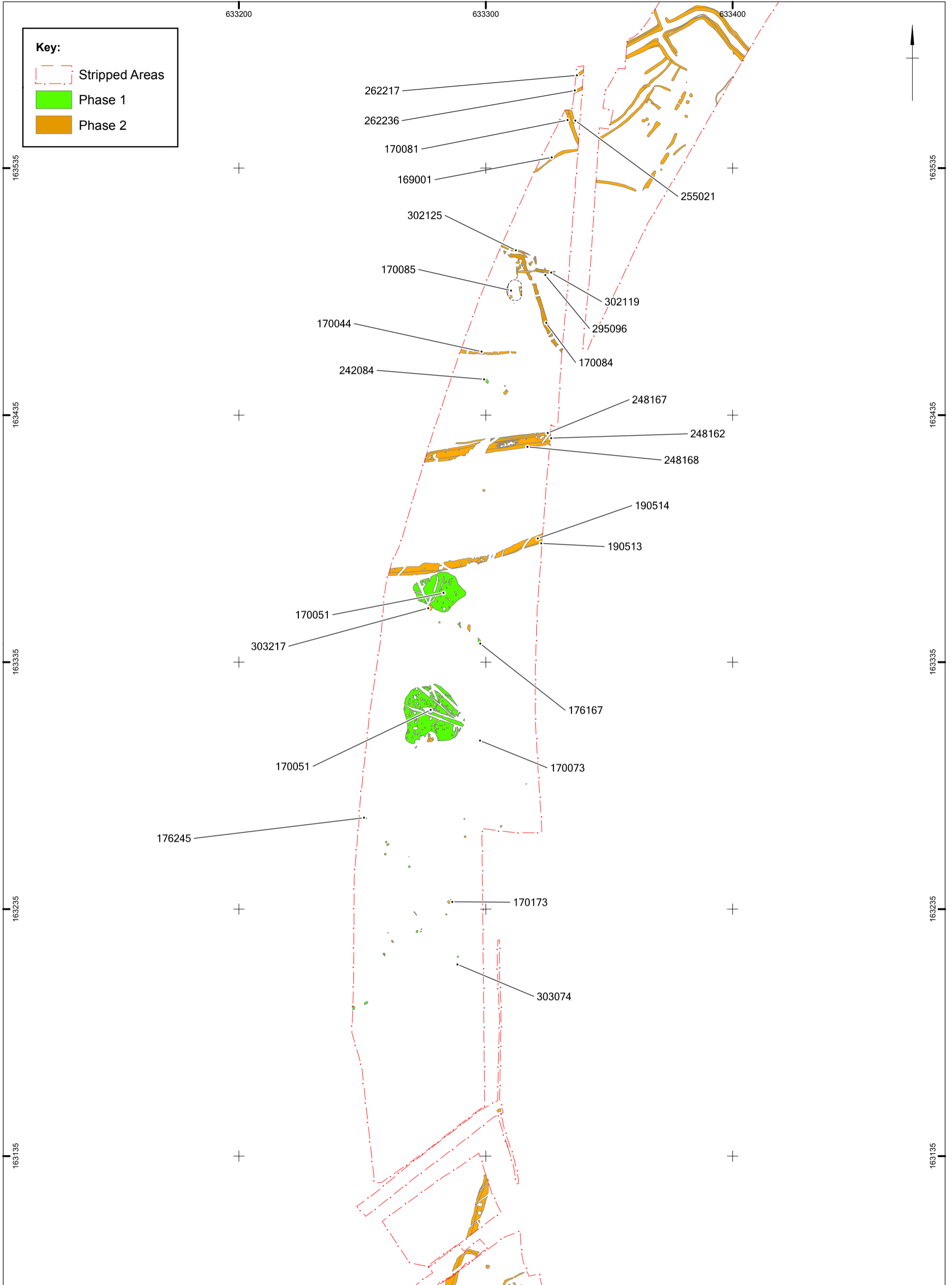
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Zone 6 All Phases

Figure 6



262217  
 262236  
 170081  
 169001  
 302125  
 170085  
 170044  
 242084  
 248167  
 248162  
 248168  
 190514  
 190513  
 170051  
 303217  
 176167  
 170073  
 17245  
 170173  
 303074  
 255021  
 302119  
 295096  
 170084

**Key:**

- Stripped Areas
- Phase 1
- Phase 2

0  60 m

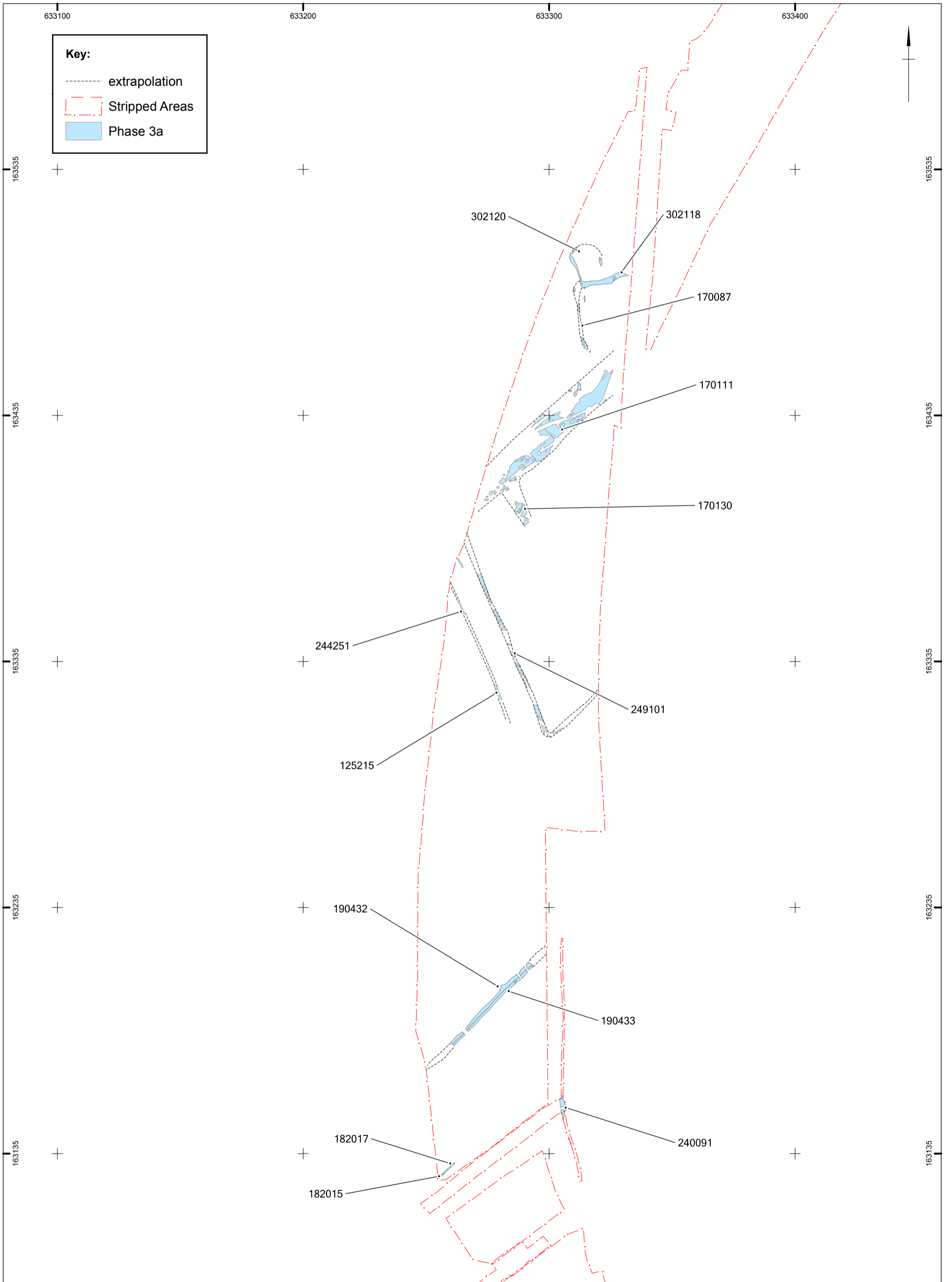
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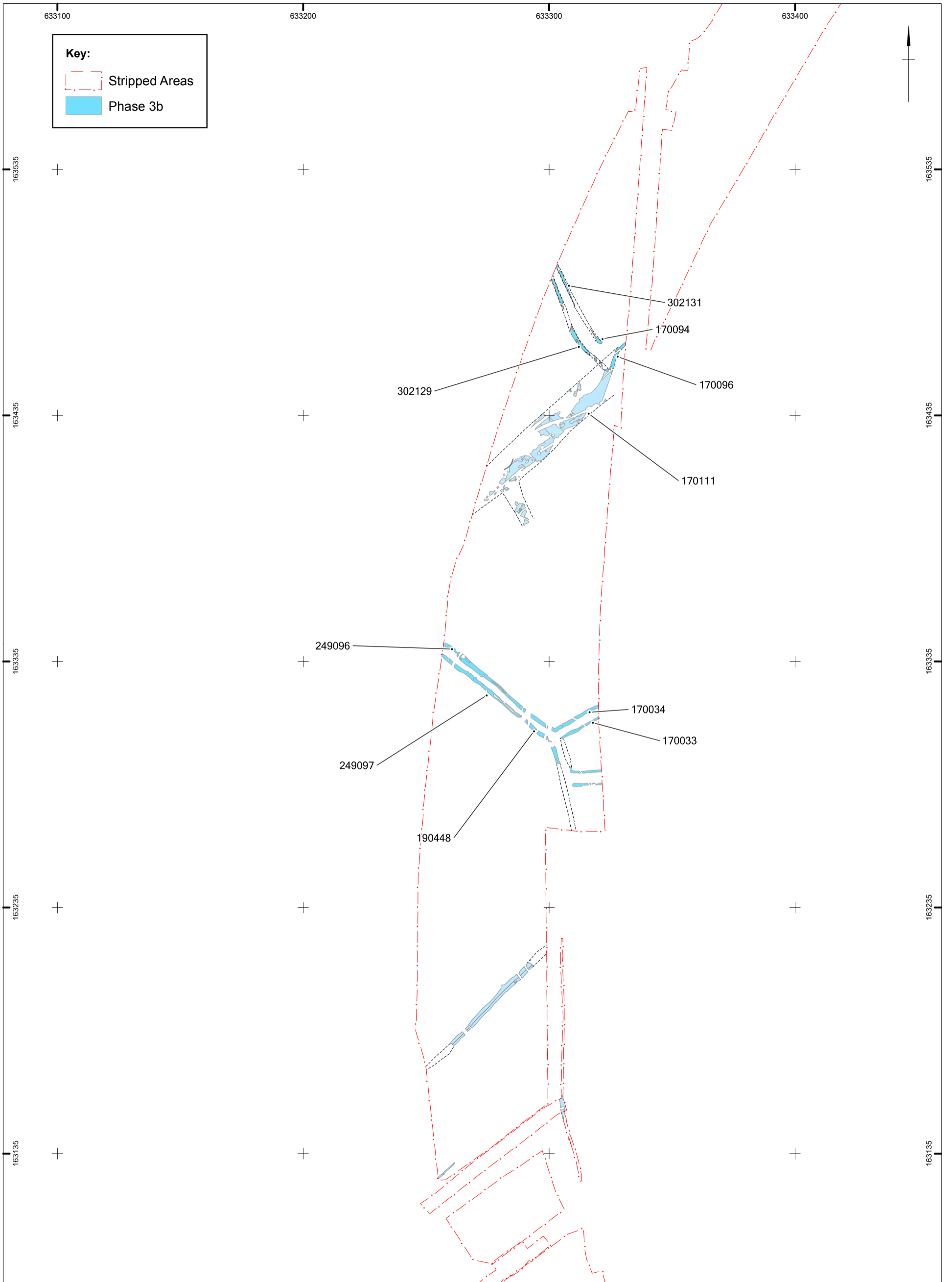
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Zone 6 Phase 1 and 2

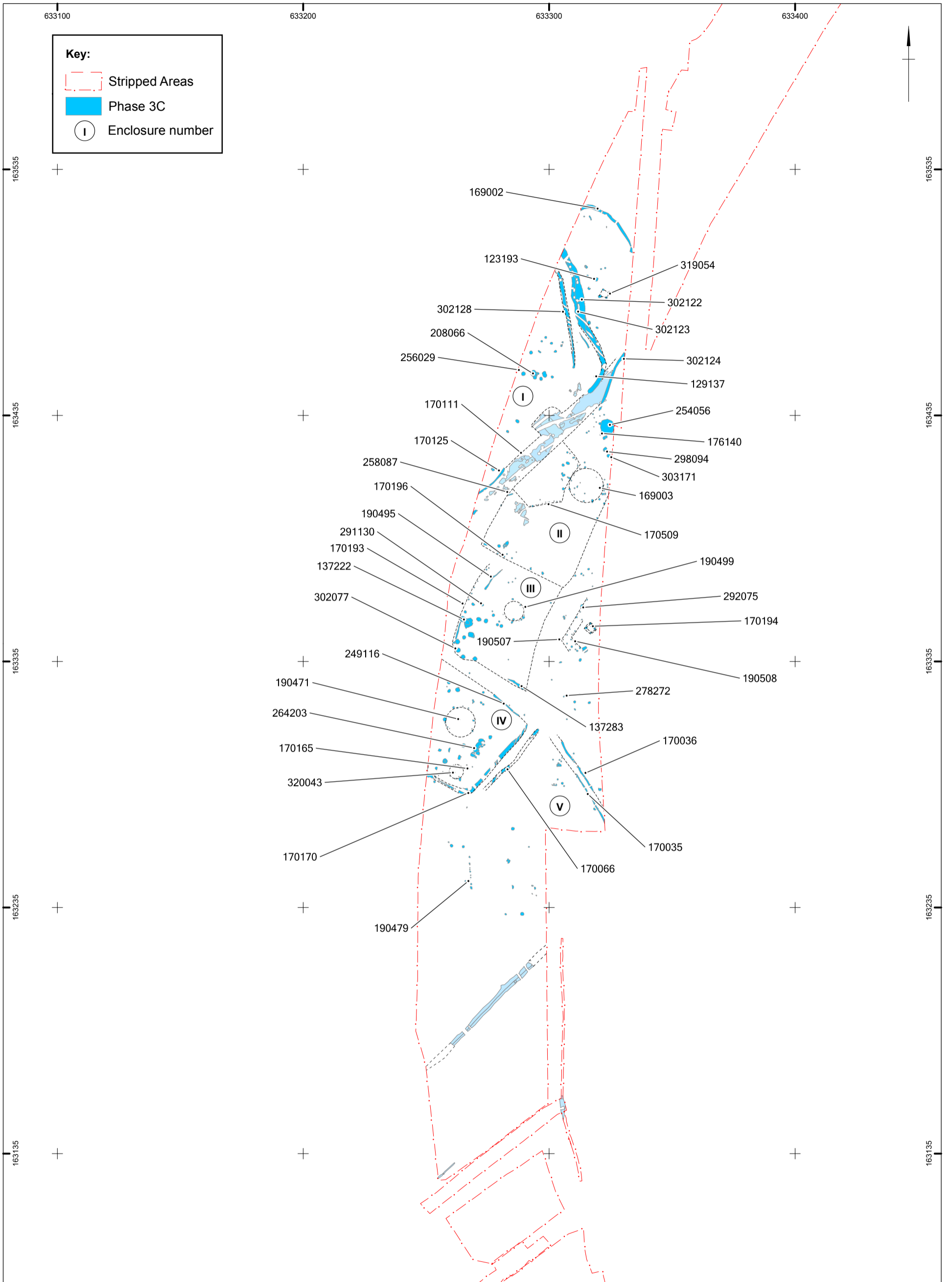
Figure 7







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**Key:**

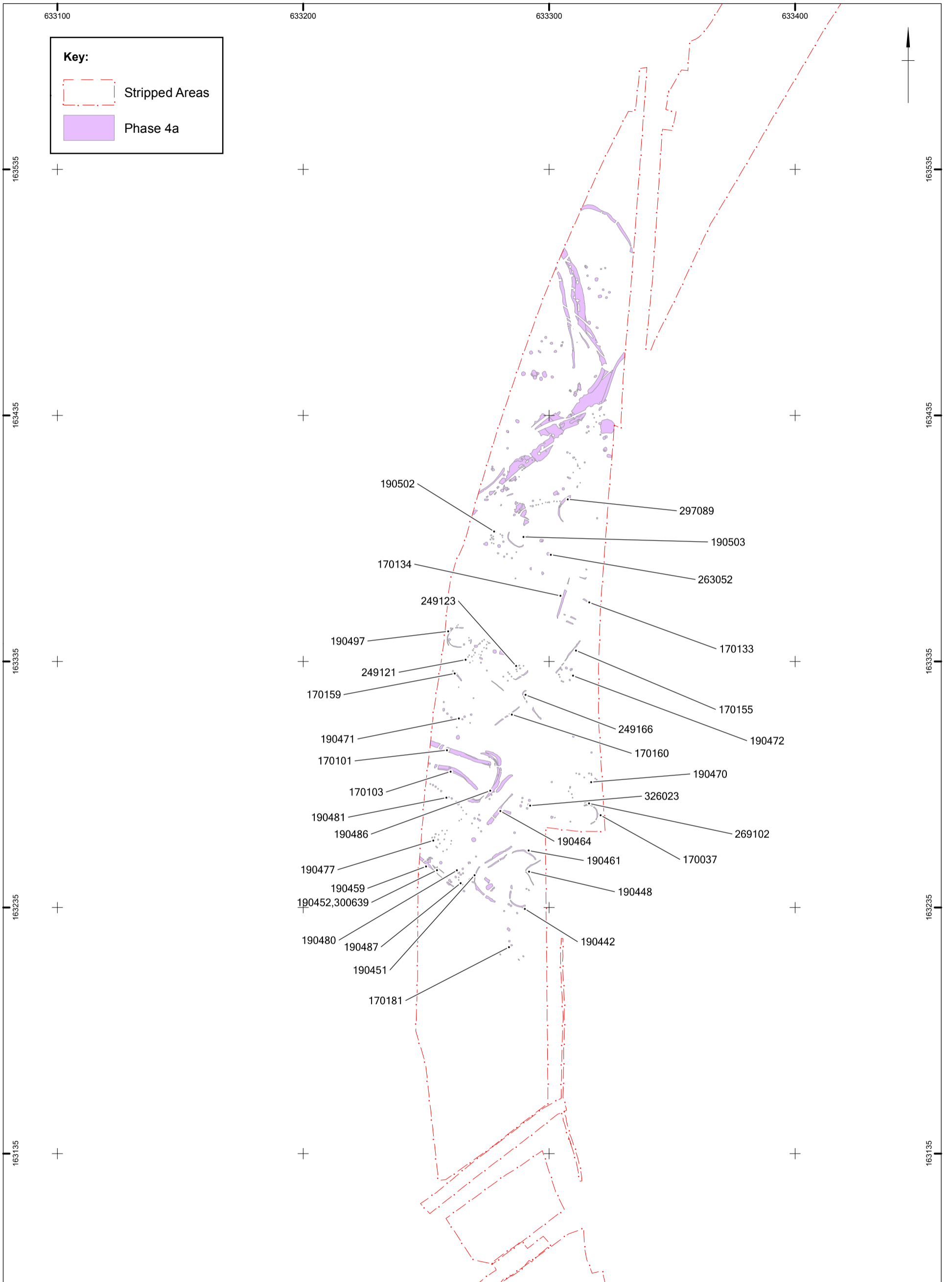
- Stripped Areas
- Phase 3C
- I Enclosure number



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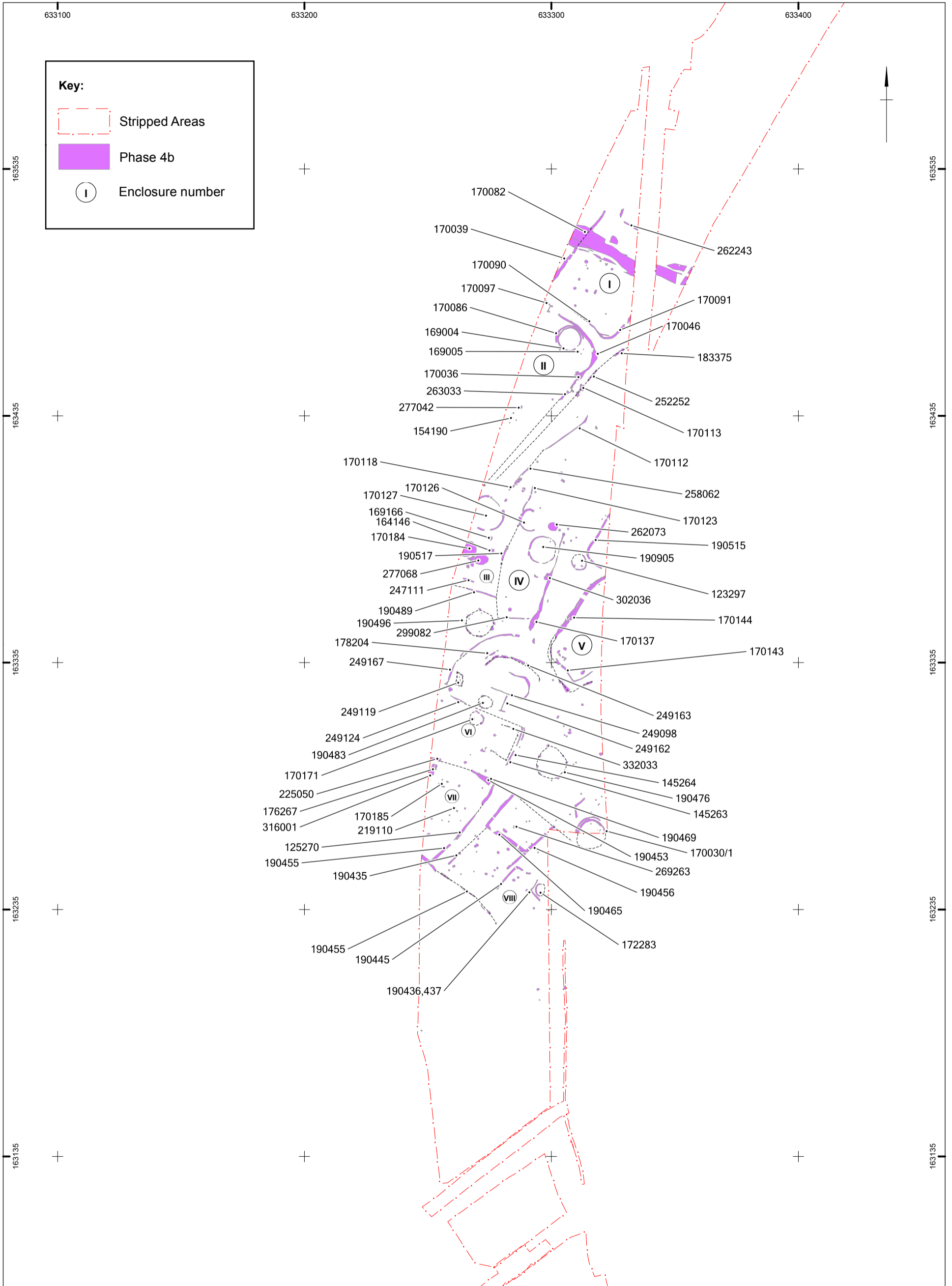
- Stripped Areas
- Phase 4a





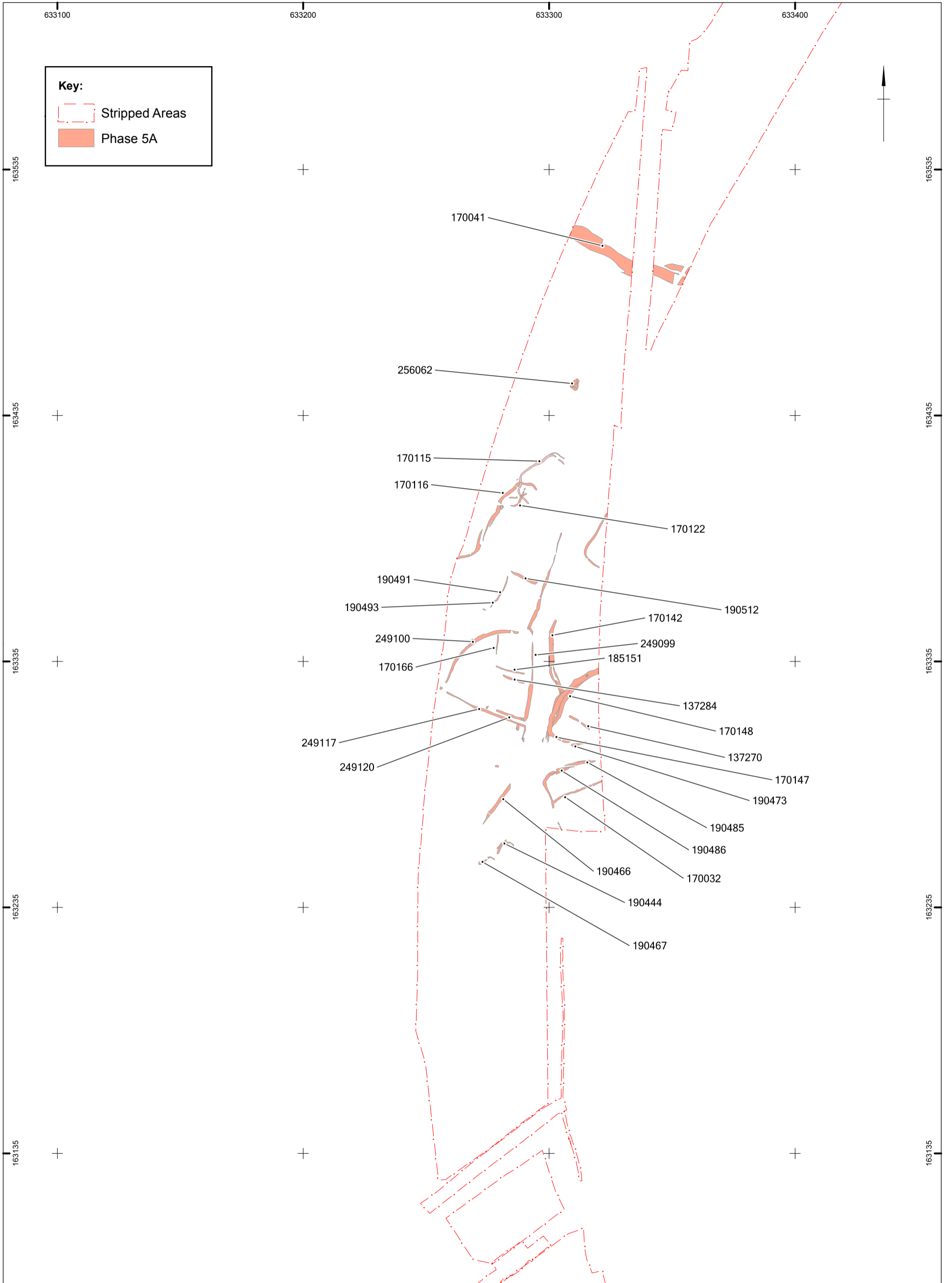
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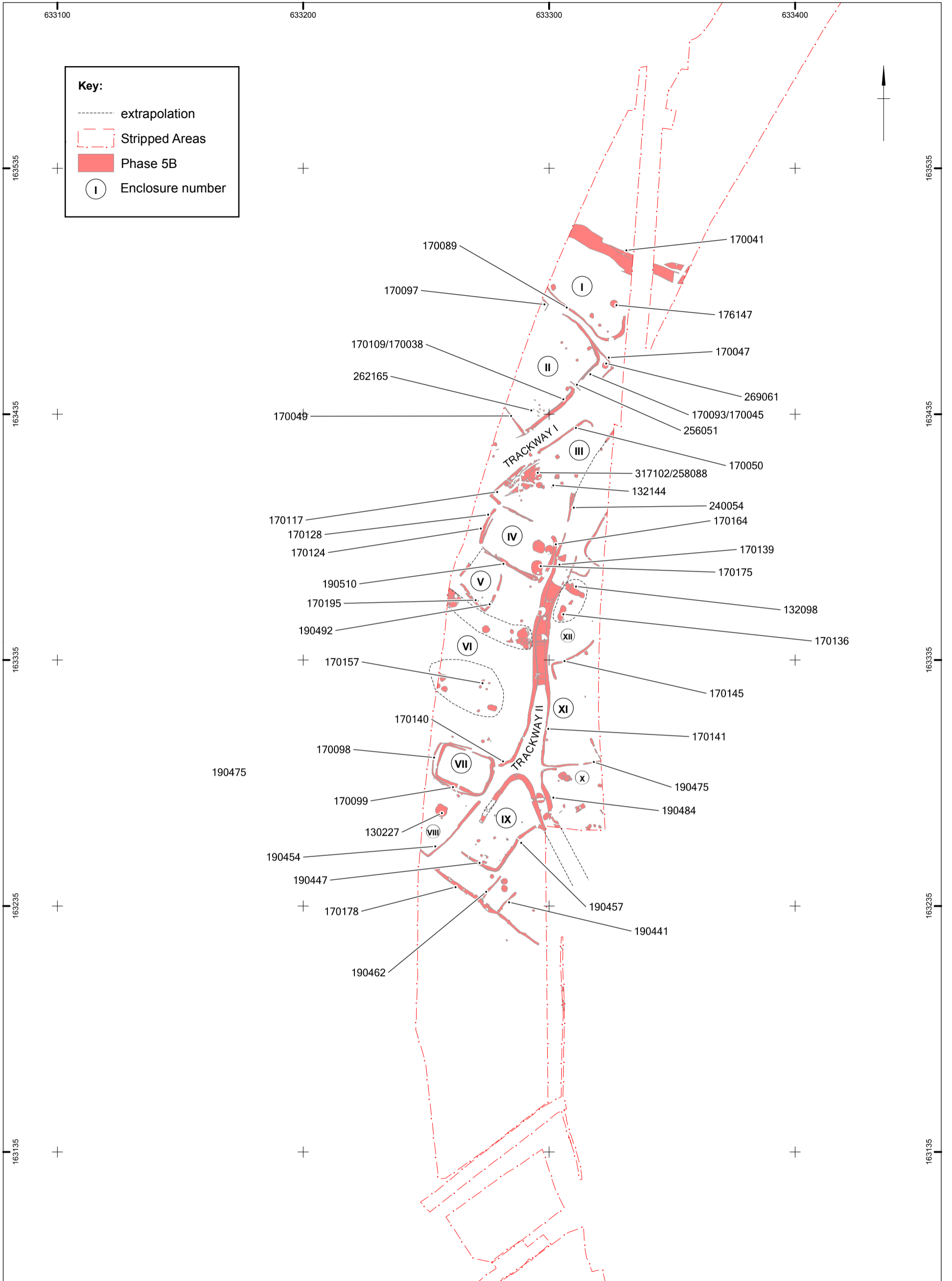
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0 60m

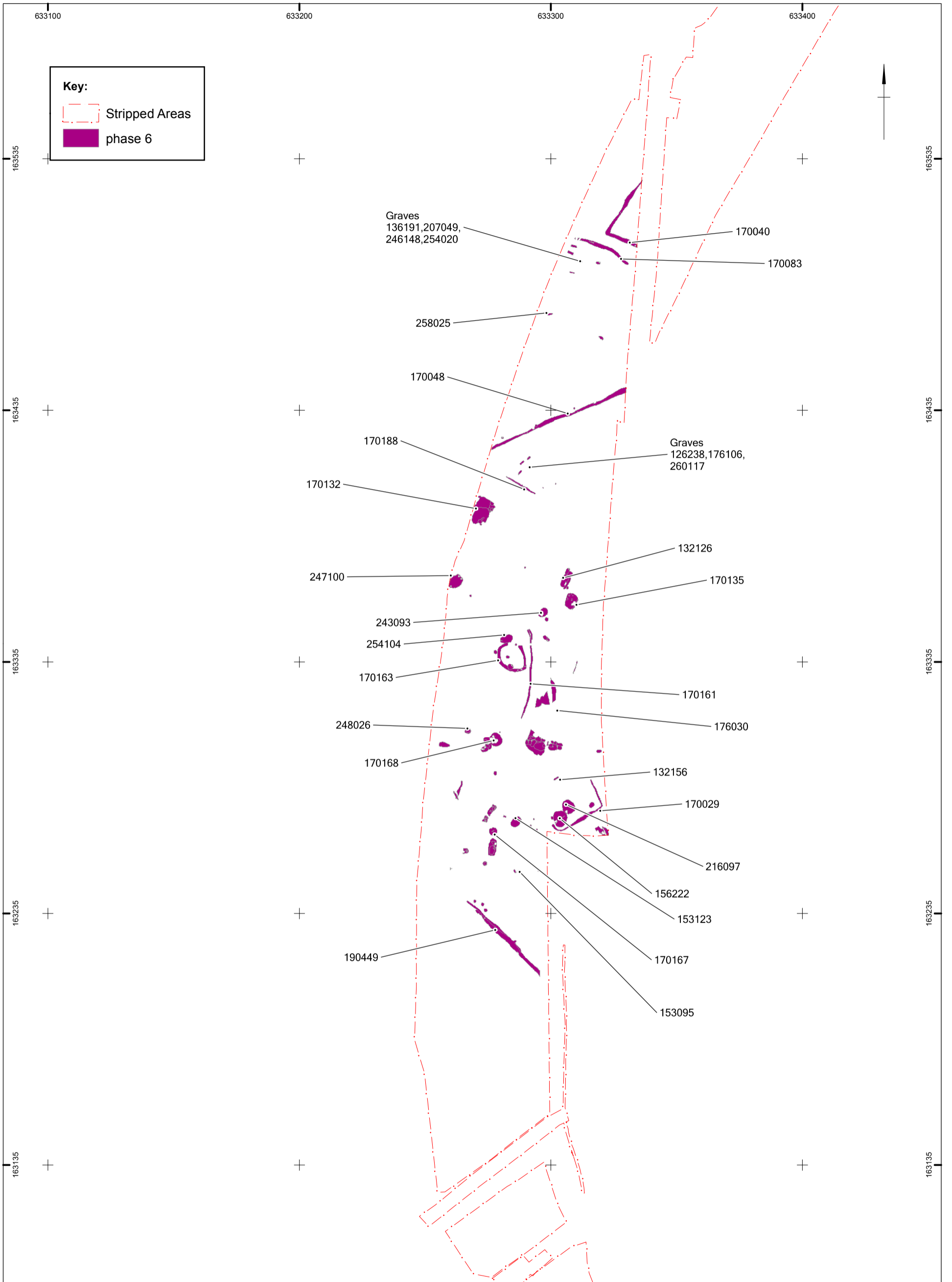
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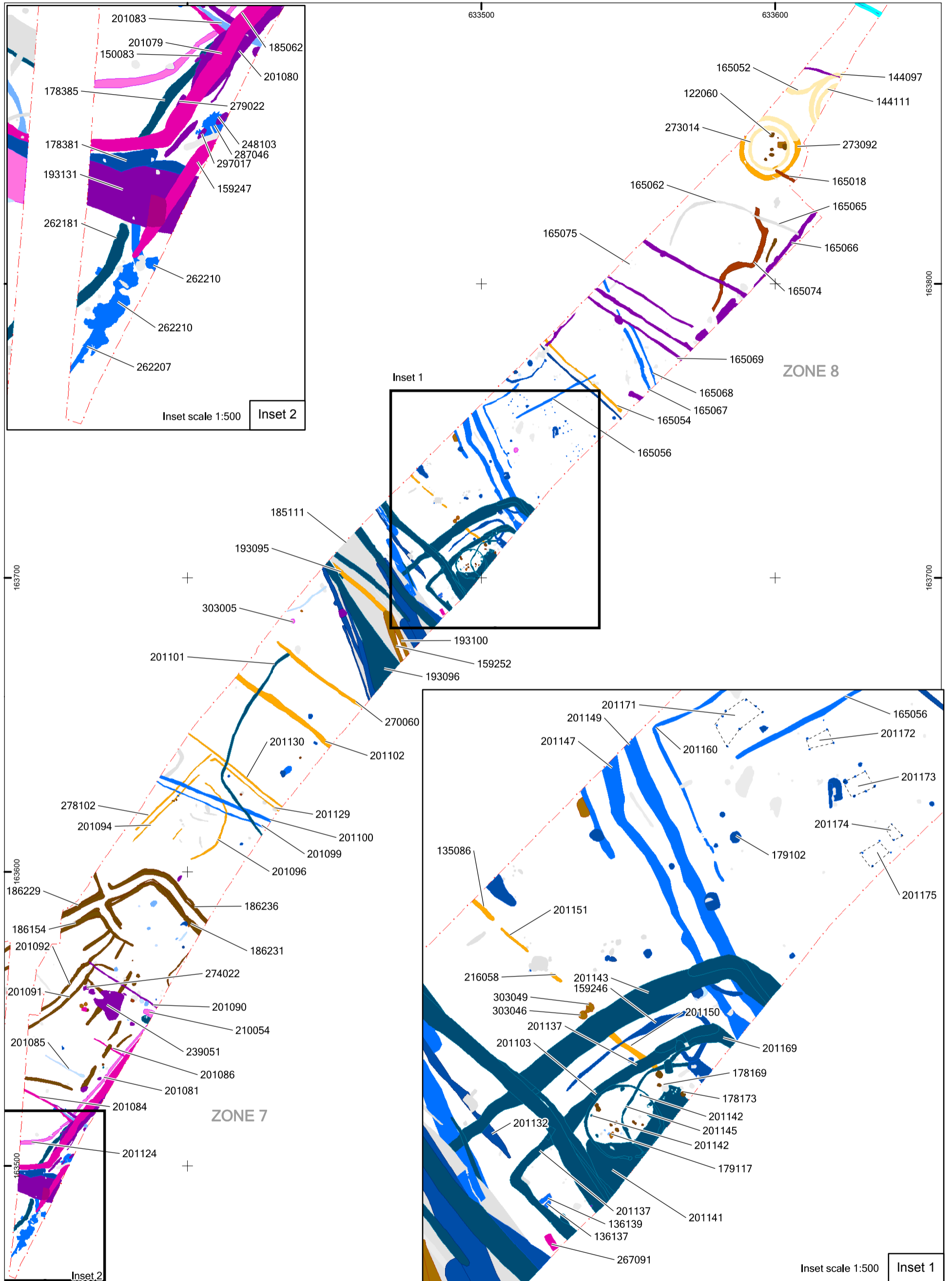
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Zone 6 Phase 5b

Figure 14





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0 16m

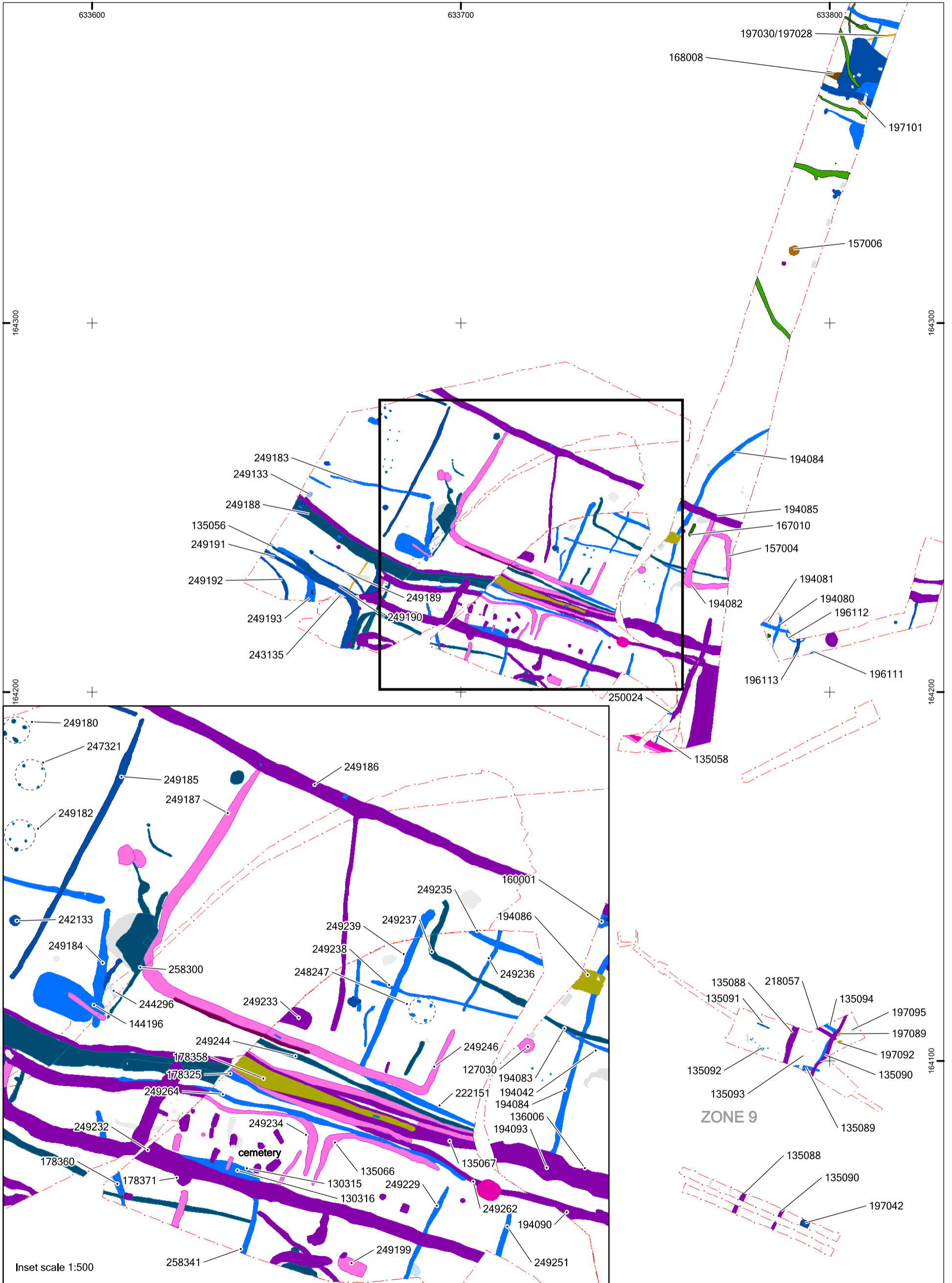
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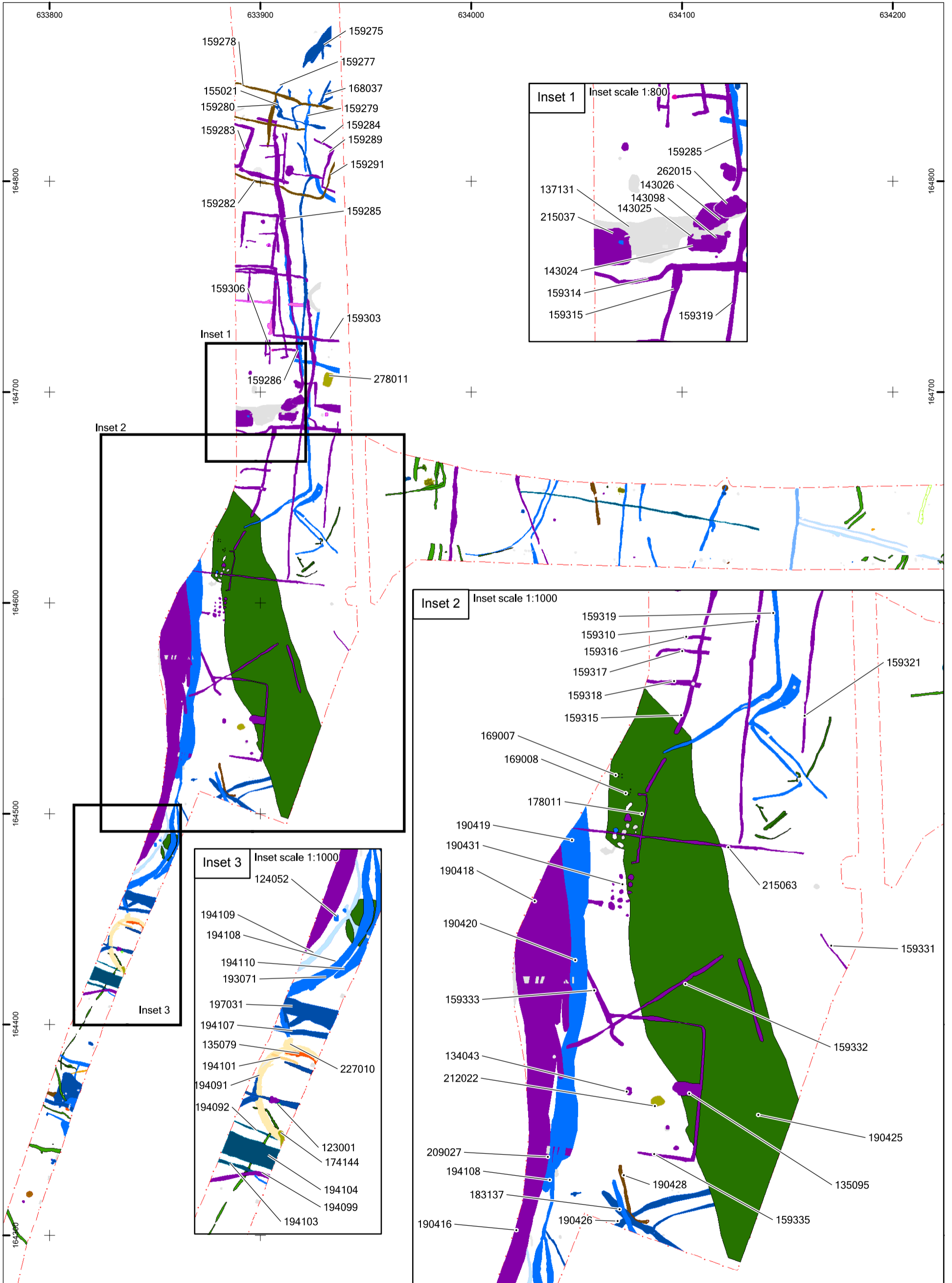
Zones 7 and 8

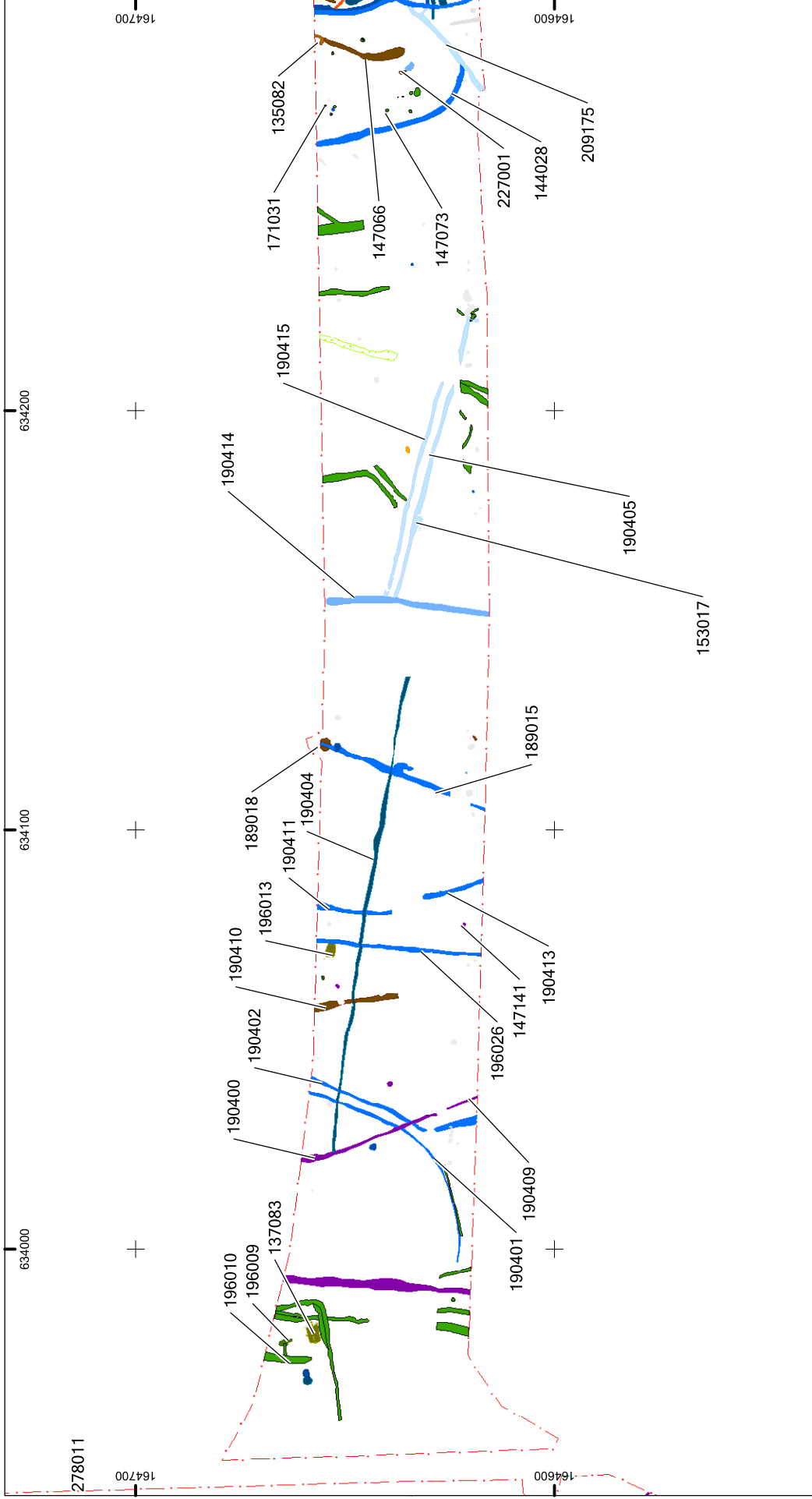
Figure 16






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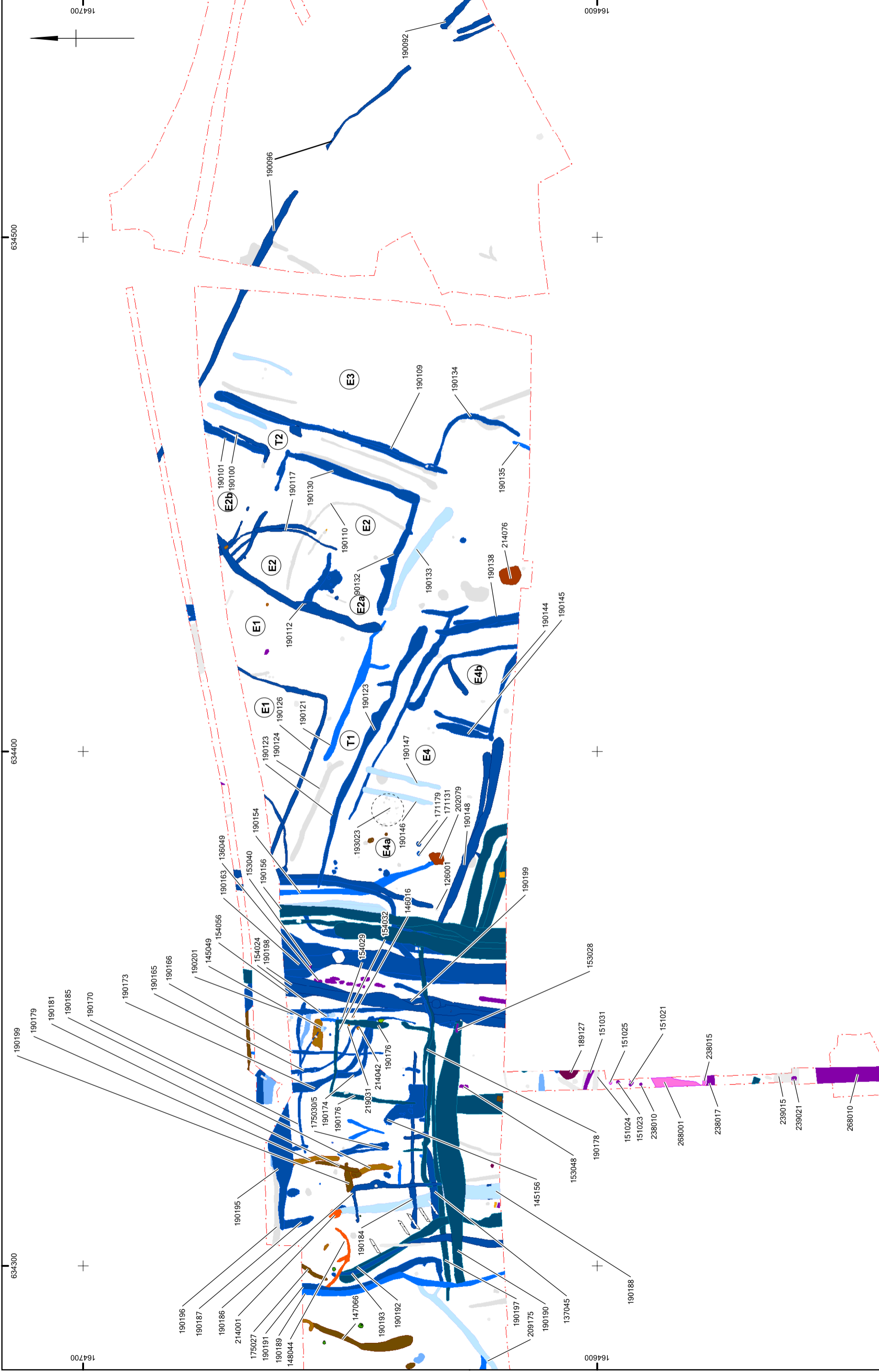
0 50 m

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Figure 19

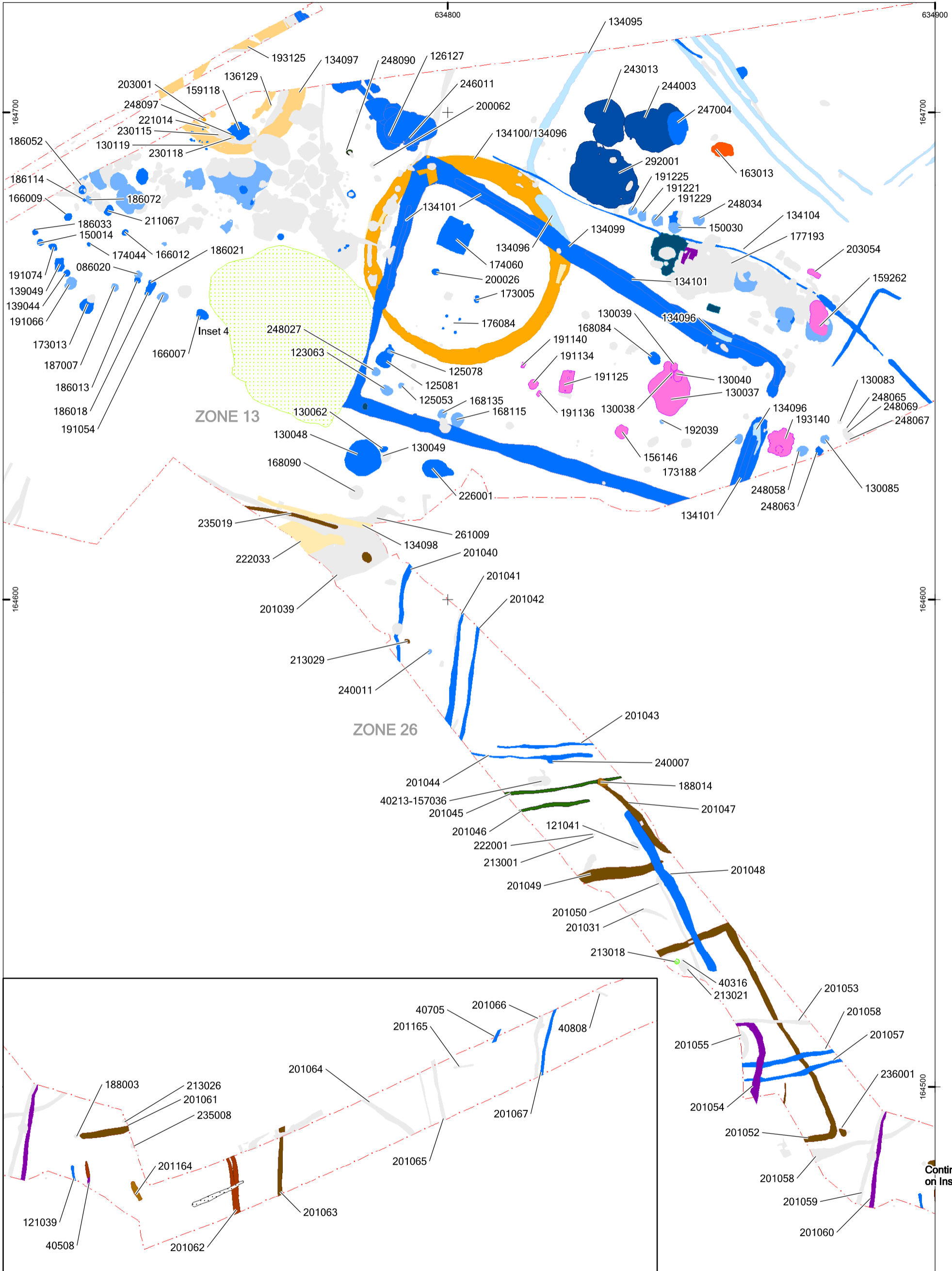
Zone 11 (East)



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50 m  
 0

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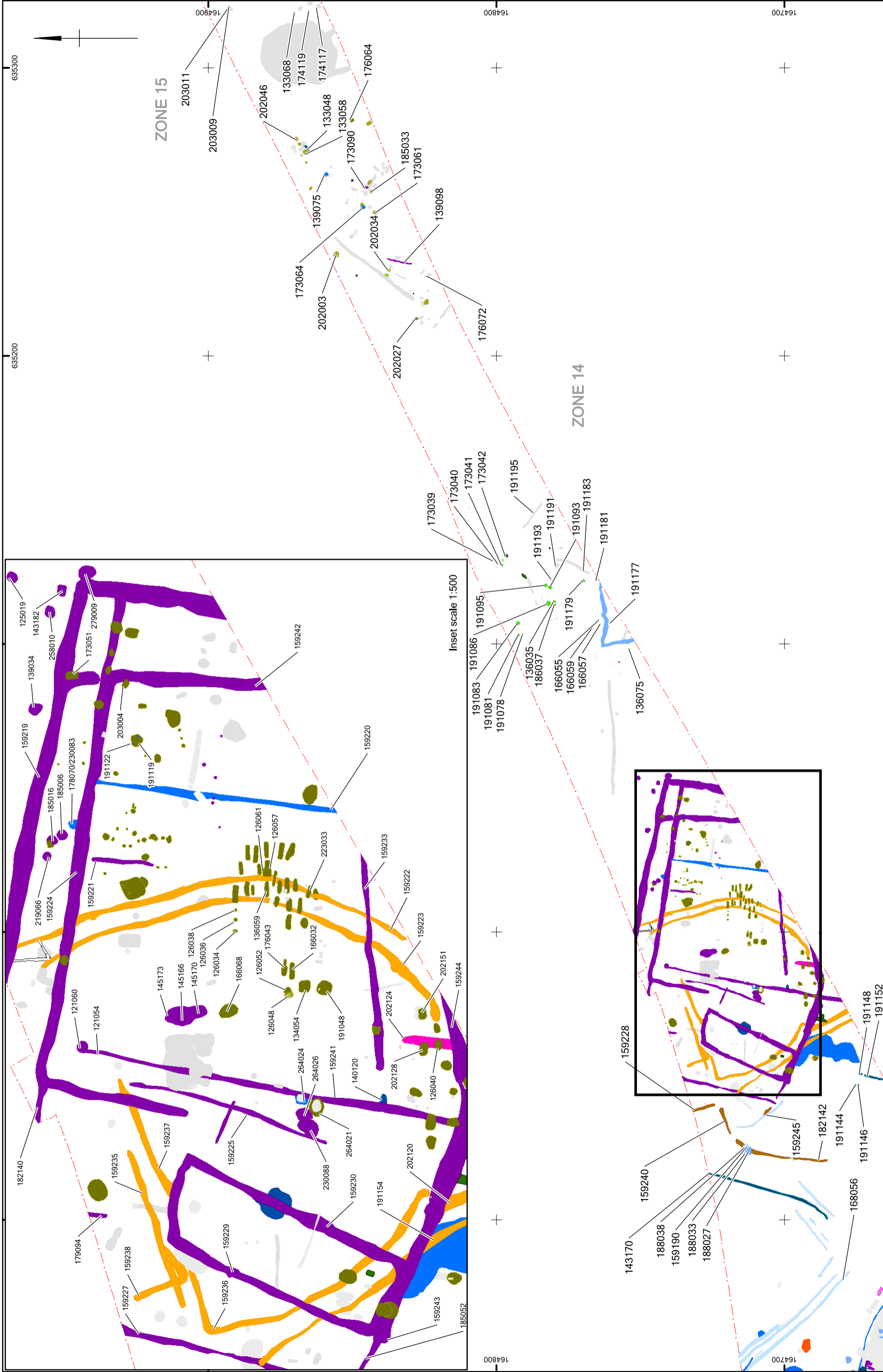


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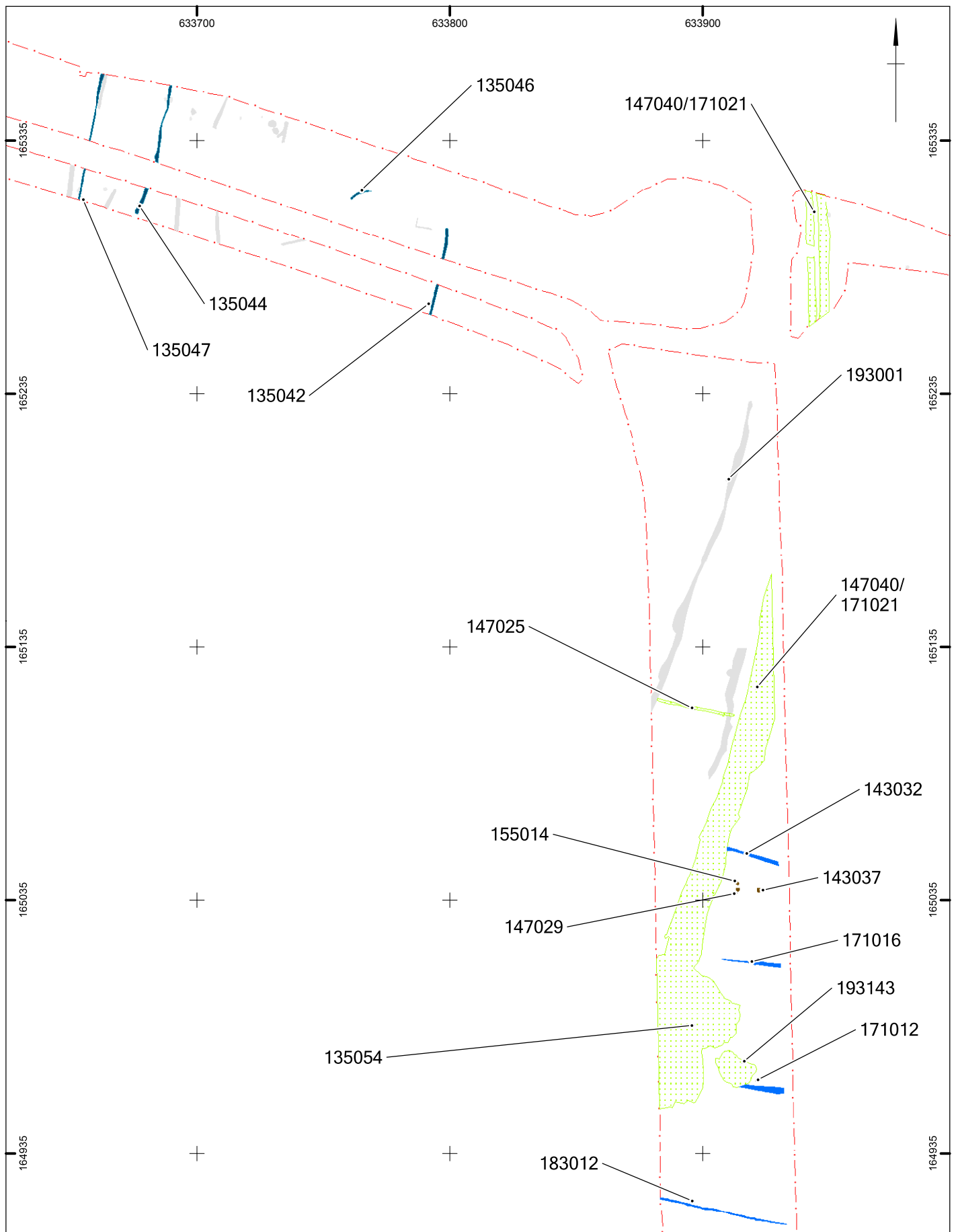
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80m  
 0

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Zone 14 and 15

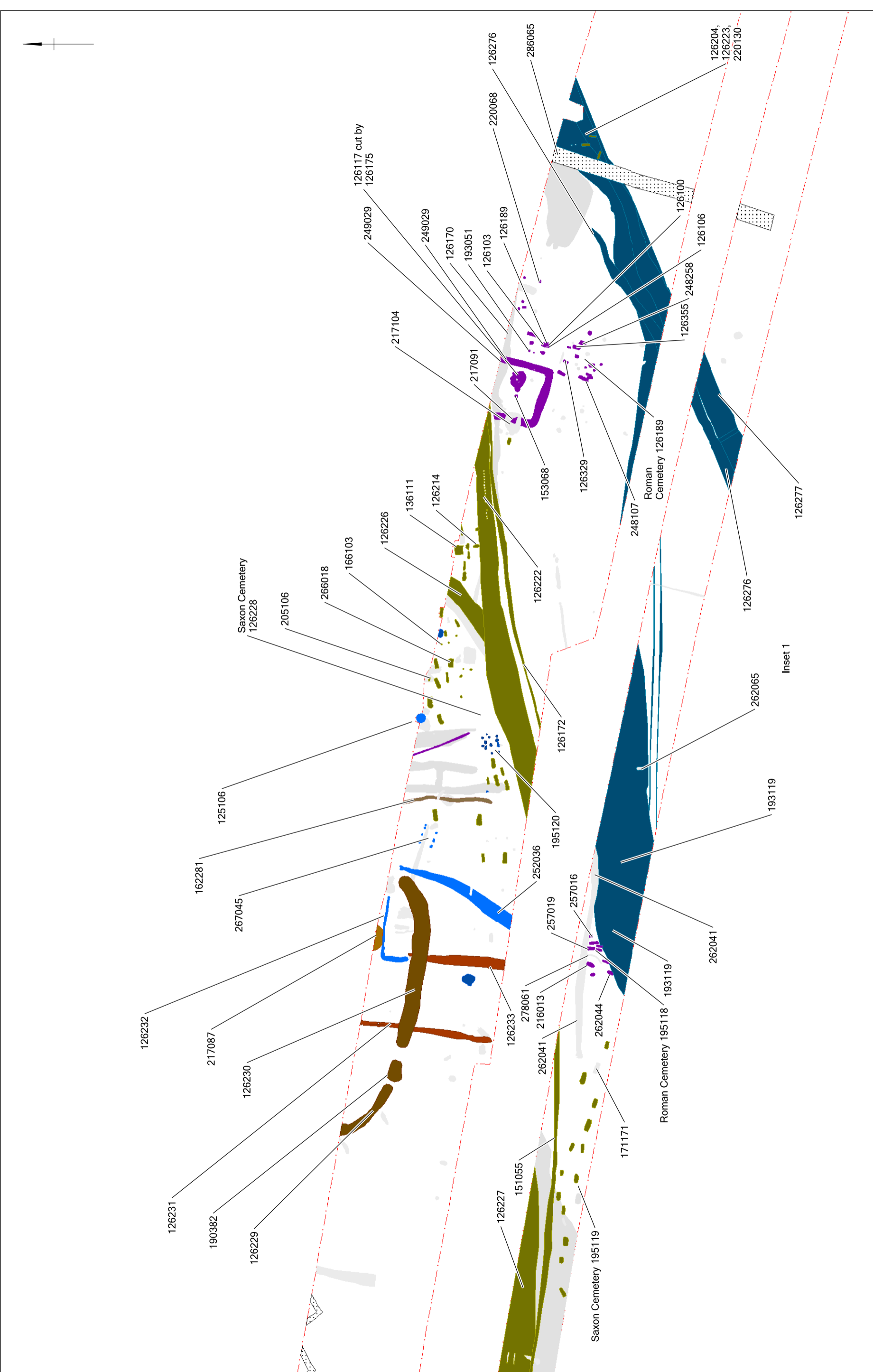
Figure 22



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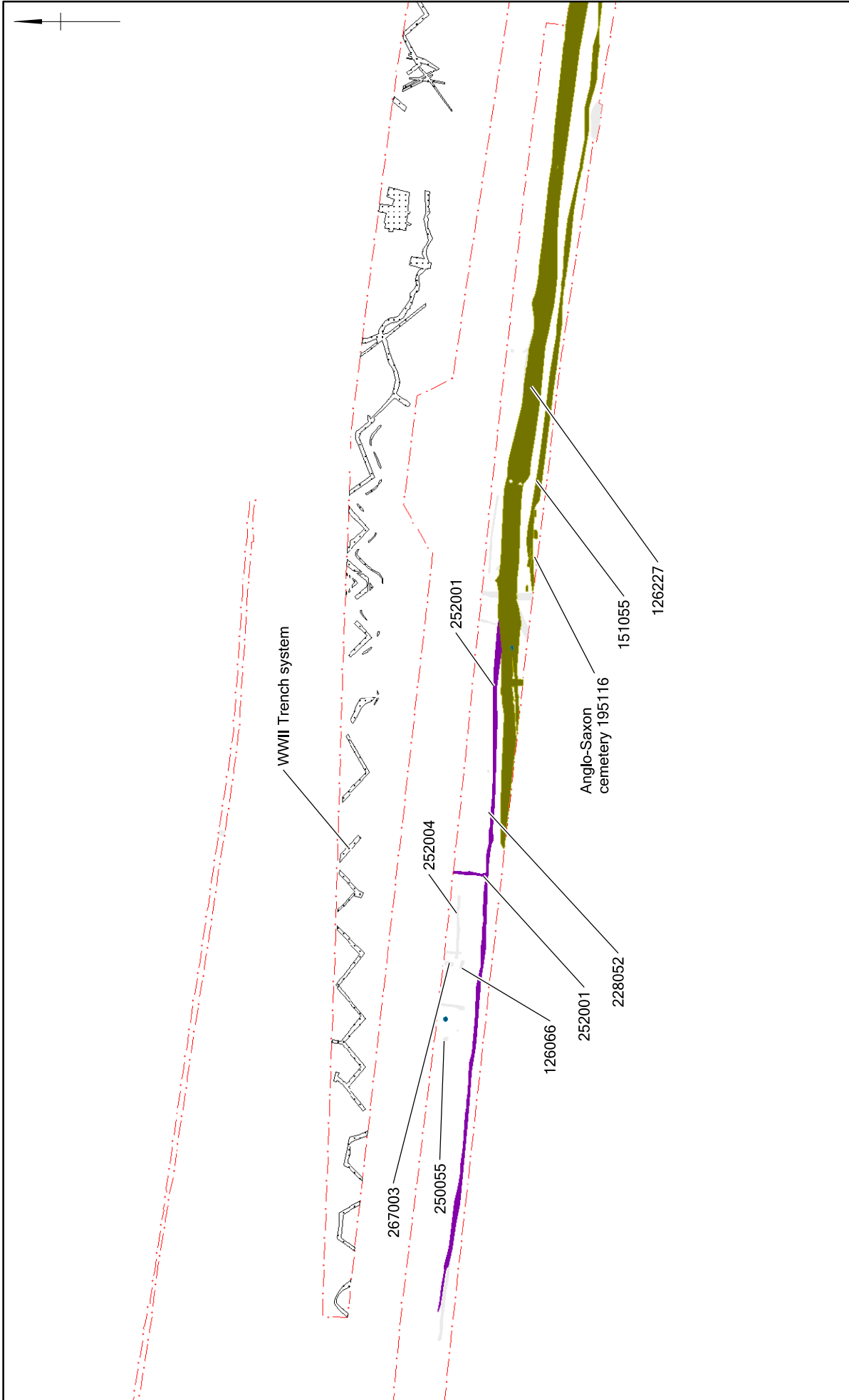
Figure 23 - Zone 17 and 18



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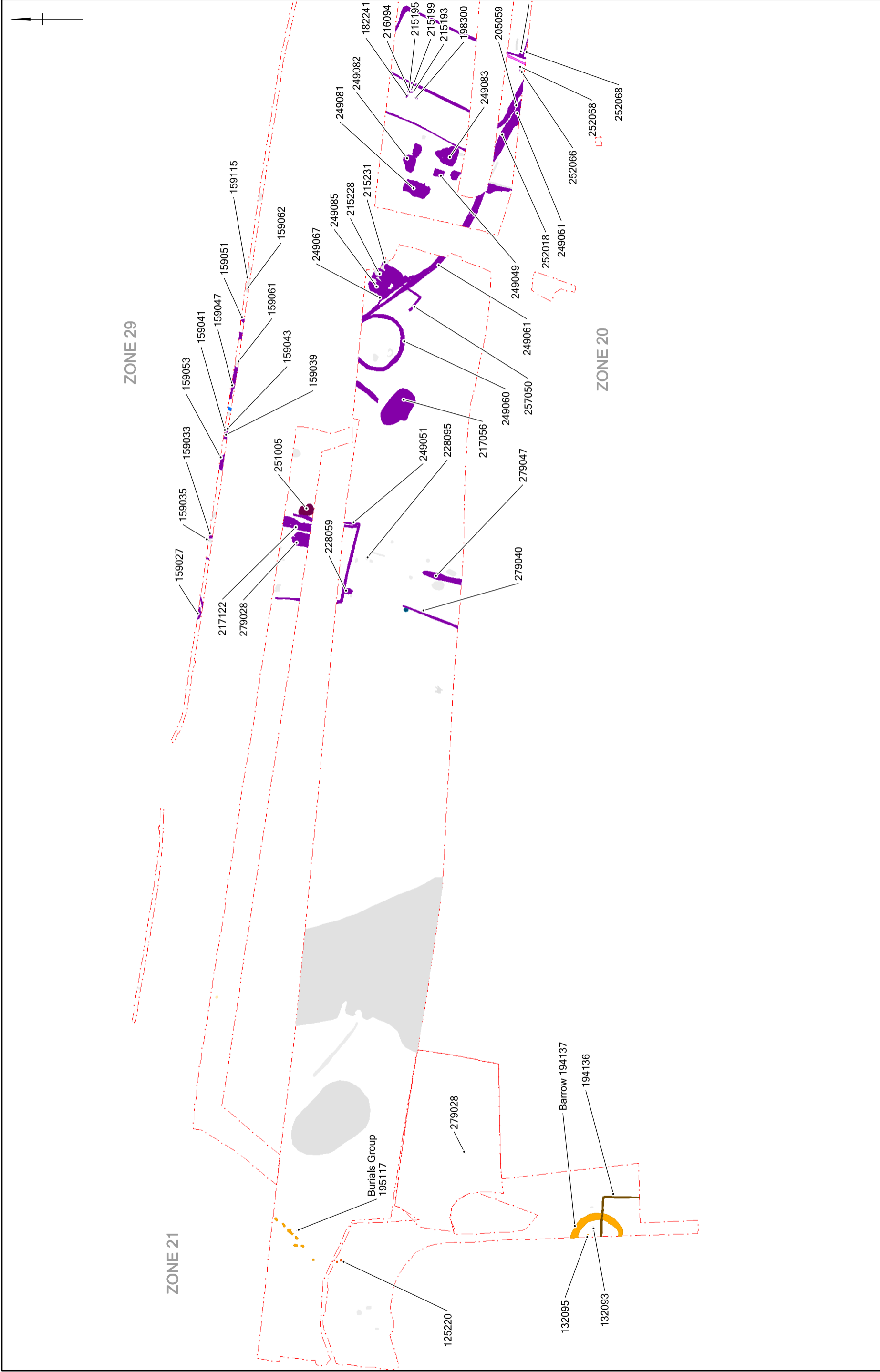




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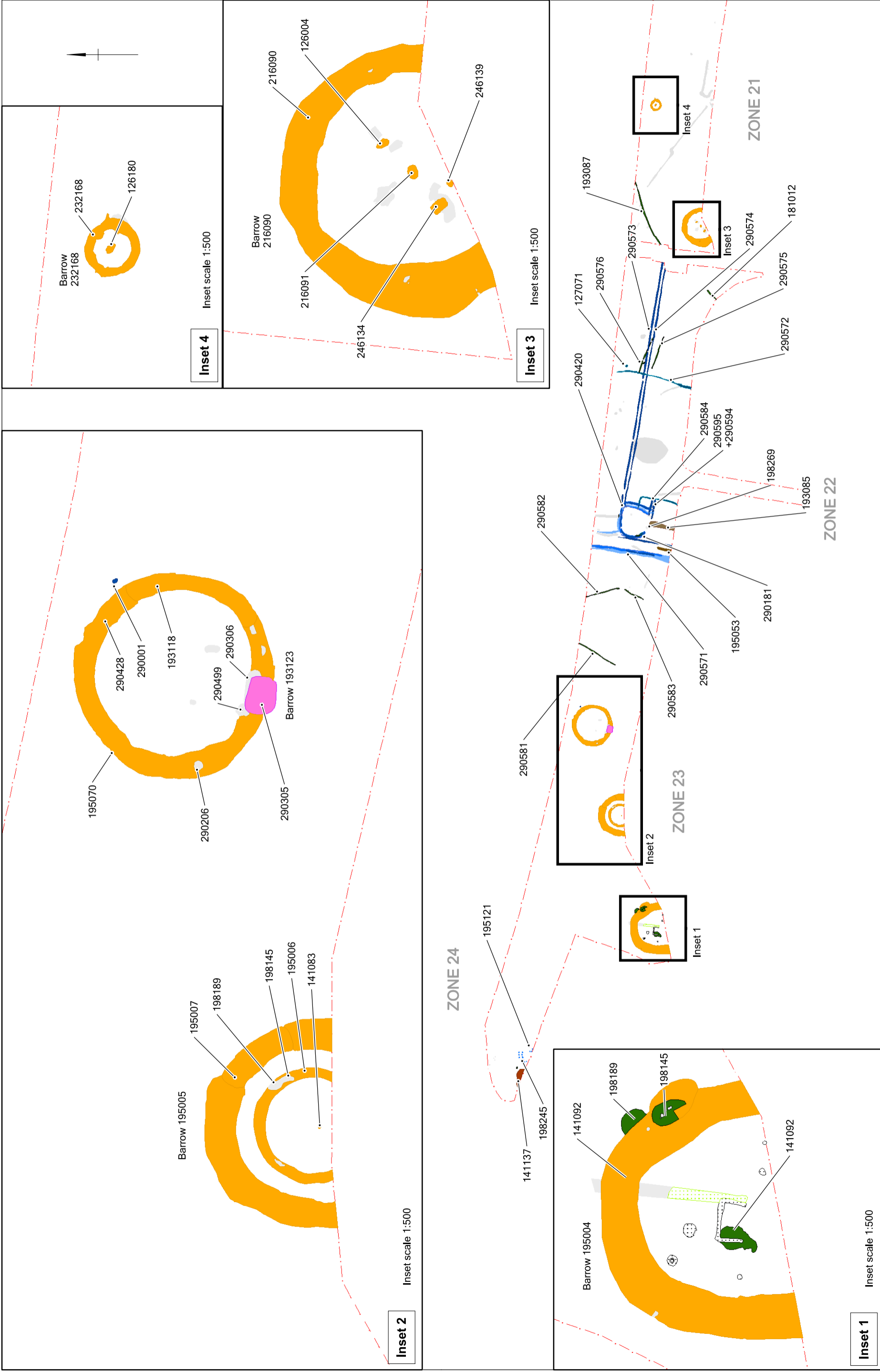
Zone 20 (East) Figure 25





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Zone 20 (West), 21 (East) and 29



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Zone 21 (west of Wayborough Hill), 22,23,24 with insets of barrows



Plate 1: Aerial photograph: Zones 1 – 3 (view from south)



Plate 2: Aerial photograph: Zones 11 – 13 (view from west)


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Plate 3: Aerial photograph: Zones 13 – 15 and 26 (view from east)



Plate 4: Aerial photograph: Zones 17 – 20 (view from east)


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Plate 5: Zone 3: Winter conditions



Plate 6: Zone 11: Winter conditions


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Plate 7: Zone 13: Excavation of Bronze Age and Iron Age features immediately ahead of construction works



Plate 8: Zone 6: Excavation of Iron Age / Romano-British features in progress (view from south)


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Plate 9: Zone 6: Major Late Iron Age / Romano-British enclosure ditch 170082 in foreground (view from north)


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Plate 10: Zone 10: Possible Neolithic ring-ditch 194091



Plate 11: Zone 13: Early Bronze Age ring-ditch - Barrow 1


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Plate 12: Zone 13: Early Bronze Age ring-ditch - Barrow 2



Plate 13: Zone 13: Early-Middle Iron Age SFB 174060 in trapezoidal enclosure


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Plate 14: Zone 13: Horse burial in quarry pit complex

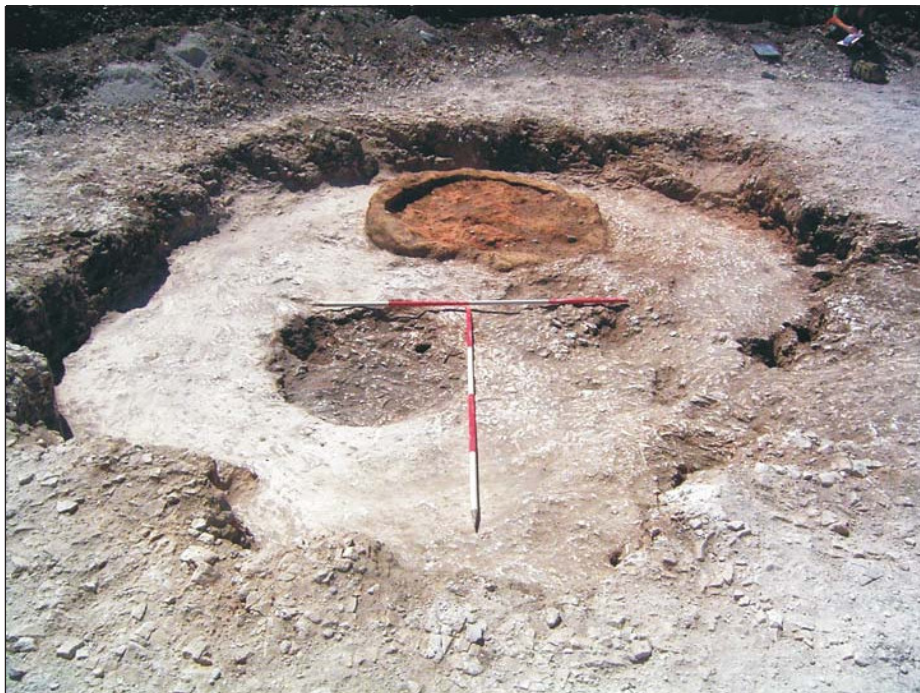


Plate 15: Zone 13: Romano-British SFB 193140


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Plate 16: Zone 14: Anglo-Saxon cemetery



Plate 17: Zone 19: Iron Age burial in storage pit 205106



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Plate 18: Zone 19: Anglo-Saxon triple burial 136111

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archaeology

**Oxford-Wessex Archaeology Joint Venture**



*Wessex Archaeology*

Oxford Archaeology

Janus House, Osney Mead, Oxford, OX2 0ES  
t: 01865 263800 e: oasouth@oxfordarch.co.uk



Wessex Archaeology

Portway House, Old Sarum Park, Salisbury, SP4 6EB  
t: 01722 326867 e: info@wessexarch.co.uk



a r c h a e o l o g y

Oxford-Wessex Archaeology Joint Venture

## East Kent Access (Phase II), Thanet, Kent

### Post-Excavation Assessment Volume 2



Document Reference  
Draft  
Dated June 2011







# Oxford Wessex Archaeology

## East Kent Access – Phase 2, Thanet, Kent

### Post-Excavation Assessment Volume 2: Specialist Appendices

Document Reference: Draft

June 2011

<b>Date</b>	<b>Compiled by</b>	<b>Checked by</b>	<b>Approved by</b>
17/06/2011	A Smith OWA Post-excavation Manager	K Welsh OWA Lead Project Manager	K Welsh OWA Lead Project Manager

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PRE = Preliminary (tender)

DFT = Draft

DSC = For Discussion

ACC = For Acceptance

PRD = Pre-Draft

INF = For Information

ISS = For Issue

FIN = Final

#### Comments:



**EAST KENT ACCESS  
(Phase II)**

***POST-EXCAVATION ASSESSMENT VOLUME 2:  
SPECIALIST APPENDICES***

**Grid reference: TR 3350 6480**

**Planning Reference TH/05/0964**

For

**Volkerfitzpatrick Hochtief (Joint Venture)**

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**June 2011**



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**EAST KENT ACCESS (Phase II)**  
**POST-EXCAVATION ASSESSMENT VOLUME 2:**  
**SPECIALIST APPENDICES**

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**EAST KENT ACCESS (Phase II):**  
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**SPECIALIST APPENDICES**

**1 EARLIER PREHISTORIC POTTERY BY MATT LEIVERS**

1.1.1 The assemblage from the East Kent Access Road assessed here consists of 10,641 sherds, weighing 83.561kg and includes material ranging from the Early Neolithic through to the Middle Iron Age. Later material is reported on elsewhere. By Zones, chronological breakdowns by type are given in Tables 1.1-20.

**Table 1.1: Pottery from Zone 4**

	No	Weight (g)
<b>Prehistoric</b>		
Flint	5	12
Sand	6	4
Uncertain	3	2
<b>Late Bronze Age</b>		
Flint	26	264
Grog	1	5
Organic	19	31
<b>Late Bronze Age/Early Iron Age</b>		
Flint	1256	8858
Sand	7	20
<b>Early Iron Age</b>		
Flint	254	1248
Sand	5	22
<b>Early/Middle Iron Age</b>		
Fine flint	55	792
Flint	114	3000
Sand and flint	125	1548
Sand	2	3
	<b>1878</b>	<b>15809</b>

**Table 1.2: Pottery from Zone 5**

	No	Weight (g)
<b>Early/Middle Iron Age</b>		
Sand. Rare fine flint and grog	2	7
Sand and fine flint	9	243
Sand	3	36
	<b>14</b>	<b>286</b>

**Table 1.3: Pottery from Zone 6**

	No	Weight (g)
<b>Early Neolithic</b>		
Flint	154	719
<b>Late Bronze Age</b>		
Flint	1	3
	<b>155</b>	<b>722</b>

Table 1.4: Pottery from Zone 7

	No	Weight (g)
<b>Prehistoric</b>		
Flint	5	3
Uncertain	11	2
<b>Beaker</b>	1	6
<b>Early - Middle Bronze Age</b>		
Sandy	2	54
<b>Middle – Late Bronze Age</b>		
Flint	27	341
<b>Late Bronze Age</b>		
Flint	645	6003
Sandy	7	48
<b>Late Bronze Age/Early Iron Age</b>		
Flint	1043	6303
Organic	1	8
Sand	20	69
<b>Early Iron Age</b>		
Flint	445	3103
Sand and fine flint	2	3
Sand	121	218
<b>Early/Middle Iron Age</b>		
Flint	212	1171
	<b>2542</b>	<b>17332</b>

Table 1.5: Pottery from Zone 8

	No	Weight (g)
<b>Prehistoric</b>		
Flint	15	16
Grog	4	17
Sandy	9	11
<b>Early Neolithic</b>		
Flint	8	48
<b>Early Bronze Age</b>		
Grog	1	3
<b>Middle Bronze Age</b>		
Flint	4	17
<b>Middle – Late Bronze Age</b>		
Flint	9	47
<b>Late Bronze Age</b>		
Flint	53	348
Sandy		
<b>Late Bronze Age/Early Iron Age</b>		
Flint	3	3
Sand	4	3
	<b>110</b>	<b>513</b>

Table 1.6: Pottery from Zone 9

	No	Weight (g)
<b>Early Iron Age</b>		
Flint	17	199
	<b>17</b>	<b>199</b>



Table 1.7: Pottery from Zone 10

	No	Weight (g)
<b>Prehistoric</b>		
Flint	3	2
<b>Middle Neolithic</b>		
Flint	92	679
<b>Beaker</b>		
Flint	5	12
<b>Middle Bronze Age</b>		
Flint	59	408
<b>Late Bronze Age</b>		
Flint	7	26
Organic	3	46
<b>Late Bronze Age/Early Iron Age</b>		
Flint	69	487
Sand and fine flint	13	122
<b>Early Iron Age</b>		
Flint	19	182
<b>Early/Middle Iron Age</b>		
Flint	3	12
	<b>273</b>	<b>1976</b>

Table 1.8: Pottery from Zone 11

	No	Weight (g)
<b>Prehistoric</b>		
Flint	5	6
<b>Middle Bronze Age</b>		
Flint	52	2214
<b>Late Bronze Age</b>		
Flint	226	1883
<b>Late Bronze Age/Early Iron Age</b>		
Flint	21	113
<b>Early Iron Age</b>		
Flint	2	19
<b>Early/Middle Iron Age</b>		
Flint	200	1563
Sand	28	85
	<b>534</b>	<b>5883</b>

Table 1.9: Pottery from Zone 12

	No	Weight (g)
<b>Early Neolithic</b>		
Flint	1	6
<b>Beaker</b>		
	2	12
<b>Early Bronze Age</b>		
Grog	8	44
<b>Middle Bronze Age</b>		
Flint	115	1629
<b>Middle – Late Bronze Age</b>		
Flint	65	820
<b>Late Bronze Age</b>		
Flint	334	3227
Sand	1	2
<b>Late Bronze Age/Early Iron Age</b>		
Flint	320	2810
<b>Early Iron Age</b>		
Flint	98	518
<b>Early/Middle Iron Age</b>		
Flint	285	3358
Sand and flint	2	5
	<b>1231</b>	<b>12431</b>

Table 1.10: Pottery from Zone 13

	No	Weight (g)
<b>Late Bronze Age/Early Iron Age</b>		
Flint	25	80
Sand and flint	1	6
<b>Early Iron Age</b>		
Flint	1	1
<b>Early/Middle Iron Age</b>		
Sand, rare fine flint and grog	4	61
Sand and flint	11	184
	<b>42</b>	<b>332</b>

Table 1.11: Pottery from Zone 14

	No	Weight (g)
<b>Prehistoric</b>		
Flint	4	8
<b>Early Neolithic</b>		
Flint	624	5874
<b>Late Bronze Age</b>		
Flint	13	112
<b>Early Iron Age</b>		
Flint	59	1274
<b>Early/Middle Iron Age</b>		
Flint	14	49
Organic	141	107
	<b>855</b>	<b>7424</b>

Table 1.12: Pottery from Zone 17

	No	Weight (g)
<b>Early Iron Age</b>		
Flint	5	26
	<b>5</b>	<b>26</b>

Table 1.13: Pottery from Zone 18

	No	Weight (g)
<b>Middle – Late Bronze Age</b>		
Flint	1	22
	<b>1</b>	<b>22</b>

Table 1.14: Pottery from Zone 19

	No	Weight (g)
<b>Middle Neolithic</b>		
Flint	35	100
<b>Late Bronze Age</b>		
Flint	404	3928
<b>Early Iron Age</b>		
Sand, rare fine flint and grog	1	8
<b>Early/Middle Iron Age</b>		
Flint	74	1227
Sand and flint	135	897
Sand, rare fine flint and grog	67	742
Sand	2	59
	<b>718</b>	<b>6961</b>

Table 1.15: Pottery from Zone 20

	No	Weight (g)
<b>Early Bronze Age</b>		
Grog	88	179
	<b>88</b>	<b>179</b>

Table 1.16: Pottery from Zone 21

	No	Weight (g)
<b>Beaker</b>	1	1
<b>Early Bronze Age</b>		
Grog	15	168
<b>Middle Bronze Age</b>		
Flint	261	4746
<b>Middle – Late Bronze Age</b>		
Flint	5	108
<b>Late Bronze Age</b>		
Flint	8	122
<b>Late Bronze Age – Early Iron Age</b>		
Flint	10	61
<b>Early/Middle Iron Age</b>		
Flint	1	5
	<b>301</b>	<b>5211</b>

Table 1.17: Pottery from Zone 22

	No	Weight (g)
<b>Prehistoric</b>		
Flint	1	1
<b>Middle – Late Bronze Age</b>		
Flint	3	20
<b>Late Bronze Age - Early Iron Age</b>		
Sandy	3	7
<b>Early Iron Age</b>		
Flint	1	4
	<b>8</b>	<b>32</b>

Table 1.18: Pottery from Zone 23

	No	Weight (g)
<b>Early Neolithic</b>		
Flint	1	8
<b>Beaker</b>	1	7
<b>Early Bronze Age</b>		
Grog	1	3
<b>Middle Bronze Age</b>		
Flint	7	73
<b>Middle – Late Bronze Age</b>		
Flint	17	130
<b>Late Bronze Age</b>		
Flint	113	1882
<b>Early Iron Age</b>		
Flint	25	57
Sandy	4	8
<b>Early – Middle Iron Age</b>		
Shell	149	1115
	<b>318</b>	<b>3283</b>

Table 1.19: Pottery from Zone 24

	No	Weight (g)
<b>Prehistoric</b>		
Uncertain	2	1
Flint	1	1
<b>Late Bronze Age</b>		
Flint	4	28
	7	30

Table 1.20: Pottery from Zone 26

	No	Weight (g)
<b>Prehistoric</b>		
Flint	8	1
<b>Early Neolithic</b>		
Flint	4	9
Shell	5	10
<b>Middle Bronze Age</b>		
Flint	1019	398
<b>Middle – Late Bronze Age</b>		
Flint	132	906
<b>Late Bronze Age</b>		
Flint	47	462
<b>Late Bronze Age – Early Iron Age</b>		
Flint	1	26
<b>Early Iron Age</b>		
Flint	131	1762
<b>Early – Middle Iron Age</b>		
Grog and flint	61	417
Flint	1	3
Sand and flint	135	716
	<b>1544</b>	<b>4710</b>
<b>Total</b>	<b>10641</b>	<b>83561</b>

## 1.1 Methods of assessment

- 1.1.2 Pottery from all zones was examined in its entirety, with the exception of the very large assemblages from Zone 13 (9633 sherds weighing 190.5kg, predominantly Middle Iron Age) and Zone 6 (30,087 sherds weighing 419.8kg, predominantly Romano-British). In the case of the former, only key selected contextual groups were scanned in order to assist phasing of particular stratigraphic sequences since the nature of the material (sizeable groups of large sherds from well stratified locations) necessitates full fabric and form analysis at a later stage. In the case of the latter, key groups of Early Neolithic material were extracted from the very large later assemblage.
- 1.1.3 Otherwise, the assemblage was quantified by count and weight and divided into broad fabric groups (such as flint-tempered, sandy) within each context. Note was made of the presence of diagnostic form types, surface treatments, decoration and evidence of use. Spot dates were assigned to each group of sherds within a context on the basis of form and fabric type. A large number of contexts were represented by undiagnostic flint-tempered body sherds which

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have been phased as Late Bronze Age - Early Iron Age. Similarly undiagnostic sandy sherds are currently phased as Early - Middle Iron Age.

## 1.2 Early Neolithic

- 1.2.1 The only sizeable assemblage came from Zone 14, where a group of 10 pits (136075, 173041, 186035, 186037, 191081, 191083, 191086, 191093, 191095, 191179) contained 624 sherds weighing 5874g, decorated and shouldered rather than carinated, indicating a date between the 37<sup>th</sup> and 34<sup>th</sup> centuries BC. All of the sherds are in quite poor condition, and there does not appear to be any pattern to the parts of vessels present.
- 1.2.2 Forms include heavy hemispherical bowls, shouldered bowls, and two vessels with angular carinations. Rims are rounded or flattened and upright, sometimes slightly pulled down internally; externally expanded; and everted. There is a single instance of a flat, horizontal, crescentic lug handle; another of a vessel with long oval lugs on the shoulder. The surfaces of some vessels retain an applied slip. Many have smoothed interiors. Others are burnished externally and have internal wiping. Decoration consists of diagonal lines on rim tops; vertical tooling in necks; one rim has incised zig-zags; closely-spaced bone and other dot impressions on external surfaces are quite common; carinations have diagonal lines above (and in one instance below) the angle; various other incised or tooled lines are present. The vessel with shoulder lugs has alternate panels of dot impression and finger fluting above the shoulder and panels of dots below.
- 1.2.3 None of the material from other zones adds to this picture, and only Zone 6 contained more than 10 Early Neolithic sherds. Here, a group of quite widely separated features (mostly pits) at the southern end of the zone contained 154 sherds weighing 719g. Although quantities were much lower than in Zone 14, diagnostic traits indicate that the ceramics belong to the same tradition of decorated bowls.

## 1.3 Middle Neolithic

- 1.3.1 Middle Neolithic Peterborough Wares were recovered from only two locations: in Zone 10, where 84 sherds weighing 642g came from pit 123001; and Zone 19, where 35 sherds weighing 100g came from pit 228052.
- 1.3.2 The Zone 19 material derives from the collar of a Fengate-type vessel, very similar in form and decoration to the examples from Baston Manor, Hayes (Phillp 1973, fig. 6).

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- 1.3.3 The Zone 10 pit contained sherds from a minimum of two Mortlake-type vessels with typical expanded 'T'-shaped rims, one decorated with twisted cord impressions, the other with fine short incised lines. Cavettos and bodies are decorated with a variety of impressed designs, mostly fingers, including finger tip impressions in the cavetto.
- 1.3.4 In north-east Kent Mortlake and Fengate-type Peterborough Wares are becoming increasingly well-documented. The pit in Zone 10 lies at the western end of a zone of similar features that seem to lie along the shore as far east as Chalk Hill, Ramsgate where Fengate material was recovered from the causewayed enclosure (Gibson 2006). A pit on Chalk Hill contained portions of three Ebbsfleet or Mortlake vessels (Cleal 1995). Peterborough Ware came from a pit at Cliffs End Farm (Leivers in press). A series of four pits containing portions of up to five Mortlake bowls were encountered less than 500m to the east at Cottington Road (Leivers 2009). Further Peterborough Ware sherds have been recovered from less than 500m to the south-west in Cottington Road at Oaklands Nursery (Perkins 1998).
- 1.3.5 The pit in Zone 19 appears to form part of another distribution of such features situated on the southern edge of the plateau now occupied by the runway of Kent International Airport, running from Manston in the east (stray sherds recovered from a barrow: Perkins and Gibson 1990) to the route of the Monkton Gas Pipeline in the west (Perkins 1985) and including Laundry Road, Minster (Boast and Gibson 1990).

#### **1.4 Beaker**

- 1.4.1 Only very small quantities of Beaker or possible Beaker were recovered. The only instances where identifications were certain were on a single sherd weighing 6g from Iron Age pit 295010 in Zone 7 (an abraded body sherd with horizontal bands of probably comb impression); two sherds weighing 12g from ditch 190192 in Zone 12 (two body sherds from a vessel with groups of horizontal lines of square-toothed comb with the spaces between the groups either empty or filled with vertical lines); and one sherd weighing 7g from ring-ditch 195007 in Zone 23 (a body sherd with an infilled panel of herringbone incision and an adjacent blank panel).

#### **1.5 Early Bronze Age**

- 1.5.1 Only three instances of Early Bronze Age ceramics were noteworthy (single sherds from zones 8 and 23 were identified on fabric grounds and are uncertain assignments). All are grog-tempered, and of Food Vessel or Collared Urn traditions. Eight sherds weighing 44g from ditch 190130 in Zone 12 are

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plain and likely to be from the body of a Collared Urn. A total of 88 sherds weighing 179g from pit 171152 in Zone 20 have incised chevrons and are likely to derive from the collar of a Collared Urn.

- 1.5.2 The only other Early Bronze Age ceramics of note were three conjoined miniature Food Vessels from grave 246134 within ring-ditch 216090 in Zone 21.

## 1.6 Middle Bronze Age

- 1.6.1 Middle Bronze Age ceramics consist for the most part of flint-tempered bucket-shaped jars belonging to the Deverel-Rimbury tradition, some of which contained cremation burials. Urned cremations occurred in Zone 21 (a jar with a grooved out-turned rim and horseshoe handles in 125220); Zone 26 (a jar with a square finger-pressed rim and two lines of adjacent finger tip impression on the body in 222001); and Zone 12 (153017).

- 1.6.2 Most instances are merely sherds or groups of sherds dated on fabric grounds. Some are more diagnostic: pit 214001 and ditch 190108 in Zone 12 contained body sherds with applied cordons; ditch 194097 in Zone 10 contained fragments of a jar with a notched rim; ring-ditch 194137 in Zone 21 contained a substantially complete jar with a flat base, cordon and slightly pointed rim; ring-ditch 195007 in Zone 22 contained fragments of a vessel with a flat expanded rim, finger pressed on the inner and outer edges.

- 1.6.3 Amongst the Deverel-Rimbury ceramics, two instances of different traditions were particularly notable. Ditch 194097 (also containing Deverel-Rimbury) contained 21 sherds weighing 188g derived from three fine ring-stamped bowls. Such vessels (best represented by the example from Birchington: Powell-Cotton and Crawford 1924) are very rare (only four other examples of single sherds known from Thanet in 2007) and dated solely by the Birchington example, which was found containing 14 bronze palstaves dated to 1300-1100 BC (Hart 2007).

- 1.6.4 Ditch 165056 in Zone 7 contained two sherds in a sandy fabric weighing 54g which may belong to an earlier tradition. One sherd has a lugged horizontal cordon with a vertical cordon depending; the fabric and form are suggestive of a Biconical jar, possibly of Early to Middle Bronze Age date.

## 1.7 Late Bronze Age

- 1.7.1 The Late Bronze Age fabrics are predominantly flint-tempered (small numbers were sandy, less were tempered with organics), with both coarse and fine wares occurring.

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- 1.7.2 Commonly occurring forms include coarse ware shouldered jars with flat-topped rims and concave necks. Decoration on coarse jars largely comprises finger-impressed cabling on the rim, either alone or accompanying a band of fingertip or fingernail impressions defining the shoulder area or – rarely – in the neck. Cordons decorated with fingertip impressions were present, usually on the shoulder (although in a few instances cordons were present in the neck) as were less frequent plain cordons or examples with diagonal slashes.
- 1.7.3 Bowl forms are often undecorated and round-shouldered, however thin-walled finer vessels also occur, some of which are decorated with incised or tooled parallel horizontal lines and (in fewer instances) chevrons.
- 1.7.4 Surface treatments included wiping with cloth or vegetable pad, burnishing, and finishing with a red slip (in pit 127071 in Zone 22). A number of sherds appeared to have rusticated external surfaces (for instance in ditch 190262 in Zone 4), although a combination of small sherd size and the poor condition of the surfaces sometimes makes identification problematic. Rustication in Kent begins in the Late Bronze Age/Early Iron Age (for instance at Highstead), becoming much more common during the Early Iron Age. The upper date limit of the technique is unknown, but it continues into the Middle Iron Age (Macpherson-Grant 1991) at least.
- 1.7.5 Bases are mostly plain, however many were heavily gritted with fine flint as a result of having been sat on a bed of burnt, crushed flint while still wet. One fragment of a handle was present, in enclosure ditch 186231 in Zone 7.
- 1.7.6 As a whole, the assemblage contains many of the same vessel types and decoration as the material from Cliffs End Farm (Leivers, in press). Given this, most of the material might be expected to belong in the 11<sup>th</sup> – 9<sup>th</sup> centuries BC; red finished and rusticated material is more likely to be 7<sup>th</sup> or 6<sup>th</sup> century.

## **1.8 Early Iron Age**

- 1.8.1 Diagnostic Early Iron Age ceramics were infrequent (compared to the generally Late Bronze Age – Early Iron Age Post-Deverel-Rimbury assemblage). In general, fabrics were still flint-tempered (although the flint tends to be finer), with a smaller proportion of sandy fabrics and a very small amount with grog. Groups of over 20 sherds were only present in Zones 4, 7, 12, 13, 14, 23 and 26.
- 1.8.2 Forms continued the basic division of coarser jars and finer angular and hemispherical bowls. On the former, decoration consisted of finger pressing on shoulders, rims or cordons; on the latter of tooled or incised lines, often simple horizontal motifs, sometimes chevrons or geometric patterns. Surfaces



were often wiped, smoothed or burnished; one bowl from pit 141191 in Zone 4 had a red finish (probably haematite); another from roundhouse 201103 in Zone 7 had tooled line decoration and was also red-finished and was associated with sherds of a finger-pressed cordoned jar.

- 1.8.3 There was one instance of a vessel with a handle, from ditch 190286 in Zone 4.
- 1.8.4 Significant deposits were limited to pit 158029 in Zone 26 and pit 163013 in Zone 13. The former contained 118 sherds weighing 1654kg from at least three vessels represented by body sherds (some with wiped surfaces, some burnished), flat bases, rims and shoulders. Carbonised residues were present on the inner surfaces of some sherds. The deposit appears to be domestic rubbish. The latter had 33 sherds weighing 1011g derived from at least four vessels represented by body sherds, bases, shoulders (one with a finger pressed cordon; one with nail crescents; one with nail impressions; one stepped) and rims. 80 sherds weighing 965g came from pit 270013 in Zone 7, including parts of a jar with a slashed rim. 100 small fragments (weighing only 168g) came from ditch 201137, also in Zone 7, from a fineware vessel with horizontal lines in the neck and a neat post-firing drilled perforation.

## 1.9 Middle Iron Age

- 1.9.1 Sherds were dated to the Early to Middle Iron Age on grounds of fabric and/or form. Fabrics are much more varied than previously: although flint is still common, other types (sandy, organic, shell, grog and mixed-tempered) are much more prevalent than in earlier periods.
- 1.9.2 A number of forms could be clearly identified; these include very finely finished carinated bowls from ring-ditch 232168 in Zone 21 and pit 177314 in Zone 4; jars with flat-topped externally expanded rims and finger pressed shoulders; a weakly-shouldered jar with a finger-pressed shoulder and a simple, slightly inturned rim from ring-ditch 195007 in Zone 23; a large shouldered jar with a very coarse gritted base and a large bowl with internal burnish from pit 141191 in Zone 4.
- 1.9.3 A particularly notable deposit came from pit 205106 in Zone 19. This contained four fine carinated bowls; three fine bowls; a sharply-shouldered small bowl; two footring bases; a straight-sided jar with a pointed rim decorated with scoring; a scored and red finished proto bead-rimmed jar; other jar rims and bases; burnished, untreated, scored and rusticated bodies; sherds with all-over finger tipping; a jar shoulder with finger tipping at the change of angle; 22 red finished sherds (including the bead-rimmed jar) and a single

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polychrome (red/silver) sherd. Cunliffe has placed the occurrence of footring bases from sites along the A2 (such as Barham Downs) in a 5<sup>th</sup> to 3<sup>rd</sup> century bracket (Cunliffe 1980, 179).

- 1.9.4 A number of Middle Iron Age vessels show scored external surfaces, particularly from the large assemblage from Zone 13. The technique is often thought to be decorative, but it may also have been designed to improve grip. It is thought to have its origins in the 4<sup>th</sup> century BC and continued in use until the Late Iron Age (Elsdon 1993, 2-3). It is commonly seen in the east Midlands, and within the south-east it is present at a number of sites including Little Waltham, Essex, during the Middle to Late Iron Age (Drury 1978). In Kent it is present at Farningham Hill (Couldrey 1984) and Beechbrook Wood, near Ashford (Jones forthcoming).

### **1.10 Recommendations**

- 1.10.1 Approximately 9250 sherds (from a total of 20,274; *c.* 45% of the total) warrant full fabric and form analysis.
- 1.10.2 The earlier material (Early and Middle Neolithic; Early Bronze Age) is of intrinsic value, due largely to scarcity (particularly the case for the conjoined miniature Food Vessels from Zone 21). Of particular note amongst this material:
- 1.10.3 A total of 127 sherds are Middle Neolithic Peterborough Wares. These form part of an emerging pattern of contemporary activity along the edge of the former Wantsum Channel, the extent and nature of which is poorly understood. This material (and the Early Neolithic group from Zone 14) would benefit from radiocarbon dating, should suitable material be available.
- 1.10.4 Three instances of Early Bronze Age ceramics justify full analysis and reporting: Collared Urn ceramics from Zones 12 and 20, and the conjoined miniature Food Vessels from Zone 21. Again, radiocarbon dating would be worthwhile.
- 1.10.5 Amongst the later prehistoric material (Middle and Late Bronze Age; Early and Middle Iron Age) are a number which warrant further analysis due to their intrinsic value: for the Middle Bronze Age these include a Biconical Jar from Zone 7 (2 sherds); the cremation urns and other sherds from Zones 12, 21 and 26 (1395 sherds), and the Ring-stamped bowls (21 sherds). All will require illustration, and the Ring-stamped bowls (which are particularly rare) would justify attempts to date (residues if present; associated materials if not).

- 1.10.6 *Late Bronze Age*: The larger assemblages of Late Bronze Age pottery warrant analysis (Zones 4, 7 and 12) along with selected other sherds of intrinsic interest. The well-dated Late Bronze Age assemblage from Cliffs End Farm makes this material of greater-than-normal interest, since that assemblage provides the basis of a directly dated ceramic sequence for Thanet in particular, and south-east England more widely, which is already challenging commonly-held assumptions about the nature and timing of change in ceramic styles and types.
- 1.10.7 The possibility to extend this sequence both geographically and temporally should not be overlooked: the Cliffs End sequence begins in the 11<sup>th</sup> century BC, and continues throughout the Late Bronze Age. Later ceramics are almost or entirely absent from the Cliffs End assemblage. Given the presence of suitable residues, the East Kent Access Road material (and particularly the assemblage from Zone 13) allows the possibility of extending the sequence into the Late Iron Age at least. Such a sequence of directly-dated pottery would be a major contribution to the prehistory (and possibly early history) of the south-east of England, with nationally and internationally significant implications.
- 1.10.8 *Early Iron Age*: Significant deposits of Early Iron Age material occurred in Zones 4, 7, 13 and 26, totalling 1000 sherds. These groups should be analysed, and if possible dated.
- 1.10.9 *Middle Iron Age*: The large assemblage from Zone 13 is predominantly of this date (over 9000 sherds). Some of this material can be discounted on stratigraphic grounds, but the bulk of the material will require some level of analysis, and at least a portion of it full analysis, illustration and (if possible) dating. It would be reasonable to suppose that 20% of the assemblage would require full analysis (approximately 2000 sherds). Other groups of Middle Iron Age date that warrant full analysis come from Zones 4, 19 and 23 (750 sherds total).

### *Illustrated pottery*

Pottery date	No. Illustrated sherds
Early Neolithic	12
Middle Neolithic	3
Early Bronze Age	3
Middle Bronze Age	9
Late Bronze Age	8

Early Iron Age	6
Middle Iron Age	20
Total	61

## 1.11 References

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2 **LATER PREHISTORIC AND ROMANO-BRITISH POTTERY** BY RACHAEL SEAGER  
SMITH AND ELLIE BROOK

## 2.1 Introduction

2.1.1 The pottery considered here spans the period from the Middle Iron Age (*c.* 400 BC) through until the end of the Romano-British period (*c.* AD 410). Overall, the assemblage amounts to approximately 52,400 sherds, weighing 722.5 kg. Its large size, wide chronological range and recovery from well recorded contexts makes this material a major resource not only for understanding the chronological development of the settlements, their nature, status, economy and aspects of local, regional and international trade and exchange, but also the chronological development of the ceramics themselves. This is especially important throughout the Iron Age, where, despite significant advances (Macpherson-Grant 1991a; 1995, 248-9; Morris 2006, Couldrey *et al.* 2007; Booth 2006, 5; Jones 2009), the sequence of ceramic development is still relatively poorly known. Recently, an independently dated ceramic type series has been established for the assemblage from the Bronze and earlier Iron Age domestic, mortuary and ceremonial site at Cliffs End Farm (McKinley *et al.* in prep.). The material from the East Kent Access Road sites, in particular Zones 13 and 14, provides an unrivalled opportunity to extend this sequence into the latter part of the Iron Age (see also Appendix 1), while the assemblages from Zones 6, 19, 20 and 21 continue it through the Conquest period and into at least the 3<sup>rd</sup> century AD, with small amounts of being of 4<sup>th</sup> century AD date.

2.1.2 Most of the pottery was recovered as bulk finds during the hand-excavation of archaeological features and deposits, although the assemblage also includes pieces from the greater than 5.6mm fraction of sieved environmental and artefact samples. A number of individually three-dimensionally recorded vessels, mostly more or less complete pots found in burials, are also included. Despite some (predictable) variations by period and fabric, the overall condition of the assemblage was only moderate, with a mean sherd weight of 13.8g. The majority of sherds exhibited considerable surface abrasion and edge damage; this is so consistently present that it is likely to result from post-depositional erosion, rather than taphonomic factors.

## 2.2 Methods

2.2.1 The assessment of the later prehistoric and Romano-British pottery was aimed at characterising the assemblage, providing an indication of chronology, quantified fabric and vessel form data and highlighting any unusual or interesting features (such as evidence of use or repair) as a foundation for future research. In order to provide a basic ceramic archive (Darling 1994, 3-

5), the assessment targeted the smaller site groups, unlikely to merit further attention at a later stage, as well as areas where more detailed spot-dating of the ceramics was required to aid the stratigraphic assessment. To this end, all the later prehistoric and Romano-British pottery from Zones 1, 2-5, 7-12, 14, 15, 17-23 and 26, (totalling 22,298 sherds, 302.584kg) was subjected to a detailed scan. However, the largest site collection, from Zone 6 (c. 30,000 sherds, 420kg) has not been scanned at this stage, it being recognised that this important group, predominantly of Late Iron Age/Romano-British date, would merit more thorough examination at a later stage.

2.2.2 All the sherds were examined on a context by context basis and divided into fabric groups or broad ware categories based on predominant inclusion types, for example ‘shelly wares’ and ‘sandy fabrics’. Where appropriate, usually for the imported or regionally traded Romano-British wares, more specific fabric identifications were used, for example ‘Verulamium region whiteware’, ‘Dressel 20 amphora’, ‘Moselkeramic’. Sherds were then quantified by number and weight (in grammes) within these fabric groups. The later prehistoric vessel forms were briefly described (e.g. weakly-shouldered jar, jar with flat-topped rim) while standard type series (e.g. Hawkes and Hull 1947; Tyres and Marsh 1979; Thompson 1982; Pollard 1988; Monaghan 1987) were used to refer to the Romano-British vessel forms present in each fabric, quantified by the number of rims. Additional information, such as the condition of the sherds if exceptional, the presence of graffiti, stamps and residues, pre- or post- firing perforations or other evidence of use or repair and suitability for illustration, was noted. A subjective assessment of the intrinsic interest and perceived stratigraphic integrity of the context group (on a Yes/No basis) was made in order to highlight contexts potentially suitable for further analysis. Additionally, spot-dates were recorded, both for each fabric and for the context as a whole, all data being stored in an ACCESS database, linked to the stratigraphic information and other finds types.

2.2.3 Table 2.1 summarises the total quantities of pottery recovered from each Zone by chronological period, with shading used to highlight the principal phases of activity at each site. Tables 2.2 (Middle to Late Iron Age) and 2.3 (Late Iron Age/Romano-British) provide a more detailed breakdown of the range of fabrics/ware types present in each Zone. A very small number of pieces from Zones 6 and 13 are shown in these tables; these were examined to answer specific questions raised by the stratigraphic analysis and in no way reflect the eventual content of these assemblages.

Table 2.1: Total number and weight (in grammes) of later prehistoric and Romano-British pottery by chronological period and Zone

Period	Data	Zone:	2	3	4	5	7	8	9	10	11	12	14	15	17	18	19	20	21	22	23	24	26	29	Total
MIA	No.				256	363	429			201	28	75	18				44			4					1418
	Wt.				4261	4956	4460			1119	511	2479	299				415			31					18531
M/LIA	No.		8		319	10	1219	4	2	609	320	724	71	5	6	7	438	17	52	65	131		93		4100
	Wt.		26		2519	58	10559	9	10	4360	2399	6211	329	20	40	12	3474	272	195	667	1114		238		32512
LIA	No.	258	53		90	4	234	10	3	238	101	193	16		8	35	80	4	21		94		10		1452
	Wt.	3174	356		775	10	2507	41	8	2807	620	1323	65		167	220	793	54	72		648		130		13770
LIA/ERB	No.				55	1	102	3	3	669	453	125	10		3		751	24	4	3	296		40	5	2548
	Wt.				824	5	1347	15	11	8935	6882	1143	71		64		8570	229	32	5	1220		103	38	29495
RB	No.	1			75	4	336	57		1549	2478	202	130			3	1048	6392	168	65	42	1	4	225	12780
	Wt.	5			1148	10	6506	866		32809	32890	5210	2151			11	22376	97569	2100	405	262	3	10	3945	208276
<b>Total:</b>	<b>No.</b>	<b>259</b>	<b>61</b>	<b>1</b>	<b>795</b>	<b>382</b>	<b>2320</b>	<b>74</b>	<b>8</b>	<b>3266</b>	<b>3380</b>	<b>1319</b>	<b>245</b>	<b>5</b>	<b>17</b>	<b>45</b>	<b>2361</b>	<b>6437</b>	<b>245</b>	<b>137</b>	<b>563</b>	<b>1</b>	<b>147</b>	<b>230</b>	<b>22298</b>
	<b>Wt.</b>	<b>3179</b>	<b>382</b>	<b>1</b>	<b>9527</b>	<b>5039</b>	<b>25379</b>	<b>931</b>	<b>29</b>	<b>50030</b>	<b>43302</b>	<b>16366</b>	<b>2915</b>	<b>20</b>	<b>271</b>	<b>243</b>	<b>35628</b>	<b>98124</b>	<b>2399</b>	<b>1108</b>	<b>3244</b>	<b>3</b>	<b>481</b>	<b>3983</b>	<b>302584</b>

Table 2.2: Overall quantification (number of sherds and weight in grammes) of the later prehistoric pottery by fabric type and Zone

Ware	Data	Zone		Fabric Type																							Total
		1	2	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	20	21	22	23	26				
<b>Middle Iron Age</b>																											
Flint-tempered	No.		75	150	172				149		38	14	18				8			4						628	
	Wt.		2542	2504	2070				634		1584	770	299				108			31						1054	
Greensand-tempered	No.				2																					2	
	Wt.				7																					7	
Sand/fine flint tempered	No.		181	202	255				52	28	37	2					36									793	
	Wt.		1719	2304	2383				485	511	895	24					307									8628	
Sandy wares	No.			8								12														20	
	Wt.			97								213														310	
Shell-tempered	No.			3																						3	
	Wt.			51																						51	
<i>MIA sub-totals:</i>	No.		256	363	429				201	28	75	28	18				44			4						1446	
	Wt.		4261	4956	4460				1119	511	2479	1007	299				415			31						1953	
<b>Middle/Late Iron Age</b>																											
Chalk-tempered	No.										1															1	
	Wt.										20															20	
Flint-tempered	No.		62		11	307	3	1	143	64	159	3	42	1			59	2	25	27	89	7			1005		
	Wt.		371		109	1773	7	9	1255	934	2188	17	209	1			224	23	96	257	748	40			8261		
Grog/flint-tempered	No.										11											6				17	
	Wt.										57											69				126	
Grog-tempered	No.				3	197							1							3						204	
	Wt.				17	1414							4							29						1464	
Igneous rock tempered	No.									5																6	
	Wt.									62																62	
Sand/fine flint-tempered	No.		8	256	8	15	618	1	1	459	241	548	5	21			7	365	15	23	36	10	84		2727		



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Ware	Data	Zone	1	2	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	20	21	22	23	26	Total
Sandy wares	Wt.			26	2130	35	38	6350	2	1	3071	1377	3914	33	86		40	12	2927	249	66	405	229	191	2118
	No.			1	2	3	3	97			6	10	3	21	7	4			5			2		2	163
	Wt.				18	23	64	1022			29	26	18	87	30	19			41			5		7	1389
Shell-tempered	No.									1			2						9		1		26		39
	Wt.									5		14						282		4		68			373
<i>M/LIA sub-total:</i>	No.		8	319	10	32	1219	41	4	2	609	320	724	29	71	5	6	7	438	17	52	65	131	93	4161
	Wt.		26	2519	58	228	7055	9	9	10	4360	2399	6211	137	329	20	40	12	3474	272	195	667	1114	238	3292
<b>Late Iron Age</b>																									
Flint-tempered	No.			53	54			41	9		14	1			1		5								178
	Wt.			356	530			704	39		669	47			2		136								2483
Greensand-tempered	No.							3																	3
	Wt.							16																	16
Grog/flint tempered	No.									2			13						11				45		71
	Wt.									7		114							215				465		801
Grog-tempered	No.				2		4	29		3	22	27	63		14			8	49	2	5		36	8	272
	Wt.				27		32	164		8	189	163	372		51			65	433	13	42		121	23	1703
Sand/fine flint tempered	No.	86			21			98			179	53	80	7			2	25	12					2	565
	Wt.	1108			138			1437			1735	276	639	37			27	151	82					107	5737
Sandy wares	No.	172			13	4		63	1		18	20	34	5	1		1	2	5	2	16		13		370
	Wt.	2066			80	10		186	2		167	134	191	46	12		4	4	36	41	30		62		3071
Shell-tempered	No.										3		3						3						9
	Wt.									40			7						27						74
<i>LIA sub-total:</i>	No.	258	53	90	4	4	234	10	3	238	101	193	12	16			8	35	80	4	21		94	10	1468
	Wt.	3174	356	775	10	32	2507	41	8	2807	620	1323	83	65			167	220	793	54	72		648	130	1388
<b>Late Prehist totals:</b>	No.	258	61	665	377	36	1882	14	5	1048	449	992	69	105	5	14	42	562	21	73	69		225	103	7075
	Wt.	3174	382	7555	502	260	1752	6	18	8286	3530	10013	1227	693	20	207	232	4682	326	267	698		1762	368	6630



**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

Ware	Data	Zone										Total																						
		1	3	4	5	6	7	8	9	10	11		12	13	14	17	18	19	20	21	22	23	24	26	29									
Moselkeramik	No.																	6																8
	Wt.																	18																20
Other import	No.									1	2							2																5
	Wt.									2	5							14																21
Dressel 20 amphora	No.						18			118	25	3	17					270	113	2											4			570
	Wt.						103			7465	1839	654	890					1050	1066	134														33704
Unassigned amphora	No.										3																							3
	Wt.										250																							250
Campanian black sand amphora	No.											5							1															6
	Wt.											225							4															229
Can 186 amphora	No.															4																		4
	Wt.															912																		912
Furrowed-rim amphora	No.																		2															2
	Wt.																		114															114
London 555 amphora	No.																		2															2
	Wt.																		151															151
North Gaulish mortaria	No.																		8	3														13
	Wt.																		435	25														528
Massif Centrale Mortaria	No.										1								1															2
	Wt.										10								87															97
Rhenish whiteware mortaria	No.																		3															4
	Wt.																		46															71

Ware	Data	Zone																Total								
		1	3	4	5	6	7	8	9	10	11	12	13	14	17	18	19		20	21	22	23	24	26	29	
Unassigned mortaria	No.					2				7								16								25
	Wt.					12				141								965								1118
Verulamium whiteware mortaria	No.					1											1									2
	Wt.					81											507									588
Canterbury/Kent mortaria	No.					4				17								3	1						1	26
	Wt.					465				705								129	34						52	1385
Oxon colour-coated ware mortaria	No.																	5								5
	Wt.																	77								77
Oxon whiteware mortaria	No.																	6							1	7
	Wt.																	196							59	255
Fine greyware	No.		5	1		31	8		162	666	18		1				42	1041	26	34	3			63	2101	
	Wt.		32	1		192	222		1909	4921	233	2					730	7817	115	102	3			809	17088	
Marbled ware	No.																	3							3	
	Wt.																	29							29	
Mica-dusted ware	No.																	7							7	
	Wt.																	17							17	
Oxon colour coat	No.								5		2							54						1	62	
	Wt.								342		83							525						6	956	
Nene Valley colour-coated ware	No.																	7							7	
	Wt.																	35							35	
New Forest colour coat	No.																7								7	



**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

Ware	Zone	Zone																			Total					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	17	18	19	20	21		22	23	24	26	29
Sand and fine flint	No.					1	14	1		7	11			1				1	2	2		296		29		365
	Wt.					13	614	7		57	89			16				14	32	24		122		76		2162
Shell-tempered	No.		1				2			2	60	1						1	69		5	12			1	154
	Wt.		14				37			76	1094	1					3	1631		15	24				12	2907
Black Burnished ware	No.						7			1		3							29		1					41
	Wt.						124			442		89							519		9					1183
Flint-tempered	No.					3	11			4	2								10							30
	Wt.					86	129			92	20								102							429
Sand, rare fine flint and grog	No.																		11							11
	Wt.																		1038							1038
<b>LIA/RB total</b>	<b>No.</b>	<b>1</b>	<b>130</b>	<b>5</b>	<b>11</b>	<b>438</b>	<b>60</b>	<b>3</b>	<b>2218</b>	<b>2931</b>	<b>327</b>	<b>22</b>	<b>140</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1799</b>	<b>6416</b>	<b>172</b>	<b>68</b>	<b>338</b>	<b>1</b>	<b>44</b>	<b>230</b>	<b>15361</b>	
<b>LIA/RB total</b>	<b>Wt.</b>	<b>5</b>	<b>197</b>	<b>15</b>	<b>198</b>	<b>785</b>	<b>923</b>	<b>11</b>	<b>4174</b>	<b>3977</b>	<b>6353</b>	<b>131</b>	<b>222</b>	<b>64</b>	<b>11</b>	<b>6</b>	<b>3094</b>	<b>9779</b>	<b>226</b>	<b>410</b>	<b>148</b>	<b>3</b>	<b>113</b>	<b>3983</b>	<b>238278</b>	

Table 2.4: Latest Iron Age/Romano-British feature groups containing more than 80 sherds

Current phase	Feature	No.	Wt.
<b>Zone 10</b>			
Early Romano-British	Pit 127030	372	8586
Romano-British	Pit 176313	129	2305
Romano-British	Pit 178371	165	1766
Romano-British	Ditch 194090	80	1493
Early Romano-British	Sunken featured building 249199	126	2188
Early Romano-British	Ditch 249250	113	1460
<b>Zone 11</b>			
Romano-British	Pit 134043	169	3086
Romano-British	Waterhole 135095	81	1313
Romano-British	Layer/placed deposit 143023	147	2728
Unphased	Pit 143105	98	1206
Romano-British	Pit 147141	217	2586
Romano-British	Ditch 159314	145	1214
Romano-British	Ditch 159335	140	997
Romano-British	Ditch 215037	95	2132
Romano-British	Quarry pit 262015	724	11884
<b>Zone 12</b>			
	Layer/placed deposit 147140	115	3594
<b>Zone 19</b>			
	Kiln 126175	150	1504
	Pit 248271	85	593
<b>Zone 20</b>			
	Pit 126090	108	1927
Early Romano-British	Ditch 205059	195	2270
	Levelling 215206	91	1067
Romano-British	Pit 215215	118	1881
Romano-British	Surface 215228	143	1471
Romano-British	Ditch 217122	357	4249
	Pit 228055	151	1858
Romano-British	Sunken featured building 228059	551	11108
Early Romano-British	Enclosure ditch 249051	114	1011
Romano-British	Sunken featured building 249081	497	7970
Romano-British	Pit 249082	363	3981
Romano-British	Sunken featured building 249083	1072	15999
Romano-British	Sunken featured building 249085	359	4841
Romano-British	Pit 250071	201	6317
Romano-British	Pit 250094	344	5420
Late Romano-British	Pit 251005	326	4480
Early Romano-British	Pit 279028	485	7206
<b>Zone 23</b>			
Early Romano-British	Pit 290305	299	1230
<b>Total:</b>		<b>8925</b>	<b>134921</b>

## 2.3 Nature of the assemblages

### *Middle to Late Iron Age (c. 400 – 0 BC)*

- 2.3.1 Without diagnostic vessel forms, it has proved difficult to identify chronological differences within the fabrics used during the various phases of the Middle to Late Iron Age, and approximately 60% of the sherds belonging to this later prehistoric group could only be assigned a generalised Middle/Late Iron Age date (Table 2.2) at this stage.
- 2.3.2 It is clear, however, that although the use of flint-temper continued throughout the second half of the 1<sup>st</sup> millennium BC, the Middle Iron Age witnessed a significant shift towards the use of sand and fine-flint tempered wares (56% of the MIA sherds; Table 2.2), away from flint alone (43%), which had been dominant in preceding periods. By the Late Iron Age, the flint-tempered wares represented just 12% of the sherds, the sand and fine-flint tempered wares also declining in importance (38%) in favour of sandy (25%) and grog-tempered (18%) fabrics in line with national trends. The remaining shell-, chalk- and Greensand- tempered fabrics (Table 2.2), never represented more than very minor components of the assemblage, but can be paralleled at other sites in the region (e.g. Jones 2009, 31-4, fabrics C1, S1, Q8, QG1; Morris 2006, 82-3). Only the igneous rock-tempered sherds need to have been made outside the immediate locality (7-10km radius), although as has already been pointed out (Stead and Rigby 1999, 29-31; Morris 2006, 75) the geology of northern France is very similar to that of Kent, making it extremely difficult to identify traded vessels from this region, where grog-temper was also extensively used in the second half of the 1<sup>st</sup> millennium BC. Evidence from CTRL sites such as Little Stock Farm and Saltwood Tunnel indicate that grog-temper began to be used in this part of Kent during the Middle Iron Age (Morris 2006, 70), becoming increasingly common during the Late Iron Age and Late Iron Age/Early Romano-British periods.
- 2.3.3 The igneous rock tempered sherds, then, represent the only definite traded wares, and are unusual in this region although at first glance, they could be mistaken for flint-tempered wares. They probably derive from south-west England or Continental sources, although further petrological analysis would be required to establish this. Five of the pieces were found in Zone 11; two (Pit 155017, context 155018 and ditch 159276, context 155020) from a single very coarse, hard, thick-walled oxidised vessel, the other three, including a fine bowl/jar rim, were from ditch 159319 (context 123032). The sixth sherd, a small, featureless plain body fragment, came from pit 244112 (context 244114) in Zone 7.



- 2.3.4 The most common forms of Middle Iron Age date are shouldered jars and bowls with upright or slightly inturned, flat-topped or beaded rims in a variety of sizes, jars with narrow mouths and long, sloping shoulders, globular jars with simple upright rims (cf. Morris 2006, fig. 3.8, BBW/21 and BBW/19) and neutral profiled vessels with internally bevelled or externally expanded (proto-bead) rims (ibid. fig. 3.8, LSF/5 and LSF/49). This latter form has its origins in the Middle Iron Age saucepan-pot continuum, although it was developed and used well into the Late Iron Age (Thompson 2007, 192, form C3). Most of the forms were made in the sand and fine flint- and flint-tempered fabrics; with only three forms being recognised in the minor fabrics of this period – a carinated open bowl (Zone 12, pit 168068, context 168082) and a proto-bead rim jar (Zone 13, pit 156119, context 156122) both in sandy fabrics, and a single jar rim fragment in Greensand tempered ware from Zone 7 ditch 201136 (context 216304). Roughened surface rustication continued to be a common feature at this time, especially on larger forms; scratched or scored exterior surfaces were soon added to the repertoire with burnishing confined to the inside of bowl forms and both surfaces of a small number of fine, fairly thin-walled jars and bowls. Decoration was comparatively rare, a few vessels continuing to have finger-tip or nail impressions on shoulders, cordons and, in at least two instances (both from Zone 7) around flat (ditch 185062, context 185061) and wedge-shaped (ditch 201147, context 304004) bases. Although monochrome, two jar sherds from pit 147183 (context 147185) in Zone 5 had finely incised decoration similar to that on a polychrome jar from Little Stock Farm (Morris 2006, 51, fig. 3.8, LSF/1).
- 2.3.5 A small number of the pre-‘Belgic’ Late Iron Age coarseware (flint- and sand and flint-tempered fabrics) jars with internally thickened, faceted rims like those from Barham Downs, Bridge Hill, the Castle Street/Stour Street area of Canterbury, Worth, and Highstead, Cottington Lane and Ozengell on Thanet (Machperson-Grant 1991a, 43-5) were also noted. A new range of ‘Belgic’ style forms, such as high-shouldered, barrel-shaped jars with beaded rims and necked, cordoned jars and bowls, some with pedestal or footring bases, were also introduced during the Late Iron Age, initially hand-made and later tournetted or wheel-turned. A omphalos base in a fine sandy fabric found on trackway 249061 (context 128090) in Zone 20 may derive from a wide-mouthed, rounded cup rooted in the Late Bronze Age/Early Iron Age traditions of southern Britain and northern France (c.f. Thompson 1982, 389, type E2-4). Jars with similar bases and distinctive burnished zones and incised curvilinear decoration found in grog-tempered wares in the Folkstone area indicate a fusion of styles between the eastern *Atrebates* of Sussex (decoration) and the *Belgae* of Kent (grogged fabric) in the middle decades of the 1<sup>st</sup> century BC (Macpherson-Grant and Thompson 1991, 46). Late Iron

Age surface treatments continued to be dominated by scratched or scored exterior surfaces, and while burnishing became increasingly common, decoration continued to be rare.

- 2.3.6 Few of the later prehistoric sherds exhibited any particular evidence for use, re-use or repair. Internal sooty residues were noted fewer than 20 sherds from Zones 7 (pit 182167, context 182170 and ditch 201101, context 215138), 10 (tree-throw 135076, context 130304 and pit 247321), 12 (pit 145076, contexts 145070 and 145073 and ditch 190196, context 230050) and 26 (ditch 201042, context 193032).

#### *Latest Iron Age/Romano-British*

- 2.3.7 The overall date range of the material discussed in this section extends from around the start of the 1st century AD until the end of the Roman period although, as noted above, Late Roman sherds were scarce. Unusually for this region (*c.f.* Savage 2008, 156; Booth 2009, 4), activity within Zones 7, 10, 11, 12, 19 and 23 appears to overlap with the earlier (later prehistoric) sequences. In this area, as in many others across southern England, the Roman military campaigns of 55/4 BC and AD 43 had little effect on the ceramics and fabrics of Middle – Late Iron Age character (tempered with flint and/or sand), which continued to be made and used alongside the ‘Belgic’ grog-tempered wares characteristic of the east Kent ceramic style zone (Thompson 1982, 12-14; Pollard 1987, 30-32) well into the early Romano-British period. Although these native-type flint and/or sand tempered wares probably did not last much beyond AD 70 (Booth 2009, 7), the use of grog continued almost throughout the Romano-British period. Grog-tempered wares dominated the assemblage from Westhawk Farm, Ashford, for example, throughout the life of the settlement (mid 1<sup>st</sup> to mid 3<sup>rd</sup> century AD (Lyne 2008, 207) and after perhaps a brief demise in the late 3<sup>rd</sup>/early 4<sup>th</sup> century, re-emerged in the handmade Late Roman grog-tempered wares characteristic of the late 4<sup>th</sup> and early 5<sup>th</sup> centuries over much of southern England. Without associations with more Romanised forms and fabrics, it has proved difficult, if not impossible to reliably distinguish between many of the pre- and post-conquest coarsewares, especially those in sandy and grog-tempered fabrics and it is for this reason that the latest Iron Age material has been considered alongside the Romano-British.
- 2.3.8 These mixed assemblages were dominated by sandy (1005 sherds, 10,187g) and grog-tempered (1032 sherds, 14,187g) wares in approximately equal quantities (each representing around 40% by sherd count of the pieces assigned to this period). Vessel forms in both fabrics continued to be dominated by jars, especially the necked, cordoned (Thompson 1982, types

B1-1, B1-3) and bead rim forms (types C1-2, C4, C5-1, C7-3) initiated during the earlier part of the Late Iron Age. Other, less common forms included necked, cordoned bowls (type D2-3), imitation Gallo-Belgic platter (types G1-1, G1-4, G1-6 and G1-7), bowl (type G2-3), cup (type G3-1) and butt beaker (type G5-5 and G5-6) forms as well as a few pedestalled vessels (types A8, F3-4) including a large handled jar from grave 126195 (context 126198), Zone 19 emphasising the increased cross-channel contacts available at this time. All the flint-tempered and sand and fine flint-tempered sherds also belonged within this period, representing further continuations of the Iron Age ceramic traditions; vessel forms include bead rimmed jars and imitation Gallo-Belgic platters, although the majority (296 sherds, 1220g) derived from a single, highly fragmentary but probably more or less complete everted rim jar found in sand and fine flint-tempered ware found in pit 290305 (context 290128) in Zone 23. Sherds from a single Durotrigian-style South-east Dorset Black Burnished ware vessel with a low pedestal base were also found associated with other material of transitional Late Iron Age/Early Roman date in ditch 201079 (context 150093) in Zone 7. Although this vessel is more likely to represent a one-off gift or the personal property of a particularly mobile individual rather than any regular, economically-significant 'trade' between these two areas, its presence is of interest, as these wares are generally not seen in east Kent until after the expansion of the industry around *c.* AD 120 (Pollard 1988, 89).

- 2.3.9 Other early imports included pieces from at least two Campanian black sand amphora found in Zones 12 (ditch 190160, context 137033 and ditch 268001, context 268002), and 20 (pit 250071, context 250072), probably from Dressel 1sp or 2-4 vessels of 1<sup>st</sup> century BC - 1<sup>st</sup> century AD date (Peacock and Williams 1986, classes 3, 4 or 10) as well as Gallo-Belgic (Terra Rubra and Terra Nigra) and Gaulish whiteware vessels. These include two very fine, very white 'pipeclay' collared flagon rims, perhaps from the same vessel and probably of Tiberio-Claudian date from Zone 4 grave 147255 (context 147258) and context 182276) while grave 209118 in Zone 11 contained a suite of vessels belonging within the early decades of the 1<sup>st</sup> century AD. These consisted of a single handled, globular bodied flagon and a butt beaker (Hawkes and Hull 1947, Cam 113) both in fine whiteware fabrics, a Terra Rubra platter (Cam 3) stamped by Vervico (potter no. 139 in the G-B pottery database), a stamped Terra Nigra cup (Cam 56C) and a fragmentary shouldered bowl/jar in grog-tempered ware.

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### 2.3.10 *Imported fine- and other specialist wares*

2.3.11 After the conquest, imported finewares were dominated by samian vessels. Overall, samian represented 4% of all the latest Iron Age/Romano-British sherds in the scanned sample, with the Southern, Central and Eastern Gaulish centres accounting for 12%, 81% and 7% of the sherds. Southern Gaulish vessels, most prevalent in Zones 11 and 20, included form 27, 27g, 33 and 33a cups, form 15/17 and 18 dishes, form 29 and Curle 11 bowls. Two sherds of the 1<sup>st</sup> century AD micaceous Lezoux ware were found in Zone 20 (pit 279028, context 227014) and Zone 21 (enclosure ditch 249051, 279044), while two pieces from Les Martres form 37 bowls were found in Zones 19 (ditch 249047, context 249046) and 20 (pit 228055, context 228056); at this stage both these fabrics have been quantified within the more common Central Gaulish wares. A wider range of forms occurred among this material, predominantly from Lezoux (form 27, 33, 35 and 46 cups, shallow bowls/dishes of Curle 23 and forms 18/31, 18/31R, 31, 31R and 36, form 45 mortaria and bowl forms 37 and 38), mostly of 2<sup>nd</sup> century AD date and including eight more or less complete vessels found as grave offerings in Zones 19 (graves 153060, 166082 and 220099) and 20 (graves 182241, 198300, 215193 and 215199). One of these, a handled beaker of Dechelette form 74 with applied decoration, was in the so-called 'black samian' fabric, and was found alongside a red form 33 cup stamped by Doccius ii (AD 160 – 200; Hartley and Dickinson 2008, 291-293) and a small globular-bodied flask or flagon in a British oxidised ware fabric in grave 215193. The Eastern Gaulish fabrics were mostly from Zone 20; forms included form 27, 33 and 46 cups, shallow bowls/dishes of forms 18/31, 31 (some rouletted), and 36, form 43 and 45 mortaria, bowl forms 37 and 38 and a beaker (form 68) with barbotine decoration. One, a form 27 cup with a very flat, open profile, was found complete in Grave 216094. East Gaulish samian was also scarce at Highstead (Green 2007, 216) and Monkton (Savage 2008, 157).

2.3.12 Overall, 21 of the samian sherds were stamped, although five are too abraded and/or incomplete to be legible. One rosette stamp was noted in the base of a Central Gaulish form 33 cup from Zone 20 (ditch 217122, context 249072) while two mould maker's stamps, both of Cinnamus ii (Hartley and Dickinson 2008, 22-31, die 5b; AD 135 – 180), were noted on Central Gaulish form 37 sherds from Zone 11 (quarry pit 262015, context 143150) and Zone 14 (pit 175086, context 175090). Eleven of the Central Gaulish samian sherds, including four of the complete vessels deposited in graves, also carried post-firing scratched graffiti – six consisted of two or more letters perhaps representing names, the others being X's (three examples) or other abstract marks (two examples). Four vessels showed evidence of repair in antiquity;

body sherds from Central Gaulish forms 18/31 (sunken featured building 249083, context 171214) and 37 (context 209054) both had a post-firing perforations drilled to take a staple or rivet repair. Two other vessels, a complete Central Gaulish form 33 cup stamped by Cerialis ii of Lezoux (AD 136-165; Hartley and Dickinson 2008, 350-53) from grave 220099 and an East Gaulish form 27 cup from pit 134043 (context 134049) had been repaired using a glue-like adhesive probably derived from birch bark tar.

2.3.13 Other pre-Flavian fineware sherds were confined to two small pieces from the base of a Lyon colour-coated ware cup from pit 178371 (context 178375) in Zone 10. In addition to the cup described above, the only other Terra Nigra consisted of a rim from a Cam 16 platter (Zone 19, ditch 159313, context 209085), one of the most common and latest forms to occur in Britain, generally dated to *c.* AD 45-85. The small number of Central Gaulish roughcast colour-coated ware beaker sherds can be dated to the period *c.* AD 60 – 120, whilst those from the Argonne region probably arrived *c.* AD 80 – 135. The Cologne colour-coated wares included a small, complete hunt cup with a cornice rim (grave 182241), probably of Hadrianic to early Antonine date (*c.* AD 120- 150) as well as a rim from a bag-shaped beaker (Zone 20, ditch 159045, context 159046) of slightly later date *c.* AD 150 – 250 (Anderson 1980, 14-15, figs. 7 and 8). Central Gaulish black slipped ware (*c.* AD 150/160 – 200/250) and Moselkeramik (*c.* AD 200 – 300) beaker sherds were also recognised in small quantities.

2.3.14 Overall, amphora accounted for 4% (by sherd count) of the scanned Late Iron Age/Romano-British sherds. Rims, spikes and handles were rare; no stamped sherds were noted. Only the ubiquitous Dressel 20 type, which carried olive oil from southern Spain all over the western provinces from the mid 1<sup>st</sup> to at least the mid 3<sup>rd</sup> century AD, occurred in any quantity. Most of the Dressel 20 sherds were very small compared with the size of a complete vessel but the upper half (albeit missing the rim and with its handles deliberately sawn off) of a single vessel was found in grave 153060 in Zone 19, while 39 pieces from ditch 249250 (context 130302) in Zone 10 may represent tessera manufacturing waste. All the other types were represented by a mere smattering of sherds (Table 2.3) but indicate the presence and use of fish-based products (Cam 186; Peacock and Williams 1986, 123, class 18) and olives (London 555; Davies *et al.* 1994, 16) during the late 1<sup>st</sup> and early/mid 2<sup>nd</sup> century AD. Three of the Cam 186 sherds from waterhole 135095 (context 212028) in Zone 11 exhibited evidence of repair using the same birch-bark tar derived adhesive used on the samian vessels. The principal contents of the furrowed rim amphora remain unknown (Peacock and Williams 1986, 210-11, class 55) but they were probably imported from Normandy during the later 2<sup>nd</sup>

to early 3<sup>rd</sup> century AD. A few examples are known in coastal regions of south-eastern England (Peacock and Williams 1986, 210), with Kentish examples from the Thurnham villa (Booth 2006, 166), Springhead (Seager Smith *et al.* 2011, fig. 1.50, 717) and more locally, at Rich borough (Bushe-Fox 1932, 180, 312), Canterbury and Monkton (Savage 2008, 163, fig. 2/41, 144).

2.3.15 Mortaria, here including all examples from British and Continental sources with the exception of those made in Central and East Gaulish samian wares, were relatively rare, representing only 0.5% (by sherd count) of the scanned assemblage. Imported mortaria included examples of Gilliam form 238 (Group II: AD 65-110) and Bushe-Fox 22-30 (AD 70-150) from the Oise/Somme area of northern Gaul (Hartley 1998, 203). These fabrics occur in moderate quantities in the City of London (Davies *et al.* 1994, 62) and elsewhere in Kent (Pollard 1988, 225; Booth 2006, 166-7). Two sherds from the Massif Central region of France, probably around Vienne/Lyon (Tomber and Dore 1998, 68, CNG OX), dated to between *c.* AD 50 and 80/85, were also identified. A few mortaria in an off-white sandy fabric with abundant quartz trituration grits (Tomber and Dore 1998, 78, RHL WH), also arrived from the Rhineland between *c.* AD 150 – 250.

2.3.16 During the second half of the 1<sup>st</sup> and early 2<sup>nd</sup> century AD, Verulamium-region whiteware mortaria also reached the area. After *c.* AD 130/140, cream-coloured mortaria, here grouped as Canterbury/Kent, were made at various small-scale production centres scattered across the county. Kilns are only known from the Dane John site, Canterbury (Webster *et al.* 1940; Jenkins 1960) but others probably await discovery. These centres made vessels in fabrics and forms very similar to, and easily confused with, those used by the Colchester potters and may represent offshoots of this larger industry (Hartley and Tomber 2006, 81-2 and 97). During the late Roman period, a small number of mortaria were obtained from the Oxfordshire region, and included vessels in whiteware and red colour-coated fabrics (Young 1977, types M10, M17, C97 and C100), but mortaria never represented more than very minor components of the assemblages from these sites.

2.3.17 Only two mortaria stamps were recorded, both feather stamps on vessels of the local Canterbury/Kent group.

#### 2.3.18 *British finewares*

2.3.19 This category consists of an array of relatively high quality, thin-walled vessels predominantly fulfilling roles in the serving and presentation of

foodstuffs and beverages. Overall, they represented 14% of the sherds in the scanned sample.

- 2.3.20 The period from *c.* AD 70 to AD 120/130 witnessed the development of numerous fine ware industries in south-eastern England, those clustered along the north Kent coast (Monaghan 1987) being especially important. Fine grey wares, broadly conforming to Monaghan's (1987 249, 252-3) fabrics S5, S6 and N1-3, were the most prolific, alone accounting for 96% of the British fineware sherds (*c.f.* 70% at Monkton; Savage 2008, 157), although some may have been of more local manufacture. The vast majority of these fine greyware vessels were of very high quality - thin-walled and competently potted, using fine, well-levigated clay without added temper. Beakers predominated – initially, butt and biconical forms (Monaghan 1987, classes 2B and 2G) were favoured with smaller numbers of bead rimmed and globular types (classes 2H and 2I), while ‘poppy-head’ beakers (class 2A) became increasingly common after *c.* AD 120. Other forms included a range of bowls, dishes and platters (*ibid.*, classes 4A, F, G and J, 5B and 7A), narrow-necked flasks (class 1B) and jars (class 3A). As at Monkton, (Savage 2008, 161), biconical beakers (class 2G) and shallow dishes (class 5B), dated to *c.* AD 70 – 130, were the commonest forms. The small number of marbled ware sherds may have originated in the London area, where they are predominantly of Hadrianic date (Davies *et al.* 1994, 122, LOMA). The mica-dusted sherds, also of late 1<sup>st</sup> or 2<sup>nd</sup> century AD date, were all from the base and lower body of an indented beaker, although, given the poor condition of the assemblage, others may well exist, minus their micaceous slip, amongst the unsourced oxidised wares.
- 2.3.21 After AD 150, colour-coated wares were also being obtained from the Nene Valley. Six of the sherds were derived from beakers, including one with barbotine decoration; the seventh was from an upright-necked jar. Late Roman finewares were dominated by the red and brown colour-coated wares from the Oxfordshire region, although their relative paucity (Table 2.3) highlights the lack of Late Roman activity at these sites. Vessels from this region included a complete flagon (Young 1977, 148, type C8; AD 240 – 400) with rouletted bands above and below greatest diameter of the body, and a funnel-necked beaker (*ibid.*, 154, type C29; *c.* AD 340 – 400) with vertical comb-stamping, both from Zone 10 grave 179267. The red colour-coated bowls included of some of the most common and widely distributed types made more or less throughout the life of this industry (*ibid.*, types C45, C47, C48, C49 and C51). Others (e.g. types C52, C75, C81 and C84) are of 4<sup>th</sup> century date, although it is possible that these were purchased elsewhere and brought into Kent as personal possessions, their distribution reflecting the places where the more mobile members of the population lived (Pollard 1988, 143). This may be true

too, of the New Forest colour coated ware beaker (Fulford 1975, 52, type 33), also of 4<sup>th</sup> century AD date, found in grave 176342 in Zone 19. One of the 4<sup>th</sup> century AD Oxfordshire bowls (Young 1977, 166, type C81) found in sunken featured building 249083 (context 205162) in Zone 20 has a small, post-firing perforation indicative of repair with a staple or thong.

### 2.3.22 *Oxidised coarsewares*

2.3.23 The oxidised wares comprise a wide range of pale-fired (white, buff, orange) fabrics, sometimes white-slipped, from various British (North Kent, Verulamium, Oxfordshire), Continental (North Gaul) and unknown sources. Overall, this group accounted for approximately 10% of the scanned sherds, and was dominated by the unsourced catch-all 'Oxidised', 'Whiteware' and 'White-slipped red ware' groups. These fabrics span a wide date range and are characteristically tempered with variable quantities of sand and/or mica. Flagon forms predominated, with collared, pulley-wheel, ring-necked and cup-mouthed variants all being recognised. The diverse range of other forms included upright-necked and everted rim jars, a handled jar with a frilled moulded rim, fine cordoned bowls, bead rimmed bowls, flanged dishes, imitation Gallo-Belgic platters and Cam 113 type butt beakers, but rarely more than one or two examples of each. Unusually, two unsourced oxidised ware pieces with small, pre-firing perforations probably derive from cheese-presses; these were found in sunken featured building 249083 (contexts 171211) and feature 286018 (context 205125) in Zone 20. As a group, the oxidised ware group seems to have been most common during the later 1<sup>st</sup> and 2<sup>nd</sup> centuries AD, and provided a range of medium quality vessels for use in a variety of serving and storage roles.

2.3.24 Local sources probably include both the north Kent (e.g. Monaghan 1987, 253, fabric N4/1s; Davies *et al.* 1994, 38, 40) and Canterbury (Pollard 1995, CAT fabrics R6, R8 and R9) production centres. Small quantities of Verulamium region whiteware also reached the area up to around AD 150 (Davies *et al.* 1994, 41), recognised at Saltwood (Booth 2006, 169) and Monkton (Savage 2008, 158). Part of a Verulamium region tazza was found in Zone 20 (sunken featured building 249085, context 252096), while a complete flagon of Flavian to Hadrianic date (Tyers and Marsh 1978, 549, fig.232, 1B.2) was found in Zone 19 grave 248104. The North Gaulish whitewares (Rigby 1995, 651, fabric WW4; Tomber and Dore 1998, 75, NOG WH 4) also of 1<sup>st</sup> to 2<sup>nd</sup> century AD date, were all from flagons probably produced alongside mortaria at Noyon, Oise and/or closer to the coast in the Pas de Calais, at Bourlon (Hartley 1998, 206). These wares were far more common than on the adjacent Monkton site where only one sherd was noted (Savage 2008, 159, fabric R89).



The Oxfordshire parchment ware sherds both derived from a red-painted bowl, probably of a wall-sided form (Young 1977, type P24), perhaps the most common and widely distributed type made in this fabric. Although made throughout the life of the industry, there is some evidence to suggest that its popularity greatly increased during the 4<sup>th</sup> century AD (ibid., 87). The Hadham oxidised ware sherds derived from two vessels, one with a footed base characteristic of this industry and the other represented by plain body sherds only. Although rare (Pollard 1988, 146), these wares are present in west Kent, where they represent a 4<sup>th</sup> century AD marker; it is unlikely that they would have reached Thanet significantly earlier.

#### 2.3.25 *Other coarsewares*

2.3.26 This group of coarse, unoxidised fabrics formed the bulk of the assemblage - 66% of all the latest Iron Age/Roman sherds (Table 2.3). Vessel forms were predominantly utilitarian, fulfilling a wide variety of food storage, preparation and 'everyday' serving roles, as well as the occasional industrial purpose. Most were products of Kent industries.

2.3.27 In common with other sites in east Kent (Thompson 2007, 189; Savage 2008, 157; Jones 2009, 4), the grog-tempered wares continued to dominate assemblages well into the late 2<sup>nd</sup> or early 3<sup>rd</sup> century AD. Initially, during the 1<sup>st</sup> century AD, and as noted above, these wares were fairly soft and dark-coloured, essentially identical to and firmly rooted within the native 'Belgic' traditions of the area (CAT fabrics B1 and B2). Gradually, during the 2<sup>nd</sup> century AD, these wares became harder fired and more often oxidised (CAT fabrics R1 and R1.2), sometimes with a white slip applied to the upper part of exterior surface, although the Late Roman grog-tempered wares (CAT fabric LR1), introduced during the late 3<sup>rd</sup> century AD, reverted to the darker colours of preceding centuries while remaining hard-fired. These fabrics have been described and discussed by Pollard (1988, 98-99; 1995, 704-705) but as the distinctions remain largely subjective, based on hardness of firing, no consistent attempts were made to quantify them separately at this stage, although some 81% (4438 sherds, 76904g) of the total number of grog-tempered sherds are considered to be of later 1<sup>st</sup> to 4<sup>th</sup> century AD date.

2.3.28 After the conquest and as is normal for east Kent, the grog-tempered vessel forms continued to be dominated by platters (Thompson 1982, types G1-6, G1-7 and G1-11), butt beakers (type G5-6) and smaller numbers of cups (type E1-2), jugs (type G6), bowls (type D1-4) and lids (type L), often made in relatively fine-grained fabrics and copying continental prototypes. However, as at Monkton (Savage 2008, 161) and other parts of east Kent (Pollard 1988, 66), the curvaceous and sometimes elaborately decorated forms of the

'Aylesford-Swarling' tradition (Cunliffe 1978, A:28 and 29) are almost entirely absent. Bead rimmed jars were scarce, the necked, cordoned forms (e.g. types B1-1 and B3-8) being far more numerous during the second half of the 1<sup>st</sup> century AD and lasting into the 2<sup>nd</sup> century AD. Small quantities of 'Belgic' style sandy wares (156 sherds, 17445g) continued to be used during the second half of the 1<sup>st</sup> century AD, but were gradually replaced by the more Romanised sandy greywares. During the later 1<sup>st</sup> and early 2<sup>nd</sup> centuries AD, this catch-all fabric group is likely to include local products such as Thanet silty/sandyware (Savage 2008, 158; CAT fabric B/ER16) and vessels from the Canterbury area (Pollard 1995, CAT fabrics R4, R5, R7) commonly found on sites of Flavian-Trajanic date across east Kent, as well as other as yet unidentified kilns. A small quantity of early Thameside products may also be included in this group although Pollard has noted that this industry had little impact in east Kent until at least the second half of the 2<sup>nd</sup> century AD (Pollard 1988, 96-7). Vessel forms continued to be dominated by jars, especially the upright-necked and various beaded rim types, including some with incised or 'comb-stabbed' decoration, with a smaller range of neckless jars, flanged bowls, dishes, lids (cf Green 2007, figs. 130-133), an occasional 'Atrebatian'-style bowl and a few storage jars.

2.3.29 The North Kent/South Essex shell-tempered wares probably also reached the area prior to mid 2<sup>nd</sup> century AD. Most sherds derive from the large, relatively thin-walled storage jars (e.g. Monaghan 1987, 79-84, classes 3D1 and 3D3) characteristic of this fabric, although at least one bead-rimmed jar (*ibid.*, class 3E1) of small to medium size was also recognised. It is probable that these vessels were traded for their contents rather than in their own right (Davies *et al.* 1994, 102), but they do not appear to have been present at Monkton (Savage 2008, 158-160, table 2/4) or among the published groups from Highstead (Green 2007, tables 17 and 20).

2.3.30 During the 2<sup>nd</sup> century AD, the early Roman grog-tempered forms were gradually replaced by wide-mouthed everted rim bowls/jars (cf. Savage 2008, 181, figs. 2/36-37, nos. 60-70), generally made in the hard, oxidised fabric variants. Large grog-tempered storage jars (Thompson 1982, type C6-1) were made well into the latter part of the 2<sup>nd</sup> century AD if not beyond, and small numbers of shallow dishes were also in use at this time. From around the second quarter of the 2<sup>nd</sup> century AD, the sandy greywares became much more common. Most were derived from the north Kent 'Thameside' industry (Monaghan 1987, 244-48, fabrics S1-3; CAT fabrics R14 and R14.1) but it is probably that a few, more local products are included amongst this group, although the export of Canterbury-region greywares largely seems to have ceased by the mid 2<sup>nd</sup> century AD (Savage 2008, 162). Dishes, mostly plain

roll-rim pie-dishes and shallow, straight-sides forms with plain or grooved rims (Monaghan 1987, classes 5C, 5E and 5F) predominated in these wares, outnumbering the everted rim and 'cooking pot' style jars (classes 3H and 3J) and a small number of S-profile bowls (class 4A2). Other, less common coarseware forms of Middle Roman date included pieces from two possible cheese-presses, one in grog-tempered ware from quarry pit 262015 (context 143155) Zone 11, one in sandy greyware from sunken featured building 249083 (context 171234) in Zone 20. Similar vessels made on the north Kent marshes are dated to *c.* AD 70 – 200 (Monaghan 1987, 164, class 10).

2.3.31 Although the difficulties of dating 3<sup>rd</sup> century assemblages are well-known, the ceramic evidence from the route of the East Kent Access Road clearly indicates a reduction in the level of activity taking place at this time. Overall, only 26 contexts (Zones 10 (5), 12 (3), 19 (1) and 20 (17)) were assigned Late Roman dates, just 3% of the 881 assigned a Latest Iron Age/Romano-British date of any sort. This reduction in activity from around the middle of the 3<sup>rd</sup> century AD, coinciding with the decline of the Thameside pottery industry (Monaghan 1987, 228-30), has been noted widely in Kent (Booth 2006, 192; Green 2007, 216; Savage 2008, 163; Seager Smith *et al.* 2011), although the reasons for it remain unclear. However, the small quantities of late Roman coarsewares from the East Kent Access Road sites indicate the continued use sandy greywares into this period, particularly narrow-mouthed and everted rim jars, shallow, straight-sides dishes with plain or grooved rims and dropped flanged dishes/bowls. Some probably derived from the ailing Thameside kilns while others may be from more local, as yet unidentified sources (e.g. CAT fabrics LR2 and LR5.2) although the presence of a small number of blue-grey sherds characteristic of the Alice Holt production centre on the Surrey/Hampshire border (Lyne and Jefferies 1979) may indicate the infiltration of the east Kent markets at this time. By the late 3<sup>rd</sup> century AD, the three most common and widely traded South-east Dorset Black Burnished ware forms – everted rim jars, shallow, plain-rimmed dishes and dropped flanged bowls/dishes (Seager Smith and Davies 1993, WA types 3, 20 and 25) were also reaching the area. Vessels in the late Romano-British grog-tempered wares (CAT fabric LR1) also imitate, albeit rather poorly, the South-east Dorset Black Burnished ware 'classics', often with facet-burnished or wiped surfaces and lattice or other burnished line decoration. This fabric, together with the few mixed sand, rare fine flint and grog-tempered sherds (all from Zone 20), were probably relatively local responses to the decline of the nucleated pottery industries at this time. Given the rarity of Late Roman activity in Kent, these late ceramic groups are of particular significance.

2.3.32 Relatively little evidence for the re-use or repair of coarseware vessel was encountered, probably due to the poor condition of the sherds themselves. However, one grog-tempered vessel, probably a jar of mid/late 1<sup>st</sup> century date, from grave 147255 in Zone 4, had several larger perforations drilled through its base. Perforations of this sort are more indicative of a change of use and the practice is well-known in Late Iron Age and Roman contexts across southern England. It is traditionally associated with the production of cheese (Harding 1974, 88) although other possible uses may include the draining/straining of solids from liquids in a wide variety of industrial and domestic contexts, as time-pieces or as flower pots (Fulford and Timby 2001, 294). A shallow greyware dish from the same context also had a small, post-firing perforation just beneath the rim, probably indicative of repair with a metal staple. Similar perforations indicative of repair were also noted on grog-tempered vessels from pit 176313 (context 176314, Zone 10), natural feature 252090 (context 252090) in Zone 20 and pit 159047 (context 159048) in Zone 29. One other vessel with evidence of extensive repair using the birch bark tar-derived adhesive is especially notable, because it was chosen to contain the cremated remains of an adult male (grave 279096) in Zone 19. The hard-fired, oxidised fabric and style of this vessel, a flared rim jar with a high, rounded shoulder and incised herringbone bone decoration beneath a shoulder groove, suggest that it belongs within the 2nd or early 3rd centuries AD.

## 2.4 Proposals for further work

1.1.1 Based on the results of this assessment, six priorities for further analysis have been identified. Task 1 is essential.

1. To complete the basic ceramic archive to minimum standards (Darling 1994), the Zone 6 material (74 boxes; *c.* 30,000 sherds, 420kg) must be examined to at least the same 'detailed scan' level as the material from the other zones. The assemblage will be examined in context number order, but, if more detailed analysis is to be undertaken (see task 2 below), information from the on-site Context Finds Records will be used in conjunction with the phasing and stratigraphic analysis to identify large well-stratified feature groups which may warrant further, more detailed analysis (see 2 below). This material will then be extracted and considered in its groups; if warranted, detailed recording will be undertaken at this stage, minimising unnecessary double-handling and repetition. All the samian will be extracted and re-boxed for specialist attention as the feature groups are assembled or as a separate task if no additional analysis is to take place.
2. Fully quantified, fabric and form analysis of sherds representing up to 20% of the overall assemblage by sherd count (*c.* 10500 sherds), from specific feature groups. These key-groups will be chosen on the basis of their size

(at least 50 sherds), their representative nature within more closely-defined chronological periods (refined by C14 determinations where possible, especially within the Iron Age) and with reference to their value within the stratigraphic sequence and site narrative. This analysis, supported by illustrations (up to 250 pieces) will be aimed at describing and extending the independently-dated, earlier prehistoric ceramic sequence into the latter part of the Iron Age and on, into the Roman period, when imported fineware provide more precise dating. The scarce Late Roman groups will also be targeted. It is anticipated that many of the key-groups will derive from Zone 6; of the material assessed to date, only 23 of the later prehistoric features contained more than 50 sherds and fewer still included sufficiently large numbers of chronologically discrete, diagnostic sherds to merit more detailed analysis. However, potential candidates may include hearth 172196 (Zone 1), pit 182246 and ditch 190272 (Zone 4), pit 254114 (Zone 5) and pit 182167 and cobbled surface 287046 (Zone 7). The Latest Iron Age/Romano-British material tended to occur in larger groups, with 37 features (excluding graves, considered separately below) containing at least 80 sherds. These groups are listed in Table 2.4 and may serve as potential candidates for further analysis, depending on their stratigraphic integrity.

3. Full, quantified specialist analysis of the all the samian, including decorated pieces and stamps, from Zones 6 and 20 as well as any other pieces present within the key-groups from other zones, aimed at the characterisation of the material and further refinement of the dating of the two largest settlements. Stamps and decorated pieces will be illustrated using rubbings. In total, 454 pieces (6496g) were recovered from Zone 20; the quantity from Zone 6 is not yet known but based on the proportion of samian within the scanned Late Iron Age/Romano-British assemblage (4% by sherd count), somewhere in the region of 1300 sherds may be expected.
4. All items deliberately included in burials as offerings, personal possessions or containers for the cremated remains will be described and, where appropriate, linked with well-known published corpora (e.g. Young 1977; Thompson 1982; Monaghan 1987) and other nearby assemblages (e.g. Thompson 2007; Green 2007; Savage 2008; Jones 2009) for inclusion in the overall grave catalogue. This assessment has identified 71 ceramic vessels used in this way; a handful more may be present amongst the material from Zone 6. All the grave goods will be illustrated. No further analysis is proposed for any other sherds accidentally incorporated into the fillings of graves but, where appropriate, the results of the scan will be included in the structural and/or ceramic reports.
5. The six samian sherds with scratched graffiti consisted of two or more letters perhaps representing names, will be submitted to Dr Roger Tomlin (Wolfson College, University of Oxford) for reading and detailed reporting. Three of these vessels were found in graves and the names or other words may therefore be of special relevance to the buried individuals and/or their mourners

6. Analysis and integration of all the later prehistoric and Romano-British pottery data, including the specialist contributions; compilation of a publication report characterising and describing the changing nature of the ceramic assemblage through time and in its local, regional, national and international setting, evidence for function, social status, local production versus trade and exchange. Base-line data concerning the composition of the assemblages by chronological period will be drawn from the results of the overall scan, supported by more detailed information and illustrations from the key-groups and specialist contributions

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### **3 POST-ROMAN POTTERY** *BY JOHN COTTER*

#### **3.1 Introduction**

3.1.1 A total of 1655 sherds of post-Roman pottery weighing 27.821 kg were recovered from 20 of the 29 zones identified from the road scheme (plus one unattributable context listed here as U/S). This includes a very wide chronological range of material from early Anglo-Saxon through to high medieval and a small amount of post-medieval material. All the pottery was examined and spot-dated during the present assessment stage. For each context the total pottery sherd count and weight were recorded on an Excel spreadsheet, followed by the context spot-date which is the date-bracket during which the latest pottery types in the context are estimated to have been produced or were in general circulation. Comments on the presence of datable types were also recorded, usually with mention of vessel form (jugs, bowls etc.) and any other attributes worthy of note (eg. decoration etc.). Fabric codes referred to in the comments field are those of the Kent fabric type series housed at Canterbury Archaeological Trust (Saxon: Macpherson-Grant 1995; medieval: Cotter 2001; 2006). Pottery derived from sieved samples (usually very small sherds) was briefly scanned but only recorded if no other hand-excavated pottery from the context existed, or if it contained something of significance.

#### **3.2 Date and nature of the assemblage**

3.2.1 The pottery is generally in a fresh though fragmentary condition but with many large sherds present and little evidence of redeposition and wear. Only one 7<sup>th</sup>-8<sup>th</sup> century imported Merovingian vessel (from a grave) has survived absolutely complete but a virtually complete 8<sup>th</sup>-9<sup>th</sup> century Ipswich ware pitcher also survives as well as many other reconstructible vessel profiles of Saxon and medieval date. At the other extreme there are a few instances where individual Saxon vessels in soft crumbly fabrics have been crushed into dozens of small sherds. The nature of the assemblage is predominantly domestic in character with food preparation (evidenced by sooting), the serving of liquids, and probably storage likely to have been the main functions represented. A single cresset (oil) lamp was identified in the early medieval assemblage. No vessels of obvious industrial function (eg. crucibles) were identified. Three near-complete vessels - including two imported Merovingian vessels - were recovered from Anglo-Saxon graves and had therefore taken on a ritual significance.

3.2.2 In terms of dating the periods best represented in the assemblage here include the early to mid Saxon period (*c* 450-850). Material of the early Saxon period (*c* 450-650) is probably present but difficult to identify with certainty as the coarse local fabrics (mainly organic-tempered ware) are long-lived and continue into the mid Saxon period. Characteristic early Saxon material – including decorated vessels and fine sandy ware fabrics typical of 5<sup>th</sup>-6<sup>th</sup> assemblages in east Kent – are rare here and suggest these centuries are not well-represented in the present assemblage. If one includes the few imported Merovingian vessels (mainly *c* 575-750) within the traditional mid Saxon date-bracket (*c* 650-850) then this is the main Anglo-Saxon period represented in the collection. A small number of contexts from Zone 17 are probably of late Saxon date (*c* 850-1050). In terms of quantity however the early medieval period (*c* 1050-1225) is the best represented (mainly Zones 1 and 3). The high medieval period (*c* 1225-1400) is also quite well represented and there is a small quantity of late medieval material (*c* 1400-1550). Material of the post-medieval period (here *c* 1550-2000) is only sparsely represented and this mainly comprises a few sherds of post-medieval red earthenwares, and a small number of ‘Victorian’ sherds. Although the types of pottery recovered are typical of east Kent, and Thanet in particular, the chronological range of these types and the relatively high number of regional and Continental imports identified from a single archaeological project – coupled with a generally good state of preservation – make this an interesting and significant assemblage which will undoubtedly add to our knowledge post-Roman ceramics from this historically important corner of Kent.

### 3.3 Chronological and spatial summary

3.3.1 Table 3.1 summarises the quantity of pottery from each of the twenty zones that produced pottery. These have been grouped by the three main landscape units defined in the Research Design. The comments field provides abbreviated date ranges (see below for key) and comments on the most significant items.

**Table 3.1: Quantities of post-Roman pottery from the road scheme arranged by zone and landscape** (abbreviations: ESAX - early Saxon, MSAX mid Saxon, LSAX - late Saxon, EMED early medieval, HMED high medieval, LMED - late medieval, PMED - post-medieval)

Landscape	Zone	No. Sherds	Weight	Date range and comments
Chalk Ridge	10	119	1994	ESAX, mainly MSAX incl min 4 Merovingian imports plus local copy
Chalk Ridge	11	68	710	ESAX, MSAX incl poss Merovingian vessels, some EMED
Chalk Ridge	17	36	654	Possibly all LSAX incl imported Frankish sherd
Chalk Ridge	18	8	123	EMED
Chalk Ridge	19	218	1721	MSAX incl 2 Merovingian vessels - 1 complete. EMED
Chalk Ridge	21	7	44	HMED, PMED incl 19C
Chalk Ridge	22	17	155	EMED, HMED, PMED incl 19C
Chalk Ridge	23	20	251	EMED, HMED, PMED incl 19C
<b>Total</b>		<b>493</b>	<b>5652</b>	
Pegwell Spur	12	3	186	MSAX incl Ipswich ware, LMED
Pegwell Spur	14	144	5970	ESAX? Mainly MSAX - lots Ipswich ware incl complete spouted pitcher
Pegwell Spur	15	2	27	MSAX
Pegwell Spur	26	1	6	LMED
Pegwell Spur	29	13	382	PMED - 19/20C
<b>Total</b>		<b>163</b>	<b>6571</b>	
Ebsfleet Pen	1	242	2069	1x ESAX? Mainly EMED & HMED, some LMED & PMED
Ebsfleet Pen	2	126	3032	HMED
Ebsfleet Pen	3	592	10016	1x ESAX? Mainly EMED incl a few N. French imports
Ebsfleet Pen	4	8	96	HMED, LMED, PMED
Ebsfleet Pen	5	21	311	LMED
Ebsfleet Pen	6	2	22	EMED
Ebsfleet Pen	9	7	46	ESAX, EMED, HMED
<b>Total</b>		<b>998</b>	<b>15592</b>	
Unattributed	U/S	1	6	PMED
<b>Total</b>		<b>1</b>	<b>6</b>	
<b>Subtotal</b>		<b>1655</b>	<b>27821</b>	

3.3.2 Coincidentally, Table 3.1 appears to show a correlation between the three landscape units and the three main chronological groupings seen in the post-Roman pottery assemblage. This can be summarised as follows. The Chalk ridge unit correlates with the early-to-mid Saxon assemblage (*c* 450-850) and significantly includes all seven examples of 7<sup>th</sup>-8<sup>th</sup> century Merovingian vessels imported from North France plus other possible examples. The imported vessels provide a 7<sup>th</sup>-8<sup>th</sup> century dating emphasis for most of the assemblage here (specifically *c* 575-750) – since the local coarsewares are harder to date with accuracy. The seven definite Merovingian vessels come from two graves on Zone 19 and from a ditch backfill and a Saxon hut on

Zone 10. The Pegwell Bay Spur unit correlates with a mainly mid Saxon assemblage from a series of shell-rich pits dated by the presence of Ipswich ware to the 8th-9th century (specifically *c* 720-850). Finally, the Ebbsfleet Peninsula – which produce the bulk of pottery from the scheme – correlates with a mainly early medieval assemblage dating to *c* 1050-1225 and also with a modest assemblage of high medieval material of 13<sup>th</sup>-14<sup>th</sup> century date. Pottery from the latter unit came mainly from ditches and pits. These broad correlations might suggest that different landscape areas were exploited at different times during the post-Roman period – the 11<sup>th</sup>-14<sup>th</sup> century dating emphasis on the Ebbsfleet Peninsula, for example, might reflect the reclamation and occupation of new land exposed by the receding Wantsum Channel, which separated the Isle of Thanet from the mainland until around the 13th century. These suggestions should be researched in more depth at the analysis and reporting stage.

3.3.3 The vast bulk of pottery supplying Thanet during the post-Roman period was, until the 19<sup>th</sup> century, relatively locally produced. Although a full list of every pottery type present on the scheme is not provided here (but can be obtained from the spot-dates spreadsheet) the main types, or traditions and their significance is summarised here. Anglo-Saxon wares and imports local to the Canterbury area are discussed in detail elsewhere (Macpherson-Grant 1995). Definite Early Saxon (5th-6th century) material is rare from the scheme here but some fine sandy sherds may be of this date. The commonest local Anglo-Saxon type from the scheme is organic-tempered ware (EMS4) and its relatives. This long-lived and fairly crude handmade type is difficult to date closely. Elsewhere in southern England it is dated from *c* 450 onwards but in Canterbury, and perhaps most of east Kent, the dating is thought to be from *c* 575-800. The emergence of a distinct ‘Canterbury sandy ware’ tradition from *c* 750 represented by Canterbury Mid-Saxon sandyware (MLS2) caused the demise of organic-tempered wares. Over time the Canterbury sandy ware tradition – represented in its last few centuries by the Tyler Hill ware industry (located 1.5 miles north-west of Canterbury) – gave rise to a series of fabrics or wares that supplied the whole of east Kent from *c* 750 to *c* 1525. The whole range of these is represented from the road scheme here – mostly present in the form of jar/cooking pots. MLS2 (*c* 750-850) is common from Zone 14. Late Saxon sandy ware (LS1 *c* 850-1050) is uncommon here but there may be some 10th/early 11th-century vessels from Zone 17. The commonest type is Early Medieval Canterbury sandy ware (EM1 *c* 1050-1225) present as large cooking pots - particularly from Zones 1 and 3. Tyler Hill ware (M1 *c* 1225-1400) is also common and includes glazed and decorated jugs as well as cooking pots. A few Late medieval products of this industry are also present

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(LM1 *c* 1375-1525). The post-medieval assemblage from the scheme is very small and relatively insignificant.

3.3.4 Against this background of local wares east Kent's long coastline gave it access to imported pottery from the Continent and from few regional English sources. Imports, however, were only relatively common on the coast and Thanet's insular (and later peninsular) nature and proximity to the Continent exposed it to a higher share of imports than most other areas of Kent. Most significant here are a class of high quality wheel-thrown vessels produced during the Merovingian period in North France/Flanders during the period *c* 575-750. These are often in the form of biconical bowls or jars, or tall bottles, and are often bear rouletted decoration. Most examples are in a various grey sandy fabrics but some are oxidised orange-red. Evison (1979) has made a detailed study of this class of vessel and demonstrated that they are rarely found in English contexts except in Anglo-Saxon cemeteries in east Kent where they are relatively common – and in Thanet in particular. Although some examples are known from domestic contexts, Evison has suggested that they may have been used as accessories (and perhaps status symbols) for the consumption of imported French wine - hence their inclusion as valued grave goods. At least seven such vessels have been identified from the scheme here – one example from a grave is absolutely complete and in perfect condition (Grave F153084, Zone 19). Other examples are nearly complete or reconstructible. As well as their obvious cultural implications these (and most imported types) provide important dating for the contexts they occur in and for the poorly-dated local pottery types with which they are associated.

3.3.5 Next in significance is the regional import known as Ipswich ware. This, the first wheel-turned pottery made in England since the Roman period, was made at Ipswich (Suffolk) during the period *c* 720-850. It is present here in the form of a virtually complete spouted pitcher (ctx 202039), and several jars/cooking pots. Ipswich ware, a grey sandy ware, is very rare in Kent except from excavations in Canterbury and from Minster in Sheppey – both locations with Saxon royal connections and early minsters. Small numbers of Ipswich sherds are found at other scattered locations along the coast of north Kent and as far south as Dover and Folkestone. The 61 sherds (perhaps 15-20 vessels) identified from the scheme here – all from pits in Zone 14 – represent the third largest concentration of Ipswich ware sherds from Kent after Canterbury and Minster. Their presence here in Zone 14 (near Cliffs End), in a series of pits full of shellfish, will require some explanation but strongly suggests this location was of some importance during this period – perhaps as some kind of trading entrepot under the aegis of the nearby early monastic settlement at Minster-in-Thanet? Again this imported pottery type lends closer dating to

local coarseware types (including sandy MLS2 and a collection of mid-Saxon shelly fabrics). A smaller collection of late Saxon and mainly 12th-century north French/Flemish greywares, and a few sherds of 11th-12th century red-painted whitewares (probably from Beauvais in north-west France) are also represented in the small late Saxon and much larger early medieval assemblages from Zones 1 and 3 in particular. A type of fine shellyware (LS4) occurs as large cooking pots with distinctive tall flaring rims. These probably come from north France/Flanders and are fairly common in the assemblage here – as they are from nearby Dover where a mainly 11th-12th century dating is evident (Cotter 2006). Local shellywares (EM2, EM3) also occur and a range of flint-tempered wares (EM33, EM29) from south-west Kent and possibly Sussex also occurs as a minor element here. A few sherds of decorated London-type ware sherds (c 1175-1350) and a jug rim in ‘Aardenburg-type-ware’ (M14 c 1250-1350) represent the latest medieval imports in the assemblage.

### 3.4 Summary and recommendations

- 3.4.1 It is recommended that a full detailed catalogue should be made of the entire assemblage with the material from each context divided into fabrics and also recorded by vessel form and sub-part (eg. rim, base, etc.). The assemblage should be quantified by sherd count, weight and Estimated Vessel Equivalents (EVEs – a measure of surviving rim circumference). The Kent fabric type series housed at Canterbury Archaeological Trust should be consulted to ascertain the correct fabric codes for some of the rarer Anglo-Saxon local and imported wares including the Merovingian and Frankish greywares and the early medieval North French/Flemish grey sandy wares. It is also recommended that a few samples of the imported mid Saxon Merovingian vessels should be scientifically analysed and compared both to each other and to samples of problematic ?Roman/Merovingian greywares from the scheme which cannot be distinguished by eye as the latter are from undecorated vessels. These could also be compared (by ICPS) to the database of imported greywares established by the late Alan Vince to see if the source of the Merovingian vessels can be determined with any more accuracy. The chronological and spatial distribution of vessels from the road scheme should be investigated in more detail – preliminary indications suggest that there may be a chrono-spatial relationship between the three main landscape types identified from the scheme and the three main chronological groupings seen in the post-Roman pottery assemblage. If so, this would be of considerable interest and relevance to the over-arching themes of People (represented by the pots they used) and Place as highlighted in the Research Design. The identification of several imported 7<sup>th</sup>-8<sup>th</sup> century Merovingian vessels – a class

of vessel almost exclusive to east Kent and to Thanet in particular – again underlines the uniqueness of the Isle of Thanet and its proximity to the Continent. The significance and role of these vessels, both in domestic contexts (sunken huts) and in ritual contexts (as grave goods), should be re-examined from a number of angles including their role as possible status symbols and the evidence they provide for the continuity of Pagan Anglo-Saxon burial practices into the early Christian period following the arrival of St Augustine on Thanet in AD 597.

3.4.2 Following on from data analysis and background research a reasonably detailed publication report should be prepared. The theme and structure of this – whether mainly by zone (spatial) or period (chronological) will be decided on the basis of consultation with the project manager, in line with other artefact reports. Discrete assemblages of pottery from Anglo-Saxon huts, graves or groups of related pits will be treated in some detail. Other assemblages could be reported on in a more summary fashion. A selection of vessels should be illustrated (up to c 60 items) to represent most of the zones and chronological periods on the scheme from Anglo-Saxon to late medieval.

Task
Full detailed catalogue
Consult Canterbury Arch. Trust medieval pottery reference collection
Review site data, and general library research
Data analysis
Report writing and checking
Illustration catalogue
Drawings briefs/liaison/checking
Illustration (60 items)
Vessel Reconstruction
Scientific analysis of pottery samples*

\*It is recommended that samples of the imported mid Saxon Merovingian vessels should be analysed and compared to samples of problematic ?Roman/Merovingian greywares from the scheme which cannot be distinguished by eye. This will take the form of thin-sections and chemical analysis by Inducto-Coupled Plasma Spectroscopy (ICPS) which chemically ‘fingerprints’ differing clay sources. About 12 samples could be analysed in this way, organised by Ben Jervis of Southampton University.

### 3.5 Bibliography

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## 4 COINS BY NICHOLAS COOKE AND DAVID HOLMAN

### 4.1 Introduction

4.1.1 Some 242 coins and tokens were recovered from the excavations along the length of the East Kent Access Road, both during excavation and as part of a controlled metal detecting exercise during the preliminary surveys. This assessment is structured to provide a general introduction to the assemblage recovered, a description of the coins recovered from each of the archaeological zones into which the route is divided, and a summary of the significance and potential of each different assemblage. For the purposes of this assessment, the route has been split into groups of zones, to allow assemblages from archaeological sites which extend beyond a single zone to be considered together. These groups comprise:

Zones 1 – 3  
Zones 4 – 8  
Zones 9 – 12  
Zones 13 – 14  
Zones 17 – 19  
Zones 20 – 23

4.1.2 The bulk of the assemblage from the East Kent Access Road are struck in copper alloy (179 coins and tokens), with smaller numbers of potin (43 coins), silver (18 coins) and gold (2 coins). One of the copper alloy coins recovered, Object 2171, an *antoninianus* of Postumus, appears to have been silvered, whilst a second (Object 4398) appears to have been plated in gold.

4.1.3 In general, the assemblage is in reasonable condition, with the majority of coins and tokens identifiable to period. Some post-depositional corrosion is evident on a number of coins, notably the potin coins, but in general, the assemblage shows little sign of serious corrosion. Many of the coins also show signs of pre-depositional wear. The coins recovered range in date from the Late Iron Age through to the 20<sup>th</sup> century, and the majority are likely to represent accidental losses, although a small hoard of Roman coins was identified in Zone 7.

4.1.4 The assemblage is not equally distributed along the route. By far the largest group of coins comes from Zones 4 – 8, and Zone 6 in particular, whilst some zones contained no coins at all. Many zones, however, contain assemblages dominated by post—medieval and modern coinage, much of it found through the systematic use of metal detectors.

## 4.2 Zones 1 – 3

4.2.1 The coin assemblage from these areas is small (10 coins, see Table 4.1.) and largely comprises a collection of post-medieval and modern coins, mostly found unstratified. However, a copper issue of the House of Valentinian (Object 988013) and a silver farthing of Edward I (Object 998012) point to some earlier activity. The latter, recovered from Zone 1, may relate to the phase of medieval activity identified on the site.

**Table 4.1. Coins: Zones 1 – 3**

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
998012		Zone 1	AR Farthing	Edward I - Long cross with 3 pellets in each quadrant. CIVI TAS	AD 1280 -1281	North 1975, 1053/1
998013		Zone 1	AE coin	Illegible. V corroded coin, prob C18 or C19 in date	Post-medieval	-
991011		Zone 1	AE Half Penny	Victoria – Half penny	AD 1900	Seaby 1989, 3962
992046		Zone 1	AE Penny	George V- Penny	AD 1930	Seaby, 1989, 4055
998009		Zone 1	AE Florin	Elizabeth II – Florin	AD 1957	Seaby 1989 4146
992053		Zone 1	AE Penny	Elizabeth II – New penny	AD 1971	Seaby, 1989, 4240
988013		Zone 2	AE 3	House of Valentinian – Gloria Romanorum type	AD 364 - 378	As LRBC II,78
993012		Zone 2	AE Half Penny	George III – Reverse illegible	AD 1770 - 1775	
998015		Zone 2	AE Penny	George V – Penny	AD 1915	Seaby 1989, 4051
4652	172056	Zone 3	AE Penny	George VI – Penny	AD 1940	

## 4.3 Zones 4 – 8

4.3.1 The bulk of the coins recovered from the site came from Zones 4 – 8 (see Table 4.2).

### *Zones 4 and 5*

4.3.2 Only a small number of coins (6 in all) were recovered from Zone 4, with none at all recovered from Zone 5. The coins from Zone 4 comprise an Iron Age potin coin, two coins of the Roman period, a post-medieval token and coin and a modern half penny. Such a small assemblage can tell us little about the site, although clearly the Iron Age and Roman coins may point to activity peripheral to the settlement on Zone 6.

4.3.3 In contrast, some 136 coins were recovered from Zone 6. These range in date from the Iron Age to the modern period, with the majority Late Iron Age or Roman in date.

### *Late Iron Age coins from Zone 6*

4.3.4 The 43 coins from Zone 6 consist mainly of potin coins (35) and are thus early in date, with a range of *c.*150 – *c.*50 BC. The earliest are those of the prolific Kentish Primary Series, very common in East Kent and which were already well represented at Ebbsfleet from earlier metal-detector finds (Holman 2005). There are possibly 10 of these from the EKA excavations although the coins are yet to be cleaned and some revisions to the provisional list can be expected, e.g. the possibility of a Gaulish coin among them. The presence of

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these coins in some quantity confirms activity here in the mid-late 2<sup>nd</sup> century BC.

- 4.3.5 There are 20 of the subsequent Flat Linear I coins, again with the earliest falling within the late 2<sup>nd</sup> century BC. Insufficient detail was noted during an initial trawl through the coins, but it was seen that coins from both early (Allen D/C) and late (Allen L) in the series are present, attesting to continued activity in the first half of the 1<sup>st</sup> century BC. A further Flat Linear I potin was recovered from the adjacent Zone 7 and probably also relates to this site. That no coins from the middle part of the series are present on first impression is not unexpected as this seems to be a common feature of the distribution of Flat Linear I in East Kent. Curiously, both of the Flat Linear I hoards found on Thanet (Holman forthcoming) contain a large proportion of the middle phase coins which are generally absent from the site finds, the reasons for which are currently unclear.
- 4.3.6 No Flat Linear II potins are present but this is only to be expected, only one coin of this type having been recorded from Thanet. The type is scarce in East Kent generally with the exception of the major sites at Canterbury and Folkestone and, to a rather lesser extent, Goodnestone (Holman 2005).
- 4.3.7 Potin coins are very much in the majority, much more so than has previously been noted at Ebbsfleet. The possibility that coins shown by the metal detector users contain an element of bias away from the potins can be considered, many of the potins recorded from here being in a very poor condition as a result of soil conditions and agricultural activity. Perhaps some of the worst ones were not thought worthy of recording by their finders but this is only supposition, although it seems the most likely reason for the disparity in the distributions.
- 4.3.8 The struck coins from the EKA excavations (8 from Zone 6) display a high proportion of gold, with three coins of this metal, one of which is a plated core. A gold ¼ stater of Gallo-Belgic B type is early, probably contemporary with the Kentish Primary and possibly the earliest Flat Linear potins. At the other end of the sequence, and probably the latest IA coin from the site, perhaps dating from *c.* AD 25/30, is a stater of Cunobelin, a rare find in East Kent. It has been noted previously (Holman 2005) that the IA coin distribution at Ebbsfleet ends at this time and the latest issues, e.g. those of Amminius and the late issues of Cunobelin, are again absent. A reduction in site activity shortly before the Roman invasion may perhaps be inferred.

- 4.3.9 The struck bronzes are of types which are typically found in the surrounding area and date from the later 1<sup>st</sup> century BC – early 1<sup>st</sup> century AD. The single silver coin was illegible at the time of viewing and awaits cleaning.
- 4.3.10 A reassessment of Flat Linear potin typology and classification is currently in progress (Holman forthcoming) but for the purposes of this report, the current classification system most often used (Allen 1971) is adopted, with modifications where considered necessary.

*Roman coins from Zone 6.*

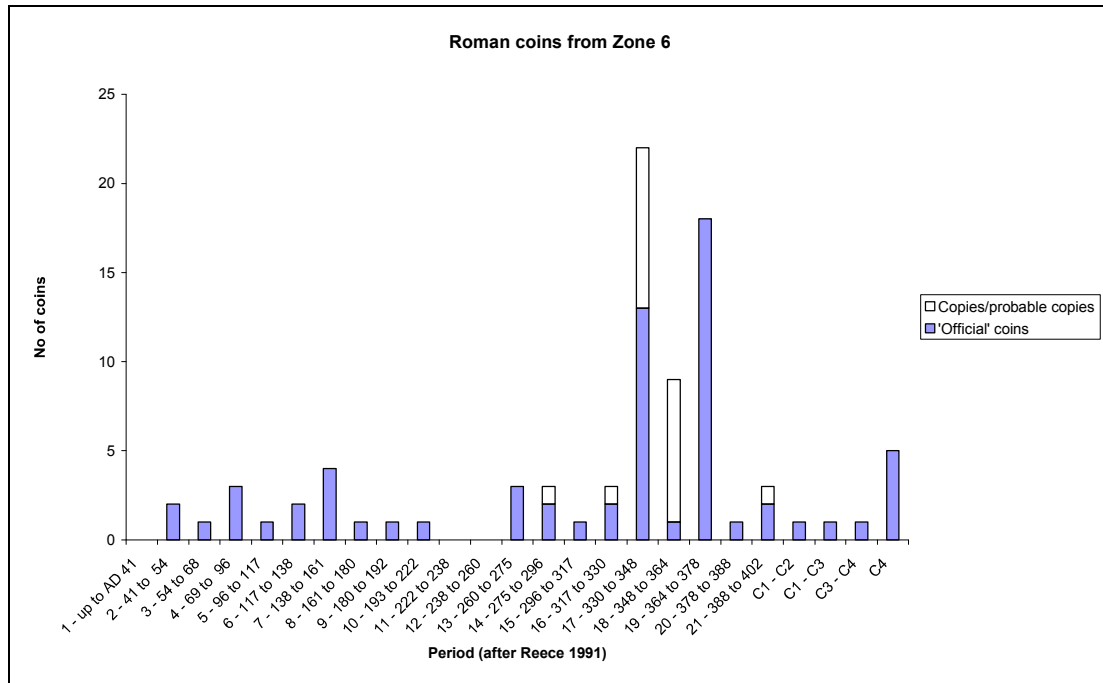
- 4.3.11 Eighty-seven of the coins from the site date to the Roman period. These are largely small denomination copper alloy issues ranging in date from the 1<sup>st</sup> century AD through to the late 4<sup>th</sup> century AD, although three silver *denarii* (Object 321 of Vespasian, Object 3237 of Trajan and Object 4651 of Elagabalus) were also recovered. All but eight of the Roman coins from the site could be identified to period (see Figure 4.1)
- 4.3.12 The earliest coins from the site comprise two coins of Claudius, struck between AD 41 and 54. Combined with a single coin of Nero (Period 3) and three Flavian coins (Period 4), these suggest activity and coin use on the site in the second half of the 1<sup>st</sup> century AD. In particular the presence of a *denarius* of Vespasian hints at coin use in the late 1<sup>st</sup> century AD. *Denarii* were regularly withdrawn from circulation as part of devaluations of the coinage, and although the *denarius* of Vespasian post-dates the major devaluation during the reign of Nero, it unlikely to have remained in circulation much beyond the subsequent devaluation under Trajan. Small numbers of coins of the 2<sup>nd</sup> century AD (periods 5 to 10) point to continued coin use on the site at this time. Indeed, it is likely that low level coin use continued throughout the 3<sup>rd</sup> century AD – periods 11 and 12 saw only low levels of coins supplied to Britain, and these are rare as site finds.
- 4.3.13 The coinage system established by Augustus, with the gold *aureus*, silver *denarius* and small copper alloy denominations (the *sestertius*, *dupondius*, *as* and *quadrans*) lasted with relatively little change until c. AD 238, when the first major change saw the replacement of the *denarius* with the *antoninianus*. During this time, little effort seems to have been made to withdraw bronze coinage from circulation and re-issue new coinage. As a result of this bronze coins remained in circulation for considerable periods of time after they were struck, making them relatively poor dating tools. Much more effort was made to maintain Imperial control over bullion coinage, however, and *denarii* are unlikely to have remained in circulation for considerable periods of time, especially given the numerous devaluations of the silver coinage from the 1<sup>st</sup>

century AD onwards. We cannot be certain the ratio at which silver coinage circulated comparative to bronze, especially as this is likely to have varied over time, and coin loss may not necessarily accurately reflect coin use on a site. However, three *denarii* were recovered from the 16 coins struck before AD 238, a ratio of 1 silver coin to every 4.33 bronze coins, a ratio which compares favourably to sites such as the CTRL excavations at Springhead (1: 5.63 coins – see Cooke forthcoming) and Richborough (1 to 5.77 coins – see Walker 1988, 284). Whilst this proportion is no doubt influenced by the small size of the early assemblage from the site at Zone 6, it seems reasonable to suggest that coins were used and circulated in proportions similar to other sites in Kent.

- 4.3.14 The dearth of coins in periods 13 and 14 is, however, surprising. Many British sites have significant peaks of coin loss in these periods, in which the omnipresent *antoninianus* and its numerous ‘barbarous’ copies seem to have circulated and been lost in great numbers. It is somewhat of a surprise then, to note that only six *antoniniani* were recovered from the site and that only one is likely to be a copy. At the nearby fort at Richborough, some 8858 coins of periods 13 and 14 were recovered, part of an overall assemblage of 50,767 coins (some 174 coins per thousand, compared to 75 per thousand from the Zone 6 assemblage). Indeed, the average period 13 and 14 assemblage from 140 sites published by Reece (1991) was some 280 coins per thousand. This strongly suggests that there was a marked drop in coin use on the site in this period, perhaps representing a hiatus of activity.
- 4.3.15 Following this, however, there is solid evidence for coin use and loss on the site from the early 4<sup>th</sup> century AD onwards. The presence of period 15 and 16 coins, generally less common as site finds than coins of the later 4<sup>th</sup> century, clearly indicates coin use in the first two decades of the 4<sup>th</sup> century AD. The peaks of coin loss in periods 17 (AD 330 – 348) and 19 (AD 364 – 378) are much as expected, although the quantity of period 18 coins (the bulk of which comprise copies of ‘Fallen Horseman’ Fel Temp Reparatio issues) is higher than might be expected. The coins of periods 20 and 21 confirm that coins were in use on the site well into the late 4<sup>th</sup> century AD, and in all probability, into the 5<sup>th</sup>.
- 4.3.16 Although the assemblage of Roman coins from Zone 6 is not a particularly large one, it can perhaps tell us something about the use of Roman coinage on the site. The coins of the 1<sup>st</sup> to 3<sup>rd</sup> centuries suggest that coins were in use on the site from the Flavian period onwards, and, apart from a period in the late 3<sup>rd</sup> century AD when coin use declined or stopped altogether, continued until the early 5<sup>th</sup> century AD. The number of coins recovered however, is relatively

small compared to the size of the site, and may indicate that coin use on the site was at a relatively low level.

Figure 4.1. Roman coins from Zone 6



### *Post-Roman coins from Zone 6*

4.3.17 The remaining six coins from the site form an undistinguished group, comprising a silver short cross penny of Henry II, modern coins of Edward VII and George V and three illegible coins, all too badly damaged, worn or corroded to be identified to period.

### *Zone 7*

4.3.18 Thirteen coins were recovered from Zone 7: one Iron Age coin, seven Roman coins and a group of five post-medieval and modern coins. The earliest is a potin coin, probably a Flat Linear I issue of the late 2<sup>nd</sup> or 1<sup>st</sup> century BC.

4.3.19 The small assemblage of Roman coins from the site is dominated by a small hoard of silver denarii. This comprised five coins, ranging in date from a very worn issue of Vespasian (Object 2730, AD 69 – 79) through to one of Antoninus Pius (Object 2723, minted AD 155 – 156). Two of these coins, Objects 2722, a *denarius* of Marcus Aurelius as Caesar minted in AD 146 to 147 and a *denarius* of Nerva, minted in AD 97 were corroded together. The fifth coin, (Object 2724) was minted by the emperor Trajan, in AD 101-2.

There can be little doubt that these form a small hoard, collected and deposited in the second half of the 2<sup>nd</sup> century AD, probably shortly after the latest coin was minted in AD 155 – 156. Although the degree of wear on a coin is not an infallible indication of the time it spent in circulation, the heavy wear recorded on the issue of Vespasian is consistent with the suggested deposition date. With the exception of this coin, the coins showed relatively little evidence of wear, although traces of post-depositional corrosion were recorded. The remaining Roman coins from the site comprise a *sestertius* of Hadrian and a damaged 4<sup>th</sup> century *nummus*.

4.3.20 The small group of post-medieval and modern coins recovered include a copper farthing of Charles II and coins of Edward VII and Queen Victoria.

4.3.21 The dearth of coins recovered from Zone 7 is perhaps surprising given the proximity to the settlement on zone 6, even more so when the hoard is discounted. The hoard itself is likely to have been deposited in the second half of the 2<sup>nd</sup> century AD. The remaining coins probably represent casual losses, and can tell us little about coin use and loss on the site.

### Zone 8

4.3.22 The three coins recovered from the site comprise two coins of Queen Victoria and a half penny of Elizabeth II. All of these are likely to be casual losses.

**Table 4.2. Coins: Zones 4 – 8**

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
3529	280140	Zone 4	Potin coin	Kentish Primary Series	Late C2 - C1 BC	
3503	172144	Zone 4	AE	Unknown As/Dupondius	C1 – C3	
3509	190213	Zone 4	AE 3	Valens - Securitas Reipublicae type.	AD 364 - 378	As LRBC II, 82
990016		Zone 4	AE Jeton/Token	Badly corroded jeton or token	Med/Post-med	
989044		Zone 4	AE Half Penny	William III – Half penny	AD 1695 - 1698	Seaby 1989, 3554
4008	172144	Zone 4	AE Half Penny	Edward VII – Half penny	AD 1910	Seaby 1991, 3991
697	130012	Zone 6	AV Quarter	Gallo Belgic BA 2	C1 BC	Van Arsdell 35
2943	130012	Zone 6	AV stater	Cunobelin – corn/horse	Early C1 AD	Van Arsdell 1931
4321	130012	Zone 6	AR unit	Illegible	C1 BC-C1 AD	
309	130010	Zone 6	Potin coin	Corroded potin coin, probably of the Kentish Primary Series	Late C2 - C1BC	
313	130010	Zone 6	Potin coin	Corroded potin coin	Late C2 - C1BC	
338	130009	Zone 6	Potin coin	Potin coin, with raised face on both obverse and reverse.	Late C2 - C1BC	
354	133023	Zone 6	Potin coin	Potin coin - Flat linear I	Late C2 - C1BC	
603	130010	Zone 6	Potin coin	Potin coin - uncertain type	Late C2 - C1BC	
626	130012	Zone 6	Potin coin	Potin coin - Flat linear I	Late C2 - C1BC	Allen L
686	130012	Zone 6	Potin coin	Potin coin - Flat Linear I?	Late C2 - C1BC	
2113	130012	Zone 6	Potin coin	Potin coin. Flat linear I?	Late C2 - C1BC	
2134	130012	Zone 6	Potin coin	Potin coin - Flat Linear I?	Late C2 - C1BC	
2177	130012	Zone 6	Potin coin	Potin coin - Flat Linear I? Incomplete flan - only c 60% present	Late C2 - C1BC	
2929	156220	Zone 6	Potin coin	Potin coin - Flat Linear I?	Late C2 - C1BC	
2990	170010	Zone 6	Potin coin	Potin coin. Flat Linear I?	Late C2 - C1BC	
3235	170002	Zone 6	Potin coin	Potin coin - Kentish Primary series ?	Late C2 - C1BC	
3238	310006	Zone 6	Potin coin	Potin coin, uncertain type	Late C2 - C1BC	
3250	310010	Zone 6	Potin coin	Potin coin - Kentish Primary Series?	Late C2 - C1BC	
3303	130012	Zone 6	Potin coin	Potin coin - Flat Linear I	Late C2 - C1BC	Allen C-D
3304	130012	Zone 6	Potin coin	Potin coin - uncertain type	Late C2 - C1BC	
3305	130012	Zone 6	Potin coin	Potin coin - Kentish primary Series	Late C2 - C1BC	
3318	130012	Zone 6	Potin coin	Potin coin - Kentish Primary Series?	Late C2 - C1BC	
3348	130012	Zone 6	Potin coin	Potin coin - Kentish Primary Series?	Late C2 - C1BC	
3349	130012	Zone 6	Potin coin	Potin coin. Flat Linear I	Late C2 - C1BC	
3351	130012	Zone 6	Potin coin	Potin coin - uncertain type	Late C2 - C1BC	

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
3352	130012	Zone 6	Potin coin	Potin coin - Flat Linear I. Only half survives	Late C2 - C1BC	Allen J - L
3358	130012	Zone 6	Potin coin	Potin coin - uncertain	Late C2 - C1BC	
3875	130012	Zone 6	Potin coin	Potin coin - Flat Linear I?	Late C2 - C1BC	
3902	130244	Zone 6	Potin coin	Potin coin - Kentish Primary Series?	Late C2 - C1BC	
3928	298153	Zone 6	Potin coin	Potin coin - Flat Linear I. damaged flan - c 60% survives	Late C2 - C1BC	Allen L
3961	190254	Zone 6	Potin coin	Potin coin - Flat Linear I	Late C2 - C1BC	Allen L
3964	144158	Zone 6	Potin coin	Potin coin - Flat linear I? Broken. 2 pieces present, probably c 60%	Late C2 - C1BC	
3972	153131	Zone 6	Potin coin	Potin coin - Flat Linear I	Late C2 - C1BC	
3977	239227	Zone 6	Potin coin	Appears to be a fragment (c. 40%) or a badly corroded potin.	Late C2 - C1BC	
4639	172303	Zone 6	Potin coin	Potin coin - Flat Linear I	Late C2 - C1BC	
4649	264243	Zone 6	Potin coin	Potin coin - Kentish Primary Series	Late C2 - C1BC	
4770	182305	Zone 6	Potin coin	Potin coin - Flat Linear I	Late C2 - C1BC	
8409	289045	Zone 6	Potin coin	Kentish Flat Linear I - incomplete. Only c. 40% present	Late C2 - C1BC	
308	130010	Zone 6	AE unit	Coin of Dubnovellaunos	c. 50 BC - AD 43	Van Arsdell 166
337	130009	Zone 6	AE unit	Coin of Epillus.	c. 50 BC - AD 50	Van Arsdell 450
3369	130012	Zone 6	AE unit	Coin Cunobelin	C1 BC	Van Arsdell 1973
4398	170010	Zone 6	AE unit (AV)	Unknown issuer	C1 BC - C1 AD	
990143	194163	Zone 6	AE unit	Unknown issuer	C1 BC	
2114	130012	Zone 6	AE As	Claudius - Minerva r with shield	AD 41 - 54	RIC I, 100
3316	130012	Zone 6	AE As	Claudius - reverse illegible	AD 41 - 54	
912	182031	Zone 6	AE	Nero - uncertain reverse	AD 54 - 68	
321	130010	Zone 6	AR denarius	Vespasian - PON MAX (TRP) COS VI Pax reverse	AD 75	RIC II, Vespasian, 90
346	130012	Zone 6	AE As	Domitian - Spes advancing l holding flower.	AD 77 - 78	RIC II, Vespasian, 791a
990111	185148	Zone 6	AE As	Vespasian - Eagle on globe	AD 72	RIC II, Vespasian, 1202
3237	130012	Zone 6	AR denarius	Trajan - Trajan's column. COS VI PP SPQR	AD 114 - 117	RIC II, Trajan, 307
3324	130012	Zone 6	AE sestertius	Hadrian - uncertain reverse	AD 117 - 138	
3248	310002	Zone 6	AE sestertius	Hadrian - uncertain reverse	AD 117 - 138	
629	130012	Zone 6	AE dupondius	Antoninus Pius - TR POT COS II.	AD 139	RIC III Antoninus Pius,
2160	269063	Zone 6	AE dupondius	Antoninus Pius - LIBERTAS COS IIII	AD 154 - 155	RIC III, Antoninus Pius,
2965	305020	Zone 6	AE sestertius	Faustina II - uncertain reverse	AD 145 - 161	
3909	130012	Zone 6	AE sestertius	Faustina I - Aeternitas reverse	AD 141 - 145 ish	RIC III, Marcus Aurelius,
328	130009	Zone 6	AE sestertius	Marcus Aurelius - uncertain reverse	AD 161 - 180	
3321	130012	Zone 6	AE sestertius	Commodus - Minerva reverse	AD 189	RIC III, Commodus,
4651	130012	Zone 6	AR denarius	Elagabalus - PM TR P IIII COS III P P	AD 221	RIC IV, Elagabalus, 43
622	130012	Zone 6	AE Antoninianus	Claudius II Gothicus - Divo Claudio	AD 270 - 273	RIC V, Part a, Claudius
2171	170002	Zone 6	AE Antoninianus	Postumus - Galley (Laetitia Aug)	AD 259 - 268	RIC V, Part II, Postumus
2172	170002	Zone 6	AE Antoninianus	Postumus - uncertain reverse	AD 259 - 268	
2146	130012	Zone 6	AE Antoninianus	Radiate antoninianus. Possibly Carausius/Allectus	AD 270 - 296	
3302	130012	Zone 6	AE Antoninianus	Radiate copy - from Pax?	AD 270 - 296	
3370	130012	Zone 6	AE Antoninianus	Allectus - uncertain reverse	AD 293 - 296	
998020		Zone 6	AE 3	Constantine I - Soli Invicto Comiti	AD 307 - 317	Variant on RIC VI,
3322	130012	Zone 6	AE 3	Constantine I - Beata Tranquillitas	AD 321	RIC VII, Trier, 303
3325	130012	Zone 6	AE 3	Constantine I - VICTORIAELATAEPRINCP type	AD 318 - 321	
990148	130012	Zone 6	AE 3	Crispus - Iovi Conservatori type	AD 321 - 324	RIC VII, Cyzicus, 17
302	130010	Zone 6	AE 4	House of Constantine - Gloria Exercitus 1 standard	AD 335 - 345	? Copy as LRBC I, 87
345	130012	Zone 6	AE 3	Constantine II - Gloria Exercitus 2 standards	AD 331	LRBC I, 187
348	130010	Zone 6	AE 4	Constantine II - Gloria Exercitus 1 standard	AD 330 - 345	? Copy as LRBC I, 88
352	130012	Zone 6	AE 3	Constans - Gloria Exercitus 1 standard	AD 339	LRBC I, 133
682	130012	Zone 6	AE 3	House of Constantine - Gloria Exercitus 1 standard	AD 335 - 345	Copy as LRBC I, 87
683	130012	Zone 6	AE 3	House of Constantine - Urbs Roma	AD 330 - 335	As LRBC I, 51
2151	130012	Zone 6	AE 3	House of Constantine - Constantinopolis	AD 330 - 335	
2176	130010	Zone 6	AE 4	House of Constantine - Gloria Exercitus 1 standard	AD 330 - 335	Copy as LRBC I, 87
2896	130010	Zone 6	AE 3	House of Constantine - Gloria Exercitus 1 standard	AD 335 - 345	? Copy as LRBC I, 87
3306	130012	Zone 6	AE 3	Constans - Victoriaeddaugqnn type	AD 341 - 348	LRBC I, 158
3307	130012	Zone 6	AE 3	House of Constantine - Urbs Roma	AD 330	LRBC I, 51
3320	130012	Zone 6	AE 3	House of Constantine - Urbs Roma	AD 334	LRBC I, 205
3323	130012	Zone 6	AE 4	Constantine II - Gloria Exercitus 2 standards	AD 330 - 345	
3328	130012	Zone 6	AE 3	House of Constantine - Constantinopolis	AD 330 - 335	As LRC I, 52
3330	130012	Zone 6	AE 3	House of Constantine - Urbs Roma	AD 330 - 335	LRBC I, 195
3876	130012	Zone 6	AE 3	House of Constantine - Constantinopolis	AD 330 - 335	As LRBC II, 52
3877	130012	Zone 6	AE 3	Constantine II - Gloria Exercitus 2 standards	AD 330 - 335	LRBC II, 198
4312	130012	Zone 6	AE 4	Constans - Gloria Exercitus 2 standards	AD 333 - 345	
4640	130012	Zone 6	AE 3	House of Constantine - Gloria Exercitus 2 standards	AD 330 - 335	As LRBC I, 72
4683	170002	Zone 6	AE 3	Constantine II - Gloria Exercitus 1 standard	AD 335 - 340	As LRBC I, 88
4759	310016	Zone 6	AE 3	Constans - Victoriaeddaugqnn type	AD 342	LRBC I, 137
990140	278162	Zone 6	AE 3	Constantine I - Gloria Exercitus	AD 330 - 345	Copy as LRBC I, 60
344	130012	Zone 6	AE 4	House of Constantine - fallen horseman type	AD 350 - 360	Copy as LRBC II, 25
347	130008	Zone 6	AE 4	House of Constantine - Victoriaeddnnaugetae type	AD 350 - 360	? Copy as LRBC II, 5
618	130012	Zone 6	AE 3	Constantianus II - FEL TEMP REPARATIO. fallen horseman type	AD 350 - 360	? Copy as LRBC II, 201
684	130012	Zone 6	AE 4	House of Constantine - fallen horseman type	AD 350 - 360	Copy as LRBC II, 25
2175	130010	Zone 6	AE 3	House of Constantine - fallen horseman type	AD 350 - 360	? Copy as LRBC II, 25
2179	130012	Zone 6	AE 4	House of Constantine - fallen horseman type	AD 350 - 360	Copy as LRBC II, 25
3252	310017	Zone 6	AE 3	Constans - Phoenix on pyre	AD 348 - 350	As LRBC II, 33
3874	130012	Zone 6	AE 4	House of Constantine - fallen horseman type	AD 350 - 360	Copy as LRBC II, 25
998045		Zone 6	AE 3	House of Constantine - fallen horseman type	AD 350 - 360	Copy as LRBC II, 25
324	130010	Zone 6	AE4	Gratian - Wreath containing VOT/XV/MVLT/XX	AD 378 - 383	LRBC II, 377
331	130010	Zone 6	AE 3	Valentinian I - Gloria Romanorum type	AD 364 - 375	LRBC II, 350
332	130010	Zone 6	AE 3	Gratian - Gloria Novi Saeculi type	AD 367 - 375	As LRBC II, 499
336	130009	Zone 6	AE 3	House of Valentinian - Securitas Reipublicae type	AD 364 - 378	As LRBC II, 82



Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
339	130009	Zone 6	AE 3	Valens - Securitas Reipublicae type	AD 367 - 375	LRBC II, 306
343	130010	Zone 6	AE 3	House of Valentinian – Gloria Romanorum type	AD 364 - 378	As LRBC II, 78
645	130012	Zone 6	AE 3	Valens - Securitas Reipublicae type	AD 364 - 378	As LRBC II, 86
676	130010	Zone 6	AE 3	Valens - - Securitas Reipublicae type	AD 364 - 378	As LRBC II, 86
677	130010	Zone 6	AE 3	Valens - Securitas Reipublicae type	AD 364 - 378	LRBC II, 513
2109	130012	Zone 6	AE 3	Valentinian I - Securitas Reipublicae type	AD 367 - 375	LRBC II, 1430
2137	130010	Zone 6	AE 3	Gratian- Gloria Novi Saeculi type	AD 367 - 375	As LRBC II, 517
3246	310012	Zone 6	AE 3	Valens - Securitas Reipublicae type	AD 367 - 378	LRBC II, 528
3298	130012	Zone 6	AE 3	Valentinian I – Gloria Romanorum type	AD 364 - 375	As LRBC II, 279
3300	130012	Zone 6	AE 3	Valens - Securitas Reipublicae type	AD 364 - 378	As LRBC II, 502
990110	247237	Zone 6	AE 3	Valens – Gloria Romanorum type	AD 367 - 375	LRBC II, 348
990139	170056	Zone 6	AE 3	House of Valentinian - Securitas Reipublicae type	AD 364 - 378	As LRBC II, 82
992008		Zone 6	AE 3	House of Valentinian - Securitas Reipublicae type	AD 364 - 378	As LRBC II, 82
994002		Zone 6	AE 3	Valens - Securitas Reipublicae type	AD 375	LRBC II, 528
999001		Zone 6	AE 4	Gratian - Wreath containing VOT/XV/MVLT/XX	AD 378 - 383	LRBC II, 377
2150	130012	Zone 6	AE 4	Arcadius – Victoria Auggg type	AD 388 - 402	As LRBC II, 566
3295	130012	Zone 6	AE 4	House of Theodosius – Victoria Auggg type	AD 388 - 402	As LRBC II, 162
991002		Zone 6	AE 4	House of Theodosius – Virtus Exerciti type	AD 393 - 402	Copy as LRBC II, 175
997007		Zone 6	AE sestertius	Illegible	C1 - C2	
678	130012	Zone 6	AE sestertius	Illegible	C1 - C3	
2895	130010	Zone 6	AE 3	Illegible	C3 - C4	
3362	130012	Zone 6	AE 4	Illegible	C4	
2173	130010	Zone 6	AE 4	Illegible	C4	
3256	310008	Zone 6	AE 4	Illegible	C4	
681	130012	Zone 6	AE 4	Illegible	C4	
3301	130012	Zone 6	AE 4	Illegible	C4	
3202	305032	Zone 6	AR Penny	Henry II – short cross penny	AD 1180 - 1189	North, 1994, 962
992007		Zone 6	AR Six Pence	Edward VII Six pence	AD 1902	Seaby 1989, 3983
992001		Zone 6	AE Penny	George V - one penny	AD 1917	Seaby 1989, 4051
990142	145309	Zone 6	AE 4	Blank - possibly a coin blank or small weight		
4769	297114	Zone 6	? coin	Illegible. Small fragment of copper, may be a frag of coin.		
990133	185148	Zone 6	coin	Illegible		
2721	201078	Zone 7	Potin coin	Potin coin - Flat Linear I	Late C2 - C1BC	Allen L
2730	201078	Zone 7	AR denarius	Vespasian - uncertain	AD 69 - 79	-
2739	201078	Zone 7	AR denarius	Nerva - FORTVNA AVGVST type	AD 97	RIC II, Nerva, 16
2724	201078	Zone 7	AR denarius	Trajan – Hercules PM TRP COS IIII PP type	AD 101 - 102	RIC II, Trajan, 49
2725	201078	Zone 7	AE Sestertius	Hadrian – Uncertain reverse	AD 117 - 138	-
2722	201078	Zone 7	AR denarius	Marcus Aurelius – Spes I TR POT COS II type.	AD 146 - 147	RIC III, Antoninus Pius,
2723	201078	Zone 7	AR denarius	Antoninus Pius – Salus I TR POT XIX COS IIII type	AD 155 - 156	RIC III, Antoninus Pius,
992030		Zone 7	AE 4	? fallen horseman copy – fragment only	C4	
991013		Zone 7	AE Farthing	Charles I – crown/rose	AD 1625 - 1649	As Seaby 1989, 3201
988004		Zone 7	AE Penny	Victoria – Penny	AD 1865	Seaby 1989, 3954
992029		Zone 7	AE Half Penny	George VI – Half Penny	AD 1945	Seaby 1989, 4115
992037		Zone 7	AE Half Penny	George VI – Half Penny	AD 1943	Seaby 1989, 4115
998019		Zone 7	AE coin	Illegible	-	-
995015		Zone 8	AE Half Penny	Victoria – Half Penny	AD 1861	Seaby 1989, 8956
995013		Zone 8	AE Half Penny	Victoria – Half Penny	AD 1899	Seaby 1989, 3962
995014		Zone 8	AE Half Penny	Elizabeth II – Half Penny	AD 1973	Seaby, 1989, 4250

#### 4.4 Zones 9 – 12

4.4.1 No coins were recovered from Zone 9, although some 23 coins were recovered from Zones 10, 11 and 12 (see Table 4.3).

##### *Zone 10*

4.4.2 Twelve coins were recovered from Zone 10. Three of these are Roman coins, although only one, an As of Titus (Object 4213) could be identified to period. The two post-medieval coins include a Rose/Orb jeton from Nuremburg, struck by Hans Krauwinkel II. Jetons were reckoning counters used in medieval accounting and mathematical calculations. They were used in conjunction with checkerboards or cloths in order to record values and sums of money. Specialist tokens for this purpose were produced from the late 13th

century onwards, and they were in widespread use from the 14th century until the late 17th century, when they were made redundant by the increasing spread of Arabic numerals. Nuremberg took over from Tournai as the main European centre for jeton manufacture in the 16th century. Prior to this, designs on jetons usually reflected those on contemporary coins, and jetons were often minted under government authority. The only controls on the minting at Nuremberg were those imposed by the Guild organisation, and new designs flourished. Hans Krauwinckel II was Guild Master in Nuremberg between AD 1586 and 1635. The remaining coins are all modern losses, and include a 5 centimes piece of Napoleon III (Object 986044) as well as several British coins of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries.

### *Zone 11*

4.4.3 A small mixed group of coins were recovered from Zone 11. Two of these are Late Iron Age potins, presumably relating to Iron Age activity on the site. The single quartered silver penny of Aethelred may have been struck in Rochester, where the names of several moneyers contain the letters EA- recorded on the reverse, although there are also candidates at several other mints. The fourth coin from the site is a modern penny of George V.

### *Zone 12.*

4.4.4 The coins from Zone 12 comprise two Roman coins – a sestertius of Marcus Aurelius (Object 1) and a Gloria Exercitus issue of the House of Constantine (Object 993051) – a Nuremberg jeton, two post-medieval coins or tokens and a modern penny of Edward VII. The Roman coins presumably relate to Roman activity on the site, but there is little that this assemblage can tell us about the site as a whole.

**Table 4.3. Coins: Zones 9 - 12**

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
4213	239280	Zone	AE As	Titus - reverse uncertain	AD 79 - 81	-
986137	249175	Zone	As/Dupondius	Unknown. Worn smooth. Only half present	C1 - C3	-
986145	249175	Zone	AE 4	Unknown. Probably a C4 copy	C4	-
986126	249175	Zone	Jeton	Hans Krauwinckel II – Rose/Orb jeton	AD 1586-1635	-
986119	249175	Zone	AE coin	Illegible. Heavily corroded post-medieval coin	Post-medieval	-
986044		Zone	AE 5 centimes	Napoleon III. 5 centimes	AD 1854	-
988028		Zone	AE Half groat	Victoria. Half groat	AD 1896	Seaby 1989, 3962
990085		Zone	AE Half Penny	Edward VII Half penny	AD 1901 -	Seaby, 1989, 3991
986122	249175	Zone	AE Penny	George V – Penny	AD 1936	-
986125	249175	Zone	AE Half Penny	George VI – Half penny	AD 1948	-
990048		Zone	AE Florin	Elizabeth II florin	AD 1962	Seaby 1989, 4146
990089		Zone	AE Penny	Elizabeth II Penny	AD 1967	Seaby 1989, 4157
421	165004	Zone	Potin coin	Worn potin, probably a Flat Linear I typ	Late Iron Age	Allen C - D
993043		Zone	Potin coin	Potin - Kentish Primary Series?	Late Iron Age	
989043		Zone	AR Penny	Aethelred II Penny. Moneyer begins with AE-. Quartered	c.AD997-1003	North, 1994, 770
992061		Zone	AE Penny	George V - Penny	AD 1930	Seaby 1989, 4055
1	126015	Zone	AE sestertius	Marcus Aurelius – Salus I SALVTI AVG COSIII	AD 168 - 169	RIC III, Marcus
993051		Zone	AE 4	House of Constantine – Gloria Exercitus 2 standards	AD 335 - 345	Copy as LRBC I, 87
992083		Zone	AE Jeton	Nuremberg jeton	C16 - C17	-
989011		Zone	AE Token	Uncertain design. Very worn	C17 - C18	-

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
989013		Zone	AE coin	Illegible	Post-medieval	-
998101	998101	Zone	AE penny	Edward VII - penny	AD 1905	Seaby 1989, 3990

#### 4.5 Zones 13 – 16

4.5.1 Only a small number of coins were recovered from the excavations in Zones 13 – 14, and none from Zones 15 or 16 (see Table 4.4). The assemblages from these sites are mixed, and can tell us little about coin use or loss, which is perhaps surprising given the presence of Romano-British settlement remains in this area.

##### *Zone 13*

4.5.2 Two coins came from the site – an Iron Age potin, probably of the Kentish Primary Series (Object 538) and a half penny of George III.

##### *Zone 14*

4.5.3 The four coins from the site comprise an illegible Roman coin, probably struck in the 4<sup>th</sup> century AD, a quartered short cross penny of King John (Object 985001) and two modern coins, one of which is illegible.

**Table 4.4. Coins: Zones 13 - 14**

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
538	243014	Zone	Potin coin	Potin coin - Kentish Primary Series?	late C2 - C1	
983014		Zone	AE Half Penny	George III – Half Penny	AD 1806 - 7	Seaby 1989, 3781
1570	184002	Zone	AE 3	Illegible	C4	
985001		Zone	AR Penny	John – short cross penny, Quartered	AD 1209 -1217	North, 1994, 974/1
983009		Zone	AE Half Penny	Illegible	C18 - C19	
985045		Zone	AE Penny	Victoria - Penny	AD 1861	Seaby 1989, 3954

#### 4.6 Zones 17 – 19

4.6.1 No coins were recovered from Zone 17. Elements of the small assemblage recovered from Zones 18 and 19 relate to the Romano-British and Saxon activity on the sites (Table 4.5).

##### *Zone 18*

4.6.2 A single Late Iron Age potin was recovered from the site (Object 991040). Another Iron Age coin, a struck bronze unit of the 1<sup>st</sup> century BC (Object 1206), was also recovered from Zone 18/19.

##### *Zone 19*

4.6.3 Two further Late Iron Age coins were recovered from Zone 19 – a potin (Object 990069) and a struck bronze (Object 998120). This group of four coins from Zones 18/19 must relate to Late Iron Age activity in the area in the

late 2<sup>nd</sup> and 1<sup>st</sup> centuries BC. The presence of three illegible early Roman coins from Zone 19 suggests that there may be continuity into the early Roman period, although none is well dated. A single late Roman coin, a Fel Temp Reparatio of the late 340s AD was also recovered from the site (Object 990082).

4.6.4 The single Saxon sceatta from the site was recovered from a Saxon grave, and was clearly deposited as a grave good (Object 2017). It is of a type (Series B), dated to the late 7<sup>th</sup> to very early 8<sup>th</sup> century AD, which is often represented in grave finds. The remaining six coins from the site are either illegible post-medieval or modern issues.

**Table 4.5. Coins: Zones 17 - 19**

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
991040		Zone	Potin coin	Potin coin - Flat Linear I type?	late C2 - C1	-
1206	153105	Z 18/19	AE unit	Geometric pattern? / Stylised bird	C1 BC	-
990069		Zone	Potin coin	Potin coin - Kentish Primary Series?	Late C2 - C1	-
998120		Zone	AE unit	Bust l/stylised animal ? continental	Late Iron Age	-
990052		Zone	AE	Uncertain	C1 - C2	-
1218	126095	Zone	AE	Illegible	C1 - C3	-
4750	153032	Zone	AE As	Uncertain	C1 - C3	-
990082		Zone	AE 3	House of Constantine - Phoenix on globe. Fel Temp Reparatio	AD 348 - 350	As LRBC II, 42
2017	136113	Zone	AR sceatta	Bust r. / Bird atop a cross. Secondary series - Series B'	AD 680 - 710	North, 1994, 126
988019		Zone	AE coin	Illegible	Post-medieval	-
990068		Zone	AE coin	Illegible	Post-medieval	-
990081		Zone	AE Half Penny	Illegible	Post-medieval	-
990061		Zone	AE Farthing	Victoria - farthing	AD 1860 -	Seaby 1989, 3958
990055		Zone	AR Shilling	George V - Shilling	AD 1922	Seaby 1989, 4023
990070		Zone	AE Farthing	George V - Farthing	AD 1925	Seaby, 1989, 4060

## 4.7 Zones 20 – 24

4.7.1 Coins were recovered from all five of these zones, with the majority from Zones 20 and 21 (see Table 4.6)

### *Zone 20*

4.7.2 Eleven coins were recovered from this zone. The earliest of these was a Late Iron Age potin coin (Object 3908), probably of the Flat Linear I series and dated to the late 2<sup>nd</sup> century or 1<sup>st</sup> century BC. There were also four late Roman coins recovered from this area, ranging in date from *c.* AD 270 (Objects 1900 and 3794) through to *c.* AD 345 (Object 991060). These probably reflect coin use associated with the Romano-British sunken-feature buildings on the site. The rest of the assemblage from Zone 20 comprises five coins and a token dated to the post-medieval and modern periods.

### *Zone 21*

4.7.3 Four further Late Roman coins were recovered from Zone 21. These are all late Roman in date, and are likely to be part of the same assemblage as those recovered from Zone 20, although three of these coins were too corroded to be

identified to period. The fourth is of a type struck by emperors of the House of Constantine between AD 350 and 353.

- 4.7.4 The remaining nine coins from the site comprise a single Nuremburg jeton (Object 995073), struck by Guild master Hans Krauwinckel II (master AD 1586 – 1635), seven post-medieval and modern coins (including a 1937 American one cent piece - Object 988189)

### *Zone 22*

- 4.7.5 A single illegible post-medieval coin was recovered from Zone 22.

### *Zone 23*

- 4.7.6 The four coins recovered from Zone 23 were a ‘Sarmatia Devicta’ issue of Constantine I struck in AD 323 – 4 (Object 992184), a ‘Short Cross’ silver penny of Henry III struck in AD 1216 – 7 by a Moneyer called Hiun, in Canterbury (Object 990150), a Half penny of George III and an extremely worn silver flan of uncertain date.

### *Zone 24*

- 4.7.7 An illegible coin from Zone 24 is thought likely to be post-medieval in date, based upon the form and dimensions of the flan.

**Table 4.6. Coins: Zones 20 - 24**

Object	Context	Zone	Type	Issuer / type	Issue Date	Reference
3908	126254	Zone	Potin coin	Potin coin. ? Flat Linear I. Damaged flan - probably c 80% present	Late C2 - C1 BC	-
1900	251015	Zone	AE Antoninianus	Postumus – uncertain reverse	AD 259 - 268	-
3794	249020	Zone	AE Antoninianus	Radiate copy. Small irregular flan	AD 270 - 296	-
3787	249020	Zone	AE 3	Uncertain - Virtus Exercit type	AD 318 - 324	-
991060		Zone	AE 3	House of Constantine - – Gloria Exercitus 2 standards	AD 330 - 345	? Copy as LRBC II, 48
991070		Zone	AE Token	Corroded C17 token	C17	-
991051		Zone	AE coin	Illegible	Post-medieval	-
998163		Zone	AE Token	Bust I, VICTORIA REGINA - TO HANOVER. 1837 below	AD 1837	-
3793	249020	Zone	AE Half Penny	Victoria - Half Penny	AD 1887	Seaby 1989, 3956
991069		Zone	AE coin	Illegible	Unknown	-
7759	171221	Zone	AE coin	Illegible	Unknown	-
998193		Zone	AE 3	House of Constantine - Victoriadnnauggetcae type	AD 350 - 353	As LRBC II, 5
992144		Zone	AE 3	Illegible	C3 - C4	-
988046		Zone	AE 4	Illegible	C4	-
992197		Zone	AE 4	Illegible	C4	-
995073		Zone	AE Jeton	Hans Krauwinckel II - Imperial orb GOTES SEGEN MACHT	AD 1586-1635	Cf. Mitchiner. 1571-
983025		Zone	AE Half Penny	Extremely worn C18 half penny	C18	-
995058		Zone	AE Farthing	Victoria - Farthing	AD 1838-1860	Seaby 1989, 3950
998190		Zone	AE Half Penny	Victoria - Half Penny	AD 1837-1901	-
995055		Zone	AR Six Pence	George V - Six Pence	AD 1928	Seaby 1989, 4040
995060		Zone	AE Penny	George V - Penny	AD 1935	Seaby 1989, 4055
988189		Zone	AE one cent	United States of America – One cent 1937	AD 1937	-
990107		Zone	AE Half Penny	George VI - Half Penny	AD 1943	Seaby 1989, 4115
991066		Zone	AE coin	Illegible	Unknown	-
992157		Zone	AE coin	Illegible	Post-medieval	-
992184		Zone	AE 3	Constantine I - Sarmatia Devicta type	AD 323 - 324	RIC VII, Trier, 435
990150		Zone	AR Penny	Henry III – Short Cross penny	AD 1216 - 7	North, 1994, 976/1
998249		Zone	AE Half Penny	George II - Half Penny	AD 1729-1739	Seaby 1989, 3720
998248		Zone	AR coin	Illegible – worn smooth	Unknown	-
992174		Zone	AE coin	Illegible	Post-medieval	-

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## 4.8 Potential and recommendations

- 4.8.1 Assessment of the assemblage of coins recovered from the excavations on the East Kent Access Road has not only provided evidence related to the archaeological features and deposits along the route but has also demonstrated that in some cases there is potential for the further analysis of assemblages to provide important evidence for the nature of activity on specific sites.
- 4.8.2 A total of 52 Iron Age coins were recovered during the course of the excavations, the majority (43) from the area of a previously known site at Ebbsfleet, which had already produced a significant number of Iron Age coins (Holman 2005). The excavation of a portion of this site, and the coin assemblage from it, provide important evidence for coin use and loss on a Late Iron Age domestic settlement in East Kent. Analysis of the range of Iron Age coins from this site has the potential to shed light on the date range of the settlement, changes in coin use and also trade links and exchange networks with the continent. It also provides an opportunity for a re-assessment of the previously published group of coins from the site.
- 4.8.3 Although only smaller numbers of Iron Age coins were recovered from the other sites along the route, these can provide some information on coin use in the wider landscape, and in some cases, may be linked to more dispersed settlements or associated activity.
- 4.8.4 The Roman coin assemblage is also dominated by the coins recovered from Zone 6. The assessment suggests that Roman coins were probably being used on the site as early as the Flavian period, and possibly before. Following this, there appears to have been low level coin loss on the site well into the 3<sup>rd</sup> century AD. An unusual and interesting hiatus of activity in the mid to late 3<sup>rd</sup> century AD appears to have been followed by a resurgence of coin use early in the 4<sup>th</sup> century AD, with coin loss continuing throughout the 4<sup>th</sup> century, and in all probability into the 5<sup>th</sup>. Detailed analysis of this assemblage in conjunction with an analysis of the stratigraphy and the other finds from the site may further our understanding of the chronological history of the site, and in particular the apparent hiatus of coin loss in the late 3<sup>rd</sup> century AD.
- 4.8.5 A small dispersed hoard of silver coins, probably deposited early in the second half of the 2<sup>nd</sup> century AD, was recovered from Zone 7.
- 4.8.6 As with the Iron Age coins, small quantities of Roman coins were recovered from a number of other sites along the route, often in association with Roman settlement activity and even burials. These have the potential to inform us of coin use and loss in peripheral areas, and provide an important contrast to the larger assemblages.

- 4.8.7 Only a small number of Saxon and medieval coins were recovered from the site. Whilst these can provide us with broad dates for features and deposits, and allow some comparison with other sites in the area, the small size of the assemblage means that the potential for further analysis is limited. The same is true of the small number of jetons recovered from the excavations.
- 4.8.8 A moderately large assemblage of post-medieval and modern coins was recovered from the excavations. Most of these were found unstratified, their number undoubtedly swelled by the systematic use of metal detectors. They can tell us little about the archaeology of the area, although there are one or two interesting coins – notably the 1937 American one cent piece and the 5 centimes piece of Napoleon III.
- 4.8.9 It is proposed that analysis largely concentrate on the assemblages of Late Iron Age, Roman, Saxon and medieval coins, and that the post-medieval and modern coins be summarised only in publication. This analysis should aim to understand the history of coin use and loss on the site, trade with the continent in the Iron Age, the evidence for hoarding of coins in the Roman period and to examine local, regional and national comparanda for this assemblage.

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## 5 METALWORK BY GRACE JONES

5.1.1 A wide range of metal objects was recovered from the route of the East Kent Access Road, ranging from Late Bronze Age hoard material to modern fixtures and fittings. The assemblage is dominated by ironwork (3027 objects), with smaller quantities of copper alloy (429 objects), gold (8 objects), silver (12 objects) and lead (104 objects). The assemblage was recovered during hand excavation of the features and general layers, augmented by metal detector survey following machine stripping and in selected areas (eg Zone 6) during hand-excavation. The metalwork recovered by metal detecting during the preliminary survey has been quantified and discussed elsewhere (in the reports on the preliminary surveys of the various zones), and the few pre-modern objects of interest will be included in the forthcoming analysis and publication.

5.1.2 The assemblage from the excavated contexts has been recorded by x-radiograph, and summary descriptions and classifications entered onto the project database. An overview is presented below, by material type and zone.

### 5.2 Gold objects

5.2.1 A total of eight objects of gold were recovered across the route, most of which are of prehistoric date (Table 5.1).

#### *Gold objects of prehistoric date*

##### 5.2.2 *Bracelets by Andrew Fitzpatrick and Lorraine Mephram*

5.2.3 Two gold pennanular bracelets were found during scanning of the spoil heap in Zone 4. Both had internally hollowed bodies and solid, outwardly expanded terminals. The bracelets fall within Eogan's variety 4 (Eogan 1994, 84-5), which he places within the Ewart Park metalworking phase of the Late Bronze Age (Needham 1996, Period 7, 950-750 CAL BC). This is the same date as the metalwork hoards previously found at Ebbsfleet (e.g. Perkins 1991). There is a concentration of known findspots of pennanular gold bracelets in south-east England, including examples from hoards; two bracelets of very similar form were found within a hoard of nine bracelets from Bexley, Kent (Eogan 1994, pl. 9).

##### 5.2.4 *Other objects*

5.2.5 Two tiny fragments of gold were found in sample 7644, from the backfill of grave 230115 in Zone 13. The date of this grave is currently uncertain; it may be Bronze Age or more likely Iron Age in date, but the possibility that it was



Saxon cannot be ruled out. One fragment is a piece of ribbed sheet that had been folded, the other is very thin and has the appearance of a piece of crumpled foil. Each weighs less than 0.1 g and probably derived from composite objects.

5.2.6 A bent and twisted strip of gold was recovered from layer 201087 in Zone 7. It had been decorated with repoussé ridges and punched dots. It is very thin, approximately 0.1 mm, however this can be confirmed upon removal of the adhering soil. The date of this fragment is uncertain though a Late Bronze Age date seems likely.

5.2.7 A fragment from a gold 'finger' ingot of sub-rectangular section (flat on one side, faceted on the other) was recovered during the preliminary metal-detecting of Zone 7. One end tapers, the other end appears to have been cut. It measures 15.5 x 10 x 5.8 mm and weighs 7.1 g.

#### *Gold objects of post-medieval date*

5.2.8 A small gold mount or fitting, in the form of a rosette, was recovered during the initial metal-detecting survey of Zone 12. It comprises four large petals separated by smaller double petals. The object is centrally perforated and has strips for attachment at the rear. It measures 9.4 x 8.6 x 0.5 mm and weighs 0.7 g.

#### *Gold objects of uncertain date*

5.2.9 A flattened droplet was recorded from layer 130010, Zone 6 (ON 310). It measures 23.6 x 9.6 mm and is a maximum of 3.3 mm thick; it weighs 3.1 g. The fragment may be of Iron Age or Roman date.

### **5.3 Silver objects**

5.3.1 Twelve silver objects or fragments were recorded from four features across the route. Of these, nine are fragments from a possible binding, of U-shaped section, with riveted strip fragments. Mineralised remains, perhaps of leather, adhere to the some of the pieces, and they may have been part of a knife sheath (ON 2312 and 2440, Saxon grave 267072, Zone 19). Four small, thin fragments, decorated with punched dot decoration, probably part of a pendant or decorative fitting, also came from this grave. Part of a shield pendant with five domed bosses was recorded from Saxon grave 171171, Zone 19 (ON 1835). A finger ring with rectangular bezel came from layer 130010 and is of post-Roman, probably post-medieval, date (ON 325).

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## 5.4 Copper alloy objects (incorporating silver objects from graves)

5.4.1 A total of 429 copper alloy objects were recorded, excluding coins, from Zones 1, 3, 4-7, 10, 11, 13, 14, 19-23, with the greatest concentration in Zone 6 (Table 5.2). The identifiable objects range in date from Late Bronze Age to modern.

### *Summary of the assemblage*

#### 5.4.2 Zone 1

5.4.3 A folded rectangular belt plate was recovered from medieval ditch 172116 (ON 116). The front is gilded, fragments of leather adhere to the underside. Pit 175120 contained sheet fragments that re-join to form a rectangular strip, decorated with an animal (ON 4352), possibly a decorative binding or book clasp. Another fragment, decorated with incised lines, may be associated (ON 4693). A 16<sup>th</sup> to 17<sup>th</sup> century drawn copper alloy wire pin with spiral wound head was recorded from pit 175145. A fragment from a modern object was present in the topsoil (ON 810).

#### 5.4.4 Zone 3

5.4.5 Unidentified small fragments of copper alloy were recorded from gully 172034 (ON 103) and ring-ditch 172040 (ON 110).

#### 5.4.6 Zone 4

5.4.7 Late Bronze Age hoard material was present at the base of the subsoil at the northern end of Zone 4. The largest concentration was a group of 13 objects, recorded as ON 3511. It contained a sword fragment, bracelet fragment, a possible axe fragment, sheet fragment, anvil or winged axe fragment and eight ingot fragments. All other pieces were individually recorded: a fragment from a sword blade, close to the hilt (ON 892); an axe fragment (ON 3500); a socket fragment (ON 3505); a sword blade fragment (ON 3508); a possible axe fragment (ON 3510) and an ingot fragment (ON 4007). A possible ingot fragment was also present in pit 254124 (ON 4701).

5.4.8 Romano-British ditch 190289 contained a small, unidentifiable piece and a tiny wire fragment (ON 3536). Other finds from the subsoil comprised two strip fragments, moulded on the interior, which may have come from the binding of an Iron Age or Saxon scabbard (ON 3501 and 3507). Post-medieval or modern items from the subsoil included a button (ON 4009), buckle (ON 3506) and bell (ON 3502).

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#### 5.4.9 Zone 6

5.4.10 A total of 149 objects of copper alloy were recovered from Zone 6, with the vast majority from the colluvial / 'dark earth' layers at the south end (**Table 3**). Identification of a number of undiagnostic fragments from these layers has not been possible.

#### 5.4.11 Bronze Age

5.4.12 A tanged chisel from colluvium layer 305067 (ON 3222) is of Late Bronze Age date and perhaps part of a dispersed hoard. It comprises an expanding blade with convex cutting edge. A plate fragment and amorphous lump may represent metalworking debris from this period (ON 304, dark earth / colluvial deposit; ON 2901, colluvium). A pin with slightly swollen head from hollow way 248162 (ON 3869) may be of Late Bronze Age date, however it is fragmentary and highly corroded. A sub-rectangular sheet fragment from Late Bronze Age/Early Iron Age ditch 262236 may be a vessel fragment, but could be intrusive in this feature.

#### 5.4.13 Iron Age

5.4.14 Two fragments of Iron Age shield binding (cf Stead 1991, fig. 22) were identified from dark earth / colluvial deposit 130012 (ON 692 and 2120). They comprise the projecting knob and sections of the U-shaped binding. A third possible binding fragment was also recovered from the colluvium (ON 3223). A ring-headed pin also came from layer 130012 (ON 3347). It is of an early type, dated to the 4<sup>th</sup> century BC by Dunning (1984, 274), although a similar example from Barton Stacey, Michelmersh, Hants, was recovered from a pit of 8<sup>th</sup> to 6<sup>th</sup> century BC date (Jones forthcoming). A flat tankard handle, of Late Iron Age date, came from the fills of ditch 170088. Three possible mirror fragments were also noted, from layers 130010 and 130012 (ON 318, 341 628). A very small D-shaped ring from layer 170010 (ON 2891) may be a mini-terret ring.

#### 5.4.15 Roman – Personal objects

5.4.16 The brooches included six simple one-piece ('Nauheim-derivative') brooches, five with flat bows (one from pit 256060, ON 2181) and one of simple wire form. This type dates to the 1<sup>st</sup> century AD, in use before the conquest but more commonly used post-conquest (Bayley and Butcher 2004, 147). Two-piece Colchester brooches, dating to the middle years of the 1<sup>st</sup> century AD, were also recorded (four examples, including ON 3966, ditch 170115 and ON 3396, ditch 170150), as well as two Colchester derivatives, however these require cleaning to confirm their identification. Post-conquest 1<sup>st</sup> century AD

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types include four Hod Hill brooches. A possible penannular brooch, or earring, came from layer 130012 (ON 3297). Five brooch fragments (pins/coils), were also recorded, four were unstratified.

- 5.4.17 Seven bracelets were recovered, two from features. A twisted wire bracelet came from sunken-feature building 170132 (ON 3218), a similar example has been published from the late Roman cemetery at Lankhills (Clarke 1979, fig. 76, grave 139). Two fragments from a small bracelet were recorded from sunken-featured building 15007 (ON 3983), one terminal has transverse groove decoration. The other bracelets were unstratified (layer 130012), three were decorated and two were plain, none would be out of place in a Romano-British assemblage. Twisted wire fragments from layer 301095 and pit 185180 may also represent bracelets. Curved wire fragments from ditch 190510 might have come from a small bracelet, or ring fitting (ON 4680).
- 5.4.18 Three hairpins were recovered, one with simple, conical head from Roman pit 245133 (ON 2986), and two with decorated heads from Roman pit 170021 (ON 614) and layer 124163 (ON 3231). Shank fragments from possible pins or needles were recorded from ditch 170178 (ON 3364) and sunken-feature building 170132 (ON 3987). A D-shaped single buckle with rectangular plate was present in Roman gully 170099 (ON 990145). A second single buckle from layer 130012 may also date to this period (ON 335).
- 5.4.19 Roman – Toiletry items
- 5.4.20 Four pairs of tweezers came from the unstratified layers of Area 6, the blade edges of two pairs were defined by an incised line. An ear scoop and nail-cleaner were found together in pit 327030, the nail cleaner was decorated (ON 3967). A second decorated nail cleaner was also recorded from posthole 247088 (ON 2182).
- 5.4.21 Roman – Textiles
- 5.4.22 A single needle (Crummy 1983, type 3), dating to the late Romano-British period, was recovered from well 153123.
- 5.4.23 Roman – Fittings
- 5.4.24 A copper alloy ring was recorded from Roman ditch 249100 (ON 2998), six or seven other rings came from the colluvial layers and will be considered further during analysis. A U-shaped rod with out-turned ends, possibly a small handle, was present in early Roman ditch 170114 (ON 2184). A very similar object came from Iron Age cobbled surface 291102 (ON 3880).

## 5.4.25 Roman – Military

5.4.26 A rectangular belt plate of Romano-British date was recovered from ‘dark earth’ / colluvial deposit 130012 (ON 4311). The surface was tinned and decorated with two wavy lines of punched dots, between them is a single straight line of punched dots. Part of a second probable belt plate was also recorded from this layer (ON 674).

5.4.27 A decorated strip (ON 3308, context 130012), 14mm wide but now rolled, may be a fragment of binding from a sword (cf Poux 2008, fig. 6.9). A composite sheet fragment from an unphased *posthole* could potentially have come from a *lorica segmentata* fitting (ON 4349).

## 5.4.28 Roman – Unidentified

5.4.29 A number of copper alloy fragments from the Roman features could not be identified. They included sheet fragments from pit 178214, posthole 296069, sunken-feature building 170136 and test pit 170003, and a strip fragment from layer 126236. Six unidentifiable lumps came from ditches 190492 and 170178, and pits 132098 and 262094.

## 5.4.30 Post-medieval/modern

5.4.31 Amongst the objects of post-medieval and modern date were seven buckles (colluvial deposit or unstratified). A small finger ring, or toe ring, may also be of this date (ON 627). Other objects include a modern wing-nut.

## 5.4.32 Undated

5.4.33 A wide range of objects from the ‘dark earth’ / colluvial deposit (contexts 130010, 130012, 31005, 31006, 310011) were undated. They included a conical boss with decorated outer band, probably of post-Roman date (ON 625); five studs; a tinned decorative appliqué; five strip fragments; eight sheet fragments; one curved wire fragment; two possible fragments of binding; five wire fragments; two disc fragments; a cylindrical fragment and six amorphous pieces. Other objects from the ‘dark earth’ / colluvial deposit which have not been certainly identified at this stage, but will be included in the next stage of analysis, include a possible buckle fragment (ON 2897); a ‘waisted’ half cylinder (ON 2952); a riveted sheet fragment (ON 2116); a possible late Bronze Age hollow bracelet fragment (ON 4327) and a finial knob (ON 3263).

## 5.4.34 Zone 7

5.4.35 A small number of copper alloy objects were recovered from Zone 7. Romano-British grave 267091 contained two copper alloy rings (ON 2451).

One is crude, formed from a coiled rod with overlapping terminals, the other is a plain, annular ring. Further work is required to ascertain if these were used as fittings or personal items. Undated grave 136139 also contained a copper alloy ring that would have formed part of a fitting (ON 2754). A small, undiagnostic fragment was recovered from roundhouse 201103 (ON 2752). Early Romano-British ditch 201081 contained a wire fragment of uncertain function, flattened at one end, tapering at the other (ON 2108). Two fragments from a possible disc-shaped object (ON 2737 and 2712) and a coiled strip (ON 2710) were recorded from layer 201087. A 2<sup>nd</sup> century AD plate brooch came from the subsoil (ON 986086).

#### 5.4.36 Zone 10

5.4.37 A wide range of objects was recorded from metal-detecting of the topsoil and subsoil in Zone 10a (lagoon site), undertaken in advance of and during machine stripping in August 2010. Potentially the earliest in date was a possible Late Bronze Age ingot fragment (ON 986134). Two early Romano-British brooches were present: highly corroded fragments from a bow brooch (ON 4215) and part of a winged brooch (ON 986133). A medieval or post-medieval book clasp was also recorded (ON 986148). Most of the objects were of post-medieval or modern date, they included (all object numbers prefixed 986): a thimble (ON 114); a buckle frame fragment (ON 098); six buttons (ON 112, 124, 127, 139, 140, 142); two fitting fragments (ON 093, 115); a large nail (ON 116); a staple (ON 123) and seven unidentifiable fragments (ON 095, 109, 110, 128, 129, 132 and 149). A possible pin shaft was undated (ON 986143).

5.4.38 A blade fragment from a Late Bronze Age sword was recorded from layer 249176 (ON 986102). A stud of possible Roman date was present in the colluvium (ON 210). A twisted sheet fragment, possibly from a vessel, was recorded as part of the finds retrieval (ON 4369).

5.4.39 Few copper alloy objects were recovered from features. They comprise fragments from an early Romano-British bow brooch in ditch 194104 (ON 211) and an almost complete pair of tweezers from ditch 194090 (ON 200).

#### 5.4.40 Zone 11

5.4.41 Three Romano-British ditches contained small amounts of copper alloy. A slightly tapering and curved strip fragment, with decoration in the centre, was recorded from ditch 159314 (ON 422). A brooch spring and two possible brooch fragments came from ditch 159332 (ON 428-430) and three wire fragments were present in ditch 190422 (ON 425). Pits 129018 and 147133 contained one-piece bow brooches of 1<sup>st</sup> century AD date (ON 414 and 435).

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A very corroded fragment from pit 147139 may be from a brooch spring (ON 441).

5.4.42 A curved strip fragment, decorated with a central band, possibly with a herringbone motif, and edges defined by two grooved lines, was recorded from the subsoil (ON 420). This may have been part of an early Romano-British armlet (Crummy 1983, 1586) or possibly a decorative binding strip.

#### 5.4.43 Zone 13

5.4.44 A small number of copper alloy objects were recorded from features, a number also came from the colluvium. Those from the colluvium included objects of post-medieval or modern date: two buttons (ON 542, 1584); a stud (ON 545) and a fitting (ON 546). A heavy ring fragment of circular cross section, possibly an armlet or anklet, was undated but requires further analysis (ON 1578).

5.4.45 A copper alloy barbed and tanged arrowhead was recovered from fill 130067 of ring-ditch 134096 (ON 582). The tangs are rounded at the end, one tang is slightly shorter than the other, but it appears to have been made this way and was presumably meant to be asymmetric. The rounded ends would be unusual for barbs, unless they were designed for easy retrieval. The object is very flat, perhaps suggesting it may have functioned as a decorative fitting, rather than a metal arrowhead. A buckle of D-shaped frame from this ditch must be intrusive (ON 1508).

5.4.46 Sunken-featured building 193140 contained a small, two-piece Colchester brooch of 1<sup>st</sup> century AD date (ON 1509). Part of a pair of tweezers, with moulded ridges, was recorded from pit 168090 (ON 564) and a ring fitting was present in pit/grave 126141 (ON 1532).

#### 5.4.47 Zone 14

5.4.48 Four copper alloy objects were recorded from Zone 14. A Romano-British prick spur from enclosure ditch 159219 (ON 1709) is similar to an example from Pakenham, Suffolk (Shortt 1959, plate XV.19). A strip fragment, possibly from a binding, came from Romano-British enclosure ditch 159224 (ON 500). A hooked tag with ring and dot decoration, of a type in use during the 7th to 11th centuries, was recovered from pit 202021 (ON 510). A perforated strip fragment, with a piece of twisted wire through the hole, was recorded from undated pit 143177 (ON 1705).

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#### 5.4.49 Zone 19

#### 5.4.50 Graves

5.4.51 Copper alloy objects were recovered from nine Romano-British graves and 15 Saxon graves. In addition, small, undiagnostic sheet, rod or wire fragments were recorded from Romano-British grave 218196 and Saxon graves 153084, 166105, 189178, 266018 and 286009.

5.4.52 The grave goods from the Romano-British graves were of varying date. Early Romano-British items included a bow brooch from grave 126016, a particularly large and bent two-piece Colchester from grave 22057 and a large rosette brooch from grave 150100. Probable late Romano-British personal items included three bracelets from grave 176342 and a finger ring from grave 262044. Items only broadly dated as Roman, at this stage, include a tiny penannular brooch (grave 278060), a possible hollow bead (grave 216010), a hairpin (grave 257016) and a ring fitting and lock bolt (grave 153068).

5.4.53 The copper alloy objects from the Saxon graves were again dominated by personal items. Many are paralleled from other cemeteries in Kent such as Finglesham, Buckland and Mill Hill, and indicate a date in the 6<sup>th</sup> to 7<sup>th</sup> centuries. Most of the graves contained only one or two copper alloy objects, including buckles (graves 189174, 252073, 280022, 286009); a very small buckle and pair of tweezers (grave 22044); a bracelet (grave 153034); workbox fragments (grave 252037); a chain link (grave 220109); a strapend (grave 166141) and a small, possible weight (grave 126091). Grave 166102 contained a tiny buckle, a strapend and a possible fitting. An unusual and presumably high status object, possibly a pointer or stylus, similar to a pin beater from a female's grave at Finglesham (Hawkes and Granger 2006, fig. 2.130, grave 130), was recorded from grave 153075; a wire loop from a chatelaine or necklace also came from this grave. Two brooches came from grave 279036, an annular brooch and a small-long or cruciform brooch. Three graves contained multiple objects. The remains of a decorated workbox, barrel lock, decorative plate, buckle plate and small-long brooch were recorded from grave 136111. Grave 171171 contained a silver shield pendant, five copper alloy wire loops from a necklace or chatelaine, purse fittings, a finger ring with circular bezel, a penannular brooch and possible tweezer fragments. Grave 267072 contained fragments from a silver fitting, possibly knife sheath, part of a silver pendant, a copper alloy disc brooch, a strapend, a possible catchplate and a ring fitting.



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#### 5.4.54 Other features

5.4.55 Two brooches were present in gully 126170, a moulded disc brooch (tutulus) dating to the 2<sup>nd</sup> century AD (ON 1212) and a Saxon penannular brooch (ON 1204), the latter recovered during metal-detecting. Natural feature 166119 contained a copper alloy bar fragment, possibly from a buckle (ON 1220). Five objects were recorded from trackway 126227: a stud (ON 1962); a possible decorative fitting, probably of medieval or later date (ON 1963); two small waste fragments (ON 1965 and 1217) and a curved rod of oval section, segmented beaded on one side, plain and flat on the other side, again probably medieval or later in date (ON 1887). A single rod fragment was recovered from trackway 126227, bent to form a loop (ON 3100). Of interest from the topsoil was a square-sectioned tapering rod, one end terminates in a point, the other end is broken, possibly a Bronze Age punch (ON 1209); and an incomplete Saxon buckle (Marzinzik 2003, Type II.2 or II.26), with ring and dot decoration on the plate (ON 1208). The other finds from the topsoil include three waste fragments/offcuts (ON 1205, 1214 and 1226) and an unidentified fragment (ON 1229).

#### 5.4.56 Zone 20

#### 5.4.57 Romano-British features

5.4.58 Three Romano-British graves contained small amounts of copper alloy. Two copper alloy objects were found placed above the cremation in grave 25066: a simple wire bracelet and a finger-ring with green glass intaglio. The urned cremation in grave 252068 was associated with a twisted wire bracelet (ON 4426), and a tiny rod fragment came from grave 198300.

5.4.59 Copper alloy was also recorded from three sunken-featured buildings (SFBs). Of particular interest are the large numbers of sheet fragments recovered from SFB 249083. These appeared to have been cut from a vessel, perhaps to be used as scrap or for repairs. Some were perforated, some riveted, some plain (ONs 3112, 3154, 3155, 3162, 3170, 3717, 3718, 3722, 3737, 3738, 3744, 3746 and 3747). Also present was a cylindrical piece of sheet metal (ON 3141); a composite disc-shaped object, possibly a fitting (ON 3153); a stud (ON 3724) and a very small nail or tack (ON 3179). A perforated sheet fragment was recorded from a pit associated with SFB 249085, and a probable wire bracelet was present in the building (ON 4185). Two rod/pin fragments were recorded from SFB 228059.

5.4.60 A number of Romano-British pits contained fragments of copper alloy: a ring, probably a fitting, from pit 250071 (ON 3700); perforated sheet fragments, one riveted, from pit 251005 (ON 858 and 1903); and a pin fragment, possibly

from a brooch, from pit 286001 (ON 4146). A finger ring fragment with oval bezel and traces of a glass setting, was recovered from ditch 217122 (ON 1904) and a small bell with rounded dome, hexagonal form suspension loop, clapper missing, came from ditch 205059. The latter is similar to (but smaller) an example from Wanborough, Wiltshire (Hooley 2001, Fig. 29.6). A bent wire with flattened terminal from trackway 249061 (ON 3708) is a possible bracelet. A sheet fragment was recorded from surface 215228.

#### 5.4.61 Undated features

5.4.62 A complete hairpin, possibly of Roman date, and two sheet fragments, came from pit 228055 (ON 3126); a post-medieval or modern button was recorded from pit 126090. Three post-medieval/modern objects were recovered from the topsoil, a button, buckle plate and fitting (ON 3792 and 4435).

#### 5.4.63 Zone 21

5.4.64 Two Bronze Age features contained small quantities of copper alloy. An unidentified piece from ring-ditch 194137 may have been used as a binding, perhaps from a vessel (ON 2200). The fragment, of V-shaped section, has a couple of diagonal incised lines on one side, both ends are broken. The piece has been bent outwards, possibly post-usage. Five rod fragments from grave 246134 may have come from the shaft of a pin (ON 2262).

#### 5.4.65 Zone 22

5.4.66 A small copper alloy sheet fragment was recorded from layer 195075 (ON 4635).

#### 5.4.67 Zone 23

5.4.68 A Late Bronze Age dress pin was recovered from pit 198189 (ON 909). It is 65mm in length with a flat circular head decorated with two concentric grooves. Ring-ditch 195070 contained a complete bracelet of possible Late Bronze Age date. The surviving terminal was decorated with transverse grooves at the end and diagonal grooves on the side. Fragmentary thin, rolled sheet fragments were also recovered from this feature, but may be later in date.

## 5.5 Iron objects

5.5.1 The assemblage of iron objects comprises 3027 pieces, most recovered by hand from Zones 1-4, 6, 7, 9-14, 17, 19-23 and 29 (Tables 5.4, 5.5 and 5.6). They came from a variety of features and layers and range in date from the Iron Age to the modern day. A brief summary, by zone, is presented below.

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*Composition of the assemblage*5.5.2 *Zones 1-3*

5.5.3 A total of 18 iron objects were recovered from Zone 1, including fragments of a possible knife blade from an undated pit. The other objects comprised nails, strips, a ring fitting and unidentified fragments, recovered from three undated pits, one Romano-British ditch and five medieval ditches. Four nail fragments were recorded from Zone 2. Of the 136 objects from Zone 3, 113 were nail fragments from a medieval ditch. The remainder were nail fragments, strips or unidentified, and came from the upper soil layers, medieval or undated ditches.

5.5.4 *Zone 4*

5.5.5 Of the 20 iron objects from Zone 4, nine were recorded from Romano-British grave 177322, comprising nail fragments and an unidentified piece. A large latch-lifter came from Iron Age ditch 190290, a ring fitting from Iron Age ditch 190288 and knife blade fragments from Romano-British ditch 190290. An unidentified fragment was recorded from Iron Age gully 127133 and sheet fragments from Romano-British gully 159268. Four possible nail fragments were recovered from post-medieval trackway 141207.

5.5.6 *Zone 6*

5.5.7 A total of 522 iron objects were recovered from Zone 6 (Table 5.5). A broad scan of the assemblage indicated a wide range of identifiable objects, dating to the Iron Age and Romano-British period. The weaponry and tools included a sword, three spearheads, two projectile points, nine knives, an axe, a chisel, three scythes and five smaller hook-shaped cutting tools. Other objects included two pokers, a pair of dividers, a latch-lifter, a currency bar and three brooches.

5.5.8 *Zone 7*

5.5.9 Iron objects were present in four Romano-British graves. The individual in grave 267091 had been placed in a coffin, represented by 39 nail fragments. A single possible nail fragment was recorded from inhumation grave 136139. A pair of nailed shoes/boots accompanied the cremated remains in grave 271009 and an unidentified fragment was recorded from cremation grave 179132. Of interest amongst the other iron objects from Zone 7 were knife blade fragments and a rod with a suspension loop at one end and hook at the other, from ditch 159241. The rod may have been part of a suspension system, perhaps a cauldron hanger. The other objects were predominantly nails or

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unidentified fragments, from ditches dating to the Late Bronze Age/Early Iron Age and Roman periods, an unphased pit and an Iron Age cobbled surface.

*5.5.10 Zone 9*

5.5.11 Two possible nail fragments were recorded from the topsoil.

*5.5.12 Zones 10-11*

5.5.13 Of the 299 iron objects from Zone 10, 265 came from eight Romano-British graves. These provided evidence for the presence of coffins in graves 176334, 179267, 239266 and 239278. A pair of nailed shoes/boots was recorded from grave 182340; details of the shape of the left and right soles were still visible during excavation. Groups of hobnails were also recovered from graves 239266 and 248221. Nails were recorded from cremation graves 247315 and 258338. Iron from other features in Zone 10 included knife and nail fragments from sunken featured building (SFB) 194086 and nail fragments from SFB 249199, both of Saxon date. A possible tool came from Romano-British ditch 178358 (ON 4217), all other objects were nails or unidentified fragments.

5.5.14 A total of 51 objects were recorded from Zone 11, mostly from Romano-British features, including five pits, five ditches, one layer, one floor surface and one hearth, but also three undated pits and one undated ditch. Many were nail fragments, but a knife and two possible agricultural cutting tools were also identified.

*5.5.15 Zone 12*

5.5.16 A number of Late Iron Age or Romano-British ditches, pits, graves and layers produced 39 iron objects. Those from the graves comprise an iron ring, perhaps an armlet, and several nail fragments, from grave 166005; and a single possible hobnail from grave 136033. Most of the other finds were nails or unidentified fragments, however a large wheel rim was recovered from Romano-British feature 268010 (ON 1400), the upper part of a hollow-way. This measured 0.93-0.95 m diameter and was 45 mm wide.

*5.5.17 Zones 13-14*

5.5.18 A range of iron objects was recorded from Zones 13-14. Eleven objects came from features currently assigned to an Iron Age phase. Most could not be clearly identified at this stage without cleaning, however they included a U-shaped handle with mineralised wood remains, perhaps from a box or similar, recovered from ditch 134099 (ON 825); a possible ring-headed pin from pit 248027 (ON 4575) and a tear-drop shaped probable weight from pit 139075 (ON 573). Also of interest is a large wire from pit 126141 (ON 1523). It had

been bent into a U-shape and pinched into a kink halfway down one side, the end is bent back on itself, two rings are threaded through it. This may have been some form of personal ornament. Other finds from features of this phase include a perforated disc, a ring fitting, a bent, hooked rod and a length of hooked wire. Prehistoric pit 157048 contained a perforated strip fragment.

5.5.19 Six objects came from the Romano-British sunken-featured buildings (SFBs). Objects from SFB 193140 include a tanged knife with sharp, angled back (ON 1515); an almost complete socketed hook (ON 1513); a plate fragment that may have come from a hipposandal (ON 1516); part of a possible tool (ON 1514) and a nail. A probable chisel was recovered from SFB 191125. From the Romano-British ditches came part of a knife blade (ON 541), part of a possible bucket handle (ON 1718), a probable buckle fragment (ON 1566), a joiner's dog (ON 4080) and a possible link from a snaffle bit (ON 1567). A knife with traces of inlay on the blade was recovered from pit 279009 (ON 1710) and possible blade fragments were present in pit 139054 (ON 506). A possible awl or tracer was present in pit 185006 (ON 502). Other finds from the pits include two ring/collar fittings, sheet fragments, riveted sheet/plate, bar fragments and a bent rod.

5.5.20 Iron objects were recorded from two Saxon graves and 15 pits. Grave 133048 contained knife fragments (ON 557), and 11 nail fragments were recovered from grave 223033 (ON 590-9). From the pits came six knives; a punch or awl; a T-shaped key or latch-lifter; two possible hinge fragments; a decorated, riveted strip; rod/bar fragments, strip and sheet fragments.

5.5.21 Half of the iron objects from Zones 13 and 14 came from currently unphased features (though many are probably Iron Age) and the colluvium. They included eleven probable knives, the socket from a probable hooked cutting tool, a possible awl, and a saw. A spadeshoe (Manning 1985, type 2) was similar to an example from nearby Cliffs End Farm (J. Schuster pers. comm.). A medieval horseshoe (Clark 1995, type 4) came from the colluvium. Household objects include a bucket handle and part of a candle holder (medieval but pre-conquest). Fittings include a possible hinge/latch fragment, seven nails, a clench bolt and part of a bracket. Amongst the identified are a range of bar, rod, strip, sheet and wire fragments, including at least five thin, tapering rods of similar length (105-112 mm) of unknown function (ON 560, 571, 579, 587 and 1569).

5.5.22 *Zone 17*

5.5.23 Two Late Saxon pits contained iron objects: a complete knife from 147029 and a nail from 143037.

#### 5.5.24 Zone 19

5.5.25 A total of 838 iron objects were recorded from Zone 19, mostly from the Romano-British and Saxon graves (Table 5.6), but also from trackways, gullies, pits and WWII trenches.

#### 5.5.26 Romano-British graves

5.5.27 Fifteen of the Romano-British graves from Zone 19 contained iron objects, the vast majority were nails and other fittings, presumably the remains of coffins. These were recorded from graves 126100 (14 nails), 126110 (six nails and an angle bracket), 126329 (seven nails/10 shanks), 150097 (18 nails, 34 shanks), 153068 (two nails and 10 shanks), 220054 (10 nails, seven rod/shanks), 220112 (21 nails, 10 shanks) and 248104 (10 nails, eight rod/shank). Possible box fittings were also present in graves 150097 (plate and strip fragments), 153068 (a ring with two rods looped around it) and 220112 (riveted plate fragments). Smaller numbers of nails and rod/shank fragments were recorded from graves 126109, 150100, 153060, 176345 and 248258. Six hobnails and a nail or rivet came from grave 166077, as well as a number of nails and hobnails from the samples that have yet to be quantified.

5.5.28 Other iron objects from the Romano-British graves include a loop, possibly from a buckle and two wire/chain fragments from grave 220112, and a small iron disc 17mm in diameter and 6mm thick, found near to the skull in grave 176342, possibly the head of a nail.

#### 5.5.29 Saxon graves

5.5.30 A total of 35 Saxon graves contained iron fittings and grave goods. Of interest amongst the fittings is the presence of clench bolts in four graves. Grave 209243 contained 16 complete and one partial clench bolt; all appear to have had rounded heads and diamond-shaped roves/washers, varying from 57 mm to 78 mm in length. Five clench bolts were recorded from grave 136111, and single clench bolts from graves 153075 and 22095. Other possible single bolt fragments were present in graves 171171, 209243 and 251044. Most of the other fittings comprise nails and angle brackets, a lock-plate was present in grave 171171.

5.5.31 The grave goods were dominated by knives (present in 20 graves) and other weapons, including spearheads (graves 189174, 252076, 282014 and 286106), a seax (grave 166102) and a shield boss (grave 250050). Personal items included buckles (graves 136111, 166102, 209243 and 252076), a strapend (grave 171171), chatelaines (graves 171171, 216007, 220109 and 267072) and a firesteel (grave 136111). Shears were present in graves 153084 and 171171.

## 5.5.32 Trackways

5.5.33 Iron objects were recorded from four trackways, including an iron nail with rectangular-sectioned head from Iron Age trackway 126277. The largest group of objects came from Saxon trackway 126227, including a spearhead, two knives, a horseshoe, two nails and five rod/shank fragments, a diamond-shaped rove and two bar fragments. A single nail came from Saxon trackway 126226 and an unidentified object from trackway 126191.

## 5.5.34 Saxon gully and ditch

5.5.35 Five small, unidentifiable fragments came from ditch 151055 and a single nail from gully 126172.

## 5.5.36 Pits

5.5.37 Of interest among the Romano-British pits in this area were two features containing groups of nails. Thirty-five hobnails and approximately 140 small nails and shank fragments came from pit 239107, and 57 nails and hobnails were recorded from pit 177480. A small tubular fragment was present in a sample from Iron Age pit 205106, a rod fragment came from undated pit 248271 and a nail shank was intrusive in Late Bronze Age pit 217087.

## 5.5.38 World War II trenches

5.5.39 A small group of objects including a kettle and various tins, most of them heavily corroded, was recovered from limited excavation (largely by machine) of the backfill of the WW II defensive trenches south of Manston aerodrome.

## 5.5.40 Topsoil

5.5.41 A nail, a bolt and a rod were recorded from the topsoil.

5.5.42 *Zone 20*

5.5.43 A total of 659 fragments of iron were recovered from Zone 20 (Table 5.7). All came from Roman or undated features, with the exception of a heavily corroded probable nail fragment from Saxon trackway 217058.

## 5.5.44 Graves

5.5.45 Nine Romano-British graves in Zone 20 contained iron objects, mostly nails, suggesting the presence of coffins in grave 126066 (six nails), 128084 (19 nails, 12 shanks), 182241 (four nails, one shank), 198301 (six nails, one shank), 216094 (six nails, two shanks), and 267001 (five nails, 12 shanks). Hobnails, indicative of nailed shoes/boots, were recorded from three graves

(126066, x 33; 198301 x 26; 267001 x 9). Probable bracelet fragments, formed from an iron wire wrapped with thin copper alloy strands, were found placed above cremated bone in a vessel in grave 252066, in association with a copper alloy bracelet (ON 4412) and finger-ring (ON 4414). A group of four rods from grave 252068 included one with hooked ends that may have been part of a suspension system, such as a cauldron hanger, and one that may have formed part of a tool.

#### 5.5.46 Ditches

5.5.47 Romano-British ditches 205059, 205131, 217122 and 249267, and undated ditches 171245 and 288074, produced 39 iron objects, including a knife from the latter (ON 3801). The other objects include various fastenings and fittings such as nails, and miscellaneous strip, sheet, bar and rod fragments. Enclosure ditch 249051 contained a small, socketed hooked cutting tool, a composite bone/antler and iron handle, a nail and a rod.

#### 5.5.48 Pits

5.5.49 A total of 72 iron objects were recorded from the Zone 20 pits, dominated by nail and rod/shank fragments. Other objects included a double-spiked loop from pit 279028 and a small, hooked cutting tool from Roman pit 251005.

#### 5.5.50 Levelling layers and trackway

5.5.51 A possible tanged knife and a nail came from layer 215219 and two nails from layer 215206. Three nail fragments were recorded from Roman trackway 249061.

#### 5.5.52 Sunken-featured buildings

5.5.53 Iron objects were recovered from five Romano-British sunken-featured buildings, including a high proportion of miscellaneous waste fragments or offcuts (Table 5.8). Amongst the assemblage from SFB 249083 was an object with a crescent-shaped blade and rectangular-sectioned tang projecting from the centre in the form of a small turf cutter, four possible knives (including a bent example), a lock bolt (from a tumbler lock), part of a possible key, a double-spiked loop, 34 nails/shank fragments and a rectangular plate fragment with hooked end, possibly part of a hipposandal. Amongst the miscellaneous fragments from SFB 249085 was a plate fragment (perhaps part of a cleaver), a small, hooked cutting tool, a possible latch fragment and 14 nails/shanks. Objects from SFB 249081 include an adze hammer, a rake prong, a small knife blade, a strip with possible serrated edge (?saw), an L-shaped bracket, 17 nails/shanks, a tanged blade (possibly similar to the crescentic blade from SFB



249083), and a rod with hooked end, possibly a weight. The assemblage from SFB 228059 was the smallest, comprising an almost complete looped knife, a possible buckle plate fragment, two large nails and a rod/shank.

#### 5.5.54 Zone 21

5.5.55 Twelve iron objects were recovered from nine features in Zone 21, comprising nail, rod/shank and strip fragments.

#### 5.5.56 Zone 22

5.5.57 Two nails and a strip fragment came from tertiary layer 195075, and a strip fragment from ditch 290129.

#### 5.5.58 Zone 23

5.5.59 Of the 23 iron objects recorded from Zone 23, 21 were from post-medieval or modern features, one was intrusive in a Bronze Age ring-ditch, and a single nail shank came from a Romano-British pit.

#### 5.5.60 Zone 29

5.5.61 Eighteen of the 23 objects from Zone 29 came from the topsoil, comprising rod/bars, nails and unidentified fragments, all of probable modern date. One possible nail shank came from undated grave 159009, two nail fragments from Romano-British pit 159041 and a nail from layer 159061.

## 5.6 Lead objects

5.6.1 A total of 104 lead fragments was recovered from the excavation (EX EKA 09; Table 5.9) and the preliminary survey of the topsoil and subsoil in Zone 10a (lagoon site - LG EKA 09; Table 5.10). Most are offcut or waste strip and sheet fragments that were recorded from the topsoil, subsoil and dark earth / colluvial deposits, particularly in Zones 6 and 10. A small number of objects were identified, principally weights that may have been used for a variety of purposes, and post-medieval musket shot. Other objects included a spindle whorl, a plug, a pierced disc and a handle. Only one of the objects was recovered from a feature – a very crude handle from Early Romano-British pit 279028.

## 5.7 Potential

5.7.1 A wide range of metalwork was recovered from the various zones of the East Kent Access Road. Of particular interest are the Romano-British and Saxon grave groups from Zones 4, 6, 7, 10, 12, 14, 19 and 20. Publication of the grave goods and fittings from these features will significantly increase our

understanding of burial rites in East Kent, particularly Thanet. Also significant is the Late Bronze Age hoard material from Zone 4. Two other Late Bronze Age hoards were discovered on the Ebbsfleet Peninsula during excavations along the route of the Margate to Weatherlees wastewater pipeline, which added to an existing known concentration of *Carp's Tongue* hoards around the Isle of Thanet and particularly the former Wansum Channel (Andrews *et al* 2009, 80). The gold bracelets presumably also originated from the hoard, and this is therefore the first hoard from Thanet with copper alloy and gold objects. The Iron Age and Romano-British assemblage from Zone 6 is significant in terms of the range of objects present and their date. The presence of a number of items of weaponry and tools hints at an early military presence on the site, the other finds from this zone provide evidence of daily life of the inhabitants of the settlement here. The rest of the assemblage is less significant, although it provides some evidence of a range of activities across the route in the medieval and post-medieval periods.

## 5.8 Recommendations

### *Grave goods and fittings*

5.8.1 The Romano-British and Saxon graves contained a range of grave goods (items deliberately included in the burials as offerings, personal possessions or items worn by the deceased) and fittings.

### 5.8.2 *Grave goods*

5.8.3 Following specialist conservation treatment to clean and stabilise selected iron, copper alloy and silver objects, all these items will be briefly described and germane parallels sought to confirm their identification and the date ranges suggested. Mineralised remains of textiles and leather adhering to a number of objects should be presented for specialist identification. With the exception of the hobnails and any iron objects which remain unidentifiable, all the grave goods will be illustrated.

### 5.8.4 *Coffins and other funerary structures*

5.8.5 The nails will be classified following established type series (such as Manning 1985) and the clenched nails compared to those from other graves in the region (including within Zone 19 (Perkins 1995), Mill Hill, Sarre, Ozengell, Half Mile Ride, Thorne Farm and Buckland). Where appropriate, details of the mineral-replaced wood (the direction of grain, thickness of plank etc) will be recorded while specialist identification of the mineral-replaced wood and other plant remains will also be required. Using this information, together with the

3-dimensional recording data, an attempt will be made to identify and describe the coffins and any other funerary structures present.

*Copper alloy, iron and silver from non-funerary features and layers*

5.8.6 Following any investigative cleaning, the catalogue entries for the objects will be enhanced, where possible, and parallels sought. No further work is proposed for unidentified fragments from undated features and layers, or contexts of no intrinsic interest. A report will be prepared, summarising the assemblage by broad phase and functional category. A small number of objects of intrinsic interest from the initial metal-detecting survey will be incorporated into the report. A representative range of objects should be illustrated, including all items that are likely to derive from Late Bronze Age hoards.

*Gold objects*

5.8.7 The gold objects should all be analysed using X-ray fluorescence (XRF) as the results will assist in their dating. Typological parallels should also be sought for each of the objects.

*Lead objects*

5.8.8 The majority of lead fragments from the scheme are unstratified and many are likely to be of post-medieval or modern date. Those that were stratified in features, and the pierced disc and weights from Zone 6, may be incorporated into the next stage of work, however no further work is proposed for the other fragments.

*Tasks*

Task
Enhancing catalogue descriptions and providing parallels
Report writing, including spatial analysis of all grave fittings and grave goods
Liasing with colleagues, checking drawings and proofs

*Illustration*

Material	No. objects to be illustrated
Grave goods and fittings: 137 objects	137 (copper alloy x 60; iron x 77)
Bronze Age hoard material	16
Other objects	110 (copper alloy x 44; gold x 6; iron: 60)
<b>Total</b>	<b>263 Objects</b>

Table 5.1. Quantification of gold objects

Site code	Zone	Context	ON/sample	Feature	Description	Weight (g)
EX EKA 09	4	172144	ON 880	Subsoil	Bracelet	26
EX EKA 09	4	172144	ON 881	Subsoil	Bracelet	33.9
EX EKA 09	7	201087	ON 2711	Layer	Decorated strip	1.0
EX EKA 09	13	230117	Sample 7644	Grave 230115	Folded sheet and crumpled foil	< 0.1 g each
EX EKA 09	6	130010	ON 310	Layer	Flattened droplet	3.1
MD EKA 09	7	n/a	ON 987049		Ingot fragment	7.1
MD EKA 09	12	n/a	ON 99082		Fitting	0.7

Table 5.2. Quantification of copper alloy objects from all zones, by broad functional category

Zone	Person	Toilet	Textiles	Household	Motive	Tools	Fasten	Military	Votive	Metal working	Query	Not seen	Total
1	2						2				1		5
3											3		3
4	2								17	2	6		27
5	1												1
6	52	7	1	1		2	20	4			60	2	149
7	1						1				8		10
10	10	1	1	1			4		1	1	10	1	30
11	5										5		10
13	5	1					2	1			1		10
14					1		1				2		4
19	47	1	2				13				31	3	97
20	10			9			4				34	2	59
21	1										6		7
22											1		1
23	2										1		3
Uncertain	5					1	2			1	4		13
<b>Total</b>	<b>143</b>	<b>10</b>	<b>4</b>	<b>11</b>	<b>1</b>	<b>3</b>	<b>49</b>	<b>5</b>	<b>18</b>	<b>4</b>	<b>173</b>	<b>8</b>	<b>429</b>

**Table 5.3. Zone 6: Quantification of copper alloy objects, by feature type**

<b>Feature type</b>	<b>No. of objects</b>
Dark earth / colluvial deposit	87
Colluvium	10
Other layers/finds retrieval	7
Test pit	1
Pit	9
Quarry pit	1
Sunken Featured Building	6
Ditch	18
Ring gully	2
Posthole	5
Well	1
Hollow way	1
Cobbled surface	1
<b>Total</b>	<b>149</b>

Table 5.4. Quantification of iron objects, by functional category, from all zones except Z6, Z19 and Z20

Area	Agriculture	Fastening/fitting	Household	Weighing/measuring	Transport	Personal	Military	Tools	Unidentified	Total
1		11					1	1	6	18
2		4								4
3		121					1	1	14	136
4		14					1	1	5	20
7		58	1			100	1	1	16	176
9		2								2
10		161				89	2	3	46	299
11		27					1	3	21	51
12		16			1	8			14	39
13	1	14	2		1	1	3	7	17	43
14		22	1	2			20	25	65	115
17		1					2	2		3
21		6							6	12
22		2							2	4
23		14			1				8	23
29		13							10	23
Uncertain		8					1	2	30	40
Total	1	494	4	2	3	198	33	46	260	1008

Table 5.5. Zone 6: Quantification of iron objects, by feature type and broad functional category

Feature type	Personal	Household	Military	Tools	Fasten	Metal working	Query	Total
Layer		1		1	11		32	45
Cobbled surface			1	1			3	5
Colluvium			5	1	7		38	51
Deliberate Backfill				1	2		4	7
Ditch	1		5	4	32		25	67
Finds Retrieval							1	1
Grave	1				34		29	64
Gully					1		6	7
Hollow way				3	1		3	7
Layer/placed deposit				1			2	3
Dark earth / colluvial deposit	6		1	8	39	1	35	90
Occupation Horizon					1		5	6
Oven					3			3
Pit	6		1	5	20		39	71
Placed deposit							4	4
Post hole				1	1		4	6
Post Hole/Pit Alignment	1							1
Ring gully				1				1
Roundhouse							1	1
Spread					1			1
Sunken Featured Building			1		13		12	26
Tertiary Deposit					3			3
Tertiary Fill							1	1
Test pit					22		3	25
Void					1			1
Waterhole					6		4	10
Well					5		6	11
Working hollow				1	2		1	4
<b>Grand Total</b>	<b>15</b>	<b>1</b>	<b>14</b>	<b>28</b>	<b>205</b>	<b>1</b>	<b>258</b>	<b>522</b>



**Table 5.6. Zone 19: Quantification of iron, by feature type, stratigraphic phase and broad functional category**

Stratigraphic phase	Feature type	Personal	Weapons	Transport	Fastening /fitting	Tools	Query	Not seen /samples	Total
Late Bronze Age	Pit				1				1
Late Bronze Age Total					1				1
Iron Age	Pit							1	1
Iron Age Total								1	1
Romano-British	Grave	32			163		34	5	234
	Pit				57				57
	Trackway				1				1
Romano-British Total		32			221		34	5	291
Saxon	Ditch						5		5
	Grave	94	6		115	34	68	21	337
	Gully				1				1
	Trackway		1	1	11	2	1		16
Saxon Total		94	7	1	127	36	73	21	359
Unphased	Grave				2		15		18
	Pit				142		4	17	163
	Trackway							1	1
	Topsoil				2		1		3
Unphased Total					2		12		185
<b>Grand Total</b>		<b>126</b>	<b>7</b>	<b>1</b>	<b>495</b>	<b>36</b>	<b>127</b>	<b>45</b>	<b>838</b>

**Table 5.7. Zone 20: Quantification of the iron by feature type and broad functional category**

Feature type	Personal	Tools	Fastenings / fittings	Military	Query	Not seen (samples)	Total
Ditch			15	1	23		39
Enclosure Ditch		2	1		2	16	21
Grave	60		62		9	1	132
Inhumation Burial	4		6		21	5	36
Levelling			3	1			4
Natural feature					1		1
Pit		1	37	1	24	9	72
Ring-ditch						2	2
Sunken Featured Building		10	70	5	124	133	342
Surface					2		2
Trackway			2		2		4
World War II Features						4	4
<b>Grand Total</b>	<b>64</b>	<b>13</b>	<b>196</b>	<b>8</b>	<b>208</b>	<b>170</b>	<b>659</b>

**Table 5.8. Zone 20: Quantification of miscellaneous fragments from the sunken-featured buildings**

Description	228059	249049	249081	249083	249085
Rod/bar			3	20	2
Sheet			5	20	2
Strip			4	4	3
Strip (?bucket/barrel ring)		2			
Perforated strip				2	
?Blade fragments				2	
Plate				2	
Perforated plate				1	
Amorphous lumps			6	10	7
Triangular-shaped frag				3	
Irregularly-shaped frag				3	
?Tool fragment					
Ring			2		

Table 5.9. Quantification of lead objects from EX EKA 09

Zone	Feature Interpretation	Objects										Offcuts/waste				Total			
		Handle	Pierced disc	Plug	Shot	Whorl	Spindle	Weight	Irregular sheet/lump	Sheet	Strip	Uncertain	Waste	Folded or rolled sheet	Folded or rolled strip				
U/K																			1
Total																			1
10	Finds Retrieval				1														1
	Subsoil			1	3		4	10	2	2	1	2	1					24	
10 Total				1	4		4	10	2	2	1	2	1					25	
11	RB pit 158007																	1	
11 Total																		1	
13	Colluvium							2										2	
	MIA pit 126141										1							1	
	LIA quarry pit 292001							1										1	
13 Total								3			1							6	
19	Saxon grave 153034							1										1	
19 Total								1										1	
20	ERB pit 279028	1																1	
	RB SFB 249083										1							1	
20 Total		1									1							2	
23	BA ring-ditch 195007								1									1	
23 Total									1									1	
29	Topsoil										1							1	
29 Total											1							1	
3	Topsoil													1				1	
3 Total														1				1	
4	Subsoil				1													1	
4 Total					1													1	
6	Colluvium				1		3	2									1	7	

Zone	Feature Interpretation	Objects													Total
		Handle	Pierced disc	Plug	Shot	Spindle Whorl	Weight	Irregular sheet/tump	Sheet	Strip	Uncertain	Waste	Folded or rolled sheet	Folded or rolled strip	
	Ddark earth / colluvial deposit		1		2		4		5	1	5		2	9	29
	RB pit 245137							1							1
	LIA/ERB post built structure 249119										1				1
	Test pit							1							1
	Topsoil									1					1
6 Total		1	1	3	7	9	7	23	3	4	6	2	10	40	
<b>Totals</b>		<b>1</b>	<b>1</b>	<b>7</b>	<b>11</b>	<b>23</b>	<b>3</b>	<b>4</b>	<b>9</b>	<b>2</b>	<b>4</b>	<b>13</b>	<b>80</b>		

**Table 5.10. Zone 10a (LG EKA09): Quantification of lead objects recovered from the topsoil and subsoil**

Description	Object	Offcut/waste	Total
Folded sheet		1	1
Irregular sheet/lump		10	10
Plug	1		1
Sheet		2	2
Shot	3		3
Unidentified		1	1
Waste		2	2
Weight	4		4
<b>Total</b>	<b>8</b>	<b>16</b>	<b>24</b>

## 5.9 References

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## 5.10 Appendix 5A: Copper alloy and silver objects from graves

### Zone 19: Romano-British graves

#### *Grave 126106*

Fragments from an early Romano-British bow brooch (ON 1290).

#### *Grave 150100*

A single, large, rosette brooch (ON 3606).

#### *Grave 153068*

This grave contained two fittings, a ring and a lock bolt (ON 1225) and a bent and twisted cut sheet fragment (ON 2024).

#### *Grave 176342*

Three copper alloy bracelets were recorded from this grave. One is a penannular bracelet (ON 3638); another is a simple wire bracelet/armlet with twisted terminals, complete (cf Crummy 1983, 1601, in a 3rd/4th grave at Colchester) (ON 3636); and the third is also a wire bracelet, which appears to have been formed from two pieces of wire, two ends hooked together, the other two ends are twisted around the bracelet (ON 3637).

#### *Grave 216010*

A very light apparently hollow ring was recorded from this grave (ON 2428). It measured 20 mm in diameter and was 5.5 mm wide and thick, it appeared to be formed from two halves, riveted together. The function of this object is uncertain but it may have been a bead. A copper alloy ring, now in three fragments, measured 9 mm in diameter and 4 mm wide, its function is also unknown.

#### *Grave 218196*

Tiny fragments of copper alloy were recovered from the samples.

#### *Grave 220057*

A large bent and twisted two-piece Colchester brooch, of 1<sup>st</sup> century AD date, was recorded from the grave (ON 1266).

#### *Grave 257016*

A hairpin, possibly with a white metal coating, was present in this grave, now in two pieces (ON 2423).

#### *Grave 262044*

Grave 262044 contained a very small, and highly corroded, finger ring. It is of simple wire construction, with overlapping terminals (cf Crummy 1983, 1765, dated to the late Roman period at Colchester).

#### *Grave 278060*

A very small penannular brooch was recovered from the area around the skull (ON 4633). Only 12mm in diameter, the terminals were decorated with bead and reel decoration. It may have been used to fasten a delicate fabric, perhaps a veil or similar around the head.

### Zone 19: Saxon graves

#### *Grave 126091*

A single copper alloy object of uncertain function (ON 1224). It is of conical/plano-convex shape, 12 mm in diameter and 9 mm high, perforated through centre with 2 mm diameter hole. It is quite heavy and may have been used as a small weight.

#### *Grave 136111*

This grave contained the remains of a workbox, comprising copper alloy sheet fragments decorated with a punched dot design, associated with fragments of leather, textile and possibly antler (ON 2056).

Two small tacks may also have come from this box (ON 2021). Other finds included a cylindrical barrel lock (ON 2058); a decorative rectangular plate (ON 2020); a buckle plate (Marzinzik 2003, Type II.23, 7th century) with three rivets (ON 2019;) and a small-long brooch, probably of 6th century date (ON 2018). The brooch is square-headed with a crescentic foot, decorated with a large ring and dot in centre of head plate, and smaller ring dot decoration at the four corners of the head plate, on the bow and foot.

*Grave 153034*

This grave contained a single plain, wire bracelet (ON 1202).

*Grave 153075*

Grave 153075 produced an unusual, presumably high status object, comprising a rectangular sectioned body, pin-like shaft and a cross on the head. A similar object was present in a female grave at Finglesham, Kent 180, and has been interpreted as a pin beater (Hawkes and Granger 2006, fig. 2.130, grave 180). Also present was a twisted wire loop, which may have been used for suspension, such as in a chatelaine, or as an ornament in its own right, perhaps in a pendant (ON 2070).

*Grave 153084*

A very small and thin pin or rod fragment was recorded (ON 3439).

*Grave 166102*

Three copper alloy objects were present, a tiny buckle, perhaps from a purse or small bag, or item of clothing (ON 2001); a strap end with single rivet (ON 2006); and a possible fitting (ON 1297).

*Grave 166105*

A single tiny fragment of wire was recorded (ON 4446).

*Grave 166141*

A strap end was associated with skeleton 166142 (ON 3429). A sheet fragment was also present (ON 3424).

*Grave 171171*

A silver shield pendant (ON 1835, very similar to an example from Finglesham (Hawkes and Granger 2006, grave 74, 1-7) and five loops of copper alloy wire with twisted ends (cf Mill Hill, Deal, Parfitt and Brugmann 1997, Fig. 41, H1, H2), may have formed part of a necklace (ON 1837, 1841, 1842, 1844 and 1845). Five objects are bronze fittings from a possible leather purse, including the catchplate (ON 1873, 1876, 1877, 1878, 1884). Also present was a finger-ring with circular bezel (ON 1838) and a tapering strip, possibly from a pair of tweezers (ON 1869).

*Grave 189174*

A single small copper alloy buckle with D-shaped loop and riveted plate fragment were recorded, with possible mineralised textiles (ON 2426).

*Grave 189178*

This grave contained only tiny copper alloy sheet fragments (ON 4681).

*Grave 220109*

This grave contained a copper alloy chain link fragment (ON 4691).

*Grave 22044*

Two copper alloy objects were recorded, a very small buckle with D-shaped loop and two rivets on one side (ON 2414), and a complete and small pair of tweezers (ON 2405). The buckle is too small to have been part of a belt but may have been used for undergarments or similar.

*Grave 252037*

Riveted strip fragments may have formed part of a fitting from a workbox or similar (context 252038), the shank of a small nail or tack was also present (ON 1929).

*Grave 252073*

A D-shaped buckle was recorded from this grave (ON 2485).

*Grave 266018*

A small, unidentified fragment of copper alloy was present in this grave, perhaps an offcut or waste piece (ON 1223).

*Grave 267072*

This grave contained fragments from a silver fitting, perhaps a form of thin binding, of U-shaped section, with riveted overlying strips. Between the fragments are the remains of ?leather. These may represent a knife sheath (ON 2312 and 2440). Four other small fragments of silver, from a thin, possible disc-shaped object, with domed centre, may have been part of a pendant. Punched dot decoration is present (context 267070). A copper alloy enamelled disc brooch, with silver outer rim, has three glass beads (two yellow, one red) and textile remains adhering to the reverse, offering a glimpse of the relationship between strings of beads and brooches (ON 2453). Other copper alloy objects comprise a flat ring with four perforations, presumably some form of fitting (ON 2450); a strip, folded in half and hooked, then ends bent out flat, perhaps a catchplate from an item of jewellery (ON 2320); and a strapend (ON 2452).

*Grave 279036*

Two brooches were present in this grave, an annular brooch with iron pin, possible mineralised textile fragments adhere to the pin (ON 2436); and a small-long or cruciform brooch (ON 2434).

*Grave 280022*

This grave contained a buckle with oval loop, the plate is triangular, folded over at the back, with rivets at the side for attachment to the belt, punched dot decoration is visible in two lines parallel to the edges of the plate. Similar buckles have been recorded from other cemeteries in Kent (cf Hawkes and Granger 2006, grave 83.3 and 95.7, 95.8).

*Grave 286009*

Small sheet fragments of copper alloy, some perforated, were recovered from grave 286009 (ON 2401-3).

**Zone 20: Roman graves**

*Grave 198300*

A tiny rod fragment was recovered from this grave.

*Grave 252066*

Two copper alloy objects were found placed above the cremation: a simple wire bracelet, terminals slightly overlapping (ON 4412), and a finger-ring, the bevel contains a green glass intaglio, cleaning will reveal the decoration on the intaglio (ON 4414).

*Grave 252068*

This urned cremation was associated with a twisted wire bracelet (ON 4426).



## 6 GLASS BY SUE NELSON

### 6.1 Introduction

6.1.1 A total of 47 fragments of glass (excluding beads) was recovered from all zones. The majority (17 pieces) came from Zone 6 with all other zones having five or less examples. The glass ranges in date from Roman to modern with Roman vessel glass being the most common type.

### 6.2 Zone 6

6.2.1 Seventeen fragments of glass were found in Zone 6, the majority of which are Roman in date. Three pieces of probable post-medieval or modern glass were recovered from contexts 243106, 182020 and 156220; the date of context 182020 is uncertain, although the other two features are Early Romano-British and the glass, therefore, intrusive.

6.2.2 Two rim fragments of a Roman jug or bowl came from context 231002, one of which was recovered from environmental sample 5329. They are probably from a deep tubular-rimmed bowl of blown glass and are a light yellow-green in colour. These vessels range in date from AD 60/65 to the third quarter of the 2<sup>nd</sup> century AD (Price and Cottam 1998, 78). A fragment of a folded ribbon handle in blue-green glass was recovered from context 262102 in Romano-British ditch 170041, and a piece of a square bottle or jar probably dating from the 1<sup>st</sup> or 2<sup>nd</sup> century AD (ibid. 135) came from context 128039. Object 4485 from context 248195 is the folded rim of a jug or bottle in blue-green glass but is too small to be more specific. Object 884 was recovered from environmental sample 5396 and is a colourless beaker rim that has been broken off the vessel and polished; it has a flint-scored line under the rim. This rim probably dates from the 2<sup>nd</sup> - 4<sup>th</sup> centuries and would have been a relatively high status piece. It came from context 289043 in a Late Roman sunken featured building. A further five pieces of Roman vessel glass came from Zone 6 but are non-diagnostic body sherds. One (Object 4033) has traces of trailed decoration and Object 882 from context 130010 is a mould-blown piece in a deep cobalt blue, indicating a 1st century date. A single piece of Roman window glass, matt on one side and glossy on the other, was recovered from context 249106, and another two pieces came from context 132002; all of these are most likely to date from the 1<sup>st</sup> - 3<sup>rd</sup> centuries.

### **6.3 Zone 7**

- 6.3.1 Several sherds of extremely thin Roman vessel glass in a blue-green colour were recovered from context 271010 and were probably part of a small cup. They are likely to date from the 2<sup>nd</sup> - 4<sup>th</sup> centuries AD.

### **6.4 Zone 10**

- 6.4.1 Fragments of four glass vessels were recovered, of which two are of certain Roman date, one is possibly Roman, and the other is of uncertain date although it comes from a Roman burial context. This latter object (Object 4250) came from context 182342 in a Roman grave and comprises many fragments of a vessel base. No parallel could be found with any Roman form and there appear to be traces of possible impressed letters, a technique not employed until very much later. Further examination of this vessel and the context in which it was found is needed in order to clarify the situation. Object 4065 from context 178315 is a small non-diagnostic blue-green body sherd which cannot be dated on form but comes from an Early Romano-British enclosure ditch. The two certain Roman objects are Object 809 from context 178010, a body sherd from a bowl or jug in a light yellow-green glass with some ribbing present, and a fragment of a ribbon handle in blue-green glass from context 144215.

### **6.5 Zone 11**

- 6.5.1 A total of five glass objects was recovered. Three of these came from contexts 143023, 155007 and 189020 and are post-medieval in date; all are probably wine bottle fragments. Object 4688 was recovered from environmental sample 5498 and is part of the neck of a long-necked jug with the top part of the handle attachment. It is blue-green in colour and is probably mid-Roman in date. Object 800 comprises two sherds from just below the rim of a very fine blue-green small jar and came from Early Romano-British pit 158007.

### **6.6 Zone 12**

- 6.6.1 A single, minute piece of glass was associated with SK 153042 in a grave of Romano-British date. The fragment is too small to say anything further about it.

### **6.7 Zone 14**

- 6.7.1 A single piece of reticilla glass (Object 528) was recovered from context 202048 in Middle Saxon pit 202046. Rods of white and gold glass have been applied onto a base of blown green glass, with the white glass forming a

herringbone pattern around the vessel with gold borders either side. The workmanship is exceptional and it is probably part of an imported Mid-Saxon drinking vessel, but no parallel has yet been found.

## **6.8 Zone 19**

6.8.1 A single fragment of glass was recovered from context 280023 associated with SK 280023. It is a small blue green sherd of a probable beaker and is possibly Saxon in date but the sherd is too small to be diagnostic.

## **6.9 Zone 20**

6.9.1 Three fragments of glass were recovered of which two are Roman and the third is badly abraded and therefore impossible to date. Object 4192 from context 215213 is a piece of the side wall of a blue-green prismatic bottle, probably square in shape. These bottles are a common find from 1<sup>st</sup> and 2<sup>nd</sup> century sites (Price and Cottam 1998, 195). Object 3182 from context 271051 is a small fragment of a blue-green bottle or jug.

## **6.10 Zone 21**

6.10.1 Four fragments of glass were recovered, three comprising modern bottle glass. Object 3104 from context 171202, however, is a small piece of Roman vessel glass in a blue-green colour. It is too small to assign to any particular vessel form, but its thickness would suggest a bottle or jug.

## **6.11 Zone 23**

6.11.1 A single fragment of modern window glass was recovered from context 141091.

## **6.12 Zone 29**

6.12.1 Four fragments of glass were recovered, all of which are modern in date.

## **6.13 Potential and Recommendations**

6.13.1 The vessel glass has already been recorded to an appropriate archive level, and the various types discussed in terms of their chronological and functional implications, including those from grave contexts. Some limited further research will be necessary for selected pieces, to extract more comparative data to support the dating. Specialist comment may be sought on the unusual *reticella* piece from Zone 14.

6.13.2 The existing assessment report will be enhanced using the additional data. Examples of diagnostic vessel fragments will be illustrated (total of four vessels).

#### **6.14 References**

Price, J. and Cottam, S., *Romano-British Glass Vessels: A Handbook*, CBA, 1998

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## 7 BEADS BY SUE NELSON

### 7.1 Zone 6

7.1.1 A single, extremely small glass bead was recovered during environmental sampling (Sample 7915) from context 153097 in Grave 153095 of Early Romano-British date. It is pale orange, cylindrical and measures 1mm in length and diameter.

### 7.2 Zone 10

7.2.1 A total of 79 beads or partial beads were recovered from Zone 10, 77 of which came from a single grave (179267) of Romano-British date. Nine of the beads from this grave were made of jet and the rest of monochrome glass. A single broken annular bead of blue green glass was recovered from context 197085 in a Saxon sunken-floored building. This bead could be of either Roman or Saxon date as it is of a colour and form that are both long-lasting. Another small fragment of a bead came from context 148018 in a ditch of Romano-British date. It is too small to discern its form.

#### *The beads from Grave 179267*

7.2.2 This grave yielded a necklace of jet beads interspersed with translucent blue and blue/green glass beads and a single opaque yellow bead, all strung on fine copper alloy wire. The beads are quantified in Table 7.1.

#### 7.2.3 *Monochrome glass*

7.2.4 A number of the monochrome glass beads were in segmented forms (Guido 37:3) and some of the blue beads recorded as globular may in fact be broken segmented beads. Detailed microscopic examination would be needed to establish this. The blue globular beads are the most common form on this necklace, with 35 examples, whilst there are five segmented blue beads and nine segmented blue green beads. The other beads are cylinders (Guido 37:4) with three drawn cylinder blue beads and 11 drawn cylinder and five wound cylinder beads in blue green. All of the blue and blue green beads are translucent, which is less common than opaque glass. The length of the cylinder beads varies from 8mm to 20mm, in line with Guido's (1978, 94) proposed average length of 15mm, and the width is between 3mm and 4mm. The presence of the wound cylinders and the noticeable longitudinal striations present in the drawn cylinders are indicators of a late Roman date and have a distinctly Southern distribution in Britain (ibid. 94-5). The single yellow opaque bead is annular, a long-lasting form and colour.

### 7.2.5 *Jet*

7.2.6 The use of jet in this necklace is indicative of a date no earlier than the 3<sup>rd</sup> century, when jet suddenly became very popular in Britain (Allason-Jones, 1996, 9). It continued to be popular in the 4<sup>th</sup> century and declined at the end of the Roman occupation. Five of the beads in this necklace are square sectioned pillar beads (Allason-Jones type 13). They are undecorated and have two holes pierced laterally and one longitudinally. This suggests they were bought as multipurpose spacers and could be strung either way, rather than custom-made for this necklace. They vary in length from 8-10mm and in width from 3-4mm. One bead is broken but both parts are present. Two of the beads are almost square (13x11mm and 14x12mm) and 4mm thick, pierced twice through one edge and have incised concentric circles around a central dot on one side, the other side being plain. The piercing on one of these beads (Object 4235) has been done badly and is off line to the extent that it appears on both surfaces of the bead. The two remaining beads are both Allason-Jones type 50 'disc bead with domed face and undercut sides' and are pierced laterally with two holes: the smaller of the two (Object 4237) measures 12x11x4mm and the larger one (Object 4239) measures 14x14x7mm. None of the beads is made with a particularly high level of craftsmanship and most have some faults and irregularities. Two segments of the fine copper wire on which they were strung survive (Object 4244).

## 7.3 **Zone 11**

7.3.1 A single polychrome glass bead was recovered from context 122030 associated with human remains (SK 153096). The bead is red with yellow trails and is globular in form. It appears to be Saxon in date but is quite badly abraded and will need more careful examination to be certain.

## 7.4 **Zone 13**

7.4.1 A single small globular bead in a pale blue green colour was recovered from context 230116 in Grave 230115. This burial was of a neonate and was provisionally dated to the Bronze Age as it is located within a Bronze Age ring-ditch. The bead, however, is of Roman or Saxon date with Saxon the most likely.

## 7.5 **Zone 19**

7.5.1 A total of 344 beads (288 glass, 7 amethyst, 2 rock crystal, 43 amber, 3 gypsum, 1 worked bone), some fragmentary, was recovered from 18 graves in Zone 19, all of Saxon date. Table 7.2 shows the breakdown of number and

type of beads per grave. The number of beads per grave ranged from one to 236, the latter number being obviously exceptional. There are three further beads from this grave (267071) adhering to the back of a disc brooch, along with some textile remnants, not included in this table. The beads have been classified according to Hirst's (2000) recommended scheme, with reference also to the assemblage from Dover Buckland (Evison 1987).

### *Glass beads*

#### 7.5.2 *Monochrome*

7.5.3 The majority of the glass beads (264) are monochrome types and are summarised in Table 7.3. Disc, annular, globular, biconical, barrel, short cylinder with straight sides and rounded sides, long cylinder, short and long square and pentagonal types are present, all except one being coiled rather than drawn. The most common form is annular (70 examples). Almost all of the annular beads (67) come from a single grave (267071). There are 74 cylinder examples but these are subdivided into long and short types, with straight or rounded sides according to both Hirst's (2000) classification and Evison's (1987) catalogue from the Dover Buckland cemetery. This subdivision provides important dating evidence. The second most common form was globular, with 46 of the 65 examples coming from grave 267071. The bead lengths were broadly classified according to Beck's (1927) parameters of short, standard and long.

7.5.4 The most common colour amongst the beads is red followed by yellow, green and blue. These are divided into several shades by both Hirst and Evison, and again the differences can provide key dating evidence. Of the 70 annular beads, exactly half are of red shades, all of which come from Grave 267071. There are 12 blue annular beads, 15 yellow and eight green. There were 20 each of red and yellow globular beads, six blue, ten green, 7 green black and two orange.

#### 7.5.5 *Polychrome*

7.5.6 There were 23 polychrome beads found in 5 graves, 17 of which were from Grave 267071. A summary of types is found in Table 7.4. By far the majority of these beads have a red or red-brown body colour with applied trails in white or yellow. Only one bead has more than one colour applied; this is an elongated biconical bead with a red background and yellow and white trails from Grave 267071. Another unusual bead is from Grave 153032 and is cylindrical but looks to be a composite bead comprising three short cylinders. This is similar to Evison's type B06 but is triple, not double. The wire drawn

zigzag trail on this bead is uncommon in that the trail has been drawn out laterally around the bead, rather than parallel to the perforation.

### *Amber beads*

7.5.7 A total of 43 amber beads were recovered from six graves. Graves 136110, 166117 yielded a single bead, Grave 279037 four beads and 166126 two, while Graves 267071 and 252079 had 18 and 17 respectively. The bead forms have been classified according to Evison's (1987) Dover Buckland Cemetery report and are summarised in Table 7.5. Most of the beads are fairly small and irregular in shape with the majority falling into Evison's A01 and A02 types and a single slightly larger bead which looks to have been formed into a flattened barrel shape. The bead from 136110, however, has been carefully shaped into a flattened disc (Evison type A03) with the perforation off-centre, meaning it would have formed a pendant.

### *Other beads*

7.5.8 The remainder of the assemblage comprises seven amethyst quartz, two rock crystal and three fragmentary gypsum beads, one worked bone pendant and one piece of pierced vessel glass. These are also summarised in Table 7.5. The amethyst beads are all either teardrop or long barrel shaped, ranging from 14mm to 24mm in length and are perforated longitudinally. Two were from Grave 126042 and the other five from Grave 171170. The rock crystal beads are both large and irregular in form but the overall shape is discoidal. One was found in a triple burial Grave 136112, one of only two beads from that grave and was found in the neck area, but the blue glass bead was in the hand area. The other rock crystal was part of the very large bead group in Grave 267071. The three very fragmented gypsum beads also came from this grave.

### *Distribution of beads*

7.5.9 Beads were recovered from a total of 18 graves (see Table 7.2). Over two thirds of the monochrome glass beads, three quarters of the polychrome glass beads and almost half the amber beads were recovered from Grave 267071. Apart from this grave, the highest number from a single grave was 31 from 252079, which had 11 monochrome and 3 polychrome glass beads and 17 amber beads. Grave 279037 yielded 15 monochrome glass beads and four amber beads and Grave 126042 had 13 monochrome glass beads and 2 amethysts. All the other graves contained 5 or less beads.

### *Discussion*

7.5.10 During the 7<sup>th</sup> to 9<sup>th</sup> centuries the presence of amber beads in graves declines markedly (Geake 1997, 12) although they may still be found singly. The



presence in two graves (252079 and 267071) of groups of 17 and 18 amber beads would therefore suggest they are possibly pre AD 600. Of the monochrome glass beads present in the large assemblage from Grave 267071 over 25% are annular and almost 20% globular but there are only two barrel-shaped and 3 biconical forms. The presence in this group of a number of straight sided short cylinders (Evison's B18 form) and the absence of round sided short cylinders (B19 form) is also suggestive of an early date. This grave also yielded 17 of the 23 polychrome beads from the cemetery.

7.5.11 The comparatively low numbers of polychrome beads in the assemblage as a whole, however, is indicative of a later date as they decline in number from the 6<sup>th</sup> century onwards, although they continued in use until the late 7<sup>th</sup> and early 8<sup>th</sup> centuries (ibid., 44). The presence of amethyst beads in graves 126042 and 171170, is also suggestive of a later date and Geake considers them to be a grave good type diagnostic of a post AD 600 date, with continental parallels suggesting a date range of *c* AD 590-675 (ibid. 12, 41). It is possible, therefore, that the cemetery was in use for a considerable period of time.

## 7.6 Zone 20

7.6.1 One broken monochrome glass bead was recovered from context 282008. It is of coiled globular form and turquoise in colour. The bead is of probable Saxon date.

## 7.7 Potential

7.7.1 Primarily, the beads have chronological value. Various types, particularly the polychrome glass beads, can be closely dated and so provide chronological evidence to augment that of the other grave goods from the Anglo-Saxon graves, with the *caveat* that some beads may have been retained as heirloom items. In addition, the beads can aid discussion on burial rites, and possible changes in these through time, and can also indicate how the EKAR burials relate to other Anglo-Saxon burial sites in East Kent, and their context within the historical funerary landscape.

## 7.8 Recommendations

7.8.1 The beads have already been individually recorded and described using recommended classificatory systems (Guido 1978; Hirst 2000; Brugmann 2004) to aid comparative discussion, and some preliminary discussion has been made of the chronological implications of the various grave groups. Some further research will be necessary to investigate the dating of selected

beads, and to check the bead data against that of the other grave goods. Further comparisons will be sought with other published groups of beads from East Kent, most of which come from other cemetery sites.

7.8.2 The existing assessment report will be enhanced using the additional data. Examples of each bead type within each grave group will be illustrated, as well as representative examples from other contexts (a total of about 100 beads). A selection of beads should be illustrated (see Table 7.6).

**Table 7.1. Zone 10: Bead types**

Context	Object	Count	Material	Form	Colour	Comments
148018	808	1	glass	unknown	Opaque pale green	Non-diagnostic
179269	4245	1	glass	annular	Opaque yellow	
179269	4244	18	glass	globular	Translucent blue	
179269	4244	4	glass	segmented	Translucent blue	All have 2 segments
179269	4244	2	glass	Drawn cylinder	Translucent blue	Longitudinal striations
179269	4244	11	glass	Drawn cylinder	Translucent blue green	Longitudinal striations
179269	4244	3	glass	Wound cylinder	Translucent blue green	
179269	4244	8	glass	segmented	Translucent blue green	2, 3 and 4 segments
179269	-	1	glass	Wound cylinder	Translucent blue green	Fragmented From Sample 8447
179269	-	1	glass	segmented	Translucent blue	Fragmented From Sample 8447
179269	-	12	glass	globular	Translucent blue	From Sample 8447
179269	-	3	glass	Wound cylinder	Translucent blue green	Fragmented From Sample 8448
179269	-	1	glass	segmented	Translucent blue green	Fragmented From Sample 8452
179269	-	1	glass	globular	Translucent blue	From Sample 8452
179269	4243	2	glass	globular	Translucent blue	With jet pillar bead
179269	4242	2	glass	globular	Translucent blue	With jet square bead
179269	4240	1	jet	pillar	black	
179269	4241	1	jet	pillar	black	
179269	4238	1	jet	pillar	black	Broken
179269	4243	1	jet	pillar	black	
179269	4242	1	jet	square	black	
179269	4235	1	jet	square	Black	
179269	4239	1	jet	Domed disc	Black	
179269	4236	1	jet	pillar	Black	
179269	4237	1	jet	Domed disc	black	
197085	212	1	glass	Annular	Opaque green blue	Broken – 50% present

**Table 7.2. Zone 19: Bead types by grave**

Context	Mono	Poly	Amber	Amethyst	Gypsum	Bone	Vessel	Crystal	Total
126042	7			2					9
126092	6								6
136110			1						1
136112	1							1	2
136151	5								5
153032	1	1							2
153077	2								2
153086	5								5
166106	5								5
166117	2		1						3
166126	2	1	2						5

Context	Mono	Poly	Amber	Amethyst	Gypsum	Bone	Vessel	Crystal	Total
171170	3	1		5					9
220110	2								2
228046						1			1
252078/9	11	3	17						31
267070/1	196	17	18		3		1	1	236
279037	15		4						19
286015	1								1
<b>Total</b>	<b>264</b>	<b>23</b>	<b>43</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>344</b>

Table 7.3. Zone 19: Monochrome bead types by grave

Grave	No.	Colour	Form	Comments	Dating
126042	4	semi-opaque green	short cylinder (rounded)	Buckland B19	AD675-750
126042	2	opaque red	short cylinder (rounded)	Buckland B19	AD675-750
126042	1	opaque red	biconical	Hirst C1	AD625-750
126092	4	pale green	short cylinder (rounded)	Buckland B19	AD675-750
126092	1	blue green	short cylinder (rounded)	Buckland B19	AD675-750
126092	1	opaque red	short cylinder (rounded)	Buckland B19	AD675-750
136112	1	blue	annular	Hirst A2	long lasting form
136151	2	opaque yellow	globular	Hirst B1	AD575-625
136151	1	semi-opaque green	short cylinder (straight)	Buckland B18	AD575-675
136151	1	dark olive green	disc	Hirst A1	long lasting form
136151	1	opaque orange	biconical	Hirst C1	AD625-675
153032	1	opaque red	short cylinder (rounded)	Buckland B19	AD675-750
153077	1	Green blue	biconical	Hirst C1	
153077	1	opaque brown red	short cylinder (rounded)	Buckland B19	AD675-750
153086	2	opaque orange	globular	Hirst B1	AD625-675
153086	2	opaque brown red	short cylinder (rounded)	Buckland B19	AD675-750
153086	1	semi-opaque green	short cylinder (rounded)	Buckland B19	AD675-750
166106/7	1	pale green	short cylinder (rounded)	Buckland B19	AD675-750
166106/7	1	blue green	thin-walled cylinder	Hirst G2	
166106/7	1	semi-opaque green	short cylinder (rounded)	Buckland B19	AD675-750
166106/7	1	opaque brown red	short cylinder (rounded)	Buckland B19	AD675-750
166106/7	1	pale blue green	short cylinder (rounded)	Buckland B19	AD675-750
166117	1	semi-opaque green	short cylinder (rounded)	Buckland B19	AD675-750
166117	1	opaque red	short cylinder (rounded)	Buckland B19	AD675-750
166126/7	1	dark blue	annular	Hirst A2	long lasting form
166126/7	1	Green blue	short cylinder (straight)	Buckland B18	AD575-675
171170	2	opaque orange	barrel	Hirst D1	AD625-675
171170	1	dark green	drawn cylinder crimped	Hirst L2	AD475-625
220110	2	opaque brown red	short cylinder (rounded)	Buckland B19	AD675-750
252079	1	opaque white	pentagonal section	Hirst K2	AD575 onwards
252079	5	semi-opaque green	pentagonal section	Hirst K2	
252079	2	opaque brown red	pentagonal section	Hirst K2	AD625-750
252079	1	opaque yellow	annular	Hirst A2	AD575-625
252079	1	opaque yellow	globular	Hirst B1	AD575-625
267070/71	4	pale green	barrel	Hirst D1	
267070/71	1	opaque red	biconical	Hirst C1	AD625-750
267070/71	1	pale yellow	long biconical		AD575-625
267070/71	1	opaque yellow	barrel	Hirst D1	AD575-625

Grave	No.	Colour	Form	Comments	Dating
267070/71	7	pale yellow	pentagonal section	Hirst K2	AD575-625
267070/71	8	opaque red	pentagonal section	Hirst K2	AD625-750
267070/71	1	opaque yellow	pentagonal section	Hirst K2	AD575-625
267070/71	4	semi-translucent yellow green	short 4-sided cylinder	Buckland B08	AD575-675
267070/71	2	opaque red	long square section	Hirst K1	AD575-675
267070/71	1	Green blue	long square section	Hirst K1	AD575-675
267070/71	2	opaque yellow	long square section	Hirst K1	AD575-675
267070/71	1	Blue	short 4-sided cylinder	Buckland B08	AD575-675
267070/71	3	Green/ black	annular	Hirst A2	long lasting form
267070/71	1	dark blue	annular	Hirst A2	long lasting form
267070/71	5	pale green	annular	Hirst A2	long lasting form
267070/71	9	Green blue	annular	Hirst A2	long lasting form
267070/71	14	opaque yellow	annular	Hirst A2	AD575-675
267070/71	13	opaque brown red	annular	Hirst A2	AD625-750
267070/71	22	opaque red	annular	Hirst A2	AD625-750
267070/71	3	pale green	globular	Hirst B1	
267070/71	5	Green blue	globular	Hirst B1	
267070/71	12	opaque red	globular	Hirst B1	AD625-750
267070/71	8	opaque brown red	globular	Hirst B1	AD625-750
267070/71	1	Blue	globular	Hirst B1	
267070/71	17	opaque yellow	globular	Hirst B1	AD575-675
267070/71	3	pale green	short cylinder (straight)	Buckland B18	AD575-675
267070/71	2	semi translucent green blue	short cylinder (straight)	Buckland B18	AD575-675
267070/71	14	opaque red	short cylinder (straight)	Buckland B18	AD575-675
267070/71	8	opaque yellow	short cylinder (straight)	Buckland B18	AD575-625
267070/71	7	green yellow	thin-walled cylinder	Hirst G2	AD575-675
267070/71	3	opaque yellow	thin-walled cylinder	Hirst G2	AD575-675
267070/1	7	semi translucent green blue	thin-walled cylinder	Hirst G2	
279037	7	Green black	Coiled globular	Hirst B2	
279037	7	Opaque green	Coiled globular	Hirst B2	
279037	1	Opaque green	annular	Hirst A2	Long-lasting form
286015	1	Blue green	short cylinder (rounded)	Buckland B19	AD675-750

Table 7.4. Zone 19: Polychrome bead types by grave

Context	obj. no	form	body	colour 1	colour 2	motif	size	length	comments
153032	1201	A4	2.2	5.1		P4	2	long	lateral wire-drawn zig-zag pattern
166126	2076	A1	6.7	2.1		P7	2	short	almost all inlaid red glass missing
171170	1839	A2	7.7	8.1		P7	2	short	
252079	2339	A1	7.3	8.1		P9	2	short	fragmented
252079	2330	C1	2.2	5.1		P7	2	long	
252079	2449	G1	3.1	8.1		P13	2	long	degraded surface so motif inconclusive
267070	4717	C1	2.2	8.1		P23a	2	standard	trailed spots; from sample 7497
267071	2377	C1	2.2	5.1		P7	2	long	
267071	2354	A1	7.8	8.1		P7	2	short	
267071	2322	G1	2.2	8.1		P10	2	long	
267071	2551	G1	2.4	8.1		P8	2	long	
267071	3079	B1	8.1	2.2		P7	2	standard	
267071	3004	B1	2.2	8.1		P8	2	standard	
267071	2533	B1	2.2	8.1		P23a	2	standard	

Context	obj. no	form	body	colour 1	colour 2	motif	size	length	comments
267071	2577	B1	2.2	8.1		P4	2	standard	
267071	2321	C1	2.4	8.1	5.1	P20	2	long	
267071	2560	D1	2.2	8.1		P7	2	standard	
267071	2559	D1	2.2	8.1		P7	2	standard	
267071	3086	D1	2.2	8.1		P7	2	standard	
267071	2534	D1	2.1	5.1		P7	2	standard	
267071	2558	D1	2.1	5.1		P7	2	standard	
267071	3010	D1	2.1	5.1		P7	2	standard	
267071	3036	D1	2.1	5.1		P7	2	standard	

Table 7.5. Zone 19: Non-glass bead types by grave

Context	Object No.	Material	Form	Size
126042	4733	Amethyst Quartz	Buckland A05	14x10mm
126042	4744	Amethyst Quartz	Buckland A05	14x8mm
136110	862	Amber	Buckland A03	medium
136112	2054	Rock Crystal	discoid irregular	large
166117	2062	Amber	Buckland A01	small
166126	2078	Amber	Buckland A02	medium
166127	4724	Amber	Buckland A03	large
171170	1847	Amethyst Quartz	Buckland A05	17x10mm
171170	1849	Amethyst Quartz	Buckland A06	23x14mm
171170	1843	Amethyst Quartz	Buckland A06	15x8mm
171170	1848	Amethyst Quartz	Buckland A05	16x9mm
171170	1850	Amethyst Quartz	Buckland A06	24x13mm
228046	2417	Worked bone	hemispherical (perforated off-centre)	13mm
252078	2482	Vessel glass	pierced base of small vessel	
252079	2491	Amber	Buckland A02	medium
252079	2497	Amber	Buckland A02	medium
252079	2331	Amber	Buckland A02	medium
252079	2496	Amber	Buckland A02	medium
252079	2493	Amber	Buckland A02	medium
252079	2338	Amber	Buckland A02	medium
252079	2494	Amber	Buckland A02	medium
252079	2495	Amber	Buckland A02	medium
252079	2334	Amber	Buckland A02	medium
252079	2340	Amber	Buckland A02	medium
252079	2486	Amber	Buckland A01	small
252079	2489	Amber	Buckland A02	medium
252079	2332	Amber	Buckland A02	medium
252079	2487	Amber	Buckland A02	medium
252079	2335	Amber	Buckland A02	medium
252079	2488	Amber	Buckland A02	medium
252079	2341	Amber	Buckland A02	Medium
267071	3029	Gypsum	fragmented - identifiable microscopically	
267071	3096	Gypsum	fragmented - identifiable microscopically	
267071	3037	Gypsum	fragmented - identifiable microscopically	
267071	2355	Amber	Buckland A01	small
267071	2579	Amber	Buckland A01	small
267071	2367	Amber	Buckland A02	medium

Context	Object No.	Material	Form	Size
267071	2586	Amber	Buckland A01	small
267071	2587	Amber	Buckland A02	medium
267071	2584	Amber	Buckland A01	small
267071	2545	Amber	Buckland A02	medium
267071	2563	Rock Crystal	discoid irregular	large
267071	3032	Amber	flattened barrel	large
267071	3030	Amber	Buckland A02	medium
267071	3034	Amber	Buckland A01	small
267071	3019	Amber	Buckland A01	small
267071	2391	Amber	Buckland A02	medium
267071	2580	Amber	Buckland A02	medium
267071	3015	Amber	Buckland A02	medium
267071	2392	Amber	Buckland A01	small
267071	2371	Amber	Buckland A02	medium
267071	3078	Amber	Buckland A02	medium
267071	2380	Amber	Buckland A02	medium
279037	2465	Amber	Buckland A01	small
279037	2469	Amber	Buckland A01	Small
279037	2472	Amber	Buckland A01	Small
279037	2477	Amber	Buckland A01	small

Table 7.6. Objects for illustration (Zone 19)

Context	Object	Description
126042	4733, 4744	2 amethyst quartz beads
126042	4729	Eg. of short cylinder rounded glass bead
126042	4732	Biconical glass bead
126092	1241	Eg. of short cylinder rounded glass bead
136110	862	Amber pendant
136112	2054	Rock crystal bead
136112	2016	Annular glass bead
136151	2089	Eg. of globular glass bead
136151	3441	Short cylinder straight glass bead
136151	2090	Disc-shaped glass bead
136151	3440	Biconical glass bead
153032	1203	Short cylinder rounded glass bead
153032	1201	Red and yellow wire-drawn polychrome glass bead
153077	2071	Short cylinder rounded glass bead
153077	2072	Biconical glass bead
153086	2096	Eg. of globular glass bead
153086	2095	Eg. of short cylinder rounded glass bead
153086	3411	Amethyst quartz bead
166106	2041	Thin-walled cylinder glass bead
166106	2039	Eg. of short cylinder rounded
166117	2061	Eg. of short cylinder rounded
166117	2062	Small amber bead
166126	2077	Annular glass bead
166126	4668	Short cylinder straight glass bead
166126	2076	Green and red polychrome glass bead
166126/7	2078,4724	Amber beads
171170	1839	Blue and white polychrome glass bead
171170	1843,47, 48,49,50	Five amethyst quartz beads
171170	1851	Eg. of barrel-shaped glass bead
171170	1846	Drawn cylinder glass bead
220110	2093	Eg. of short cylinder rounded glass bead
252079	2330	Red and yellow polychrome glass bead
252079	2498	Eg. of pentagonal section glass bead
252079	2344	Annular glass bead
252079	2343	Globular glass bead

Context	Object	Description
252079	2338,41,86 87,88,94	Egs. of amber beads
252079	2482	Glass vessel base used as bead
267070	4717	Red and white biconical polychrome glass bead
267071	2534	Eg. of red and yellow barrel polychrome glass bead
267071	3086	Eg. of red and white barrel polychrome glass bead
267071	2577	Red and white globular polychrome glass bead
267071	3079	Red and white annular polychrome glass bead
267071	2321	Red, yellow and white biconical polychrome glass bead
267071	2354	Blue and yellow disc polychrome glass bead
267071	2533	Red and white globular polychrome glass bead
267071	3004	Red and white globular polychrome glass bead
267071	2551	Red and white cylinder polychrome glass bead
267071	2371,80, 2584,86,87 3015,32	Egs. of amber beads
267071	2563	Rock crystal bead
267071	2322	Red and white cylinder polychrome glass bead
267071	2377	Red and yellow barrel polychrome glass bead
279037	2456	Coiled globular glass bead
279037	2477	Eg. of small amber bead
286015	2404	Short cylinder rounded bead

## 7.9 References

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## 8 PIPE CLAY FIGURINES BY SUE NELSON

- 8.1.1 Three fragments of a pipe-clay figurine were recovered from Zone 20 and one from Zone 6. The fragment from Zone 6 (Object 873) was recovered from a pit of Early Romano-British date (269061) and is made from a very white clay. The piece is curved and may represent drapery but the lines do not flow so it may represent part of a column. It is possibly part of a Venus figurine.
- 8.1.2 The other three fragments all come from a Roman sunken-featured building in Zone 20. Two are conjoining pieces and the other, although from a different context, is almost certainly from the back of the same figurine. The two pieces (Object 4162) are from the front of a Dea Nutrix (nursing Goddess) showing the lower portion of a figure seated in a wicker chair, although the feet are missing; the third piece represents the back of a wicker chair. The figurine was mould cast in two halves and there is an air hole in the left hand side, placed to allow gases to escape during firing. It was probably made in Central Gaul in the 2<sup>nd</sup> century AD. These figurines are more commonly found in Gaul than in Britain, though a complete example was discovered in an infant burial in Baldock, Hertfordshire in 1988.

### 8.2 Recommendations

- 8.2.1 The figurine fragments have already been recorded to an appropriate archive level, and briefly discussed in terms of their identification, potential origin and dating. Little further work is necessary, beyond some additional comparative research in order to note other occurrences of such objects in Kent, and to place them within their regional and historical context.
- 8.2.2 The existing assessment report will be enhanced with this additional data, and all three fragments recovered will be illustrated.



**9** CLAY PIPES *BY SUE NELSON*

- 9.1.1 A very small total of just four fragments of clay pipe were recovered from the excavations in all zones. A complete but undecorated pipe bowl and a plain stem fragment came from context 175152 in Zone 1 and can be dated stylistically to the 17<sup>th</sup> century. A plain stem fragment was found in context 141093 in Zone 23 and another stem fragment came from context 288067 in Zone 21. This fragment was painted at the mouthpiece end (although the very end is missing) in a light red-brown and the rest of the stem shows traces of a yellow-green glaze. None of the stem fragments offer any close dating evidence, although all are clearly post-Medieval. No further work is recommended.

**10 CERAMIC AND CLAY ARTEFACTS** BY CYNTHIA POOLE

10.1.1 A total of 22 objects weighing 663 g were recovered from the excavations and the forms and types are tabulated in Table 10.1. One was part of an Anglo-Saxon bun shaped loomweight and the remainder were spindle whorls. Eight of the spindle whorls were made from pottery (though one may be stone, when more closely examined) and the remainder were of fired clay. The majority are complete or have suffered only minor surface damage. Other spindle whorls recovered from the excavations were made of other material, such as animal bone and oyster shell. These are assessed elsewhere in this volume.

**Table 10.1: Quantification and types of clay artefact**

Form	Lwt	Spindle Whorl				Spindle Whorl Total	Total
		bun	conical	discoidal	hemispherical		
Type	bun	conical	discoidal	hemispherical	tronconique		
Count	1	2	10	3	6	21	22
Weight	84	29	285	95	170	579	663

10.1.2 Fabrics have not been analysed, as these are usually more closely related to pottery production than structural fired clay.

10.1.3 The spindle whorls are almost all very well made and neatly finished. They fall into four types: discoidal, hemispherical, conical and tronconique. Sizes range from 7-31 mm thick by 20-73 mm diameter. Perforations range from 5-12 mm diameter. Most of the perforations have been neatly drilled or pierced, and are cylindrical or conical in form. Four of the spindle whorls have been decorated with incised circles, concentric around the perforation, scratched after firing. The spindle whorls made from pottery discs are probably of Iron Age-Roman date, but the fired clay spindle whorls are likely to be Saxon.

**10.2 Statement of potential and recommendations**

10.2.1 The fired clay objects are all connected with spinning and weaving. The numbers are not great for the area excavated, which suggests they represent small scale domestic production of wool. The spindle whorls were probably personal items belonging to individuals. A comparison with spindle whorls from other areas of Kent, and if Saxon particularly with material from the cemetery sites, may show links to other areas of the region.

10.2.2 Recording of all the spindle whorls should be completed. Fabrics should be identified by the relevant pottery specialist. Comparative research needs to be done to verify their date. A short report should be produced. A sample of 8

objects, including all the decorated ones, should be illustrated. As there are additional spindle whorls in other materials, the group would be better dealt with by a single specialist considering the complete assemblage of spindle whorls.

<b>Task</b>
Recording the assemblage
Analysis of data, research, writing report.
Fabric identification by pottery specialist
Illustration brief and checking of illustrations
Illustration of 8 objects (photography or drawing)

**11 AMBER, JET, SHALE AND OTHER MINERALS** BY SUE NELSON WITH ALISTAIR BARCLAY**11.1 Amber**

11.1.1 An amber V-perforated button (ON 2266) came from a grave (which also contained a food vessel) within a ring-ditch on Zone 21. It was associated with SK246136 (context 246135) and was found 'inside the mouth'. Surface condition is poor with the original surface oxidised to a whitish-yellow, which is crazed and exfoliated in places. It comprises two joining fragments with an old break, perhaps caused by perforation.

11.1.2 The button is of hipped conical shape (ht 20mm, diam 23mm, wt 10.53g) with a typical V-perforation in the base and is closest in form to Shepherd's type 3- (2009, fig 2 and 340: form found in Wessex and East Yorkshire and in a variety of materials). Beck and Shennan list 13 general occurrences of this type of amber object (1991, table 4.12: Shepherd 2009 lists up to 18) with the nearest findspot possibly coming from North Shoebury, Essex (Shepherd 2009, appendix, 357: type 4, details uncertain). In Britain this type of object occurs occasionally in Beaker (Yorkshire coast) and mostly in Early Bronze Age (Wessex and elsewhere in Britain) funerary contexts (Shepherd 2009). Association with a Food Vessel is unusual, although both types of object are extremely rare for Thanet and indeed Kent generally. A provisional date of *c.* 2200-1950 BC is likely but should be confirmed by radiocarbon dating the human bone.

11.1.3 A comparative study with similar beads (type 3) of amber and other materials (jet/shale and bone) should be made and coastal connections (in particular with East Yorks and Wessex) considered as part of a wider study of the grave assemblage. Analysis of the amber to identify its place of origin is unlikely to be helpful (Alison Sheridan pers comm) as material is known to have been exchanged from the Baltic and collected as erratics from the East coast of England. Other finds of amber from East Kent are rare and include an amber bead from the upper ditch fill of the Kingsborough K2 causewayed enclosure and a pommel fragment from the Ringlemere henge.

**11.2 Jet**

11.2.1 Nine jet beads were recovered from Romano-British Grave 179267 in Zone 10 and these are discussed in detail in the bead report for that zone. Two other pieces of jet were recovered, one a fragment of a polished and worked artefact (ON 4687) from context 244010 (Zone 19), in a pit of probable Romano-British date, and one an un-worked flake from context 141022 (Zone 3), in a

Medieval ditch containing pottery dating from 1000-1500AD. Neither of these two objects is chronologically diagnostic.

### 11.3 Shale

11.3.1 A total of 14 shale artefacts were recovered from all zones. The majority of these are either broken or unfinished pieces. One complete bracelet came from Zone 13 and a number of incomplete bracelets, rough-outs and a piece of un-worked shale were found in Zone 6, the latter group suggesting that shale was being worked in the vicinity. (Evidence of large-scale, prehistoric shale working was recently discovered at Margett's Pit in west Kent). None of the shale objects is decorated.

#### *Zone 6*

11.3.2 A total of seven shale artefacts were recovered from Zone 6 (see Table 11.1). Apart from a large piece of un-worked shale, all of these objects are partial bracelets, three of which are unfinished. Object 3968 from context 291131 was clearly in the early stages of manufacture when it failed as there are many visible tool-marks on all surfaces. All the objects are from Iron Age or Early Romano-British contexts.

**Table 11.1. Shale from Zone 6**

Context	Object	Description	Count	Percentage	Diameter	Width	Depth	Finished
305018	870	Bracelet fragment	2	35%	80mm	10mm	10mm	Unfinished
303169	4076	Bracelet fragment	1	<10%	-	18mm	15mm	Finished
130012	3296	Bracelet fragment	4	80%	70mm	6mm	11mm	Finished
130229	3901	Bracelet fragment	1	<10%	-	6mm	9mm	Finished
239186	893	Bracelet fragment	2	25%	90mm	14mm	9mm	Unfinished
291131	3968	Bracelet fragment	1	55%	100mm	27mm	16mm	Unfinished
274067	-	Un-worked piece	1	-	-	-	-	-

#### *Zone 12*

11.3.3 Two fragments of a broken shale bracelet rough-out were recovered from environmental Sample 5006 (ON 813) from context 166003 associated with SK166001, a burial of Romano-British date. Less than 10% of the bracelet is present. It is 12mm wide, but has split laterally so the depth cannot be measured.

*Zone 13*

11.3.4 A total of five shale objects were recovered from Zone 13. The assemblage comprises one complete bracelet and four bracelet fragments, two of which were unfinished (see Table 11.2). Object 1501 is the only complete shale artefact found from all zones. It was found in association with SK200066 in a pit of Iron Age date. It is particularly large and therefore probably worn as an armlet. It is very well finished, but not decorated.

**Table 11.2. Shale from Zone 13**

Context	Object	Description	Count	Percentage	Diameter	Width	Depth	Finished
200066	1501	Complete bracelet	1	100%	100mm	11mm	16mm	Finished
200065	4654	Bracelet fragment	1	30%	70mm	7mm	8mm	Finished
248089	4655	Bracelet fragment	1	20%	80mm	10mm	-	Unfinished
154082	1506	Bracelet fragment	1	20%	70mm	10mm	-	Unfinished
168167	7124	Bracelet fragment	1	15%	80mm	6mm	6mm	Finished

*Zone 14*

11.3.5 Two shale objects came from Zone 14. A fragment of a shale bracelet rough-out was recovered from context 230102 in pit 230088 of Romano-British date. It measures 100mm in diameter, 32mm in width and 15mm in depth. A single broken shale loom-weight (ON 1712) came from context 212075 in a pit of Saxon date. Approximately 60% of the object is present comprising two conjoining pieces. It has a diameter of 120mm and is 45mm thick with a perforation diameter of 30mm, although this varies as it is fairly roughly made.

*Zone 19*

11.3.6 A single shale object (Object 2052) was recovered from a Saxon burial context in Zone 19 in association with SK136113. It is clearly a piece of carved shale but its function is unknown and no parallel has yet been found for it; it may be a re-used Roman artefact.

**11.4 Other minerals**

11.4.1 A small fragment of yellow mineral was recovered from context 153076, Grave 153075 in Zone 19. The grave is of Saxon date. The mineral appears to be gypsum as it has the typical monocline crystal structure and is very soft, but is a bright sulphurous yellow. Several fragments of beads made from white gypsum were recovered from Grave 267072, another Saxon grave in Zone 19,

and context 267071 from the same grave contained a small piece of worked quartz. This has been carved to a cylindrical shape but is not pierced so may have been inlaid into a piece of jewellery or a box.

## 11.5 Potential and recommendations

- 11.5.1 The jet beads will be included with the other beads of various material types (see above). The two other jet objects have already been briefly described and discussed; only one is potentially diagnostic, and some limited comparative research will be undertaken in an attempt to identify this object to type. This object will be illustrated.
- 11.5.2 Most of the shale objects conform to common, well paralleled Iron Age and Romano-British types, and have already been recorded and described to an appropriate level. However, the implications of the presence of both finished and unfinished objects on the site, as well as some unworked shale, requires further consideration, as does the potential source of the shale used, in the light of the recent discovery of a late prehistoric shale-working site at Burham in west Kent (Wessex Archaeology 2010). A piece of carved shale from an Anglo-Saxon grave in zone 19, currently without known parallel, also requires further comparative research.
- 11.5.3 The existing assessment report will be enhanced with the additional data and the discussion of shale-working broadened. Selected objects will be illustrated to represent the various stages of shale working (see below), as well as the carved piece from Zone 19.

### *Objects for illustration*

Object 870 (305018) an example of an unfinished bracelet from Zone 6  
Object 3296 (130012) an example of a finished bracelet from Zone 6  
Object 3968 (291131) a good example of the early stages of a bracelet rough-out with many visible tool-marks from Zone 6  
Object 1501 (200066) a whole shale bracelet from Zone 13  
Object 4654 (200065) example of a finished bracelet from Zone 13  
Object 1712 (212075) Broken loom-weight from Zone 14  
Object 2052 (136113) Unknown object from Zone 19

## 11.6 References

Beck, C. and Shennan, S. 1991 *Amber in Prehistoric Britain*, Oxbow Monogr 8

Shepherd, I.A.G., 2009 The V-bored buttons of Great Britain and Ireland, *Proc Prehist Soc* 75, 335-369

Wessex Archaeology 2010, Margetts Pit, Margetts Lane, Burham, Kent: post-excavation assessment and updated project design, unpubl. client rep., ref. 70760.06

**12 WORKED BONE** BY SUE NELSON**12.1 Zone 3**

12.1.1 A single worked bone artefact (ON 840) was recorded from context 204021 in an early medieval ditch in Zone 3. This is a spindle whorl made from the proximal head of a cattle femur. It is 38mm in diameter and has a 7mm perforation, which appears to have been drilled from both sides.

**12.2 Zone 6**

12.2.1 A total of 17 artefacts of worked bone and antler came from Zone 6, all of probable Iron Age or Roman date. Five of these items are perforated long-bones and one is a perforated portion of a sheep/goat pelvis, broken at the opposite end to the perforation (its form is, therefore, uncertain). Three of the long-bones (875, 4451 and 4452) are perforated on one side only. Although all these are broken it is clear that two of them had been chopped and would have tapered to a point. On the other, the break is too high up to be certain. All three are formed from the radial bones of sheep/goat. Object 867, made from the proximal end of a sheep/goat tibia, is complete down to its tapered point and measures 90mm in length. Object 868 is broken but was clearly also tapered and is formed from the proximal end of a pig tibia. Both these artefacts are perforated and display considerable polishing from prolonged use, but the function of such points is unclear. Object 4409 from context 296070 is probably another example of a perforated bone point. It is formed from the distal metatarsal shaft of a sheep/goat. It has broken along its length and at both ends so its precise form cannot be ascertained, but the remains of a perforation are clearly visible on one edge. The surface is highly polished.

12.2.2 A complete bone point (ON 3891) from context 125166 was formed from the proximal end of a sheep/goat tibia. It measures 104mm in length and has been drilled along its length. All but the top 20mm have a high degree of use-wear polish. Object 883 from context 273047 is a fragment of a bone point from which the tip is missing, roughly made from the long-bone shaft of a large mammal. The pointed end is polished from prolonged use, probably as a piercer. Two further bone points were recovered, comprising Object 2968 from context 254087 and Object 2987 from context 302069. The former is a broken fragment shaped from the long-bone of a mammal and the latter is very roughly shaped, probably fashioned from a sheep/goat long-bone. There is little evidence of use-wear, though the tip is slightly polished. Objects 656 and 657 are two conjoining sections of a bone needle. The very end of the head, above the eye is missing.



- 12.2.3 Object 4456 from context 269249 is a small fragment of a polished antler artefact with a ring-and-dot motif. The thickness of the object and its slight curvature would indicate it was probably part of a handle. Another handle (ON 3293) is hollow and formed from the central shaft of a horse metatarsal with visible saw marks at both ends. It is 84mm in length and 25mm in diameter, undecorated but highly polished. A third handle (Object 3283) is formed from the antler of a probable red deer. It is 96mm long and slightly elliptical in section with a maximum diameter of 35mm. It is undecorated and the surface is degraded, but some polish is still discernible. Finally, Object 3906 from context 297108 is a socketed antler handle that has split in half lengthways and is broken at the end where the tang would have fitted into the socket. The handle has been tapered and carved to a T-shaped end. It is undecorated.
- 12.2.4 Object 4199 from context 288159 is a fragment of a weaving comb formed from a cattle scapula. No teeth remain on the comb but the serrated edge where the teeth would have been is discernible. The centre of the bone has been drilled out and the object has acquired a high level of patination through prolonged use.

### **12.3 Zone 11**

- 12.3.1 A single worked bone artefact, Object 432, came from a Romano-British context (143150) and is an almost complete tapered bone pin. The head is chamfered to a slight point and the very end of the tip is missing. It has a highly polished but undecorated surface.

### **12.4 Zone 12**

- 12.4.1 Two worked bone artefacts were recovered from Zone 12. Object 1429 from context 190079 in an Early Iron Age ditch is a squared-off hollow handle formed from a cattle metacarpal bone. It is almost complete, with slight damage to one end, and measures 87mm in length and 21mm across with a perforation 12mm in diameter along its length, forming a hollow tube. There are three sets of two incised around its circumference, one at each end and one slightly off centre. The surface is degraded but traces of polish can still be detected. Object 811 from context 175009 is the tip of a polished bone pin or point of unknown purpose; it is too small to discern its original form.

### **12.5 Zone 13**

- 12.5.1 The four worked bone artefacts recovered from Zone 13 all came from probable Iron Age contexts. Object 1537 from context 175154 is a complete bone pin measuring 75mm in length, tapered to a fine point but flattened at the

opposite end. It is too small to determine the type and species of bone. The surface is degraded but some polish is still discernible. Object 1528 is a probable amulet made from a pierced canine tooth of a dog. It was found in association with SK126143 in a Middle Iron Age deposit. Object 1511 is a fragment of sheep/goat tibia with two holes drilled from the outside and evidence on the edges that there were at least two more holes around the circumference of this object, but not in exact alignment. The surface shows a high degree of polish but its function is unclear. Object 1522 from context 177092 in an undated pit is a complete bone pin measuring 79mm in length. The type and species of bone cannot be determined. It displays a very high degree of polish on all surfaces.

## 12.6 Zone 14

- 12.6.1 A total of four artefacts were recovered from Zone 14. Object 835 from context 139073, an Early Romano-British feature, is a roughly pierced fragment of sheep/ goat pelvis, drilled from one side. There is no shaping or polish and there is no obvious function. Two further artefacts come from features of uncertain date. These are a very fine complete tapered bone pin (ON 824) measuring 48mm in length and formed from a bird bone, and a complete bone piercer (ON 832) measuring 101mm in length and formed from a pig fibula; its shaft is polished through prolonged handling.
- 12.6.2 Objects 1565 and 4686 are parts of a single artefact, probably a handled comb, partially recovered on site and partially from an environmental sample. They include one large piece and several small fragments of a carved antler handle with a pattern of incised lines around the circumference interspersed with chevrons and plain sections. There are three other curved fragments, two of which show iron staining from rivets, and one flat piece. The handle is broken off too high up to discern any socket but the flat piece shows remains of possible teeth. The three other pieces from the same context recovered from the sample comprise one curved fragment of similar design to Object 1565 and two flat pieces which are parts of a comb plate. These may be the remnants of two objects or may have all have been part of the same handled comb.

## 12.7 Zone 19

- 12.7.1 All seven bone or antler artefacts from Zone 19 were recovered from burial contexts, six from Saxon graves and one from an Iron Age burial.
- 12.7.2 Three of the objects from Saxon graves are fragments of antler combs, one single-sided and two double-sided. Object 4682 from context 153077 is a small fragment of a composite comb with an iron rivet still in place. Object

2413 comprises multiple fragments of another composite comb of antler with iron rivets. Object 2435 comprises many fragments of a single-sided antler comb with iron stains where the rivets once fitted. The surfaces of all these combs are badly degraded and any decoration that was once present has disappeared.

12.7.3 Object 2053 from context 136113 in Saxon grave 136110 is a complete two-ended weaving tool or 'thread picker' measuring 82mm in length. This is very similar to object 75/5 from the Dover Buckland cemetery (Evison 1987, fig. 38). Evison (ibid. 112) reports that 'in England they are found both in the graves of women and in settlements'. This object has a badly degraded surface and it is not possible to identify from what animal it was made, but it may be antler rather than bone. Object 2029 was recovered from the same grave (136110) as the 'thread picker'. This comprises several flat fragments of carved antler, possibly decorative plates from a box. The surface is degraded but there are traces of incised linear and small ring-and-dot decoration. There are also traces of what appears to be a red pigment on some of the pieces. The other item from the Saxon cemetery is a bone pendant bead, Object 2417, recovered from context 228046. It is hemispherical and formed from the head of a femur, probably of sheep/goat. The hole is drilled close to one edge and drilled from both sides. The outer curved surface is somewhat degraded but the sawn surface retains some polish.

12.7.4 Object 1808 was recovered from context 205107 and was apparently associated with an Iron Age burial within the same pit. It is a pierced fragment of cattle carpal bone, highly polished on both surfaces, but it is not carved or shaped and is not polished on its outer 'rim'. Its function is unclear.

## **12.8 Zone 20**

12.8.1 Only two items of worked bone were recovered from Zone 20, both from pits of Romano-British date. Object 4032 from context 126099 is a complete tapered bone pin. It measures 112mm in length. The surface is very degraded and no decoration or polish is visible. Object 890 from context 250098 is a two-ended bone pin, but one tip is missing. It has a polished surface but is undecorated. It is not possible to determine the species of origin of either of these artefacts.

## **12.9 Potential and recommendations**

12.9.1 The worked bone has already been recorded to an appropriate archive level, and the various types discussed in terms of their chronological and functional

implications. Some further research will be necessary to establish dated parallels for the various types.

- 12.9.2 The existing assessment report will be enhanced with the additional data. Selected objects will be illustrated to represent the various types (a maximum of around 20 objects).

**13 WORKED FLINT BY PHIL HARDING**

13.1.1 Worked flint was collected from two phases of work along the route of the East Kent Access Road. An initial phase of test pitting and fieldwalking produced 71 and 67 pieces respectively of worked flint. These pieces were included in a separate report which is summarised here.

13.1.2 The majority of pieces were unretouched flake debitage, and as such were not closely dateable. Most were broad and squat, but this is a frequent bias in (especially) fieldwalked assemblages, where heavier pieces survive better.

13.1.3 A very small number of pieces could be dated more closely. A spurred awl from 1601 is similar to pieces which are generally accepted as Late Neolithic, as are examples from 2403 and 12201 (the latter on a flake of Bullhead flint). A flake with rather abrupt retouch straight down one edge is likely to be of a similar date (from 109034). There were five scrapers: one cannot be dated, two or three are probably Bronze Age, one (from 101111) is probably Early Neolithic. Other tools are limited to pieces with miscellaneous retouch or use, which cannot be dated.

13.1.4 Cores and core fragments were predominantly later types (perhaps later Neolithic or Early Bronze Age). The only noteworthy exception is a heavily patinated sub-pyramidal flake core from 2602, which is an earlier Neolithic type.

13.1.5 A total of *c.* 589kg of burnt flint was also recorded from the investigations, and this is quantified by zone in Table 13.1.

**Table 13.1. Quantification of burnt flint from excavations, by weight and by zone**

Zone	Weight (grams)
1	3004
2	1391
3	15,339
4	28,882
5	2609
6	168,281
7	18,604
8	1391
9	33
10	9042
10a	26,300
11	10,457
12	21,409
13	243,340
14	12,948
15	-
16	(no excavation)
17	-
18	43
19	17,661
20	2822

Zone	Weight (grams)
21	422
22	595
23	3216
24	-
25	(removed from scheme)
26	1713
27	(no excavation)
28	-
29	-
TOTAL	<b>589,073</b>

## 13.2 Worked flint from the excavations

13.2.1 Worked flint from the road construction phase of excavations was examined in two phases.

### *Phase 1*

13.2.2 An initial assessment of worked flint from the principal zones was assessed a sit was processed to allow preliminary conclusions to be made regarding the density and date of the material. This made it possible to identify any occupation on sites not represented by archaeological features. This assessment was optimistic that the worked flint represented an important sample of material and that larger assemblages would offer the chance to study the development of occupation and early settlement across the landscape in this part of Kent.

13.2.3 It noted the availability of high quality raw material and that the condition of individual pieces was very good. This was attributed to fine grained sediment that minimised edge damage. Patinated material was more prevalent near the Chalk.

13.2.4 From a chronological perspective there was very little to indicate Mesolithic activity; nevertheless it noted that blades were present along most of the route, but were less frequent, perhaps overwhelmed by flakes, where they coincided with areas of Bronze Age activity. Technological indicators, principally platform abrasion and well struck platform rejuvenation tablets, tended to confirm that blade manufacture was a consistent technology, using local, good quality, frequently Bullhead, flint.

13.2.5 Retouched material consistent with (Early) Neolithic assemblages included an axe, microdenticulates and leaf arrowheads. The most easily identifiable, distinctive pieces tended to favour the earlier rather than the later Neolithic. However broader, squat flakes, which are generally accepted to be characteristic of Late Neolithic and Bronze Age industries were present in

most areas. This material was characterised by hard hammer percussion and denticulate retouch to flake blanks.

- 13.2.6 This initial assessment concluded that it had provided a very firm basis for earlier activity than might be guessed from the excavated features and speculated that more interesting material would be forthcoming as the project progressed.

### *Phase 2*

- 13.2.7 The entire worked flint assemblage has been quantified onto the Wessex Archaeology database. This quantification has been accompanied by detailed notes summarising the contents of the assemblage by excavation zone. These notes are intended to assist the subsequent analysis of the assemblage. Provisional conclusions suggest that there were very few large groups of material. Subsequent analysis will be necessary to group material by context to confirm which ones are securely stratified; however it is likely that most of the assemblage comprised residual artefacts from later periods. Nevertheless the presence of diagnostic material has been noted and the occurrence of this component forms vital evidence that can be used to reconstruct activity across the landscape.

- 13.2.8 Isolated flakes were noted that were in a slightly rolled condition and which may hint at Palaeolithic activity on Thanet. A small number of pieces are already known from the area and additional material is an interesting supplement to that body of evidence.

- 13.2.9 A small number of pieces were also noted that may represent evidence of human presence soon after the Last (Devensian) Glaciation. This period of re-colonisation, following the retreat of the ice sheet, may be represented by a fragment of a burnt blade and by a burin. These pieces by no means confirm human occupation at this time but do deserve consideration, at a time that evidence of activity is extremely scarce.

- 13.2.10 There were no major discoveries of Mesolithic flint working, only two microliths, both from Zone 6, a tranchet axe and tranchet axe sharpening flakes were found. This is in keeping with present knowledge from Thanet where Mesolithic activity is known only from records of diagnostic artefacts, but no flint working sites. Nevertheless consideration of the context of this additional material will enhance the existing record and may indicate preferential areas for activity. In addition further consideration and review of the distribution of blades and blade cores within the worked flint assemblage may provide additional hints at the distribution of Mesolithic activity on Thanet.

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- 13.2.11 The distribution of blades and blade cores is important. Deliberate blade production, allied to the possible preferential use of Bullhead flint for their production, may also be linked to probable Early Neolithic activity. Material appears to increase in Zone 6, although this may be related to the larger number of excavated sections undertaken in this area. Some effort should be made to calculate general densities of worked flint across the entire region to identify preferred geological or topographical areas that attracted prehistoric activity.
- 13.2.12 Early Neolithic retouched tools included leaf arrowheads, axes, comprising fragmentary, complete, ground and flaked examples, microdenticulates and scrapers. A number of certain and probable bifacial thinning flakes have also been identified. The distribution of these may also be significant indicators not only of Neolithic activity but also of industrial production.
- 13.2.13 The importance of Zone 6 is marked by a concentration of flaking debris (176166) which is likely to be *in situ*. This group of material contained a large component of bifacial core tool thinning flakes. The scatter has undergone some vertical reworking through the sediment and may also have suffered some truncation by modern ploughing. Nevertheless, it is likely that this material is otherwise undisturbed, which can be confirmed by refitting. This group is also of importance because it contains a microlith. There is no other evidence of a Mesolithic component in this collection but the condition of the microlith is identical to the remainder of the pieces from the scatter. This makes it possible that this assemblage joins an existing body of material from Kent that might represent transitional activity from the Mesolithic to the Early Neolithic.
- 13.2.14 Most of the scrapers are well made and seem most likely to date to the Neolithic period. Chisel arrowheads were present in small numbers. It may be possible to associate these implements with Middle Neolithic groups of material if pottery is also present. It may also be possible to refine associated scraper types.
- 13.2.15 The assessment failed to identify any clear diagnostic Late Neolithic flint work. It is possible that some, at least, of the microdenticulates and scrapers are of this period but there were no recorded examples of oblique arrowheads. Isolated artefacts with faceted butts, a characteristic that is often found on Late Neolithic artefacts, were present. As with other groups of worked flint, Late Neolithic material may become apparent following additional analysis, possibly enhanced by study of the pottery. This aside it is likely that much of the Late Neolithic material was contained within the general background of surface material and poorly stratified groups.



- 13.2.16 The Early Bronze Age is represented by stratified assemblages that were excavated from a number of ring-ditches on the Chalk ridge. This material represents flaking activity in the area of the barrows. Some of the flaking is in situ as confirmed by refitting material; other groups may represent dumped waste. The collections are amongst the largest from the East Kent Access Road. They are dominated by collections of flakes, primarily preparation and core trimming flakes. However there remains a background spread of earlier material on the Chalk uplands, as represented by leaf arrowheads.
- 13.2.17 Cores are generally scarce at many other locations along the road line but here are present, generally as rejected pieces. This suggests that cores that were successfully prepared for blank production were taken away. Similarly there is very little hint at the intended product or of the form of retouched tools although it is likely to have been the suite of knives and scrapers that are typical of Bronze Age assemblages. It is also possible that some of the artefacts recovered from this part of the excavation represent grave goods, which may require further analysis.
- 13.2.18 An important observation made during the quantification was the range of raw materials used for tool production and the possible associated chronological implications. Bullhead flint has been linked to the Early Neolithic blade production and nodules from the Chalk Downs were clearly utilised by the Bronze Age flint workers at the Bronze Age barrow monuments. In the area of Zone 6 flint working debris was associated with the use of nodules of cobble flint, possibly derived from a beach. The use of this raw material is associated with a technology characterised by hard hammer percussion, flakes with cortical butts and cores with incipient cones of percussion on the striking platform. This technology in association with randomly retouched flakes is typical of Late Bronze Age activity. It may be possible to relate the distribution of this material with settlement features or field systems that will confirm or deny these conclusions.

### **13.3 Potential**

- 13.3.1 The worked flint assemblage, much of it poorly stratified, is an important component of the excavation archive and in many respects represents the sole surviving evidence of the earliest human activity along the road line and of the wider area. The quantification was undertaken with no knowledge of associated contexts or features, making the conclusions totally independent of any site's phasing. The conclusions of the assessment undertaken on the worked flint assemblage should be correlated against the site archive to note distributions of worked flint in comparison with geology, topography, raw material availability and chronological period.

- 13.3.2 The assessment has shown that there are significant groups of material that will require more detailed analysis; very few are numerically sufficient to merit metrical analysis. These groups include most importantly the probable *in situ* flaking scatter in Zone 6, which will require further work, possibly involving refitting to assess the degree to which it has been subjected to post depositional reworking. There are also a number of discrete pit groups that, if securely dated, may provide a 'control' by which to discuss less well stratified groups. Finally there is material, principally from the barrow ditches that has been shown to refit.
- 13.3.3 The results of this more detailed study will make it possible to exploit the main strength of the entire assemblage which is to demonstrate the development of land use, raw material exploitation and settlement across Thanet and into Kent. This county has seen a marked increase in archaeological results in the recent past which have produced a wealth of results that can be used for comparative study.

#### **13.4 Recommendations**

- 13.4.1 Some effort will be made to calculate general densities of worked flint across the entire EKA route to identify preferred geological or topographical areas that attracted prehistoric activity, with specific reference to the three landscape zones comprising the Chalk Ridge, the Pegwell Bay Spur and the Ebbsfleet Peninsula respectively.
- 13.4.2 The assessment has indicated that there are few large groups of material. Subsequent analysis will group material by context and feature to confirm which ones are securely stratified and their likely date, which may be enhanced by accompanying study of the pottery.
- 13.4.3 The occurrence of diagnostic material (which has been recorded for the assessment) forms vital evidence that can be used to reconstruct the nature of prehistoric activity across the landscape zones. For example, further consideration and review of the distribution of blades and blade cores within the worked flint assemblage may provide additional hints at the distribution of Mesolithic activity on Thanet, while the distribution of Early Neolithic bifacial thinning flakes may be significant as an indicator not only of Neolithic activity but also of industrial production. In the case of production, the distribution of tools from the route will be correlated with raw material availability and its possible associated chronological implications considered.
- 13.4.4 The importance of Zone 6 is marked by a concentration of (? Mesolithic-) Early Neolithic flaking debris that is likely to be *in situ*, which can be

confirmed by refitting, and provides a group large enough to warrant metrical analysis. Very few other groups are likely to be numerically sufficient for this to be undertaken, but there is some material, principally from the barrow ditches in Zone 23, that may re-pay refitting.

**14 WORKED STONE** BY RUTH SHAFFREY**14.1 Introduction**

14.1.1 Approximately 2000 pieces of stone were retained during excavations along the route of the East Kent Access Road. Zones 1, 5, 8, 9, 16, 18, and 24 did not produce any worked stone; the remaining sites produced a total of 200 items of worked or utilised stone. Where multiple fragments were found in a single context and are either adjoining or are made of lava (which crumbles into multiple small fragments in certain soil conditions), these have been recorded as a single item. The worked and utilised stone is summarised in Table 14.1. The stone was examined with the aid of a x10 magnification hand lens. It is recorded and assessed below by zone.

**Table 14.1. Worked and utilised stone by zone**

	Burnt	Indeterm.	Industrial	Other	Processor	Quern	Struct.	Unworked	Whetstone	Grand Total
ZONE 2						1				1
ZONE 3				1		2			1	4
ZONE 4		1		1		3				5
ZONE 6	2	1	1	2	4	45	8	1	1	65
ZONE 7				1		5				6
ZONE 10		1				4	1		1	7
ZONE 11	1				1	6				8
ZONE 12		1	1			4	3			9
ZONE 13	5		6	3	2	8				24
ZONE 14	6		1	2	1	19	1		5	35
ZONE 15						1				1
ZONE 17						1				1
ZONE 19		1								1
ZONE 20			1			22	1	2	1	27
ZONE 21						2				2
ZONE 22						1				1
ZONE 23				1						1
ZONE 26			1							1
ZONE 29						1				1
Grand Total	14	5	12	10	8	125	14	3	9	200

**14.2 Zone 2**

14.2.1 The only worked stone recovered from Zone 2 are four fragments (111g) of worn lava quern from a medieval pit (context 239239).

### 14.3 Zone 3

14.3.1 A number of probable quern fragments of quartzitic sandstone were recovered from Bronze Age contexts in Zone 3 (from fills of pit 151001). Several of these have no evidence of working, whilst others have pecked faces and at least two fragments appear to be struck flakes. These may be evidence that the stone was being worked on the site. One further piece of worked stone from a medieval context is a natural lump of schist that has been utilised along one side as a hone for sharpening (context 131017, SF 4039).

### 14.4 Zone 4

14.4.1 Five items of worked stone were recovered. Late Bronze / Early Iron Age contexts contained some probable quern fragments (context 250168) and some possible shale (unworked) from ditch 250168 (context 250169). Small lava quern fragments were recovered from late medieval / post-medieval trackway 141207 (context 141208). A complete upper rotary quern fragment of likely Roman date was recovered from the subsoil 172144; this is of Greensand, probably Folkestone Beds. A small fragment of probable red ochre (a naturally tinted clay) was recovered from context 280140.

### 14.5 Zone 6

14.5.1 A total of 65 records of worked stone were produced from Zone 6. These consist mainly of quern fragments representing domestic debris, as well as other items.

#### *Iron Age*

14.5.2 Fifteen items of worked stone or utilised were recovered from contexts phased as Iron Age. These comprise seven quern fragments, one spindle whorl, four processors, one marble, two probable structural stones and one burnt piece. Six of the querns are made from Greensand, while one group of 20 fragments are weathered lava from the surface of a Late Iron Age trackway (context 298123). These will be of particular interest if they are from securely dated Iron Age contexts as pre-Roman lava is rare. Two of the earlier querns are positively identifiable as saddle querns and of the remainder only one example can be positively classified as a rotary quern (SF 3971). This quern was recovered from pit 291130 (context 291131), currently phased as Early-Middle Iron Age, although the recovery of the quern indicates a Middle Iron Age rather than Early Iron Age date.

14.5.3 Four processors were recovered, including an obvious hammerstone with significant percussion damage (SF 3211, context 289050) and a Cornish

Group 1 Greenstone axehead found in the secondary fill of gully 247083 surrounding a round house (SF 866, context 247084). The axehead has seen significant reuse with a now well faceted end. Two other likely processors have less clear functions, with one polished pebble possibly being a pot burnisher (context 291127) and the other a pebble with a worn dished surface (context 298104). There is also a single plain chalk spindle whorl (SF 505).

- 14.5.4 Structural stone from Iron Age contexts includes a worn slab, possibly from a floor surface, and 3.5 kg of chalk, some of which has visible worked surfaces, and all of which were presumably used structurally nearby (context 291131).

#### *Late Iron Age / Roman*

- 14.5.5 Eleven querns (11kg) were recovered from Late Iron Age or Roman contexts comprising 2.8 kg of Greensand (two fragments), 1.9 kg of Puddingstone (one fragment), 5.3 kg of Millstone Grit, (three conjoining fragments and three other fragments) and 0.7 kg of Lava in the form of approximately 50 small fragment from four contexts. At least one of the Millstone Grit querns is from a mechanically operated millstone.
- 14.5.6 Other items of worked stone include a piece of white marble that is likely to have been a wall veneer in a high status building (context 247175) and a neatly shaped triangular stone (context 171228) that may have been a floor stone. One stone has a deep worn and dished upper face, suggesting possibly a use as a pivot stone, although the depth of the socket suggests it may have been an informal mortar (context 246170). Other unworked chunks may also have been structural (context 178243). A single processor of indeterminate function was also found (context 124157).

#### *Unphased*

- 14.5.7 A significant quantity of rotary quern fragments (39 kg representing an estimated 26 querns, plus another complete unweighed quern) were recovered from (currently) unphased contexts. However, the vast majority of the unphased querns are almost certain to be Roman in origin. The most common lithology is Greensand (31 kg from 15 items, plus the complete quern), some of which is almost certainly from Folkestone, and the remainder which may also be from this source. A total of 4.3 kg of lava (approximately 130 fragments) was recovered from six unphased contexts. Only two Millstone Grit querns were recovered (2.8 kg), of which one is certainly from a mechanically operated millstone (SF 4487). Less than 1 kg of sandstone querns was also found (three fragments).

14.5.8 Other worked stone from unphased contexts comprises a worn burnt slab, possibly from flooring (194160), and two further unworked but heavily burnt and blackened stones that have been used in hearths or similar (17005, 305070).

### *Summary*

14.5.9 The stone from Zone 6 is varied and was recovered from Early Iron Age through to Late Roman contexts, although the emphasis is clearly on items of Roman date. The Roman material is typical of domestic Romano-British assemblages with its mixture of rotary querns and other processing tools, although there are a greater number of querns than is usual. The millstone fragments indicate that intensive grain processing was occurring, but these may have been robbed from elsewhere. The presence of likely building stone suggests substantial structures were located relatively nearby and the wall veneer is likely to have been robbed from a high status building.

## **14.6 Zone 7**

14.6.1 Six contexts in Zone 7 produced worked stone, most notable of which are two querns that had been deposited together in layer 201078 of Roman date. These comprise a complete upper beehive rotary quern (SF 4710) of Greensand, probably Folkestone Beds and an upper millstone of Millstone Grit, incomplete and in 14 fragments (SF 2703).

14.6.2 Three contexts (303048, 178140, 178150) all produced fragments of a coarse pebbly sandstone that appears to have been smashed. They are of a lithology used for querns, although none retain positively identifiable worked surfaces. One further item is a pebble with a small socket cut into it – its purpose is currently unknown (SF 2738)

## **14.7 Zone 10**

14.7.1 A total of seven items of worked stone were retrieved from Zone 10, all of which are either Roman or unphased. Four contexts produced quern fragments including an upper rotary quern fragment of probable Folkestone Beds Greensand from pit 127030 (context 127027) and a possible quern fragment of ferruginous grit from context 178321. Context 250027 produced five fragments (109g) of broken lava quern while context 156079 produced a single fragment of Millstone Grit that could be from either a rotary quern or a millstone as the circumference does not survive. Although the ferruginous stone is the least common, all the lithologies are typical quern materials, both within the road scheme and across the region.

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14.7.2 Other stone of interest includes a piece of probable shale, although it is unworked (context 127027), a burnt slab, also unworked, but which was probably used in a hearth (context 127028) and a waisted pebble, whose distinctive shape was probably caused by use as a hone (SF 4206).

#### **14.8 Zone 11**

14.8.1 The small amount of worked stone recovered from Zone 11 consists mainly of rotary quern fragments: one fragment of Greensand (context 262011: 460g), one fragment of ferruginous puddingstone (context 165008, 501g) and 3779g of lava fragments from four contexts (218125, 165013, 143023 and 165002). These are all from Roman or unphased contexts.

14.8.2 A single burnt slab was recovered from a Saxon context and is unworked but was probably used in a hearth or other similar structure (context 202022). Some fragments of cylindrical faceted chalk were retrieved from re-deposited natural (context 240027) and although chalk was widely available relatively near to Zone 11, these fragments are clearly worked, if of unknown purpose.

#### **14.9 Zone 12**

14.9.1 A small amount of worked stone was recovered from Zone 12 including one Greensand quern fragment (context 145054) and some tiny lava quern fragments from a Saxon context (164056). Greensand was also used for a very good example of a rubber that would have been paired with a saddle quern (context 145073) as well as a block and a slab that were presumably used structurally, or intended for such purposes (contexts 145070, 174135). A further roughly squared block of sandstone also seems likely to have been used structurally (context 230061). The blocks are intriguing, as Roman structures were not identified in this zone, but they could have been robbed from other nearby sites, perhaps for breaking up and using in metalled surfaces.

14.9.2 Roman backfill of ditch 137026 produced possible chalk working debris. Working of chalk in Zone 12 is further indicated by the recovery of a partially made spindle whorl from the colluvium.

14.9.3 In this group of finds, the rubber is of particular significance, since saddle querns and their associated rubbers are not especially common finds in Kent. They are typically prehistoric in date, although it is possible they remained in use longer in Kent than elsewhere as there are scant securely dated early rotary querns in Kent. One example only is dated to the very late Iron Age (at Farningham) (Blanning 2006).



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### 14.10 Zone 13

14.10.1A total of 24 items of worked stone was recovered from Bronze Age to possibly Saxon phases of activity in Zone 13.

#### *Prehistoric*

14.10.2Of 12 pieces of stone from prehistoric contexts, two are from Early or Middle Iron Age features and the remainder are currently broadly dated to the Iron Age (with most of these likely to be of Middle Iron Age date).

14.10.3Querns were found in four contexts and include a likely saddle quern from Early or Middle Iron Age pit 248058 and three other quern or probable quern fragments, none of identifiable type (contexts 174002, 211051, 168081). It is worth noting that the quern fragments from pit 211043 (context 211051) are of lava and thus normally dated to the Roman conquest onwards. However, if they are from securely dated Iron Age contexts, they are of some significance and add to a very small number of known prehistoric examples (Manby and Fenton-Thomas 2009, 185). The other two fragments are of Greensand.

14.10.4Other items of worked stone include a single undecorated chalk spindle whorl found in pit 125104 and a pebble with a deep V-shaped channel on one face that may have been used as a shaft straightener (context 211046). Two large chalk weights came from Iron Age pit 203066 (SF 1534, 1535); the weights are similar to one from a Saxon context in Zone 14 (SF 2094), but these types of weights are more typically found in Iron Age features.

14.10.5Iron Age features also produced stone that had not been worked but that had been or might have been used, including a burnt slab probably used in a hearth (but retrieved from pit 168068) and two naturally perforated flints potentially used as weights (192040, 248060).

#### *Romano-British*

14.10.6Two items of worked stone were recovered from the same Roman backfill of pit 156146. These consist of a plain chalk spindle whorl (SF 1543) and an upper beehive rotary quern, incomplete, in two adjoining fragments. The quern is made from Greensand, from an as yet undetermined source.

14.10.7Other stone from Romano-British contexts includes burnt stone presumably used in a hearth (context 295002), lava rotary quern fragments (context 133049) and an approximately cylindrical piece of worked chalk (SF 1518) from the fill of an Early Roman sunken-feature building (context 173199). The chalk is inscribed on one side with a rectangle divided into eight, and may

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have been a pestle originally. The lava is distinguished from most of the lava recorded by being noticeably less worn and friable.

### *Unphased*

14.10.8 Worked stone from currently unphased or unstratified contexts includes some burnt and blackened stone (contexts 203050, 202180), a probable quern fragment of Greensand (SF 1526) and two well-used quartzite cobbles with significant percussion damage (contexts 210004, 184001). There is also a piece of worked chalk – a circular disc, perhaps intended for manufacture into a spindle whorl (context 130084).

## **14.11 Zone 14**

14.11.1 Zone 14 produced a total of 35 items of worked stone (where multiple fragments of lava from a single context were counted as one item). The vast majority of the stone was recovered from Saxon contexts.

### *Iron Age*

14.11.2 A single piece of worked probable Purbeck limestone could be a processor or building stone (context 139047).

### *Roman*

14.11.3 Roman contexts produced one piece of building stone (context 139052) and one other burnt stone from the same context. Lava quern fragments were found in the same feature (context 139054). A single hone making use of a large unworked chunk of micaceous sandstone was recovered from pit 230088 (context 230093).

### *Saxon*

14.11.4 The bulk of the worked stone from Zone 14 was recovered from Saxon and unphased contexts. This includes 8 kg of weathered lava quern (approximately 283 fragments) from 16 contexts. One other quern was found - probably a saddle quern, made of Greensand and reused in probable hearth 173051 (context 173050, SF 511).

14.11.5 Other categories of worked stone found in Zone 14 include a weight, hones, processors and other small objects. The weight is a large oblong chalk example possibly used as a thatch weight or fishing weight (context 126177, SF 2094) and is of a type seen on other sites in Kent and elsewhere. No primary whetstones were recovered but an assortment of collected stones have been used as hones including two slabs, one chunk and a boulder (contexts 173089, 176071, 184002, 139087). These may relate to the shellfish

processing which is almost certain to have taken place on site. They have all utilised a yellowish brown micaceous sandstone, of currently undetermined source, but presumed to be relatively local. There is also a processor, worn on one side (context 202103) and two rounded, almost spherical stones that are not worked, but may have had some personal value (contexts 176066, 279024). Several burnt and blackened but otherwise unworked stones derive from hearths (contexts 133051, 175087, 173050).

#### **14.12 Zone 15**

14.12.1A Saxon pit fill (context 202052) produced the only worked stone in the zone in the form of 856 g of lava quern fragments (approximately 20 fragments).

#### **14.13 Zone 17**

14.13.1A single rounded fragment of lava from the backfill of post-medieval quarry pit 147029 is the only item of worked stone from Zone 17.

#### **14.14 Zone 19**

14.14.1A single piece of worked stone, probably Greensand, was recovered from an Iron Age pit (context 205107). The stone has one flat pecked surface suggesting it is from a quern, although it is too small to identify positively.

#### **14.15 Zone 20**

14.15.1 Most of the stone came from Roman contexts, with the remainder unphased. Roman contexts produced a small assemblage of rotary quern fragments comprising 9.55 kg of lava (in 225 mostly very small worn fragments, a condition typical of lava querns in Kent) and 2.6 kg of Millstone Grit (three quern or millstone fragments and one unworked piece, possibly from a millstone or example of raw material). One further large fragment of Millstone Grit (unweighed) has a diameter in excess of 520mm and is likely to be from a millstone (context 252096, SF 3106). The quern and rotary fragments were distributed between 22 contexts. Rotary querns of both Millstone Grit and lava are typical of Romano-British assemblages from domestic sites in Kent. One further quern is a complete upper example of a beehive type with conical hopper. It is made of puddingstone, probably from Hertfordshire (context 134094, SF 3805) and had been reused in the wall of a sunken-feature building of probable mid-Roman date; it is likely to be 1st century AD in origin. The unphased quern and millstone fragments are probably also representative of Roman activity. There is also a single whetstone fragment of Kentish Rag (context 250097) and a piece of white marble (context 135041), possibly wall veneer. One further item is a large flint weighing 11.5 kg (context 134094, SF

3803). The flint is unworked but has a natural perforation and may have been used as a weight.

#### **14.16 Zone 21**

14.16.1 Two contexts in Zone 21 produced worked stone. Romano-British pit 126090 contained a small quantity of lava quern fragments (94 g), while probable prehistoric pit 194134 contained a massive boulder (SF 2203, 194135) that had been used as a saddle quern. The boulder itself is unshaped but has a large basin in the upper surface that is pecked and worn. The source of this is unclear at present, although it is of Greensand, probably from the Folkestone Beds.

#### **14.17 Zone 22**

14.17.1 A total of 1.5 kg of weathered lava rotary quern (represented by 30+ fragments) was recovered from the secondary fill of Late Iron Age pit 290387.

#### **14.18 Zone 23**

14.18.1 A single piece of polished pale green marble was recovered from the secondary fill of ring-ditch 170011. This is likely to be Roman in origin.

#### **14.19 Zone 26**

14.19.1 A single chalk spindle whorl of undecorated disc form was found in the secondary fill of Late Bronze Age / Early Iron Age pit 158029. Its relatively wide perforation of 9mm is more typical of Saxon and medieval whorls than Iron Age examples, which tend to range from 4-8mm (Walton Rogers 1997, 1731).

#### **14.20 Zone 29**

14.20.1 A single lava rotary quern fragment recovered from the primary fill of ditch 159015, of probable Roman date, was the only object of worked stone found in Zone 29. It is significantly less worn than the majority of lava fragments from the other zones along the route.

#### **14.21 Potential**

14.21.1 The potential of the stone assemblages varies significantly by zone and those with the most potential (and thus requiring further work) comprise the material from Zones 4, 6, 7, 10, 11, 12, 13, 14, 20, 21 and 23. Of these, the relatively large assemblages from Zones 6, 13 and 14 are the most significant.

14.21.2 The greatest potential that these individual assemblages and the worked stone as a group have to contribute to our understanding of the archaeology of the route is their ability to provide information about the types, levels and foci of domestic activity on the various sites. For example, the worked stone from Zone 14 has some potential to an understanding of the contribution that knives and their sharpening stones made to the shell processing taking place there. However, the assemblages are also important because they provide a significant level of data about the manufacture, distribution and use of saddle and in particular rotary querns in Kent (and the region in general) in the Iron Age and Roman periods, a topic which is currently poorly understood. Other items requiring further research and reporting include chalk objects such as weights, spindle whorls and more enigmatic items, an axehead, various pieces of marble and some processors.

14.21.3 The smaller assemblages from Zones 2, 3, 15, 17, 19, 22, 26 and 29 have been summarised as part of the assessment process and individually require no further work. However, they should be included in any project-wide discussion of the data.

## **14.22 Recommendations**

14.22.1 For the assemblages with moderate or higher potential, brief reports should be written which describe the worked stone and place it in the local and regional context. The relatively large assemblages of worked stone from Zones 6, 13 and 14, in particular, will in some cases require a more detailed consideration of the context, phasing and associated finds (for example, related evidence for textile working amongst the worked bone and fired clay objects).

14.22.2 The querns from Zone 6, in particular, need to be fully recorded and the assemblage placed within a local and regional context. The rotary and saddle querns from pre-Roman and very early Roman contexts will be especially important in helping develop this research area. It is critical that the Greensand querns be analysed in sufficient detail to allow their form to be characterised, their lithology identified and thus their provenance (are they from Folkestone?). This will allow the querns to add to a growing picture of the manufacture and use of querns in Kent and how this developed over time. The Millstone Grit querns and millstones will also need to be looked at in terms of their dating as they have the potential to add to our understanding of the use of Millstone Grit in the region.

14.22.3 It is recommended that a short report be prepared which discuss the hones and other processors, their likely source (are they local as presumed?) and their

purpose, particularly on Zone 14. Chalk objects such as weights, spindle whorls and more enigmatic items also require further research and reporting.

14.22.4 Other artefacts will also need some further specialist investigation to determine their significance on the site, as well as locally and regionally, for example, the Group 1 axehead and the marble from Zone 6, and the quartzitic sandstone from Zone 3.

14.22.5 It is recommended that approximately 24 items be illustrated.

### 14.23 References

Blanning, E., 2006 *The Archaeology of Beehive querns in Kent*, unpublished undergraduate dissertation, University of Canterbury

Manby, T.G. and Fenton-Thomas, C., 2009 The Lava Quern in C. Fenton-Thomas, *A Place by the Sea: excavations at Sewerby Cottage Farm, Bridlington. York*, On-site Archaeology Monograph 1, Oxbow Books, 185-186

Shaffrey, R., in prep The Worked Stone in T. Allen, *A2 widening Pepperhill to Cobham*

Walton Rogers, P., 1997 *Textile Production at 16-22 Coppergate*. The Archaeology of York, vol. 17, Fascicule 11. York: Council for British Archaeology

**15** *SLAG BY SAMANTHA ROBINSON***15.1 Introduction**

15.1.1 A total of approximately 11.4kg of material initially identified as iron slag or related industrial debris was submitted for study. The condition of the material is moderate, with the majority of the slag fragments slightly abraded around the edges.

15.1.2 All of the material was examined visually or by use of a hand lens to identify type and form. Hammerscale was collected by running a magnet over environmental samples sieved to 4mm-2mm and 2mm-0.5mm. This information was then assigned to various production processes and the results recorded. A summary of the details is presented in Table 15.1. No crucible or mould fragments have been identified.

**15.2 Description**

15.2.1 A total of 9.13kg of slag was probably the result of ironworking activities, specifically iron smithing. This slag was typically amorphous, consisting of a combination of highly vesicular pieces, sometimes with a slightly 'ropey' upper surface, and more dense low porosity pieces. Some of the latter are likely to be fragments of smithing hearth bottoms that no longer retain their original shape.

15.2.2 The assemblage included five distinct smithing hearth bottoms (SHBs). These SHBs are the hemispherical bowl-shaped accumulations of slag which formed at the base of smithing hearths. A detailed list can be found in Table 15.2. Four of these SHBs were relatively dense with a low porosity, while the other, from Zone 6, was smaller in size and moderately vesicular. The sizes varied from 60 x 60 x 25mm to 130 x 120 x 60mm, and their weight from 62g up to 491g.

15.2.3 Small quantities of hammerscale were found in environmental samples from Zones 3, 6, 10, 11, 14, and 20.

15.2.4 Other finds that could have been associated with metallurgical activity included one piece of possible iron ore (317g) from Zone 6 and six pieces of coal (38g) from Zone 23. Also from Zone 6 was an Early-Middle Iron Age 'hooked billet', a small ingot of raw iron ready for smithing. However, there was little other ironworking debris from either of these two zones, and no evidence for smelting.

15.2.5 A small quantity of hearth lining (330g) was present. As hearths can be used for a multitude of activities, only the hearth lining found in direct association with iron smithing slag can be attributed to metallurgical activity. Hearth lining with iron slag adhering to it was found in Zones 10, 13, 19, 20, and 29.

15.2.6 Non-diagnostic material (561g), generally in the form of fuel ash slag (FAS), was also recovered from the site. This material can be created by various high temperature processes including, but not exclusive to, metalworking.

### **15.3 Potential**

15.3.1 Overall, the quantity of slag is very small given the size of the area investigated and the large number of features excavated, and there is no clear concentration of metallurgical residues. Of the thirteen zones with slag assemblages the largest quantity of debris (5.6kg) came from Zone 14. This zone produced several relatively large pieces of slag (average weight 560g) and three of the five SHBs, all from Saxon contexts. The remaining zones produced an average of 290g of smithing slag, with less than 100g coming from Zones 1 and 29.

15.3.2 No evidence of iron smelting was present on the site and the small quantity of smithing slag provides no certain evidence of ironworking activity within the excavated area. The presence, however, of a combination of smithing slag, hearth lining, tiny quantities of hammerscale and the 'hooked billet' from Zone 6 indicate smithing activity in the vicinity, probably during the Early – Middle Iron Age and possibly later. The ironworking debris from Zone 14 also suggests smithing within or very close to the zone, but here in the Middle Saxon period.

15.3.3 No further work is recommended.



Table 15.1: Ironworking debris by zone/type/weight

Zone	No of pieces	Smithing (g)	Hearth lining (g)	Non-diagnostic (g)	Other (g)	Total (g)
1	1	0	0	12	0	13
3	18	106	0	22	0	146
6	100	476	107	229	956	1868
10	48	749	102	25	0	924
11	5	290	0	0	0	295
12	29	358	0	110	0	497
13	35	220	24	82	0	361
14	53	5599	0	41	0	5693
19	28	383	74	3	0	488
20	22	340	10	0	0	372
21	1	427	0	0	0	428
23	27	151	0	7	38	223
29	10	31	13	30	1	85
<b>Totals</b>	<b>377</b>	<b>9130</b>	<b>330</b>	<b>561</b>	<b>995</b>	<b>11,393</b>

Table 15.2: Details of smithing hearth bottoms (SHBs)

Zone	Context	Weight (G)	Dimensions (mm)	Notes
6	132079	62	60x60x25	
14	158052	211	95x65x30	
14	158064	491	130x120x60	
14	158064	423	85x70x40	In multiple pieces
21	205121	427	100x75x40	

## 16 STRUCTURAL FIRED CLAY AND BRIQUETAGE BY CYNTHIA POOLE

### 16.1 Introduction

16.1.1 Fired clay was recovered from 23 zones, the largest groups coming from Zone 6 and Zones 12-13. The assemblage amounted to a total of 9648 fragments weighing 173.21kg. Overall mean fragment weight (MFW) was 18g, though individual pieces ranged in size from 1g to 1788g reflecting the variable preservation within the assemblage. A MFW over 15g is usually indicative of a good proportion of diagnostic material. The assemblage consists of oven or hearth structure and furniture, and includes a significant group of briquetage comprising structural material, furniture and containers used in salt production. Structural material relating to buildings is minimal.

### 16.2 Methodology

16.2.1 The assemblage has been quantified and rapidly scanned to identify the range of forms and fabrics. Of the 1230 records 924 have been scanned and a basic identification made, though not always assigned to a fabric. The remaining 305 were either not found, or noted in passing; a quantity of the smaller fragments, especially within the larger groups from Zone 6 and Zone 13, were not examined. Fabrics were assigned to broad categories based on macroscopic features.

### 16.3 Fabrics

16.3.1 Three fabrics dominated the assemblage, all occurring in varying combinations.

Fabric A: a silty clay probably derived from brickearth deposits

Fabric O: an organic tempered fabric using fabric A as its base matrix (this was sometimes subdivided into fine and coarse organics)

Fabric E: a chalk tempered fabric.

16.3.2 Other fabrics occurred in small quantity.

B: a flint tempered fabric (often of LBA date)

C: a clean clay

D: similar to A, but with the addition of ferruginous clay pellets

F: a fine sandy clay.

## 16.4 Forms

16.4.1 The majority of the material is interpreted as deriving from oven or hearth structures or furniture relating to the use of such structures. Possible building daub occurred in relatively small quantity. It included a single block of compacted chalk and clay, which may have derived from a cob wall or trampled clay floor, some fired clay with larger timber impressions and possible render fragments.

16.4.2 Structural material included hearth surface, oven floor, base lining, wattle supported superstructure (probably upper walls, dome or cover), and oven plate. The wattle supported superstructure forms about a third of the whole assemblage. The oven and hearth furniture includes slabs and oven plates, pedestals of various forms, triangular perforated bricks, hand squeezed lumps and possible firebars. Included within the pedestals is a possible middle or late Bronze Age cylindrical perforated object (“loomweight”) as well as cylindrical and tapered/pyramidal forms likely to be of LIA-ERB date. There are two large groups of triangular perforated bricks of MIA-ERB from Zone 6 and Zone 13, several of which have an external groove across the corner, a feature more common to these objects in eastern England.

16.4.3 Briquetage also formed a substantial part of the assemblage and in addition to vessels, included structural material deriving from the salt working hearths or ovens and furniture, comprising plates or slabs, pedestals, supports, stabilisers, wedges and clips. Categorized as pedestals are a significant number of triangular perforated bricks, with salt discolouration and wear on their apex from supporting vessels.

16.4.4 Evidence of industrial activity was slight in the form of a small quantity of furnace lining or wall, a possible mould and crucible fragment.

## 16.5 Spatial Distribution

16.5.1 Fired clay was recovered from the majority of zones, though in very variable quantity (Table 16.1).

**Table 16.1: Quantification of fired clay by zone (including objects)**

Zones	Nos	Wt (g)
Z01	5	348
Z02	0	0
Z03	101	1026
Z04	46	1189
Z05	32	602
Z06	407	34174
Z07	65	602
Z08	2	23

Zones	Nos	Wt (g)
Z09	102	2559
Z10	146	1184
Z11	73	4594
Z12	444	9231
Z13	3258	50765
Z14	1227	49190
Z15	1	23
Z16	0	0
Z17	4	83
Z18	1	6
Z19	229	3011
Z20	856	11261
Z21	48	146
Z22	5	22
Z23	1	12
Z24	0	0
Z25	0	0
Z26	31	217
Z27	0	0
Z28	0	0
Z29	6	267
ZU	325	2556
Total	9654	173091

16.5.2 The largest quantities came from Zones 6 (34kg), 13 and 14 (c 50kg each) with more modest assemblages from Zones 12 and 20 (10-11kg), and with a further seven zones (Z3, 4, 8, 9, 10, 11, 19) producing between 1 and 5 kg. Briquetage was recovered from twelve zones and illustrates the ubiquity of salt production in this area of Kent.

## 16.6 Potential

16.6.1 The fired clay contains several significant groups of material which will provide information about the character and form of hearth and oven structures within the settlements. An analysis of the fired clay in relation to *in situ* structures such as the well preserved oven base within an SFB in Zone 13 and associated carbonized plant remains will be essential to come to a better understanding of the design and function of the structures from which the fired clay is derived. The variations in clay fabrics may be related to the exploitation of clay resources within different areas of the immediate landscape. It is difficult to date most fired clay on intrinsic evidence, but the general character of the assemblage suggests it is broadly of Iron Age –early Roman date and certain objects such as the triangular bricks are certainly of this date. However a small number of objects may possibly be of late Bronze Age date and some of the material could prove to be of earlier prehistoric date or Saxon-medieval.

16.6.2 The briquetage indicates that salt production was being undertaken on or close to the sites. The largest quantity occurs on the zones encircling Pegwell Bay (Zones 4, 5, 6, 7, 10, 11, 12, 13, 26) but a small quantity also occurs on

the more inland areas (Zones 19, 20, 22) and may provide contrasting evidence for salt processing for the two landscape areas. Salt production was clearly a common activity in the area and a significant contribution to the local economy in the Iron Age – early Roman periods. The fired clay can provide evidence of production methods and characteristics of the salt industry on this area of the Isle of Thanet and a comparison to production in other coastal areas of Kent. Of national importance is the evidence for the use of triangular perforated bricks as pedestals in salt production, providing some of the best unequivocal evidence to date that these objects were used as oven or hearth furniture rather than being loomweights, the traditional function assigned to them. The two large groups of triangular bricks from Zones 6 and 13 also appear to provide additional evidence of such use, possibly in relation to domestic ovens or hearths.

### **16.7 Recommendations**

- 16.7.1 The assemblage from the major sites should be fully recorded and non-diagnostic material selected for discard. Material from the smaller sites where there is little diagnostic material will not be re-visited. Reports should be produced on the sites/zones producing more than 1kg of fired clay and brief summary statements for zones producing less than 1kg, together with a final section of an overview, discussion and inter-site comparison for the whole assemblage. The reports will focus mainly on briquetage and salt production, which looks to be the most important aspect of the collection. Around 20-30 objects should be selected for illustration.

**17 CERAMIC BUILDING MATERIAL** *BY CYNTHIA POOLE***17.1 Summary and Quantification**

17.1.1 Ceramic building material (CBM) amounted to a total of 892 fragments (74,168g). Approximately 200 fragments (10.5kg) are of post-Roman date the majority more likely to be post-medieval than medieval. Roof tile and brick are the predominant forms of this period. Roman tile amounted to 630 fragments (61kg) and was represented by tegula, imbrex, flue tile and brick, together with a high proportion of undiagnostic flat tile. The tile is quantified by form and zone in Table 17.1. Abrasion was generally low or absent, but no complete tiles were present and the mean fragment weight of 83 g is low.

Table 17.1. : Quantification of ceramic building material by form and zone

Zone	Class	Brick	T.mam	Flat tile	Flue	Imb	Teg	Tess	Tile	indet	Unid	PM Brick	Arch. Brick	Floor	Roof: flat	Roof: peg	Wall tile	Water Pipe	Tarmac	Grand Total	
Z01	Nos	6		38	1		1			2		2			2						52
	Wt(g)	1354		502	86		155			8		18			34						2157
Z02	Nos			1											1						2
	Wt(g)			2											31						33
Z03	Nos			9		3			2	2					6						22
	Wt(g)			1994		156			132	5					121						2408
Z04	Nos									1		4			10						15
	Wt(g)									13		1570			93						1676
Z05	Nos														4						4
	Wt(g)														114						114
Z06	Nos	21	1	38	2	7	45	1	10	14	4	2			12	3					159
	Wt(g)	3185	873	2799	195	883	7763	2	764	167	42	55			161	114					16999
Z07	Nos	42			2	1									3						48
	Wt(g)	600			82	355									49						1086
Z08	Nos								10												10
	Wt(g)								91												91
Z09	Nos								2												2
	Wt(g)								244												244
Z10	Nos								2						4	1					7
	Wt(g)								87						57	26					170
Z11	Nos	1		8			3		12	1					4						29
	Wt(g)	461		530			698		379	6					81						2155
Z12	Nos	1		1	1				5												8
	Wt(g)	412		35	15				11												473
Z13	Nos								3	1	3	2			14						23

**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

Zone	Class	Brick	T.mam	Flat tile	Flue	Imb	Teg	Tess	Tile	indet	Unid	PM Brick	Arch. Brick	Floor	Roof: flat	Roof: peg	Wall tile	Water Pipe	Tarmac	Grand Total
	Wt (g)								151	7	42	33			265					498
Z14	Nos	2		7			4				4				3					20
	Wt (g)	225		715			716				149				86					1891
Z17	Nos			1																1
	Wt (g)			268																268
Z18	Nos			1											2					3
	Wt (g)			24											28					52
Z18A	Nos														3					3
	Wt (g)														11					11
Z19	Nos			2											4					6
	Wt (g)			211											48					259
Z20	Nos	2		11	1	1	2		1											18
	Wt (g)	443		338	30	97	136		434											1478
Z20 A	Nos	7		24			16		1	1										49
	Wt (g)	605		1956			3239		54	45										5899
Z20 E	Nos	18		41	1	2	16					4	1	1	1					85
	Wt (g)	2404		3432	113	799	2880					41	27	217	9					9922
Z20 G17/18	Nos	2		12		2	7			1										24
	Wt (g)	319		402		119	1726			7										2573
Z20 W	Nos	3		93			35													131
	Wt (g)	1169		4292			5659													11120
Z21	Nos			3			37		2	2	1	2		8						53
	Wt (g)			106			3136		21	29	29	211		348						3851
Z21E	Nos			3																3
	Wt (g)			214																214
Z21W	Nos	1					14		1											16
	Wt (g)	305					1100		27											1432



**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

Zone	Class	Brick	T.mam	Flat tile	Flue	Imb	Teg	Tess	Tile	indet	Unid	PM Brick	Arch. Brick	Floor	Roof: flat	Roof: peg	Wall tile	Water Pipe	Tarmac	Grand Total	
Z22	Nos	1																		1	
	Wt (g)	130																			130
Z23	Nos						2					29			8			4			43
	Wt (g)						301				4896				96			287			5580
Z23/22	Nos											4			7						11
	Wt (g)										85				102						187
Z24	Nos														2						2
	Wt (g)														26						26
Z26	Nos														3						3
	Wt (g)														39						39
Z29	Nos			4								1			24		1	5	1		36
	Wt (g)			115								11			549		31	180	239		1125
ZU?	Nos								2												2
	Wt (g)								3												3
Total Nos		107	1	297	8	16	182	1	53	23	12	50	1	1	125	4	1	9	1		892
Total Wt (g)		11612	873	17935	521	2409	27509	2	2398	258	262	6920	27	217	2348	140	31	467	239		74168

## 17.2 Methodology

17.2.1 The assemblage was rapidly scanned to identify the main functional categories and date the tile where possible. The tile was assigned to known form categories; flat tile has been used for plain flat fragments of Roman date without any diagnostic characteristics and indeterminate for any fragments too small or broken to establish date or form. The field walking and test pitting boxes were not scanned, though all boxes were looked in and one or two bags were randomly selected from each to briefly scan to get a feel for the character of the assemblage.

17.2.2 Broad fabric categories were identified based on macroscopic characteristics.

## 17.3 Fabrics

17.3.1 Six main fabric categories were identified.

Fabric A: cream, calcareous, shelly (may be associated with a maroon/red moulding sand).

Fabric B: orange, fine silty micaceous clay with rare fine pores, contains rounded red ferruginous inclusions 0.3-2 mm and rare rounded quartz sand grains <0.5 mm. This was very similar to fabric D, but tended to be softer and more powdery in texture.

Fabric C: orange, moderate density of medium sized (*c* 0.5 mm) rounded quartz sand.

Fabric D: orange, reddish orange, fine clay with no or few visible inclusions, but a moderate scatter of pores that may represent organic inclusions; occasional red rounded ferruginous clay pellets 1-2 mm. Most tile in this fabric has a fine moulding sand composed of rounded-sub-rounded fine-medium rose and brown quartz sand.

Fabric E: orange, red, reddish orange, laminated clay with clay pellets (E1 contains coarse rounded clay pellets; E2 contains angular unwedged clay up to 10 mm; E3 is strongly laminated with cream streaks, but no pellets).

Fabric F: Red, fine sandy clay containing frequent fine quartz sand.

Fabric Med1: orange with grey core, medium-coarse rounded quartz sand *c* 0.5-1 mm; used for medieval roof tile.

17.3.2 The fabrics suggest most of the tile was derived from a single production centre, with only limited evidence for more widely dispersed fabrics known from other sites. Fabric D was dominant, accounting for over 80% of the tile. The distinction between fabric B and D may not be a valid division, the differences representing variations in preparation of the clay or firing conditions. It is likely that these fabrics represent the exploitation of a brickearth deposit throughout the Roman and medieval/post-medieval periods, though at present it is unclear whether this is from a local production centre serving the Isle of Thanet or more regionally based in Kent. Fabric A, of

which only two fragments occur, is a known late Roman fabric of 3rd century or later date (Betts and Foot 1994, 32-3). Four fragments may be the same as a Fabric 4/Z found at Northfleet Roman Villa (Poole forthcoming), but have yet to be compared to examples from Northfleet to confirm this.

#### **17.4 The Roman forms**

17.4.1 The Roman tile assemblage was dominated by brick, flat tile and tegula. Imbrex and flue tile occurred in small numbers and single examples of a small tesserae and a possible tegula mammata were found. No complete tiles were found, the most complete being the lower half of a tegula with a tapered form measuring 350-360 mm wide by over 300 mm long. The tegulae had both rectangular and curved flanges. Upper cutaways were of standard rectangular form removing a length of flange. Lower cutaways were almost entirely of Warry's (2006) class C (type 5) apart from one in his class D (type 1) and two of class B (type 6). According to Warry's dating of cutaway forms, this would suggest a date for the tile of mid 2nd – mid 3rd century AD. Two tegulae had nail holes.

17.4.2 Markings included signature marks, an imprint and keying. The signature marks were all made with the fingers in the most common design of a hoop drawn at the base edge of the tile with 1, 2 or 3 fingers. They were found on tegula, brick and flat tile. One brick had part of an imprint, possibly the heel of a child's foot.

17.4.3 Keying in the form of straight bands of combing usually running vertically occurred on five of the flue tiles. Comb widths measured from 19 to 25 mm wide with 4-6 teeth, with examples of both coarse and fine combing.

17.4.4 Burning occurred on 374 fragments (60%), which included all the major tile types, whilst burning was absent on 175 fragments. No observations were made on the remaining 78 pieces.

#### **17.5 The medieval/post-medieval forms**

17.5.1 No complete tiles or bricks were found and only one complete width was observed on a brick. Roof tile accounted for the greatest proportion of CBM numbering 129 fragments (2.5kg), followed by brick (51 fragments, 7kg). Approximately half of a brick was the best preserved example, measuring 64 mm thick by 117 mm wide. Roof tile measured between 9 and 13 mm thick, with just a few examples measuring 15-19 mm. No more than 20 fragments were judged to be of medieval date. Post-medieval floor and 19th-20th century wall tile were represented by single fragments and water/sewer pipe of 19th-20th century date by nine fragments. The field walking and test pitting

assemblages are large (over 5600 fragments and over 77kg) and were dominated by post-medieval roof tile, with a little brick, a few modern stamped bricks and rare pieces of Roman tile.

## 17.6 Spatial distribution

17.6.1 The post-Roman tile occurred as a scatter over most of the zones rarely amounting to more than a handful of fragments weighing less than 200-300 g. Only in Zone 23 was there a slightly denser concentration of *c* 50 fragments (5.5kg). There appeared to be no correlation between the medieval sites and the post-Roman tile. Roman tile was found in quantity in Zones 1, 3, 6, 11, 14, 20 and 21 and in small quantities (from one or two fragments up to 1kg) in zones 7, 10, 12, 13, 18, 19, 22, 23 and 29.

## 17.7 Potential

17.7.1 The Roman tile was clearly being deliberately brought to the sites for re-use. The proportions and quantities of tegulae and imbrices are not indicative of its use as roofing, nor is there any reason to suppose the other tile was used for its primary purpose. The assemblage is characterised by a deliberate selection of brick, tegulae and flat tile that could be used as general purpose building material in the manner of brick. Tegulae were commonly re-used as brick. The presence of small quantities of flue tile and a tessera, indicate the source of the tile was probably a local villa when it was being refurbished or after it had been abandoned. Lower status settlements are unlikely to have used new tile and were recycling tile that had become available elsewhere. The high incidence of burning on the tiles suggests it was primarily being re-used in ovens, corndriers and hearths. The utilisation of tile reduces to a great extent the use of fired clay in such structures in the middle and late Roman periods. An analysis of the tile can address changes in construction methods of ovens and hearths during the Roman period.

17.7.2 The medieval and post-medieval tile appears to bear little relationship to the medieval sites, but is more likely to relate to the fieldwalking material and later post-medieval – early modern agricultural activity. The large quantities of post-medieval roof tile found in the field walking and test pitting may be explained by the use of roof tile in the construction of early field drains of late 18th-early 19th century date.

## 17.8 Recommendations

17.8.1 The tile assemblage should be fully recorded and non-diagnostic material selected for discard. Reports should be produced for the larger Roman assemblages, with brief summaries for the minor collections. A brief

summary of the post-Roman assemblage should be produced, but any in depth analysis of this is unlikely to produce information relevant to the excavated medieval sites.

Task
Recording the assemblage and selective discard.
Analysis of data, research, writing report.
Illustration brief and checking of illustrations
Illustration of 8 objects

## 17.9 References

Betts, I M and Foot, R, 1994 A newly identified late Roman tile group from southern England, *Britannia* 25, 21–34

Poole, C, forthcoming The Ceramic Building Material from Northfleet Roman Villa in Andrews, P, Biddulph, E, Hardy, A, and Smith, A, *Settling the Ebbsfleet Valley: CTRL excavations at Springhead and Northfleet, Kent. The late Iron Age, Roman, Saxon and medieval landscape*, Oxford Wessex Archaeology

Warry, P, 2006 *Tegulae Manufacture, Typology and use in Roman Britain* BAR British Series 417

## 18 ANIMAL BONE BY LENA STRID

### 18.1 Summary

18.1.1 Approximately 67,300 fragments of animal bone was recovered from archaeological excavations along the East Kent Road scheme (EKA09) largely originating from Iron Age, Roman and Saxon activity, but including Bronze Age to post-medieval deposits. Both in terms of location, assemblage size and period-range, the assemblage is of great significance for the understanding of animal husbandry, economic strategies and the use of animals through time in south-east England. The assemblage primarily comprises domestic taxa (cattle, sheep/goat, pig, dog, horse and domestic fowl) but also includes wild animals (hare, rabbit, bird, fish, red deer, roe deer, rodents and amphibians). Bird remains were found, which might be from wild or domestic species (including duck and goose) and wild birds have not as yet been further identified. Additional bird and microfaunal remains have been recovered from the sieved residues, but these have not yet been examined.

18.1.2 The East Kent faunal assemblage is large and in variable condition. The bones from Zone 6 were well preserved, while those from some other zones (eg. Zone 13) were often in poor condition. As a whole, the assemblage contains many ageable elements and measurable bones which have the potential to yield information regarding the husbandry strategy of the past occupants of the site and information regarding the animal stock itself such as animal withers heights and changes through time. There is some evidence for disease and/or stress in the animal bone, which may be informative with regard to the use of domestic animals. The assemblage includes evidence of butchery which can be interpreted to examine changes in the utilisation of carcasses through time. There is very limited evidence of bone, horn and antler working. The assemblage includes several part or complete animal skeletons which may relate to ritual activity on site. An analysis of the microfaunal and wild bird remains from the sieved residues is likely to provide useful palaeoenvironmental information.

### 18.2 Introduction

18.2.1 The East Kent Access Road animal bone assemblage consists of approximately 67,300 fragments from 24 excavation zones (Table 18.1). Of these, 55,198 fragments (81.5%) were hand collected and 12,583 (18.6%) were recovered from sieved bulk samples (Tables 18.2-3), although many of the fragments from sieved soil samples are likely to be unidentifiable. The excavation area contained features from the Neolithic up to the post-medieval

period, although no animal bones were identified as Neolithic. All phasing information used in this assessment is preliminary and a number of features and contexts remain unphased at the time of writing. A full assessment record of the assemblage is available as a *Microsoft Access* database.

**Table 18.1. Total number of bone fragments per zone and phase, including sieved bones**

ZONE	TOTAL	BA	LBA-EIA	IA	LIA-ER	Roman	Saxon	Med	P-med	Modern	Unphased
1	574					64		202			308
2	12							12			
3	909	29						540		2	338
4	802	380	101	218		102					1
5	157		40	66	3						48
6	22180	267	4	5526	1983	9568		47	20	3	4762
7	2290	33	348	1128	248	366					167
8	58	43				13					2
10	2690	318		425	180	995	676				96
11	1063		46	8	1	829	49	3			127
12	2944	93	6	1144	583	30					1088
13	14931	977		9003	265	1587	6				3093
14	10694	9		429	7	2052	5381	3			2813
15	59						56				3
17	145			92				50	3		
18	106		101								5
19	1990	56	614	410	49	233	212	39			377
20	3243				18	2829	52				344
21	318	201			7	71					39
22	100			63	9			18			10
23	1311	900				17		60	3	287	44
24	22	22									
26	354	7	68	30		150					99
29	379			19		352					8
<b>Total</b>	<b>67331</b>	<b>3335</b>	<b>1328</b>	<b>18561</b>	<b>3353</b>	<b>19258</b>	<b>6432</b>	<b>974</b>	<b>26</b>	<b>292</b>	<b>13772</b>

**Table 18.2. Total number of hand-collected fragments per zone and phase**

ZONE	TOTAL	BA	LBA-EIA	IA	LIA-ER	Roman	Saxon	Med	P-med	Modern	Unphased
1	399					64		102			233
2	12							12			
3	609	29						403		2	175
4	659	277	101	178		102					1
5	110		40	42	3						25
6	19997	267	4	5171	1946	8580		47	20	3	3959
7	2155	7	348	1067	248	318					167
8	58	43				13					2
10	2167	318		361	166	815	411				96
11	726		33	4	1	558		3			127
12	2500	93	6	803	497	28					1073
13	12043	921		6905	239	1530	6				2442
14	6360	9		355	7	929	2948	3			2109
15	59						56				3
17	81			3				50	28		
18	106				101						5
19	1806	56	614	351	49	145	178	39			374
20	3138				13	2767	27				331
21	316	201			7	71					37
22	88			63	9			6			10
23	1236	869				17		16	3	287	44
24	22	22									
26	296	7	16	24		150					99
29	330			19		303					8
<b>TOTAL</b>	<b>55273</b>	<b>3119</b>	<b>1162</b>	<b>15346</b>	<b>3286</b>	<b>16390</b>	<b>3626</b>	<b>681</b>	<b>51</b>	<b>292</b>	<b>11320</b>

Table 18.3. Total number of sieved fragments per zone and phase

ZONE	TOTAL	BA	LBA-EIA	IA	LIA-ER	Roman	Saxon	Med	P-med	Modern	Unphased
1	175							100			75
2											
3	300							137			163
4	143	103		40							
5	47			24							23
6	2183			355	37	988					803
7	135	26		61		48					
8											
10	523			64	14	180	265				
11	337		13	4		271	49				
12	444			341	86	2					15
13	2888	56		2098	26	57					651
14	4334			74		1123	2433				704
15											
17	64			64							
18											
19	184			59		88	34				3
20	105				5	62	25				13
21	2										2
22	12							12			
23	75	31						44			
24											
26	58		52	6							
29	49					49					
<b>TOTAL</b>	<b>12058</b>	<b>216</b>	<b>65</b>	<b>3190</b>	<b>168</b>	<b>2868</b>	<b>2806</b>	<b>293</b>			<b>2452</b>

### 18.3 Methodology

18.3.1 The assemblage was assessed following pre-agreed assessment recording protocols. Almost all the animal bone had been washed and bagged by context prior to assessment, although very poorly preserved bone (especially from Zone 13) was retained unwashed. Washing was generally by hand, although a hose was used over a 1cm grid in the later part of the programme in order to speed up this preliminary task. Some contexts were divided between several bags, and these were sometimes stored in different boxes. Box contents lists were not available, so boxing needs to be completed before any further work can begin. The phasing used in this assessment is provisional.

18.3.2 The animal bone assemblages from Zones 6, 13 and 14 were fully assessed, since these were the most numerous and covered the Bronze Age to Saxon periods. The smaller bone assemblages from other zones were rapidly scanned for a general view of species present and bone condition. Fish bone, human bone and worked bone were extracted for assessment by the relevant specialists (see below). While the three largest sites, Zones 6, 13 and 14, were assessed, contexts immediately recognised as containing bones of little analysis value were excluded from assessment (Table 18.3). Bones recovered by sieving have not been assessed.



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- 18.3.3 Assessment of the potential of the assemblage from each period to provide useful information on husbandry patterns, population structures and consumption practices was undertaken on a context by context basis. In line with the agreed assessment strategy, the animal bone assessment involving rapid scanning of the total assemblage, and recording of very basic information, mostly qualitative rather than quantitative. For each context, the number of fragments, total weight and number of bones for the major species present were noted.
- 18.3.4 The assemblage of bone in an individual context was graded on a 3-point system (1-3), where '1' equated to high analysis value, '2' to medium analysis value and '3' to poor analysis value. High analysis value included speciable bones and teeth that could be aged, sexed or measured, as well as bones with butchery marks and pathologies. Contexts with large numbers of speciable bones were considered valuable, as well as contexts containing bones from rare species, such as wild birds and cetaceans. This method has been used in order to obtain a sufficiently large number of bones to enable detailed biometrical analysis and to identify changes in slaughter and butchery patterns through time. The methodology is, however, less suitable for discussing representation of skeletal elements since certain elements, such as mandibles, distal tibiae, radii and metapodials will be over-represented.
- 18.3.5 The bones were identified at Oxford Archaeology using a comparative skeletal reference collection in addition to standard osteological identification manuals, such as Cohen and Serjeantson (1996), Hillson (1992) and Schmid (1972). Sheep and goat were not identified to species at this stage, but rather classified as 'sheep/goat'. Long bone fragments, ribs and vertebrae, with the exception of the atlas and axis, were classified by size: 'large mammal' representing cattle, horse and deer, 'medium mammal' representing sheep/goat, pig and large dog, and 'small mammal' representing small dog, cat and hare.
- 18.3.6 The general condition of the bones for each context was graded using a 4-point system (1-4), grade 1 equating to well to fair preservation of the bone surface, grade 2 equating to poor bone surface preservation and grade 3 indicating that the entire bone surface had eroded. Grade 4 (mixed bone preservation) was not used in the assessment as one bone condition was always dominant in each context. The bone condition recording is thus a good indicator of the possibilities to record butchery marks, traces of gnawing and pathologies. Note that most contexts with poor analysis value (see above) were not assessed for bone condition.

18.3.7 For ageing, mandibles with two or more recordable teeth (Grant 1982), cattle horncores (Armitage (1982) and fused and unfused epiphyses (Habermehl 1975) were noted. Sexable elements, ie cattle pelves and complete metacarpals, sheep and goat skulls and horn cores, sheep/goat pelves, pig and horse canine teeth and dog bacula (penis bone) were noted, using data from Boessneck *et al.* (1964), Prummel and Frisch (1986), Schmid (1972) and Vretemark (1997). Measurable bones were noted according to von den Driesch (1976).

**Table 18.4. Distribution of high value, medium value and poor value fragments in zones 6, 13 and 14, calculated on a context-basis.**

	n	High value	Medium value	Poor value
<b>Zone 6</b>	22180	12345 (55.7%)	3522 (15.9%)	6313 (28.5%)
<b>Zone 13</b>	14931	6132 (41.1%)	4074 (27.3%)	4775 (32.0%)
<b>Zone 14</b>	10694	3246 (35.2%)	1143 (10.7%)	6305 (59.0%)

## 18.4 Overview of assemblages

### *Preservation*

18.4.1 Preservation was generally good for bones in Zone 6, even for the older assemblages. The Bronze Age assemblage from Zone 13, on the other hand, was in a very poor condition and bones from other phases in Zone 13 were also in poor or very poor condition, suggesting that butchery marks and pathologies are likely to be under-represented in the Zone 13 assemblage due to erosion of the bone surfaces. The bones from Zone 14 were in variable condition, ranging from fair to poor.

18.4.2 Bone preservation in the remaining zones was mixed but was generally either fair or poor, with the exception of bone from Zones 10 and 15 which were generally well preserved and the bone from Zone 23 where the preservation was very poor.

**Table 18.5. Preservation level for re-fitted bones from assessed contexts from all phases of the East Kent Access Road assemblage, zone 6, calculated on a context-basis.**

	n	1	2	3
<b>Bronze Age, incl. LBA-EIA</b>	277	186	91	
<b>Iron Age, incl. LIA-ER</b>	5480	4878	543	59
<b>Roman</b>	6727	6578	136	13
<b>Medieval</b>	4	4		
<b>Post-medieval</b>	6	6		

**Table 18.6. Preservation level for re-fitted bones from assessed contexts from all phases of the East Kent Access Road assemblage, zone 13, calculated on a context-basis.**

	n	1	2	3
<b>Bronze Age</b>	739		91	648
<b>Iron Age, incl. LIA-ER</b>	5581	681	1341	3207
<b>Roman</b>	1565	416	800	349
<b>Saxon</b>	206		155	51

**Table 18.7. Preservation level for re-fitted bones from assessed contexts from all phases of the East Kent Access Road assemblage, zone 14, calculated on a context-basis.**

	n	1	2	3
<b>Iron Age, incl. LIA-ER</b>	155	67	88	
<b>Roman</b>	716	177	371	168
<b>Saxon</b>	2116	955	674	487

*Species representation**18.4.3 Zone 6 (landscape area 3)*

18.4.4 In the high value analysis group, a total of 3762 re-fitted fragments could be identified to species. The medium value analysis group added 1059 speciable bones. Both the Iron Age and Roman assemblages are substantial and therefore highly suitable for further analysis. The Bronze Age assemblage is much smaller, but due to the relative scarcity of Bronze Age animal bone assemblages in this region, in combination with bone of similar date from other zones, this too is worthy of further study. The medieval and post-medieval assemblages are too small to yield any useful information and will not be discussed further in this assessment.

18.4.5 As expected for the time periods concerned, domestic mammals dominate the assemblages. Preliminary findings suggest that similar numbers of cattle and sheep/goat were present in the Iron Age and Roman assemblages, potentially suggesting that animal husbandry did not change much after the Roman invasion. This is interesting since the location of the site, near Richborough which is claimed to be one of the major invasion points, suggests that Roman influence whether as culture or as goods should be quite marked. No other faunal assemblages from the Isle of Thanet include large numbers of bones from both the Iron Age and the Roman period, so the East Kent assemblage will provide the first opportunity to investigate the issue of Romanisation in an animal bone assemblage from this important region.

18.4.6 The Iron Age and Roman assemblages also contained a few goat cranial elements. Goat are rare in Iron Age and Roman Britain compared to sheep (King 1991, 16), so further speciation of skeletal elements classified as sheep/goat will therefore be undertaken as part of the analysis stage.

18.4.7 Other species present in the Iron Age and Roman assemblages include horse, dog, cat, red and roe deer and unidentified cetacean. The assemblage also contained an unknown large mammal tibia from Iron Age pit (279145), which merits further attempts at species identification. The cetacean remains comprise fragments of vertebrae and may not be further speciable. Horse

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remains are fairly common, which may reflect the importance of horses for carrying loads or for riding. The presence of unfused horse bones in the Iron Age and Roman assemblages suggest that horses may have been bred at the site, rather than broken in as semi-wild adults (cf Harcourt 1979) and this will be a topic for further analysis. One Iron Age posthole (156237) contained a very small and slender equid bone, which raises the possibility that donkey may be present. Donkeys are very rare in Roman Britain and have not yet been identified from Iron Age sites (Johnstone 2004, 230-1). A species identification of this specimen is therefore particularly important.

- 18.4.8 The scarcity of cat remains when compared to those of dog is fairly typical for rural settlements from these periods, but it is clear that both animals were present. The deer remains comprise postcranial and cranial elements, including antler fragments. Antler fragments are more common in the Roman assemblage and the presence of one sawn-off antler tine in ditch (223065) suggests that small scale antler working took place on site during the Roman period.
- 18.4.9 The Iron Age avian assemblage included duck and possibly swan, whereas the Roman assemblage comprised domestic fowl, goose, duck, corvid and as yet unidentified wild birds. While it is difficult to distinguish greylag goose and mallard from their domestic counterparts, it is probable that the majority of the goose and duck bones in the assemblage belonged to wild birds (Albarella 2005).
- 18.4.10 The high value contexts in the Iron Age and Roman assemblage contained a substantial number of bones and teeth suitable for ageing, sexing and biometric analysis (Table 18.10). An analysis of the medium value contexts would add several ageable bones and a smaller number of measureable bones to these figures. The Bronze Age data are scarce, although this is to be expected considering the small size of the assemblage in this zone.
- 18.4.11 Butchery marks were fairly common on bones from the Iron Age and Roman periods (Table 18.11), so it would therefore be possible to investigate whether any changes in butchery practice occurred after the Roman conquest. Specific Roman butchery processes have been observed in several post-conquest assemblages (Maltby 2007) although they have been rarely observed on bones from rural sites. It will be significant in this regard to note that Zone 6 is located relatively close to military fortresses at Reculver and Richborough. Apart from butchery marks on the main domesticates, cut marks from filleting and disarticulation were also noted on bones from dog and horse.

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- 18.4.12 Pathologies were relatively infrequent on bones from all phases (Table 18.11) and occur in almost equal numbers in the Iron Age and Roman assemblages. Further study of pathologies will provide valuable information relating to animal husbandry practices.
- 18.4.13 Deposits of special interest in Zone 6
- 18.4.14 The Iron Age assemblage contained several articulated animal bone groups (ABGs). These included two animal burials: one horse burial in ditch (246153) and one cattle burial in pit (173275). An articulated horse leg was found in pit (315038). Of particular interest are a cattle skull and mandibles which were associated with infant burial (297080) and a dog penis bone (*bacculum*) found at the base of pit (302077).
- 18.4.15 A total of 2770 bone fragments were recovered from an Iron Age metalled trackway (170111) (ENT3007) which extended from Zone 6 into Zone 7. The feature consisted of single layer of densely packed small river pebbles, with abundant fragments of discarded animal bone incorporated into the metalling. The trackway generally measured around 5.0 to 5.5m wide, but extended as wide as 11.8m. It remains unclear whether this represents the original width of the feature, prior to later truncations, part of a branch of the trackway or an extension placed deliberately as a working area. Certainly bone was common in this area. While the trackway was probably constructed in the beginning of the Iron Age it seems to have remained in use up until the Late Iron Age and parts of it, utilised as possible working areas, survived to the beginning of the early Roman period. The trackway was covered in a spread of animal bone and cobbles. The high and medium value bones from the Zone 6 part of this trackway comprised 1361 re-fitted bones, of which 609 could be identified to species. Since the bone spread was sampled on a grid, with further study of the bone recovered from the soil samples it should be possible to investigate whether there was any spatial patterning relating to bone working, butchery, bone size, species or element.
- 18.4.16 Other features of particular interest include two Iron Age and two Roman human graves. While some of the animal bones may have been accidental inclusions in the grave fill, others, such as the cattle skull and mandibles associated with infant burial (297080) (as above), seem likely to have been grave goods.

**Table 18.8. Number of identified bones/taxon in the East Kent Access Road bone assemblage, Zone 6 (high value contexts)**

	Bronze Age	Iron Age	Roman	Medieval	Post-medieval
Cattle	52	697	729		
Sheep/goat	17	576	872		3
Pig		193	202		2
Horse		123*	160		
Dog	5	60*	56		
Cat		3	1		1
Deer	7		11		
Bird	1	8	15		
Cetacean		2	1		
<b>Total</b>	<b>82</b>	<b>1653</b>	<b>2021</b>		<b>6</b>

\*: incl. semi-articulated skeletons

**Table 18.9. Number of identified bones/taxon in the East Kent Access Road animal bone assemblage, Zone 6 (medium value contexts)**

	Bronze Age	Iron Age	Roman	Medieval	Post-medieval
Cattle	9	178	202	1	
Sheep/goat	1	176	200		
Pig		101	37		
Horse		52	62		
Dog		17	111*		
Deer		1			
Bird			6		
<b>Total</b>	<b>10</b>	<b>442</b>	<b>606</b>	<b>1</b>	

\*: incl. semi-articulated skeletons

**Table 18.10 Number of mandibles and bones in the East Kent Access Road animal bone assemblage, Zone 6 (high value contexts), providing ageing, sexing and measuring data. Ageable bones from semi-articulated skeletons counted as 1.**

	Bronze Age	Iron Age	Roman	Post-medieval
Ageable mandibles	6	141	170	1
Ageable bones	17	543	693	2
Sexable bones	1	57	65	
Measureable bones	4	136	179	

**Table 18.11. Number of contexts in the East Kent Access Road animal bone assemblage, Zone 6 (high value contexts), containing bones with butchering marks and/or pathological conditions.**

	Bronze Age	Iron Age	Roman
Butchery marks	1	31	38
Pathologies	2	11	14

#### 18.4.17 Zone 13 (landscape area 2)

18.4.18 The archaeology in Zone 13 comprised features dating to the Bronze Age, Early, Middle and Late Iron Age, Romano-British, Saxon/medieval and post-medieval periods. Two ring-ditches (probably barrow ditches) were of Bronze Age date, but their fills of included material of Middle and Late Iron Age date.

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An earlier ditch (134100) lay below one of these features and contained some animal bone within its fill. The fills of a single pit or tree-throw (163013) appears to be securely Early/Middle Iron Age while other pits and enclosure ditches and the fills of sunken-featured buildings have been dated more broadly to the Middle and Late Iron Age and Romano-British periods. The medieval (or more probably Saxon) material was confined to grave fills while post-medieval finds were recovered from a quarry pit.

18.4.19 The speciable fragments in Zone 13 included 1695 high value bones and 605 medium value bones. The zone included bones from the Bronze Age, Iron Age, Roman and Saxon/medieval periods, although only the Iron Age assemblage was of a suitable size for detailed inter-zone analysis. Bones from pit/tree-throw (163013) were not numerous enough or well enough preserved to be considered in this assessment.

18.4.20 The Bronze Age assemblage included only 63 identifiable bones, of which 11 were avian and the remainder were from cattle, sheep/goat, pig and horse. Given the small number of bones, the assemblage on its own can only provide a very basic level of information pertaining to animal use and husbandry practices. However, since earlier prehistoric animal bone assemblages from south-east England are scarce, the bone is worth fully recording and considering alongside other assemblages of similar date from the road scheme.

18.4.21 The Iron Age assemblage was the largest recovered from this zone, but no attempt has been made at this stage to further differentiate the assemblage into Middle and Late Iron Age by the date of individual fills. Typically, the animal bone was dominated by fragments from the primary domesticates, cattle sheep/goat and pig. Cattle are the most numerous of these domesticates by number of fragments, as was also the case for Zone 6. Other mammals present included horse, dog, red and roe deer as well as commensal microfauna including amphibians and small rodents. The avian bones comprised domestic fowl and a small number of as yet unidentified wild birds. Fowl are rare in Iron Age assemblages compared to their more frequent presence on Roman and later sites (Yalden and Albarella 2009, 101) so their presence here is of particular significance and the security and phasing of contexts containing fowl should be checked. It is believed that chickens were introduced to Britain during the late Iron Age (Maltby 1997, 402). The deer bones included one red deer metacarpal and one roe deer radius, suggesting occasional hunting. Of particular interest were three slender equid bones from Middle Iron Age ditch (143221). Donkeys have previously only been identified from three British Iron Age sites (Johnstone 2004, 407). If confirmed by further study, their presence both here and from Zone 6 would suggest the possibility of trade

with the Roman empire. Donkeys may have been used as pack animals. It is worth noting, however, that intrusion from deposits of later date cannot yet be ruled out

- 18.4.22 Eighty-seven mandibles and teeth from Iron Age cattle, sheep/goat and pig will provide useful ageing data (Table 18.14). By considering the extent of epiphyseal fusion a further 322 bones are ageable. The much smaller Roman assemblage provided 24 mandibles and 86 other bones suitable for ageing. Bones from foetal, neonatal and juvenile individuals were noted in both Iron Age and Roman phases. Useful sexing data was provided by 49 bones from Iron Age animals and by four bones from Roman animals.
- 18.4.23 From a study of slaughter age patterns and the male:female ratio it will be possible to gain some indication of the Iron Age husbandry practices for the settlement represented in Zone 13, while the data from the high value Roman bones can be usefully combined with material from other zones to contribute to a schemewide overview (see below).
- 18.4.24 Butchery marks were noted on bones from the primary domesticates and, in the Iron Age assemblage, also horse. The location of the butchery marks on the horse remains indicates severing of the head and disarticulation of the knee joint. Butchery marks on horse bones from other Iron Age settlements are occasionally recorded (Maltby 1996, 23), suggesting that horse meat was occasionally eaten. One sawn-off cattle horn core suggests that small-scale horn working took place.
- 18.4.25 A small number of pathologies were recorded in the Iron Age and Roman assemblages.
- 18.4.26 Articulated bone groups were confined to a single fragmented horse skull in Roman pit (156146) which may represent a placed deposit of some ritual significance. However, further investigation of the feature fills would be required before the significance of the remains can be confirmed.
- 18.4.27 The Saxon/medieval assemblages and post-medieval assemblages from this zone are small, and not from primary rubbish deposits, so no further work is warranted.



**Table 18.12. Number of identified bones/taxon in the East Kent Access Road animal bone assemblage, Zone 13 (high value contexts)**

	Bronze Age	Iron Age	Roman	Saxon
Cattle	35	505	54	13
Sheep/goat	16	398	141	3
Pig	5	118	20	
Horse	2	68	29	1
Dog		18	5	
Cat				4
Deer		2		
Bird	11	28	7	1
Cetacean			1	
Commensals		119		
<b>Total</b>	<b>63</b>	<b>1354</b>	<b>256</b>	<b>22</b>

\*: incl. semi-articulated skeletons

**Table 18.13. Number of identified bones/taxon in the East Kent Access Road animal bone assemblage, Zone 13 (medium value contexts)**

	Bronze Age	Iron Age	Roman	Saxon
Cattle	80	202	17	19
Sheep/goat	23	131	26	5
Pig	5	44	7	3
Horse	2	29	10	
Dog	2	13		
Bird		1	1	
Commensals		9		
<b>Total</b>	<b>108</b>	<b>409</b>	<b>61</b>	<b>27</b>

\*: incl. semi-articulated skeletons

**Table 18.14. Number of mandibles and bones in the East Kent Access Road animal bone assemblage, Zone 13 (high value contexts), providing ageing, sexing and measuring data. Ageable bones from articulated skeletons counted as 1.**

	Bronze Age	Iron Age	Roman	Saxon
Ageable mandibles	4	87	24	2
Ageable bones	24	322	86	3
Sexable bones	4	49	4	
Measureable bones	6	60	16	

**Table 18.15. Number of contexts in the East Kent Access Road animal bone assemblage, Zone 13 (high value contexts), containing bones with butchering marks and/or pathological conditions.**

	Bronze Age	Iron Age	Roman
Butchery marks	1	16	6
Pathologies		8	3

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*18.4.28 Zone 14 (landscape area 2)*

18.4.29 The majority of the bones from Zone 14 came from mid-Saxon shell-rich fills within pits and ditches, although the assemblage also contains bone from the Iron Age and Roman period. While a number of Neolithic pits and Bronze Age-Early Iron Age enclosure ditches were discovered in this zone, no animal bone was recovered from the fills. Later Iron Age - early Romano-British deposits included the fills of shallow ditches and gullies together with several pits. Romano-British deposits included the lower fills of deeper ditches and pits.

18.4.30 The assemblage in total contained 763 speciable bones from high value contexts and 314 bones from medium value contexts. Unlike the assemblage from adjacent Zone 13, bones from sheep/goat are the most numerous in all periods, although not only is the Iron Age assemblage very small, and thus susceptible to representative bias, but the Roman assemblage also contains fewer than 300 bones from the three main domesticates, which is insufficient to provide a secure inter-species ratio (cf Hambleton 1999, 39) even if bones from both value groups are combined. Goat horn cores were present in the Roman (n:2) and Saxon assemblages (n:4).

18.4.31 Other animals present include horse, dog, cat, domestic fowl, goose, corvids, as yet unidentified wild birds including bird of prey, and frog/toad. Goose were very frequent in the Saxon assemblage, which may reflect a focus on goose husbandry as opposed to fowl keeping. Horse remains were infrequent. The unusually large number of dog and cat bones is skewed by two articulated individuals from the secondary fill of ditch (174191).

18.4.32 The high value group yielded a total of 244 ageable bones and 79 ageable mandibles and teeth, most of these in Saxon contexts. While the Saxon assemblage will provide enough data for an analysis of slaughter ages, sex ratios and size, the Romano-British assemblage contains insufficient bones for any valid analysis of animal husbandry strategies in the area represented by this excavation zone. However, this group could be combined with other contemporary assemblages from the road scheme as part of the analysis of Romano-British animal husbandry from the site-wide project.

18.4.33 A small number of contexts contained bones with butchery marks or pathologies.

18.4.34 Articulated bone groups (ABGs) were found in both Roman and Saxon features, although it is as yet unclear whether these have some 'ritual' significance or whether they represent waste disposal. The Roman ABGs

include one fragmented horse skull and one fragmented cattle skull in pit (258010), as well as one probably semi-articulated cat in pit (173090). Saxon pit (167081) contained one fragmented cattle skull, and ditch (174191), also Saxon, contained one semi-articulated dog and one cat.

18.4.35 Two Saxon graves (136085, 176053) included a small number of animal bones within their fills. It is yet not clear if these are accidental inclusions in the grave fill or deliberate deposits.

**Table 18.16. Number of identified bones/taxon in the East Kent Access Road animal bone assemblage, Zone 14 (high value contexts).**

	Iron Age	Roman	Saxon
Cattle	5	39	109
Sheep/goat	34	103	268
Pig	8	2	13
Horse			4
Dog			5
Cat	1	7*	4
Bird	2	25	121
Commensals			4
<b>Total</b>	<b>50</b>	<b>185</b>	<b>528</b>

\*: incl. semi-articulated skeletons

**Table 18.17. Number of identified bones/taxon in the East Kent Access Road animal bone assemblage, Zone 14 (medium value contexts)**

	Iron Age	Roman	Saxon
Cattle	7	6	17
Sheep/goat	4	9	75
Pig	1		1
Horse	2	2	5
Dog			97*
Cat		1	64*
Bird	1		22
<b>Total</b>	<b>15</b>	<b>18</b>	<b>281</b>

\*: incl. semi-articulated skeletons

**Table 18.18. Number of mandibles and bones in the East Kent Access Road animal bone assemblage, Zone 14 (high value contexts), providing ageing, sexing and measuring data. Ageable bones from semi-articulated skeletons counted as 1.**

	Iron Age	Roman	Saxon
Ageable mandibles	8	20	51
Ageable bones	18	60	166
Sexable bones	1	4	24
Measureable bones	0	10	50

**Table 18.19. Number of contexts in the East Kent Access Road animal bone assemblage, Zone 14 (high value contexts), containing bones with butchering marks and/or pathological conditions.**

	Iron Age	Roman	Saxon
Butchery marks	1	2	6
Pathologies		4	10

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#### 18.4.36 Remaining zones

18.4.37 The remaining zones show great variation in bone count, not only for the assemblages as a whole, but for the different time periods (see Tables 18.1-3 above). Individual assemblages containing more than 1000 hand-collected fragments include the Iron Age assemblage from Zones 7 and the Roman assemblage from Zone 20, while the Iron Age assemblage from zone 12 comprises 803 hand collected fragments Roman assemblage from zone 10 comprises 815 fragments. While they have not undergone a full assessment, as the quantity of bone suggests that these would merit a full analysis. Iron Age bone from zone 7 could be usefully combined with that from the adjacent zone 6. All Bronze Age and Late Bronze Age/Early Iron Age assemblages should be recorded.

18.4.38 The main domestic animals (cattle, sheep/goat, pig, horse, dog) were present in all zones. The assemblage from Zone 10 included a notable number of bird bones, mainly goose and domestic fowl. Two roe deer mandibles and two pieces of sawn deer antler were recovered from Roman features in Zone 20, the latter indications of antler working. Other indications of craft activity on the sites included one Iron Age sheep horn core with saw marks from Zone 12 and one sheep and one goat skull with sawn off horn cores from a Bronze Age pit (157013) in Zone 10. Since Bronze Age goat remains are rare (Noddle 1994, 118) the security and the phasing of this feature must be confirmed.

18.4.39 Articulated animal bone groups include one Iron Age sheep/goat and one calf from the metalled trackway (170111) (see above) in Zone 7, one Roman sheep/goat burial from Zone 20 and a total of four as yet undated sheep/goat burials from Zones 12 and 19. Other ABGs include one horse and one dog skull from Iron Age pit (134043) in Zone 11 and one pig head from Romano-British grave (220057) in Zone 19.

### 18.5 Potential and recommendations

18.5.1 The substantial faunal remains from the East Kent Access Road excavation provide an opportunity to significantly improve our understanding of animal husbandry practices, butchery practices, waste disposal patterns, and ritual deposition, not only for the different time periods represented by these assemblages, but also for the three landscape zones within the road scheme. An analysis of a substantial assemblage can also be used for large-scale comparisons, such as Maltby's disposal pattern analysis of Hampshire chalkland sites where consistently cattle bones dominated the ditch fills and sheep/goat dominated the pit fills (Maltby 1994, 88). The East Kent Access Road assemblages would be suitable for a similar analysis and could thus

clarify whether Maltby's observed disposal pattern also was valid for south-eastern England, or whether this pattern was exclusive to Hampshire or to chalkland sites.

- 18.5.2 Substantial animal bone assemblages in Kent dating from the Bronze Age are scarce and a full record of the Bronze Age and late Bronze Age-early Iron Age animal bone assemblages from East Kent Access Road would therefore be valuable and of regional significance. If only bone from zones with at least 100 fragments were considered, the Bronze Age bone assemblage from Zones 4, 6, 7, 10, 13, 19, 21 and 23 would number 4207 fragments. Full analysis would yield important information on the species ratio and age profile of the herds, and would provide data to inform a subsequent discussion about animal husbandry strategies in the three landscape zones as well as the region as a whole.
- 18.5.3 There are also very few published bone reports from Iron Age sites in eastern Kent and therefore an analysis of the high value groups from Iron Age assemblages from Zones 6, 7, 12 and 13 would again be of regional significance and would significantly enhance research into animal husbandry. An inter-zone analysis would compare the animal husbandry strategies between settlements in Landscapes 2 and Landscape 3, zone 13 (Landscape 2) is situated on higher ground, on chalk. A forthcoming report from Canterbury Archaeological Trust on an Iron Age assemblage from Thanet Earth, near Birchington, would provide another landscape type to compare the East Kent Access Road assemblages to. An analysis would also provide an opportunity to contrast the economic strategies at an Iron Age rural site with a Romano-British one, the latter potentially trading livestock to the nearby military complexes and civilian settlements. The small and slender equid bones in the Iron Age assemblage from Zones 6 and 13 merits detailed identification in order to confirm or disprove the presence of donkey.
- 18.5.4 Although several Roman sites have been identified on the Isle of Thanet (Perkins 2001), there are hardly any published animal bone reports from this area. The nearest large assemblage is Monkton, situated just west of Zone 24-25. It comprises 2451 speciable bones including ABGs (Bendrey 2008, 234). The large Roman assemblages from Zones 6, 13 and 20 thus merit a full recording of all high value contexts. Since these assemblages represent the three different Landscapes, they could also be used for comparison between the Landscapes, as well as the region as a whole. Analysis could also be extended to high value groups from Zones 10 and 14, which comprise slightly less than 1000 bones each. While the Roman assemblages from the remaining sites are too small to yield useful information on a site by site basis, bones

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from important features, such as the pig head from grave (220057) in Zone 19 merits a brief discussion.

- 18.5.5 'Romanisation' in Britain is traditionally associated with a transition from a mutton-rich diet to one mostly based on beef and pork. The increase in cattle has been connected to a higher demand for beef in the expanding urban markets as well as the increased usage of cattle for traction as more arable land was taken into use to support the increasing population (Grant 1989, 138; King 1991). One of the landing points of the Roman invasion is thought to have been nearby Richborough, which suggests that Roman influence, in form of goods if not concepts, would have been present at the Isle of Thanet settlements almost immediately after AD 43. Further, the proximity to the continent suggests possibilities for trade prior to the Roman invasion. The Roman Empire undoubtedly influenced coastal Kent already during the late Iron Age.
- 18.5.6 The apparent lack of Romanisation visible in the animal bone assemblage from Zone 6 is very interesting and merits further discussion. The site plans suggest that the assemblages from Zone 6 and the adjacent Zone 7 represent the same settlement. These combined Iron Age and Roman assemblages from Zones 6 and 7 in Landscape 1 could then be contrasted with assemblages from other landscapes within the road scheme as well as with sites from other parts of south-east England. The Roman assemblage from Zone 13 is on its own too small to justify direct comparison with the larger Iron Age assemblage from this zone. If, however, Zone 13 was combined with the adjacent Zone 14 (both from Landscape 2) the combined faunal remains would comprise substantial Iron Age and Roman assemblages.
- 18.5.7 A study on Romanisation would also include an analysis of butchery methods. Analyses have shown that urban and military Roman sites show specialist butchery patterns, suitable for large scale processing, whereas rural Roman sites generally show similar butchery patterns as Iron Age sites. However, data for rural sites are not uniform and some butchery patterns are found regularly on both urban and rural sites (Maltby 2007). There is little detailed data on butchery from south-eastern England as a whole and subsequently an addition of data from East Kent Access Road would be valuable for future discourse on the subject.
- 18.5.8 Saxon settlements on the Isle of Thanet are rare, despite the presence of several large Anglo-Saxon cemeteries. The biggest animal bone assemblage to date derives from Manston Road, Ramsgate, and comprises 363 bones identified to species (Hamilton-Dyer 2009, 231, 233). Additionally, there is a paucity of Saxon faunal assemblages in south-eastern England as a whole

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(Sykes 2007, 30-31). It is therefore very important that the Saxon assemblage from Zone 14 is analysed in full.

18.5.9 The remaining Saxon and medieval assemblages are too small to yield any useful information.

#### *General recommendations*

18.5.10 Specific recommendations for the phased assemblages from the main excavation have been given above. Implicit in these recommendations is the fact that not all the bone will be recorded. Contexts of low analysis value can be ignored, while some contexts from medium value contexts will also be excluded from analysis, particularly for deposits of Iron Age-Saxon date.

18.5.11 The phasing used for this assessment is preliminary and further stratigraphic analysis may not only increase the number of phased contexts, but also make it possible to separate the Late Bronze Age-Early Iron Age bones and the Late Iron Age-Early Romano-British bones, which may make it viable to compare the Bronze Age, Iron Age and Roman economic strategies from different geographical zones within the scheme. The time estimate (see below) is calculated on the basis that all of the Late Bronze Age-Early Iron Age bones, the Late Iron Age-Early Romano-British bones and an estimated 10% of the unphased bones will be fully recorded

18.5.12 The sieved fragments from the smaller fractions are likely to be highly fragmented or comprise bones from small commensal species, some of which may be intrusive. Smaller bones from wild birds may also be present. While it will not be necessary to record all the sieved bone, it will be important to recover and record all bone from samples securely dated to the Bronze Age, from secure Iron Age contexts in Zones 6, 7, 12 and 13 and from secure Roman contexts in Zones 6, 13, 14 and 20. For commensal species, only bones from lower fills should be recorded. The time estimate (see below) follows the same calculations as for the hand collected bones. However, since only speciable bones from the sieved samples will be recorded, the resulting time estimate was divided by 50%.

#### *Conservation*

18.5.13 The current storage of the assemblage, bagged by context in archive boxes, is suitable for use in the future although box contents lists need to be completed for each zone. Wherever possible the complete assemblage from each context should be stored in the same box for ease of retrieval. Bone for discard may be identified after full analysis has been undertaken, but the number of contexts identified for discard is likely to be minimal.

*Tasks*

<b>Task</b>
Making box lists for the animal bones
Bone identification and recording (Bronze Age-EIA)
Bone identification and recording (Iron Age-ERB)
Bone identification and recording (Roman and Saxon)
Travel to external reference collection (Tring) for bird bone identification
Analysis of data
Writing report
Final editing
Quality assessment (Rebecca Nicholson)

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## **19 FISH REMAINS BY REBECCA NICHOLSON**

### **19.1 Introduction**

19.1.1 During excavations along the East Kent road scheme, around 1200 samples, representing almost 20,000L of soil, were sieved to 0.5mm (occasionally 1mm) as part of the flotation process for the recovery of plant and animal remains. In addition, bones were recovered by hand during the excavation.

19.1.2 Sample residues were routinely sorted to 4mm, and very occasionally to 2mm. Unsorted residues containing fish bones have been retained, and timings are given for sorting in this report, based on a scan by the author of the retained residues. In total, 175 sorted residues contained fish remains in the >4mm fractions, and at least 14 of the retained fine fraction sample residues (<4mm) contain significant numbers of identifiable small fish bones.

19.1.3 For this assessment around 600 bones have been provisionally identified, representing about 80% of the total extracted so far from the samples. Most of the bones, and occasionally scales, came from Romano-British and Saxon features within Zone 14. A small collection of hand collected bones, again mainly from Zone 14, have not yet been recorded.

### **19.2 Method**

19.2.1 Bones have been identified to taxon and anatomical element using the author's personal reference collection. Where identifications were uncertain the bones have been identified either to family level or have been classified as unidentified. In some cases, these bones have been given a tentative identification but remain to be checked using one of the large national collections of fish remains. A large collection of scales remains to be identified. Measurements have been taken on bones where appropriate, using digital callipers to 0.1mm, to allow size reconstruction at the analysis stage. Few bones proved to be measureable, however.

### **19.3 Results**

19.3.1 In general the fish remains are in fair or good condition, but this finding must be qualified in that those assemblages from deposits containing abundant marine shell or cess-like material largely from Zone 14 are well preserved while those from other Zones and periods are in poorer condition. It is likely, therefore, that most of any fish remains have been lost in many areas through post-depositional decay. Even in Zone 14, the remains may be biased in favour of rapidly buried bones and more robust bones, often from larger taxa. The

inclusion of samples from cassy deposits are therefore particularly significant in redressing the size bias inherent in many collections of fish remains.

- 19.3.2 A range of species are present and it is likely that the range of small fish should be increased when the finer residues have been fully sorted. Taxa present in a number of samples include gadids (cod, whiting, haddock, rockling), common eel, conger eel, herring and possibly sprat, shad, sea bass, sea bream, mackerel, scad, ray(s), grey mullet, garfish, gurnard and flatfish including plaice, flounder or dab and sole. There were also possible identifications of dogfish/small shark and john dory. Of particular note is the presence of anchovy bones in the finer residue of Saxon pit fill samples 6940 (182129) and 5587 (163018). Several contexts included assemblages of fish bones which exhibited evidence of chewing and/or digestion.
- 19.3.3 Although most of the hand collected fish bone has not yet been recorded, it is clear that most are from large cod family fish (mainly from cod and large haddock), although a collection of dogfish or other small shark vertebrae came from zone 14 context 125021, currently phased as Romano-British.
- 19.3.4 None of the recovered fish remains came from contexts phased to the Neolithic or Bronze Age.

#### *Iron Age remains*

- 19.3.5 A very small collection of fish remains came from Iron Age contexts, from small flatfishes, eel and very occasional herring/sprat, ray and small gadid. Several bones from sample 7109 (173190) appear chewed. The residue from sample 8344 (middle Iron Age context 256043) also includes some chewed fish remains.

#### *Romano-British remains*

- 19.3.6 The Romano-British deposits from residues sorted to date include around 100 identifiable bones from elasmobranchs, small flatfish, eel, conger eel, herring or sprat, cf. shad, mackerel, gurnard and small gadids. Several cassy deposits were excavated, including well fill 172304 from Zone 6 (interpreted as “cassy” from the mineralised concretions within the fills, including mineralised fly pupae and puparia) and fill 182120 (described as a charcoal-rich layer beneath a shell-dump) in Zone 14. These deposits appear to contain fish remains which have been chewed or digested, a feature consistent with the incorporation of faeces. Outside the towns, it appears that the Romano-British population ate little fish, so the remains from East Kent are significant, although not numerous.

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19.3.7 A collection of 65 elasmobranch vertebrae from pit fill 125021 (Zone 14, feature fill currently phased as Romano-British) probably came from a single large dogfish/small shark.

#### *Saxon remains*

19.3.8 Around 400 identifiable bones come from feature fills provisionally phased to the Saxon, and probably all from the middle Saxon (AD720-850) period, representing the majority of bones from this period extracted from the sorted residues. While a range of taxa have been identified, including all those also recorded in the Romano-British deposits, a greater proportion of the bones came from herring and, to a lesser extent, from mackerel, possibly implying a greater use of nets offshore. The presence of herring and eel in what appear to be cessy contexts is reminiscent of assemblages from urban cess pits of this date (Nicholson forthcoming). Remains from large gadids, particularly cod, were all from Zone 14 deposits phased as Saxon. Unusually, two vertebrae from anchovy were identified in sample 5587 (context 163018 in zone 14). Anchovies can be caught in southern British waters, along with herring and sprats, but the fish is here at the northern edge of its range and to find it in Saxon deposits is unusual and noteworthy.

#### *Medieval remains*

19.3.9 A very small number of identifiable bones were from contexts dated as medieval and no further work would be warranted.

#### *Unphased Contexts*

19.3.10A significant number of contexts remain unphased. Notable among these is a cuttlefish (not fish but a cephalopod) 'bone' (the hard internal structure composed of aragonite) from unphased context 125106.

19.3.11Also of note, pit fill 139066 (pit 139061) contained a range of amorphous organic and inorganic materials, including coprolitic concretions, mineralised woodlice and fly pupae/puparia and white and amber coloured nodules. This fill has many components typical of cess pit fills, and the fish remains (most commonly herring/sprat) within the unsorted sample residue are clearly chewed and/or digested. If this feature can be phased, the residue from this sample should be sorted. If the feature is Romano-British, then the fish remains would be particularly significant as direct evidence of fish consumption by a rural population at this time.

## 19.4 Potential and recommendations

19.4.1 The fish assemblage from East Kent is very small in comparison to published assemblages from English towns and monastic sites of Saxon and later date (eg. Nicholson 2006, 2007). It is, however, significant in that the Romano-British and Saxon assemblages come from a rural location.

19.4.2 The focus of the analysis should be:

1) To examine continuity and change in fishing from the Iron Age to the Saxon period and to examine the evidence in the light of national trends (cf. Barrett *et al.* 2004).

2) To look for evidence of fishing methods and fishing locations, in particular to look for evidence of rockpool, coastal, inshore and offshore fishing for the prehistoric, Roman and Saxon periods.

4) To look for any evidence for the preservation of fish in the Zone 14 assemblage. Shellfish are especially abundant in features from this zone (see below), and it is possible that the meat was being preserved for later consumption. If so, then the preservation of other meats might be expected.

### *Recommendations*

19.4.3 Given the early date of the remains covered here, even samples with small numbers of fish remains are significant. It would therefore be worthwhile fully sorting the retained 4-2mm residues from samples which have been shown on a quick scan of a petri-dish of residue to contain identifiable fish remains. Many of these are from 'cessy' fills within of pits and ditches. Where 2-0.5mm residues have been retained and have been confirmed as containing fish – tiny bones likely to represent intertidal collection or coastal fishing with fine nets – a proportion of the retained residue (depending on size) should be sorted. Since familiarity with identifiable tiny fish remains is essential for rapid sorting of fine material, this should be done by the specialist.

<b>TASK</b>
Sorting retained residues from middle Iron Age sample 8344, Romano-British pit and ditch fill samples 5835, 6913, 8393, 6911, 6914 and Saxon pit and sfb fill samples 5583, 6934, 5209, 5835, 5836, 6940, 6981 and, potentially, unphased sample 5572
Identification and quantification of remaining fish remains; to include further identification of some remains identified only to family at this stage.
Preparation of report

**Table 19.1. Numbers of identified fish bones from the >4mm fraction of selected samples, by species and period.**

SPECIES	Late Saxon	Anglo-Norman	Early Medieval	High Medieval	Late Medieval	Post Medieval	Grand Total
Elasmobranch nfi.	3	4		9			16
Thornback ray		15	7	7	2	1	32
Ray nfi.					1		1
Herring					24		24
Pilchard		3					3
Clupeid nfi.		149		15	3		167
Salmonid nfi.				1	1		2
Smelt						1	1
Eel		11		18	10	7	46
Conger eel		6		12	4		22
Cod		7		8	5	6	26
Whiting		37		1	9	1	48
Haddock		1		1	1	2	5
Ling				9	8	1	18
Gadid nfi.		44	2	14	21	3	84
Hake		1			1		2
Cyprinid nfi.						1	1
Grey mullet		3			1	1	5
Gurnard nf.		9		1			10
Mackerel		8		9	1	6	24
Bass		2					2
Cottid nif.		1			1		2
Perch						1	1
Plaice/flounder				2	1		3
Right-sided flatfish nfi.	33	48	20	45	62	39	247
Sea bream nfi.		12		1			13
Ballan wrasse						1	1
Wrasse nfi.						2	2
Scad		1					1
Dover sole		14		4	3	2	23
Turbot/brill	1			1			1
Flatfish nfi.		17	5	16	46	1	85
Unidentified	1	33	1	13	14	19	81
Grand Total	38	427	35	187	219	94	1000

(nfi - not further identified).

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**20 MARINE SHELL** BY GREG CAMPBELL**20.1 Introduction**

20.1.1 A large assemblage (some 25,000 shells totalling 317.7kg) was recovered from 1102 deposits, 41.4% from the sieving of 194 soil samples. Nearly a third (32%) of the number of shells were Roman, and over a third (35%) were Saxon (24.5% middle Saxon), with only a very small proportion prehistoric (0.8%), Bronze Age (4.7%), Iron Age (6.4%) or medieval (2.4%). The balance (19.2%) could not be phased for the assessment. Many of the shells, especially the Saxon-era shells, were recovered from the topographical hollows in large features dug in earlier (notably Roman) periods. Therefore some of the unphased shells (especially those taken as soil samples taken to retrieve shells), and some of the shells presently thought to be Roman, are likely to be Saxon. While shells were sparse in most deposits (28% produced only one or two, and 58% had less than 10), deposits with sizable numbers seemed more common than usual (probably as a result of the extensive sieving): 128 deposits had 50 or more shells, and 25 had over 200 (one deposit had over 900 shells).

**20.2 Methods**

20.2.1 *Assessed Sample:* A portion of the site known to be rich in shell (Zones 11-14) was selected, and the marine shells from approximately 46% of the sieved samples (five of 11 boxes) were assessed in detail. In each sample, whole shells, and quantifiable elements of broken shells (umbones of bivalve shells, and apices or bases of apertures of gastropod shells), were identified to genus (to species where manifest), and counted. Numbers were estimated by scaling up a half-portion of any sample which had over 100 shells, and a quarter-portion of any sample with over 200 shells. Left and right valves of bivalves were counted separately only for oysters; left and right valves were always present in roughly equal numbers for any variety in any sample.

20.2.2 *Scanned sample:* Approximately half of the sieved samples from the other areas, and half of the hand-retrieved material, was scanned rapidly to determine if their content differed obviously from the assessed sample, and any unusual shells were identified to genus (to species where manifest).

**20.3 Results***Shells from the assessed sample*

20.3.1 The 45 samples assessed in detail produced a substantial group (8748 identifiable shells), 35% of the whole assemblage, but not quite representative

of it. In the assessed sample 2.3% of the number of shells were Bronze Age, 4.4% were Roman, and the great majority were Saxon (84.6%, 62% from the middle Saxon period alone), with the remainder (8.4%) unphased; there were no medieval or early prehistoric deposits in the detailed assessment.

- 20.3.2 *Mussels*, the most common shell, formed a little over one-fourth of the assemblage (26.5%) and were found in 60% of the samples. They were the majority of the shells in a third of the samples, and one-fourth had over 50 shells. The vast majority appeared to be the common mussel (*Mytilus edulis*), with no obvious examples of the warm-water French mussel (*M. galloprovincialis*). Mussels are common on moderately to strongly wave-beaten inter-tidal shores (where they tend to remain relatively small) and on solid and stable soft sub-tidal beds to 40m depth (where they become relatively large), but can attach to most bare stable surfaces. They often form dense mats which can expand into large beds and reefs when not disrupted by harvesting.
- 20.3.3 Preservation was exceptional for this thin fragile shell, with 6% of the mussels intact enough to be measurable. About 13% of the assessed samples contained a statistically valid number of measurable shells (20 or more), and two samples had over 100 measurable.
- 20.3.4 *Periwinkles*: The common or edible periwinkle (*Littorina littorea*) made up 23% of the shells, and were found in two-thirds of the samples. They were the majority in 16% of the samples, and 27% had over 20 shells (four samples had 250 or more). Preservation of these robust shells was good: effectively all could be identified to species and most were intact enough to measure. A widely distributed and often very common grazer of sheltered or moderately wave-beaten shores from high-tide line to about 10m depth, it is most common on inter-tidal solid shores amongst sea-weed, especially wracks (*Fucus* sp.). It is also found on muddy beds in harbours and estuaries, where at low tide it congregates on stable sections of shore, objects or under patches of inter-tidal wracks. The periwinkle can also be common amongst mussels, where small young winkles dominate inter-tidal beds but large older winkles dominate the shallow beds (Saier 2000). It is possible that the smaller winkles were collected while gathering mussels from inter-tidal beds, while others were collected from rocky shores while gathering limpets and possibly mussels from isolated patches.
- 20.3.5 *Oysters*: A common shell, making up 20% of the assessed sample. Oyster valves were found frequently (oyster valves were the majority of the shells in 20% of the sample), often in dense masses (11% had more than 100 valves). Oyster preservation was fair, with about one-fifth measurable. About 90% of



the hinges were preserved well enough to be identified to species, and all were those of the native, common or flat oyster (*Ostrea edulis*). Native oysters can be common on stable moderately wave-beaten and sheltered low inter-tidal shores and on stable sub-tidal beds to about 50m depth, where they can form extensive beds and reefs when not disrupted by harvesting. A rapid assessment showed the round small-hinged form of sheltered waters and bays, and the oval large-hinged deeper-water forms seemed about equally common; only about 5% seemed the irregular faceted form of oyster reefs. Some 48 bases were unusually shallow with the outer surfaces concave and smooth: these may have grown on large rocks or poles.

- 20.3.6 *Limpets*: These simple conical gastropods of inter-tidal rocks are not common in historic periods, but made up 18% of this assessed sample, and were found in over half of the samples. They were very common in some deposits (the majority in 9% of the samples, 17.8% had more than 40, with 16% with 100 or more), often where mussels also seemed common. Preservation was fair, with about 50% intact enough to measure. Limpets are difficult to identify to species on shell alone, but almost all appeared to be widely-distributed common limpet (*Patella vulgata*).
- 20.3.7 *Whelks*: The common whelk (*Buccinum undatum*) is not a common archaeological find. However, whelks made up 4.8% of the assessed assemblage, and were found in nearly half the samples (47%). Several were the only shell or one of a half-dozen other shellfish in a sample, but could make up 30% of some shell-rich deposits. About one in eight samples (15.6%) had 20 or more, with one sample having over 100. Most were well-preserved, with about three-fourths intact enough to measure; sizes ranged from quite small to quite large (approx. 40-170mm). This carnivore-scavenger of muddy sands and stony beds from extreme low tide to 100m depth is a modern-day delicacy, fished by dredging but mainly potting (it is also a nuisance in crab- and lobster-pots, eating the bait).
- 20.3.8 *Buckies*: The red whelk or bucky (*Neptunea antiqua*) was found in almost the same quantity as the whelks, but in fewer samples (31%) and always as a small proportion of other shells (3-15%), often periwinkles, limpets or whelks, which it occasionally outnumbered. Some 13% of the assessed samples had more than 40 buckies, and two samples had over 80. Preservation was excellent, with about three-fourths intact enough to measure, ranging in size from quite small to very large (30-200mm). About one in twenty were burnt so at least part of the shell was brittle and grey, or had short bands of impregnated soot.

20.3.9 Buckies, carnivore-scavengers of sandy or muddy sea-beds, are almost completely unheard of in English archaeology. This assemblage is the vast majority of all those found in England. The only others reported are a pair from early 9<sup>th</sup>- to early 10<sup>th</sup>- Century Flixborough (Carrott, 2000), a handful from late medieval Hull (Johnstone *et al.* 1999), and from a dozen late Saxon and medieval deposits in York (O'Connor 1984). They are cold-ocean shellfish, common only in the North Sea, Ireland and north to Arctic waters (Hayward & Ryland 1990, 685), although there is a localised population off Thanet in Pegwell and Sandwich Bays (Light 2009). They are also deep-water shellfish, almost never in water less than 15m deep (Hayward & Ryland 1990, 685), and therefore only harvestable by deep-water dredging or potting. Also, they are poisonous at least seasonally, secreting a nerve toxin probably to immobilize prey (Power *et al.* 2002). Until recently fished as whelks (Hancock 1967, 1), buckies are no longer considered edible (Hayward *et al.* 1996, 202) and are discarded at sea as bye-catch from whelk-potting (Power & Keegan 2001).

20.3.10 *Uncommon shells*: Only two dozen or fewer examples of some shell types were found in the assessed shells, usually in ones or twos. Most were typical of inter-tidal or shallow sub-tidal sea-weed covered shores, such as flat winkles (*Littorina obtusata/mariae*), with a very few possible black-lined winkles (*L. cf. nigrolineata*), and rainbow scallops (*Chlamys varia*). Most may have been collected accidentally with mussels. Many were typical of inter-tidal or shallow sub-tidal rocks such as small top-shells (*Gibbula* sp.) with very rare rock winkles (*L. saxatilis*), dog-whelks (*Nucella lapillus*), and small dog-whelks (*Nassarius cf. reticulatus*). Shells of deep-water sands or gravels were restricted to a single necklace shell (*Lunatia* sp.) and one carpet-shell (*Venus cf. pallustra*). Shells expected amongst harvestable oysters, such as yearling or two-year-old oysters (spat), and sting-winkles (*Ocenebra erinacea*) were also uncommon. Shells of near-shore muds and sands were surprisingly rare considering such shores should be common nearby in the Wantsum Channel and Pegwell Bay, with only one Baltic tellin (*Macoma balthica*) and 20 cockles (*Cerastoderma* sp.), most too small to eat.

#### 20.3.11 *Assessed shells by period*

20.3.12 Assessed Bronze Age shells were quite different from the other periods, overwhelmingly mussels (98%) with very rare oysters. The tiny number of Iron Age shells was mostly oysters, with one-fourth periwinkles; a single bucky suggests deeper-water potting may have begun by this time. Roman shells were a small part of the assessed shells (4.4%), much less than that for the whole assemblage, and were dominated by oysters (71%) with about one-

fourth (23%) mussels, and occasional whelks and buckies. Saxon-era whelks and buckies were found in roughly equal numbers and made up a very high proportion of the shells compared to excavations elsewhere (11.2%); oysters, mussels, periwinkles and limpets in roughly equal numbers made up the balance. The unphased shells (8.4%) were more similar to prehistoric and Roman deposits than Saxon ones, being dominated by well-preserved mussels (60.8%) with almost all the remainder oysters.

### *Scanned shells*

20.3.13 Scanning of the shells sieved from soil samples indicated that these were broadly of the same character as the sample assessed in detail. Only two further types of shell were found, a single probable hatchet-shell (cf. *Lucinoma borealis*), a small bivalve of sub-tidal muddy sand, and two piddocks (*Pholas dactylus*). Most famous in Britain for damaging wharfs and wooden warships, this bivalve usually bores into soft rock, and could be expected in the chalk and Thanet Beds of this part of Kent. It is also edible, consumed since Classical times in the Mediterranean, where it has been fished to near-extinction (Voultsiadou *et al.* 2010, 42). The copious whole mussels from Zone 13 deposit 173231 (SS 7603) are oddly small (20-35mm).

20.3.14 Hand-retrieved material appeared to have the expected preponderance of oysters, but otherwise did not differ markedly from the assessed sieved assemblage in either composition or preservation. While very likely to differ in detail between periods due to differing use of marine resources, there were no examples of deposits rich in types of shell not seen in the sieved assemblage. The intensity of sieving from the chalk ridge (Zones 17-25) seems lower than from lower-lying parts, while having a similar range of periods, so hand-retrieved material from this area may need to be employed to compare and contrast the differences in land-use between the upland and lowland zones for these periods. Even very local coastal-inland connections during early prehistory are little understood due to lack of evidence, so any samples from pre-Roman features on the chalk ridge should be processed. Hand-retrieved shell can be highly informative (O'Connor 1984), especially oysters (Winder & Gerber-Parfitt 2003).

### *Absent or oddly infrequent shells*

20.3.15 There are edible types of shells which should be common in the waters around the Isle of Thanet, but which are absent or uncommon from the assemblage. Especially odd is the lack or rarity of shells of shallow-water muds and sands, since these are easily gathered by rake or spade while the tide is low, and these sediments should have been very extensive in Pegwell Bay, in the Wantsum Channel as it silted, and at the mouth of the Stour in the

drifting shingle which closed off the Wantsum over time. Shells such as Baltic tellins, furrow shells (*Scrobicularia plana*), carpet-shells (venerids) and razor-shells (*Solen/Ensis*) should be much more common. Particularly odd is the low numbers of cockles (*Cerastoderma* sp.), which form extensive dense easily-harvested beds, and extensive dense deposits in coastal British archaeological sites (e.g.: Campbell 2009, 9-11; Murray 2001). Three possible explanations are:

1. Muddy and sandy beds around Thanet were much more restricted in size and duration than previously thought;
2. Shells from mud and sand were consumed and discarded elsewhere, perhaps as a local resource for the local populace;
3. Muddy and sandy beds were much more restricted because these beds were intentionally exploited for some other purpose, such as oyster culture.

20.3.16 There are also shells common in or amongst extensively harvested shells, but which are absent or uncommon. The limpets and mussels appear to have been harvested from rocky shores, yet there are next to no shells of the high-shore, such toothed top-shells (*Osilinus lineatus*): perhaps harvesting was restricted to rocks near low-tide, where most edible shells grow most densely and reach edible size most quickly. The shells which live in and amongst mussels and limpets (such as small winkles, dog-whelks and barnacles) and oysters of harvestable size (barnacles, sting-winkles, jingle-shells, undersized oysters and spat) were also unusually rare: it seems likely that most of the shells were sorted and cleaned of most unwanted shells before being shipped, as would be expected for 'commercial' catches.

## 20.4 Potential

20.4.1 The EKA marine shells comprise a significant assemblage, being copious, well-preserved and well-recovered (due to extensive sieving), and associated with a long succession of periods and cultures. Marine shells are well-studied only for restricted periods in restricted regions of Atlantic Europe: the Mesolithic and early Neolithic periods, mainly in Scotland, Denmark, Brittany, and northern Spain (Milner *et al.* 2007b); early Christian Ireland (McCormick & Murray 2007); and the medieval French Loire & Poitou coasts (Dupont 2010). The only similar-sized multi-period rural assemblage for all Atlantic Europe would seem to be Le Yaudet, Brittany (Campbell 2007): while most of the shells were recovered by sieving, preservation was poorer and the range of landscapes sampled was much smaller. The nearest multi-period rural excavations with a full analysis of a sizable marine shell

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assemblage are Rookery Hill, Newhaven, East Sussex (Bell 1977) and North Shoebury, Essex (Murphy 1995), both much smaller.

- 20.4.2 The concentrations of whelks which include both shallow- and deep-water types are the first clear evidence for deep-water whelk fishery in Atlantic Europe.
- 20.4.3 The preservation of information on historic mussel fishing practices is exceptional for Atlantic Europe, due to the large numbers of intact mussels. It is usual for an archaeological deposit containing hundreds of valves to produce none intact (e.g. Winder 1980, 125; Light 2005, 59; Campbell 2007, 12).
- 20.4.4 The assemblage is also important in that it is a rich source of evidence for the English economy during the Roman and Saxon periods. The dominance of edible shells, their restriction to a small number of species, their possible harvesting from richer beds, and the likelihood that the shells are free of the usual associated organisms because they were sorted and cleaned, suggests specialised shellfish harvesting on a ‘cottage-industry’ scale. The consistency of the assemblage across the periods suggests this scale of processing lasted for some time. During the Roman period Richborough supplied an international trade in shellfish famous as far as Rome (Juvenal: *Satires* 4, 141), which may have continued into the 4<sup>th</sup> Century (Philpots 1890, 39). The minsters which were founded during the middle Saxon Conversion to Christianity (which began in Kent), and the later *wics* founded as trading emporia, both formed networks which relied on coastal locations for international shipping. Both minsters and *wics* had profound effects on the economic and political organisation of England, especially on the later emergence of commercial centres in walled towns. The best evidence for the extent of connections between communities and the coast is marine shell, and the marine shells have been analysed for sites associated with both coastal minsters (Murray 2001; Somerville 2011) and *wics* (Winder 1980; Winder & Gerber-Parfitt 2003). A Conversion-era minster shell assemblage in Kent, from Lyminge, was assessed recently (Campbell 2011). Some important questions for Roman and Dark Age economics which could be answered by this assemblage are:

*What was the extent and nature of coastal industry in the Roman period? Do Roman practices extend or replace an Iron Age tradition? Do earlier practices continue into the late or even post-Roman period?*

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*Did middle Saxon coastal sites flourish because Conversion-era minsters (such as Minster-in-Thanel) built on surviving late Roman coastal industries (such as shell-fishing), or were these industries started anew?*

*Did wics and emporia flourish because coastal industries were already operating due to the activities of Conversion-era minsters, or were these industries started anew?*

20.4.5 The shells are also regionally important, potentially providing an opportunity to produce a framework for studying changes in the use of shellfish over time in Kent. A search of the British Environmental Archaeology Bibliography (Hall 2008) showed reports on archaeological marine shells from Kent are limited to a handful of one-page notes, and two medium-sized assemblages: the middle Saxon trading- and fishing-hamlet of *Sandtun* (Murray 2001), and the beach sediments around the 10<sup>th</sup>-Century Graveney Boat (Thomas 1978). Medieval Kent shellfish are briefly discussed for the fishermens' tenements at Townwall Street, Dover (Allison & Harrison 2006). There are no significant analyses of marine shell in Kent for any other period. The nearest for the transition in marine shell exploitation from late prehistory to the Roman period is Mount Batten, Plymouth (Cunliffe & Hawkins 1988). The nearest sizable Roman assemblage analysed appears to be from Culver Street, Colchester (Murphy 1992).

## 20.5 Recommendations

### *Detailed identification of shellfish*

- 20.5.1 *Task 1:* The assemblage has potential to trace variation through time in
- the relative importance of shellfish in the diet,
  - the range of shellfish exploited,
  - the types of beds exploited for the main edible species (reflected better by associated shellfish than the main edible species themselves), and
  - the extent to which the shellfish were processed on a cottage-industry scale (by being selected for minimum size, sorted and cleaned).
- 20.5.2 To satisfy this potential, Neolithic, Bronze Age, Iron Age, and medieval deposits, and Roman and Saxon deposits with over a specified number of shells will have their shells identified to species, using recognised identification guidebooks and reference collections where necessary. The identification will be carried out on a 50% sub-sample for any particularly large deposits. This and subsequent tasks can only proceed once the dating for all deposits is finalised.

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*Source and exploitation of main edible species*

- 20.5.3 *Mussels*: Mussel preservation in the assemblage is exceptional, presenting a potential opportunity to use mussels whole enough to measure to characterise the size range, and any effects on size due to overfishing. Mussel shape and size differs between habitats, so measuring mussels to reconstruct shape variation with size should make it possible to determine harvesting strategy (whether they were harvested by hand from easily accessible high-tide shores, from less accessible low-tide shores, or dredged from sub-tidal beds). Mussel shells tend to be increasingly relatively wide with increasing tidal height (Seed 1968, 571), and growth rate varies with tidal height (Buschbaum and Saier 2001, 33), with mussels tending to be slower-growing, smaller and more aged with increasing tidal height (Seed 1968, 564).
- 20.5.4 *Task 2*: Any Neolithic, Bronze Age or Iron Age deposit containing more than a specified number of whole mussels, and the Roman and Saxon deposits richest in whole mussels, will have those mussels measured for shell height, width, length and thickness, and the differences between deposits and periods will be assessed using multivariate statistical tests such as multivariate analysis of variance (MANOVA) or its non-parametric form (NPMANOVA).
- 20.5.5 *Buckies & Whelks*: The site appears unique in the quantities and preservation of buckies, presenting the first opportunity to characterise the size range found acceptable in the past, any effects on size due to overfishing, and the past size ranges of a population near its southern limit. Bucky shell size and shape differs between males and females, and the male-female ratio varies seasonally (Power & Keegan 2001). Therefore, recovering the male-female proportions for each deposit will help in determining whether buckies were fished seasonally or year-round.
- 20.5.6 Common whelks also show allometric differences between habitats (Magnúsdóttir 2010), which can be used to reconstruct whether they were forms of the near-shore (and therefore gathered by hand) or deep-water (and therefore potted or dredged). Measuring the whelks will also reveal whether they were similar in size to buckies, and therefore fished in the same ways. Several buckies and whelks showed surface evidence of burning or sooting consistent with their being roasted or smoked.
- 20.5.7 *Task 3*: A selection of Neolithic, Bronze Age or Iron Age deposits containing whole whelks and buckies, and the Roman and Saxon deposits richest in whole whelks and buckies, will have those shells measured as in Magnúsdóttir 2010 and the differences between deposits and periods will be assessed using multivariate statistical tests of Task 2.

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- 20.5.8 *Oysters*: Oysters, modern and archaeological, are well-studied. Oysters take different shapes in different beds to deal with different surfaces, tidal flows and sediment loads, being angular and faceted in reefs, rounded when spread out in sheltered waters in harbours and inlets, and oval when spread out offshore; measuring archaeological oysters to capture these shape differences is used regularly to reconstruct past oyster harvesting strategies (e.g. Campbell 2010; Winder 1992). Oyster shells are colonised by other organisms (barnacles, sponges, bristle-worms) which leave permanent traces on the shells to differing extents in different beds. Sophisticated statistical comparison of oyster shell infestation has been used to discriminate between the nature of the oyster beds being harvested in the past (Winder & Gerber-Parfitt 2003). Oyster bases also take the shape of the objects upon which they grew, and there are some examples of what might be managed oysters being grown on poles.
- 20.5.9 *Task 4*: A selection of Neolithic, Bronze Age or Iron Age deposits containing more than a specified number of whole oysters, and the Roman and Saxon deposits richest in whole oysters, will have those shells measured as in Winder & Gerber-Parfitt 2003, and the differences between deposits and periods will be assessed using statistical tests of Task 2.
- 20.5.10 *Periwinkles*: Periwinkles tend to have different average sizes in different habitats (Cummins *et al.* 2002), especially between inter-tidal and sub-tidal beds (Saier 2000). Periwinkle shape variation with size follows different trends in different habitats (Crothers 1992; Kemp & Bertness 1984), so measuring can show whether archaeological periwinkles were harvested primarily from inter-tidal or sub-tidal waters (Campbell 2009, 11-13).
- 20.5.11 *Task 5*: A selection of Neolithic, Bronze Age or Iron Age deposits containing a specified number of whole periwinkles, and the Roman and Saxon deposits richest in whole periwinkles, will have those shells measured as in Campbell 2009 and the differences between deposits and periods will be assessed using multivariate statistical tests of Task 2.
- 20.5.12 *Limpets*: Relative height varies with length in known ways with tidal height and wave-exposure in common limpets (Baxter 1983; Lewis & Bowman 1975; Thompson 1980) and this variation is used on archaeological limpets to reconstruct exploited shores and the effect of exploitation (e.g. Cabral & da Silva 2003; Campbell 2007, 16-18; Milner *et al.* 2007a).
- 20.5.13 *Task 6*: A selection of Neolithic, Bronze Age or Iron Age deposits containing a specified number of whole limpets, and the Roman and Saxon deposits richest in whole limpets, will have those shells measured as in Campbell 2007



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and the differences between deposits and periods will be assessed using multivariate statistical tests of Task 2.

20.5.14 *Task 7*: Write first draft (introduction, methods, results, conclusions sections for Tasks 1-6, summary and concluding text); prepare final draft.

## 20.6 Discard policy

20.6.1 A discard policy can only be framed following the completion of Task 1, the basic identification of the shells in each deposit. There is no 'magic number' of shells that renders a deposit's shells useless: even fragments can be identified by an experienced analyst, and are therefore informative. The phasing at this stage is preliminary, so it is impossible to be certain that shells of national or regional importance won't be discarded. While it is clear that Roman and Saxon deposits are often rich in shell, it is not clear which shell-rich deposits are definitely Roman or Saxon, and which discarded early, middle or late in their periods. Prehistoric and medieval shell assemblages may appear small on a per-deposit basis compared to the Saxon material here, so employing some simple count-criterion will preferentially discard shells of these periods, damaging their national and regional importance.

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**21** COPROLITE *BY REBECCA NICHOLSON*

21.1.1 A mineralised, partially complete coprolite was recovered from unphased pit fill context 179160, within pit 179158 in Zone 6. The stool is semi-torpedo shaped, pale brown coprolite, measuring 62x29mm and weighing 31g. Examination of the coprolite at x10 magnification revealed frequent inclusions of mammal bone cortex and cancellous bone and this, together with the size and shape suggest that this is a large dog coprolite. No further work is required, although depending on the significance and date of the feature, it might be worth including as a note in the final report.

## 22 PLANT REMAINS *BY KATH HUNTER*

### 22.1 Introduction

22.1.1 An extensive programme of excavation was carried out by Oxford Wessex Archaeology along the proposed route for the East Kent access road. The excavations follow the 6.5 km linear route for the road and pass through a number of different landscape types. Features and activity areas from the Neolithic, Bronze Age, Iron Age, and Romano-British, middle Saxon, Medieval and post-medieval period were revealed. Burial mounds and ring-ditches, trackways, sunken-featured buildings, pits and enclosure ditches were excavated and sampled. This large project presents an exceptional opportunity to study changes in the landscape and economy through time through the study of seeds and other plant remains.

### 22.2 Landscape areas: the focus of study

22.2.1 The excavated areas have been grouped in to three landscape areas that have been characterised in the Interim Report (OA 2011)

Landscape 1- the east-west Chalk ridge that forms the backbone of the Isle of Thanet.

Landscape 2- the Pegwell Bay Spur that occupies a spur of land that overlooks Pegwell Bay in one direction and Cottington Hill in the other.

Landscape 3-the Ebbsfleet Peninsula is low lying and has a close relationship at its southern tip with the Wantsum Channel and the sea beyond.

### 22.3 Aims and objectives

22.3.1 The aim of this assessment was to characterise the quantity and quality of plant remains preserved in deposits along the roadscheme in order to asses the value of the material to answer regional and site-based research questions. To do this, the following categories of information were considered:

- The quantity of the material preserved.
- The quality and type of preservation.
- The range of species represented.
- Indicators of human activity such as domestic and agricultural practice.
- Identify indicators of the local environment.
- The potential for C14 dating.
- Other sites within the region that may have comparable assemblages.

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## 22.4 Methods

- 22.4.1 During 2009 and 2010 over 2500 soil samples were taken, and of these 1794 have been processed by water flotation for the recovery of charred plant remains, bones and small artefacts. The size of samples primarily taken for the recovery of plant macrofossils varied, but were ideally 40L. All samples, together with the volumes of soil processed, where applicable, and volumes processed are recorded in the site database.
- 22.4.2 The samples were processed on site during the excavation, and in the weeks that followed at OA South and OA East using a modified Siraf-style flotation machine. The flots were washed over a 0.25mm mesh sieve and the residues were retained in a 0.5mm flexible nylon mesh. Where a sample was taken primarily for the recovery of charred plant remains (CPR), both the flot and heavy residues were dried in a heated drying room at ca. 25°C. Samples taken for the recovery of waterlogged remains (WPR) were processed by bucket flotation (1L samples, washover technique) using the same meshes as for bulk samples. Both the waterlogged flot and residue (WPR) were stored in water in the OAS cold store at between 4°C–8°C. The waterlogged samples were rapidly assessed and the results recorded along with the results from the samples taken for CPR.
- 22.4.3 Charred plant remains (including charcoal) have been sorted from all heavy residue fractions >2mm by environmental assistants or, if abundant, retained for future sorting if required. Any residues from samples thought to contain mineralised material have also been retained.
- 22.4.4 After processing, a preliminary phase of evaluation was carried out by Laura Trafford (supervisor, OA South) in order to identify those samples which would be worthy of full assessment and included both quantitative and qualitative information about the charred plant remains from the flots. Subsequently, a more comprehensive assessment has been carried out by the author, the results of which are presented here. Apart from those flots evaluated as worthy of assessment by Trafford, some further samples were included as a check on decisions made at the flot evaluation stage: 357 samples were assessed at this second assessment stage.
- 22.4.5 For this assessment, approximately 20ml from each flot was scanned (or the total flot if less) using low powered microscopes at magnification of between x10 and x20. (MTL10 and Leica EZ4D) The presence and relative abundance of the plant remains was recorded along with any bone, molluscs and artefact remains. The frequency of charcoal and wood fragments larger and smaller

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than 2mm was also noted. Charcoal >2mm is potentially identifiable and suitable for species analysis and dating.

22.4.6 Where mineralised remains were found in the flots or the presence of faecal material was suspected, sub samples of the finer residues, if retained, were scanned to determine whether mineralisation had been extensive and so whether these residues should be sorted at the next stage.

22.4.7 Where delicate or individual specimens of particular interest were found they were placed in a glass tube and returned to the flot. This is in order to protect them and enable them to be found easily at the analysis stage. As this was a rapid assessment of the plant remains the level of identification was limited. Where identified the nomenclature for the plant remains follows Stace 2010.

22.4.8 During the scanning process the frequency of the different type of charred plant remains were recorded using the following key:

- \* 1-5 items
- \*\* 6-10
- \*\*\* 11-50
- \*\*\*\* 50-100+

22.4.9 The presence of charcoal was similarly recorded following this key with the additional use of brackets to show the frequency of fragments over 2mm in all dimensions that might allow identification to species.

22.4.10 The criteria used to select samples for further analysis is based on a scheme developed by archaeobotanist Wendy Carruthers (2011) which allows various factors to be taken in to account when assessing samples. The priority categories used in this assessment are as follows:

**A**= high potential on archaeobotanical grounds (i.e. rare or interesting plant taxa or exceptional preservation) or due to the scarcity of information from this type of deposit (e.g. Neolithic contexts).

**B**= good potential due to reasonable preservation and/or frequent identifiable charred plant remains, i.e. the assemblage can provide a useful amount of information.

**C** = some charred material but present in very low concentrations or very poorly preserved. These samples would only be worth including if part of a group, or if the context is especially important or particular information is required.

**D** = no charred material or so few to have been fully identified and recorded. Any information recovered from C and D samples can be included in the final report if necessary.



22.4.11 This system also allows for the provision of intermediate categories for example B/C where further information may be required about the samples such as phase or feature type.

## **22.5 Results**

22.5.1 The assessment has identified 116 samples that are recommended for full analysis and these are recorded in the tables below by zone. Samples with a lower potential have been included where samples of a high potential were absent in order to give a wider range of samples from across the zones and phases. Where plant remains are present in as yet unphased samples that might be suitable for radiocarbon dating it is indicated in the comments column. The comments section of these tables gives only a summary of the full results from the assessment.

22.5.2 In order to identify at which stage a sample reached in the assessment programme each stage has been given a processing code:

1 - All samples assessed for CPR.

2- 1st stage assessment (carried out by Laura Trafford but not taken further)

3-2nd stage assessment (carried out by the Author and consists of some stage 1 samples and others included in at a later date).

### *Preservation*

22.5.3 Preservation of the plant remains from the excavation ranges from poor (with no identifiable characteristics) to excellent (with preservation allowing identification to species and even variety).

### *Landscape 3*

#### *22.5.4 Zone 1*

22.5.5 This zone was located on the Ebbsfleet peninsula close to the Wantsum channel and the sea at the southern end. None of the samples selected have been phased, so further work is not warranted at the present time, although samples 7505 and 7503 both include hazelnut shell, which could be dated and which would be typical for features of an early prehistoric date.

Phase	Sample	Context	feature	preservation type	comments	Potential
Un-phased	6004	276001	Layer possible marshy deposit	Waterlogged	Possible legume pod fragments. Need to check Identification.	B/C
Un-phased	7505	207085	Pit	Charred	Abundant hazelnut shell may be an early prehistoric date	A/B Dating
Un-phased	7503	172141	Pit	Charred	Hazelnut shell with some poorly preserved cereals	C/D Dating

### 22.5.6 Zone 3

22.5.7 Also on the Ebbsfleet peninsula to the north of Zone 1 a low-lying area located at the junction of the former Wantsum Channel and Pegwell Bay.

Phase	Sample	Context	feature	preservation type	comments	Potential
medieval	5102	141017	ditch	Charred	Cereals well preserved wheat oat and barley. Celtic bean and 2mm legumes. Wheat and barley chaff. Weed seeds include <i>Anthemis cotula</i>	B
medieval	5105	149012	ditch	Charred	Barley and oat well preserved. Possible <i>Agrostemma githago</i>	B
medieval	5122	204027	ditch	Charred		

22.5.8 While samples 5102 and 5105 include material of sufficient quantity to warrant analysis, these are only two samples and since this is the only zone which contains significant medieval archaeology, analysis of these is not considered a priority in terms of the project aims. Sample 5122 is not recommended for full analysis but could be included in the next stage in order to increase the quantity of material considered from this phase, since medieval features are uncommon outside this zone.

### 22.5.9 Zone 4

22.5.10 Central portion of the Ebbsfleet peninsula to the north of Zone 3.

Phase	Sample	Context	feature	preservation type	comments	Potential
Bronze Age	8201	280121	Oven 280119	Charred/ Silicified/ Mineralised	Oat and wheat with possible barley. Chaff relatively well preserved. Many Weed seeds types including <i>Tripleurospermum inodorum</i>	A/dating
Bronze Age	8204	312012	Pit 312011	Charred	Wheat and barley with wheat chaff. 2mm Legumes.	B
Late Bronze Age or Early Iron Age	8218	252231	Pit 252230	Charred	Barley grain, wheat chaff. Possible flax	B
Late Bronze Age or Early Iron Age	8238	254141	Pit 254140	Charred	Wheat, barley, possible oat grain. 2mm legume, weed	B/C

Phase	Sample	Context	feature	preservation type	comments	Potential
					seeds include <i>Fallopia convolvulus</i> . Early phase	
Late Bronze Age or Early Iron Age	8239	254148	Pit 254146	Charred	Wheat and barley grain, relatively well preserved wheat chaff. Early phase	B
Early Iron Age	8244	144146	Post hole 144147	Charred	Abundant grain including wheat, oat and possible barley. Abundant wheat chaff, pea, and 4mm legumes.	B
Bronze Age	8245	252238	Structure 252245	Charred	Wheat, large legume	B
Bronze Age	8246	252240	Structure 252245	Charred	Oat, barley and wheat. Wheat and barley chaff.	B
Bronze Age	8247	252242	Structure 252245	Charred	Wheat, oat. Possible Celtic bean.	B
Bronze Age	8248	252244	Structure 252245	Charred	Cereals less well preserved than from other samples from this feature include as part of the group	B/C
Late Bronze Age or Early Iron Age	8249	182248	Pit 182246	Charred	Barley and oat grain, wheat chaff. Frequent Celtic bean and 2mm legumes	A
Late Bronze Age or Early Iron Age	8253	254125	Pit 254124	Charred	Wheat grain and chaff	B

22.5.11 Samples 8203; 8206; 8207; 8208; 8209; 8211; 8216; 8221, 8222; 8223, 8224; 8225; 8226; 8234 and 8235 are not recommended for full analysis but could be included in the next stage either for dating purposes or to provide extra material for an intra-and inter-site comparison.

22.5.12 Samples 8205; 8210; 8212; 8213; 8214; 8215; 8217; 8228-8233; 8236 and 8240-8243 are not recommended for full analysis

#### 22.5.13 Zone 5

22.5.14 Located on a relatively high point on the Ebbsfleet Peninsula. Two samples were assessed from Iron Age Pit 254114. Both could be analysed, but analysis of samples from this zone is not considered to be a priority for the project.

Phase	Sample	Context	feature	preservation type	comments	Potential
Iron Age	8301	123190	Pit 254114	charred	Wheat, barley and oat with chaff. weed seeds include grasses and dock type	B
Iron Age	8302	123189	Pit 254114	charred	Wheat, barley, oat. chaff, dock seeds	B/C

## 22.5.15 Zone 6

22.5.16 Located to the north of the neck of the Ebbsfleet Peninsula rising to the north.

Phase	Sample	Context	feature	preservation type	comments	Potential
Un-Phased	5308	191007	Midden/ soil deposit in test pit 191008	Charred/ Mineralised	Oat, barley and wheat, Wheat chaff. Possible pea. Mineralised seeds include <i>Lithospermum arvense</i>	B Only worth including if securely phased.
Un-Phased	5326	128024	Post hole 128025	Charred	Grain not well preserved Possible barley. Wheat chaff. Pea, possible flax	B. Only worth including if securely phased.
Early Romano-British	5335	170024	Pit 170021	Charred	Barley with possible side grains, Wheat chaff, possible pea, 2mm legume,	B/C
Early Romano-British	5336	170023	Pit 170021	Charred	Barley and wheat grains, Wheat and oat chaff. Hazelnut shell	B/C
Early Romano-British	5378	255054	Pit 255053	Charred / mineralised	Barley, wheat and possible oat. Mineralised concretions	B/C
Early Romano-British	5379	255055	Pit 255053	Charred/ mineralised	Barley and wheat grains and chaff. Also oat chaff. Mineralised concretions	B/C
Early Romano-British	5380	255056	Pit 255053	Charred	Wheat, barley and oat grains, wheat chaff. 2mm legumes. <i>Sambucus nigra</i>	B/C
Late Iron Age or Early Romano-British	5382	258031	Post built structure 169005	Charred/ mineralised	Abundant grain - barley and wheat. Barley chaff. <i>Raphanus raphanistrum</i> seed capsules. Mineralised seeds indet.	A/B
Middle Iron Age	5385	256043	Pit 256029	Charred	Wheat, barley, oat grain and chaff. various weed seeds including <i>Lithospermum arvense</i>	A/B
Late Iron Age or Early Romano-British	5387	219077	Post built structure 169005	Charred/ mineralised	Barley with side grains and chaff. Rare wheat with chaff. Mineralised seeds including a possible brassica.	A/B
Romano-British	5395	289055	Oven 176181	Charred	Barley with possible wheat grains, wheat chaff. Frequent pea. <i>Sambucus nigra</i> and <i>Rubus sp.</i> present	B
Late Romano-British	5397	289044	SFB 170132	Charred	Barley grain, Frequent pea	B/C
Romano-British	5398	289054	Oven 176181	Charred	Cereal poorly preserved. Barley chaff. Pea and 4mm legume	B
Un-Phased	6020	193105	Grave 278177	Charred	Charred concretions containing Grain, also loose barley and oat grain. Wheat chaff	C/B/ dating. Only include in analysis if these are likely to be <i>in-situ</i> grave goods.
Early or Middle Iron Age	7903	173281	Pit 173275	Charred/ Silicified/ mineralised	Cessy concretion containing silicified and charred chaff and seeds. Wheat, oat grains, possible pea, 4mm legume. Weed seeds include <i>Tripleurospermum inodorum</i> and <i>Raphanus raphanistrum</i> seed capsules	A
Early or Middle Iron Age	7904	173282	Pit 173275	Charred/ Mineralised	Very rich sample Barley wheat and oat grain, wheat chaff, Pea, 4mm legume, Charred damson type fruit, charred and mineralised	A

Phase	Sample	Context	feature	preservation type	comments	Potential
					<i>Lithospermum arvense</i> and charred <i>Fallopia convolvulus</i>	
Late Iron Age	7923	291086	Pit 291083	Charred	Barley and oat grain, wheat chaff, 4mm legume, Abundant weed seeds including <i>Lithospermum arvense</i>	B
Middle Romano-British	7924	216110	Quarry pit 216097	Charred/silicified	Wheat and oat with possible barley grain. Charred and silicified wheat chaff. Frequent large legumes possibly peas. <i>Prunus spinosa</i> stone gnawed by small mammal. Weeds include <i>Raphanus raphanistrum</i> seed capsules	B
Iron Age	7962	173322	Pit 173318	Charred	Barley and oat grain and chaff. 2mm legume and weeds. including <i>Raphanus raphanistrum</i> seed capsules	B
Early Romano-British	7964	137294	Ditch 190485	Charred	Wheat, oat and possibly barley. Wheat chaff, large legumes, weed seeds included <i>Raphanus raphanistrum</i> seed capsules.	B/C
Late Bronze Age or Early Iron Age	8219	127169	Pit 127167	Charred	Wheat barley, celtic bean, various weed seeds including <i>Fallopia convolvulus</i> and <i>Euphrasia</i> sp.	B/dating
Late Bronze Age or Early Iron Age	8220	127170	Pit 127167	Charred	Wheat barley and wheat chaff. 2mm legume.	B/C/ dating
Un-Phased	8318	124219	Pit 124218	Charred	Well preserved wheat and oat grains. Wheat grain with glume attached with other chaff.	B/ dating
Early Romano-British	8326	132152	Well 132144	Charred /waterlogged	Barley, and wheat grain, wheat chaff, possible pea. Waterlogged portion of this sample not suitable for further analysis	B
Un-Phased	8355	178239	Post built structure 154190	Charred	Wheat, barley and oat grain, wheat chaff, Flax, possible pea, 2&4mm legume. Weeds includes <i>Raphanus raphanistrum</i> seed capsules	B. Only worth analysing if securely phased.
Late Iron Age	8384	312048	Pit 312047	charred	Cereals poor. Hazelnut shell and apple/pear core fragment, suggests possible earlier date	B/dating
Early Neolithic	8385	312050	Pit 312049	charred	Wheat and hazelnut shell	B/A
Early Romano-British	8393	172304	Well 170184	charred	Concreted charred lumps containing cereal grains, also loose cereal grains. Wheat, barley and oat. Sprouted grain. Wheat chaff. 2&4 mm legumes	B
Un-Phased	8396	248208	Well	Charred	Barley with possible side grains, Wheat grain and chaff. Pea, 2mm legume, <i>Raphanus raphanistrum</i> seed capsules	B. Only worth analysing if securely phased.
Early or Middle Iron Age	8335	331004	Round house	Charred/mineralised	Wheat, barley and oat, wheat chaff. 2mm legume, weed seeds includes <i>Raphanus raphanistrum</i> seed capsules	B/C

22.5.17 Samples 5302, 5303; 5304; 5305; 5307; 5312; 5327; 5328; 5330; 5332; 5334; 5393; 7947; 7952; 7954; 7957; 7961; 7994; 8319; 8320; 8327; 8345; 8346; 8357; 8366; 8368; 8379; 8381; 8400; 8407-8410; 8412; 8314; 8329; 8330, 8333; 8363-8365; 8367 are not recommended for full analysis but could be included in the next stage for dating purposes or to provide comparators with samples from other zones or phases.

22.5.18 Samples 6002; 6007; 6008; 6021; 7905; 7914; 7917; 7919; 7963; 8322; 8326; 8343; 8344; 8358, 8376; 8386; 8411; 8413; are not recommended for full analysis

#### 22.5.19 Zone 7

22.5.20 Located on the south-west side of Cottington Hill.

Phase	Sample	Context	feature	preservation type	comments	Potential
Late Bronze Age or Early Iron Age	7311	179105	Pit 179104	charred	Barley grain, wheat chaff. Early phase	B
Late Bronze Age or Early Iron Age	7313	182153	Ditch 201093	Charred	Wheat grain and chaff, Large legume fragments	B/C
Romano-British	7320	303002	Pit 303003	Charred	Oat with possible wheat and barley. Wheat chaff, pea and 2&4mm legume	B/C
Late Bronze Age or Early Iron Age	7324	287032	Ditch 201127	charred	Wheat grain and chaff, Possible pea. weed seeds include <i>Fallopia convolvulus</i>	B/C
Middle or late Iron Age	7328	303016	Pit 303017	Charred	Wheat and barley grain and chaff, large legume fragments and 2mm legumes, Abundant weed seeds including <i>Anthemis cotula</i> , <i>Fallopia convolvulus</i>	B/C
Late Bronze Age or Early Iron Age	7349	179131	Post hole 179130	charred	Wheat grain and chaff, <i>Fallopia convolvulus</i>	B/C
Late Iron Age or Early Romano-British	7360	178164	Pit 159256	charred	Naked barley, hulled barley, wheat grain and chaff. Emmer type grain. Naked barley Suggests a earlier prehistoric date	A/dating
Late Bronze Age	7365	303048	Pit 303049	Charred	Wheat and barley. Cereal chaff, weed seeds include <i>Fallopia convolvulus</i> and <i>Sambucus nigra</i> .	B/C

22.5.21 Samples 7300; 7312; 7323; 7359 and 7367 are not recommended for full analysis but could be included in the next stage for dating purposes or to provide comparators for samples from other zones or phases.

22.5.22 Sample 7301 is not recommended for full analysis.

22.5.23 Zone 8

22.5.24 Located on Cottington Hill and continues down its south-west slope.

Phase	Sample	Context	feature	preservation type	comments	Potential
Un-Phased	7988	125166	Pit 125163	Charred	Barley, wheat oat grain. Wheat and oat chaff. Hazelnut shell. 2mm legume	B. Only worth including if securely phased.

22.5.25 Zone 10

22.5.26 Located on the Severnscore scarp slope.

Phase	Sample	Context	feature	preservation type	comments	Potential
Early Romano-British	5202	127027	Pit 127030	charred	Wheat grain and chaff. Large legume fragments. Few samples from zone /phase	C
Early or Middle Saxon	5208	197085	SFB 194086	Charred/ mineralised	Wheat, oat, possible barley. Mineralised concretions Few samples from this Zone/phase	C

22.5.27 Samples 5210 and 5215 are not recommended for full analysis but, again, could be used for dating or as comparators with samples from other zones or phases.

22.5.28 Zone 10a (lagoon/access road) See Zone 10

Phase	Sample	Context	feature	preservation type	comments	Potential
Iron Age	8437	242134	Pit 242133	Charred	Wheat, barley and oat grain, wheat chaff. Pea, 2mm legume, Hazelnut shell, Weed seeds includes <i>Raphanus raphanistrum</i> and <i>Papaver</i> sp.	A/B
Roman	8436	130268	SFB 249199	Charred	Barley and wheat, Celtic bean. 2&2mm legumes. Possible flax. Frequent weed seeds including <i>Sambucus nigra</i>	A/B
Roman	8442	130302	Ditch 249250	charred	Wheat and barley, large legume fragments, 4mm legume weed seeds include <i>Plantago</i> type.	B/C

22.5.29 Sample 8442 is not recommended for full analysis but does have potential for dating, if required and the assessment results may be included in the next stage.

### 22.5.30 Zone 11

22.5.31 Located on the Sevenscore scarp slope.

Phase	Sample	Context	feature type	preservation type	comments	Potential
Romano-British	5403	127036	Pit 127034	charred	Cereal grains and chaff relatively well preserved. Glume wheat chaff. Large legume fragments.	C/B
Iron Age	5406	189017	Ditch 189015	Charred	Free threshing wheat, large legume fragments and 2mm legumes. Possible flax	B/C
Late Bronze Age or Early Iron Age	5407	189019	Ditch 189018	Charred	Well preserved cereals, Possible pea and Celtic bean, Hazel nutshell, hawthorn, possible flax	A
Romano-British	5486	215042	Ditch 215037	Charred	Wheat and barley. Chaff relatively well preserved including barley rachis.	B/C
Romano-British	5494	143150	Quarry pit 262015	Charred	Wheat, barley, oat. Wheat chaff, 2&4 mm legumes. Fruit stone fragment. Seeds include <i>Lithospermum arvense</i> and <i>Lotus</i> sp.	C/B

22.5.32 Samples 5405; 5420, 5472; 5485 and 5487 are not recommended for full analysis but could be used for dating or for comparison with others samples from other zones or phases.

22.5.33 Samples 5403; 5414; 5420; 5491 and 6016 are not recommended for further analysis

### *Landscape 2*

### 22.5.34 Zone 12

22.5.35 Located on the Sevenscore scarp slope running east off the brickearth deposits on to the chalk soils at the eastern end of the zone.

Phase	Sample	Context	feature	preservation type	comments	Potential
Late Bronze Age	6618	214043	Pit 214042	Charred	Mostly charcoal with occasional <i>Arrhenatherum elatius</i> culm nodes	B/C for charcoal and tubers only
Early or Middle Iron Age	6620	154030	Post hole 154029	Charred	Wheat, barley and oat grain, weed seeds includes cf. <i>Vabacum</i> sp.	B/C
Middle Bronze Age	622	214005	Pit 214001	Charred	Possible barley grain, wheat and oat chaff, <i>Brassica</i> type seed, <i>Fallopia convolvulus</i> Early date	C/B



22.5.36 Samples 5067; 5076; 5080; 5093; 5589 and 6621 are not recommended for full analysis but Samples 5405; 5472; 5485 and 5487 are not recommended for full analysis but could be used for dating or for comparison with others samples from other zones or phases.

### 22.5.37 Zone 13

22.5.38 East of Zone 12 Chalk soils.

Phase	Sample	Context	feature	preservation type	comments	Potential
Early to Middle Iron Age	5501	191052	Pit 191054	Charred/ mineralised	Wheat, barley and oat grain. Wheat and oat chaff. Pea, 2mm legume, Abundant <i>Lithospermum arvense</i> , mineralised ?wood	B
Iron Age	5502	186012	Pit 186013	Charred/ mineralised	Wheat (glume and free threshing type grains), barley and oat. Wheat chaff including a spelt spikelet fork, Celtic bean, <i>Lithospermum arvense</i> Mineralised fragments	B/C
Early to Middle Iron Age	5505	187010	Pit 187007	Charred	Wheat (poss. some Free threshing), barley grain. Pea and celtic bean. A good variety of weed seeds including <i>Lithospermum arvense</i>	B/C
Early to Middle Iron Age	5506	191064	Pit 191066	charred	Oat, barley and wheat. Wheat chaff, Pea and celtic bean, Flax, <i>Lithospermum arvense</i> ,	B
Iron Age	5509	139047	Pit 139049	charred	Wheat, barley and oat grain. Wheat chaff, possible pea. <i>Anthemis cotula</i> . <i>Arrhenatherum elatius</i>	B/C
Un-phased	5860	200067	Pit 200062	Charred/ silicified	Wheat, oat and possible barley grain, charred and silicified wheat chaff. Various weed seeds including <i>Tripleurospermum inodorum</i> , <i>Fallopia convolvulus</i> ,	B/dating
Early Romano - British	7602	173200	SFB 193140	Charred	Barley (with side grains), oat, wheat. Wheat chaff, Possible tuber/rhizome fragments. 2&4 legumes, <i>Lithospermum arvense</i> , <i>Raphanus raphanistrum</i> seed capsule, cf. <i>Hyoscyamus niger</i>	B
Un-phased	7607	248091	Grave	Charred/ silicified	Wheat (one grain sprouted), Charred and silicified wheat chaff, charred oat chaff, <i>Crataegus monogyna</i> stone and possible cherry stones. <i>Raphanus raphanistrum</i> seed capsule, <i>Lithospermum arvense</i>	B/C. Only worth analysing if the sample is considered to include deliberate deposition

22.5.39 Samples 5503; 5504; 5507; 5511; 5515; 5519; 5520; 5546; 5547; 5548; 5805; 5810; 5830; 5832; 5881; 5885; 5893; 6597; 7605; 7606; 7608; 7632; are not recommended for full analysis but may provide useful dating material or could be used to compare with samples from other zones or phases.

22.5.40 Samples 7188; 7633; 7641; 7645; 7647; 7648; 7652; 7657 are not recommended for further analysis.

#### 22.5.41 Zone 14

22.5.42 Brickearth towards the western edge, moving on to chalk at the eastern edge of the zone.

Phase	Sample	Context	feature	preservation type	comments	Potential
Early Neolithic	5510	191085	Pit 191086	Charred	Wheat grain and chaff. Possible flax. Hazel nutshell	A/B
Early Neolithic	5521	191092	Pit 191092	Charred	Poorly preserved cereal grain, Hazel nutshell.	B/C
Early Neolithic	5800	191178	Pit 191179	charred	Hazel nutshell, poorly preserved cereal.	B/C
Iron Age	6554	139075	Pit 139075	Charred/ mineralised	Wheat grain, mineralised cists and seeds including <i>Papaver</i> sp. and cf. <i>Malva</i> sp.	B
Romano-British	6922	133098	Enclosure ditch 159219	Charred	Wheat, barley and possibly oat. Possible free threshing wheat rachis, Celtic bean and possible pea,	B
Saxon	6938	202102	Pit 202100	charred	Abundant barley with side grains and chaff, wheat and oat.	B/A
Saxon	6980	202130	Pit 202128	Charred/ silicified	Well preserved barley with attached lemma base and side grains, wheat and oat also present. <i>Anthemis cotula</i> and cf. <i>Conium maculatum</i> .	B/A

22.5.43 Samples 5590; 5835; 5836; 5840; 5864; 6556; 6558; 6562; 6563; 6566; 6901; 6903; 6904; 6906; 6918; 6919; 6920; 6921; 6933; 6935; 6942; 6943; 6945 6979; 6990; 6991; 6997; 6998; not recommended for full analysis but may provide useful dating material or could be used to compare with samples from other zones or phases.

22.5.44 Samples 5801; 6579; 6594; 6595; 6598; 6923; 6924; not recommended for further analysis.

#### 22.5.45 Zone 26

22.5.46 An L shaped area of excavation running southwest from Zone 13 then northeast towards Zone 28.

Phase	Sample	Context	feature	preservation type	comments	Potential
Middle or Late Bronze Age	6400	121038	Ditch201163	Charred	Frequent cereal grain but much poorly preserved. Wheat and barley. Wheat chaff.2mm legume. Prunus sp. endocarp fragment. Weed seeds include <i>Danthonia</i> sp.	B
Late Bronze Age or Early Iron Age	6403	236005	Pit236001	Charred	Much of the cereal grain is poorly preserved. Wheat present with chaff including an oat floret base. Weed seeds include <i>Fallopia convolvulus</i> and <i>Rumex</i> sp.	C/B
Late Bronze Age	6407	188017	pit188014	charred	Cereals relatively poorly preserved - barley and possibly wheat grain. Wheat chaff. <i>Arrhenatherum elatius</i> culm node.2mm legume.	C/B

### *Landscape 1*

#### 22.5.47 Zone 19

22.5.48 Located on the high ground to the south of the airfield, Mostly chalk with a thin deposit of brickearth along the southern edge of the zone.

22.5.49 The plant remains recovered from samples in this zone were generally poorly preserved. Samples with priority code C and C/D could be analysed, in order to provide a reasonable level of coverage for this area, but this is not a high priority. Samples would only be worth taking further if securely phased.

Phase	Sample	Context	feature	preservation type	comments	Potential
Romano-British	5673	22059	Grave 220057	Charred.	Barley and wheat grains	C/D
Un-phased	6826	267033	Pit 267034	Charred	Oat and possibly barley grain.	C/D
Un-phased	7236	205103	SFB205102	Charred	Possible barley. Wheat chaff,. Rhizome/corm fragment	C/D
Romano-British	7258	126120	Pit 126119	Charred	Poorly preserved grain, wheat chaff <i>Lithospermum arvense</i> .	C/D
Un-phased	7295	126176	Kiln 126175	Charred	Wheat grain and chaff. <i>Prunus</i> sp. stone	C/D
Iron Age	7499	205107	Pit205106	Charred	Wheat, oat, barley grain, wheat chaff, possible pea, 2mm legume, weed seeds	C
Late Bronze Age	8152	126290	Enclosure ditch	Charred	Possible wheat, wheat chaff, weed seeds indet. Early date	C

22.5.50 Samples 6009; 6011; 6013-6015; 7201; 7202; 7211; 7213; 7215; 7223; 7224; 7234; 7235; 7288; 7289; 7290; 7291; 7292; 8113; 8116; 8117; 8118; 8119; 8131, 8133-8135; 8142; 8144-8149; 8153-8159 are not recommended for further analysis.

## 22.5.51 Zone 20

22.5.52 Located to the west of zone 19. Mainly chalk soils with patches of brickearth.

22.5.53 The preservation and survival of plant remains is relatively poor from this zone. Therefore samples with a priority code of C/B have been included in the samples recommended for further analysis. This will hopefully give a better picture of the type of material preserved from different phases in this zone.

Phase	Sample	Context	feature	preservation type	comments	Potential
Early Romano-British	6806	205056	Ditch 205059	charred	Wheat, barley and oat grain. Wheat chaff, pea and 2&4mm legumes. <i>Prunus spinosa</i> stone	C/B
Saxon	6808	217060	Trackway 126227	Charred	Barley, oat and wheat. Hazel nutshell	C/B
Early Romano-British	6845	205056	Ditch 205059	Charred	Wheat, barley grain and chaff. Pea and celtic bean, <i>Cretaeus monogyna</i> , <i>Fallopia convolvulus</i>	C/B
Romano-British	7718	22064	SFB249083	Charred	Barley and wheat grain	C/B
Romano-British	7719	228063	SFB 228059	Charred	Barley and wheat. 4mm legume. <i>Lithospermum arvense</i>	C/B
Romano-British	7720	228078	SFB 228059	Charred/mineralised	Wheat grain, cereal chaff, possible Celtic bean and pea. mineralised cists and seed indet.	C/B
Romano-British	7721	228079	SFB 228059	Charred	Wheat and possible barley, 2mm legume.	C/B
Romano-British	7722	228062	SFB 228059	Charred	Wheat grain and chaff, 2mm legume, <i>Raphanus raphanistrum</i> seed capsule,	C/B
Romano-British	7723	228061	SFB 228059	Charred	Barley and wheat grain. Wheat chaff poorly preserved. Possible pea and 2mm legumes.	C/B
Romano-British	7746	271060	SFB 249081	Charred	Wheat and barley grain, wheat chaff, <i>Lithospermum arvense</i>	C/B
Romano-British	7756	271053	SFB 249081	Charred	Wheat and barley grain, wheat chaff, large legume fragments	C/B
Romano-British	7761	171240	SFB 249083	Charred	Wheat grain and chaff. Silicified wheat awn fragments.	B

22.5.54 Samples 6804; 6805; 6815; 6846; 7704; 7709; 7714; 7725; 7726 are not recommended for full analysis but may provide useful dating material or could be used to compare with samples from other zones or phases..

22.5.55 Samples 6005; 6006; 6012; 6017; 6018; 6019; 6813; 6862; 6863; 7713; 7731; 7763; 7771; 7777 are not recommended for further analysis.

## 22.5.56 Zone 21

22.5.57 To the west of zone 20 chalk soils found in the west of the zone with brickearth deposits in a dry valley to the east of the zone.

Phase	Sample	Context	feature	preservation type	comments	Potential
	8035	125222	cremation burial urned125220	charred	charcoal only	D. Charcoal analysis good
	8036	125223	cremation burial urned125220	charred	<i>Arrhenatherum elatius</i> present together with potentially identifiable charcoal	C/D. Analyse for charcoal and tubers, not CPR.

### 22.5.58 Zone 23

22.5.59 To the west of Zone 21 with chalk soils across the zone. Fills from features in this zone appeared fairly sterile and the few bulk samples which were taken from ditch and pit fills (mostly Bronze Age) proved this to be the case: charred plant remains were rare and poorly preserved. No samples are worth further work from this zone.

## 22.6 Potential

22.6.1 A result of this assessment has been to demonstrate the presence of plant remains preserved by several different processes: charring, silicification, mineralisation and (rarely) waterlogging, although the great majority of the plant remains were preserved by charring. The abundance of material and combination resulting from these different preservation types means that a wide range of plant taxa is represented, and these remains have significant potential to provide useful information about domestic and agricultural practices through the prehistoric and historic periods represented along the road scheme. With full analysis it should also be possible to identify spatial and/or temporal differences or similarities in activities across the landscape areas, and to provide some general information about the general background flora.

22.6.2 In very general terms analysis of the cereal remains (grain and chaff) will:

- Provide evidence of foodstuffs, trade and/or fodder through time.
- Provide evidence for changes in the varieties of being grown and utilised through time and spatially in each landscape area.
- Provide evidence for methods of food preparation, storage, utilisation and waste disposal.
- Possibly indicate the presence of spoiled crop.

22.6.3 Apart from cereal remains.

- Flax may have been utilised for oil and or fibre.

- Brassicas may have been utilised for food, fodder, oil,
- Weed seeds may indicate cereal processing stages, crop contamination, soils utilised for cultivation, and the local environment. There are also potential food/fodder crops represented in the assemblage.

22.6.4 Important period-based questions for further consideration at the analysis stage include:

- The relative importance of wild versus cultivated foodstuffs in through the Bronze Age (cereal remains thought to be early Bronze Age are rare, so any examples from well-sealed contexts should be radiocarbon dated).
- The date at which spelt wheat was introduced (any secure early or middle Bronze Age finds should be radiocarbon dated).
- The relative importance of emmer versus spelt wheat in the Later Bronze Age - Romano-British periods).
- Evidence for changes in food storage (pits and 4-post structures)
- Evidence for centralised food production and trade to Roman towns
- Evidence for imported foodstuffs in the Roman period
- Evidence for malting/brewing in the Iron Age - medieval periods.
- Evidence for the continued use of spelt in the Saxon period (any spelt wheat from secure deposits should be radiocarbon dated).

22.6.5 Apart from palaeoeconomic considerations, the samples also have potential to provide useful information about the survival of remains in different preservational environments. Due to the relatively narrow linear nature of this type of excavation, it is possible to study remains from some distance apart. There is a potential preservation bias in the survival of charred remains due to variations in soil type: it is possible that much of the data may have been lost through physical erosion particularly of the fragile charred material in the thin soils on the chalk areas, as the shallow soils are more prone to disturbance through ploughing and erosion than deeper deposits. A comparison of material recovered from the areas such as the brickearth over the chalk in Landscape Area 1 could be used to investigate this proposal further.

### *Comparative assemblages*

22.6.6 Of direct significance, if available at the time of analysis, will be the report from the large 'Thanet Earth' excavations (ongoing post-excavation: Carruthers 2010). Other useful reports which have plant assemblages of similar date to periods represented at the East Kent road scheme include: the Weatherlees-Margate- Broadstairs wastewater pipeline (Chris Stevens 2010), White Horse Stone and Beechbrook Wood (Giorgi 2006), Princes Road, Dartford (Pelling 2003), Saltwood Tunnel (Stevens 2006), sites along the A2 (Smith forthcoming A), sites along the A2/A282 (Smith 2010), Kingsborough, Eastchurch, Isle of Sheppey (Allen *et al.* 2008; Stevens undated); Springhead

and Northfleet (Davis 2006; Stevens and Smith forthcoming), Tollgate (Davis 2006), and Leybourne Grange (Hunter 2010).

## 22.7 Recommendations

22.7.1 Up to 110 samples, as listed listed in the tables above, are potentially recommended for sorting and full analysis, however a number of these and remain unphased at this time. This has meant that it has been difficult to assess the significance of the plant remains fully, as the relationship between the assemblage and the phase is an important consideration. As a result some samples may have been included or excluded from the next stage erroneously and so the numbers of samples to be taken to full analysis has inevitably to be somewhat flexible. Most unphased samples contain material that could potentially be radiocarbon dated, as indicated in the tables above. In some cases these samples come from zones which would otherwise be sparsely or unrepresented. Consequently it is recommended that the selection of samples for full analysis should be reviewed when the final phasing information becomes available and the best 100 flots be taken to analysis.

22.7.2 One sample of particular interest is flagged up for radiocarbon dating: **Sample 7360** contained a relatively large quantity of well preserved naked barley grains the only examples seen in this assessment. This crop is normally associated with Bronze Age assemblages and its presence in an Iron Age/Romano-British context is particularly interesting. It is recommended that a few grains are radiocarbon dated to confirm their age as such a crop from this period would be archaeologically significant. Other samples for radiocarbon dating may be required to answer the research questions indicated above.

Task
sorting flots from 100 samples for CPR/ MPR
Sorting 2 residues for MPR
Quantifying and identifying 100 samples for CPR/MPR and 2 residues
Data entry, and Summary Statistics
Preparation of Report

### *Charcoal*

22.7.3 Since no specialist assessment of the charcoal has been undertaken, these recommendations are provided as a guide and some flexibility in the numbers and selection of samples is needed.

22.7.4 Although many of the assessed samples contained potentially identifiable charcoal, a great deal came from undated features, and from the fills of pits, ditches, buildings and graves etc. These are likely to be of limited use in

providing meaningful information on fuel wood selection unless associated with a specific activity, so while detailed scanning of a range of samples to cover the main landscape zones and phases will provide general information about changes in local woodland, detailed analysis of charcoal in redeposited fills is unlikely to be necessary.

- 22.7.5 Of the processed samples, 70 came from cremations with several more from possible cremations. These were of Bronze Age, Romano-British and Saxon date although some are as yet unphased. Of these, around 1/3 contain reasonable quantities of identifiable (>2mm) charcoal, and these should be submitted to a charcoal specialist for further work, since the selection of woods for cremation pyres may vary in relation to period and to the sex and/or age of the deceased and the absence/scarcity of charcoal provides useful information relating to the treatment of the cremated remains. It is likely that around 20 cremation flots will be considered suitable for further analysis of which 12 come from Late Bronze Age feature 252229 (Zone 4). If these samples prove to be of similar composition not all will need to be taken to further analysis.
- 22.7.6 Surprisingly, for a scheme of this size, only 8 hearths and 8 oven/kiln fills were sampled, and although not all were rich in potentially identifiable charcoal, the flots from at least 9 of these would be worth full analysis.
- 22.7.7 Charcoal analyses from Kent are relatively limited, even with the increase of data as a result of the large channel tunnel rail link project (CTRL). A brief report on a Bronze Age charcoal assemblage is available from Coldharbour Road, Gravesend (Robinson 1994). Charcoal from Late Iron Age/ Early Roman period cremations was analysed from the Pepper Hill funerary complex (Challinor forthcoming A) and, for the Roman period, from Dartford Football Club (Challinor 2006). In addition 9 samples spanning the Early Iron Age through Medieval periods were studied from Northumberland Bottom (Challinor forthcoming B) and charcoal analysis has been undertaken on material from sites along the A2/A282 (Challinor in Simmonds *et al.* 2010) and along the A2 (Challinor forthcoming C).

Task
Sorting and identification of charcoal (29 flots)
Reporting



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Archaeological Excavations. Charred Plant Remains From The  
Route Of The Weatherlees-Margate- Broadstairs Wastewater  
Pipeline On-Line Specialist Report Wessex Archaeology  
<http://www.wessexarch.co.uk/projects/kent/margate>*

## 23 POLLEN BY ELIZABETH HUCKERBY

### 23.1 Introduction

23.1.1 A total of eight pollen samples were assessed from dark, anaerobic and silty lower fills within two probable wells (170184 and 132144) from Zone 6 along the East Kent Access Road Scheme. The two features have been provisionally dated to the Early Romano-British period. The principal aim of this assessment was to determine the preservation, concentration and variety of any extant pollen.

### 23.2 Methodology

23.2.1 All samples were prepared for pollen analysis using a standard chemical procedure (method B of Berglund & Ralska – Jasiewiczowa (1986), using HCl, NaOH, sieving, HF, and Erdtman's acetolysis, to remove carbonates, humic acids, particles > 170 microns, silicates, and cellulose, respectively. The samples were then stained with safranin, dehydrated in tertiary butyl alcohol, and the residues mounted in 2000 cs silicone oil. Slides were examined at a magnification of 400x (1000x for critical examination) by ten equally-spaced traverses across at least two slides to reduce the possible effects of differential dispersal on the slide (Brooks & Thomas, 1967). The number of pollen grains, fern spores and *Lycopodium* marker spores were recorded and a note made of the preservation of the pollen and the presence of charcoal. Tablets with a known concentration of *Lycopodium* spores (Stockmarr, 1971) were added to a known volume of sediment at the beginning of the preparation so that pollen concentrations could be calculated. The results are presented in Table 23.1

### 23.3 Results and discussion

23.3.1 Pollen concentrations were extremely low from zero grains to a maximum of 3967 in 1 cubic centimetre in the eight pollen subsamples and there is no potential for further analysis. The maximum number of pollen grains counted over 10 transects of the slide was 19 at a depth of 0.48-0.50m in sample 8395, context 172304, the backfill immediately above secondary fill 172305 in well 170184. The two pollen samples (8398 and 8299) from the secondary fill 172305 had less pollen than 172304 although the context appeared to contain well humified organic material and was described as "peaty".

23.3.2 Where pollen was identified in the eight sub-samples it came mainly from herbaceous taxa with a high proportion of Asteraceae (daisy-type) and

Asteraceae (Lactucoideae, dandelion-type), two pollen types that are very robust pollen and not easily destroyed.

Table 23.1: Results of pollen assessment from ERB wells *170184* and *132144*, Zone 6, East Kent Access Road.

Context	Feature	Sample no.	Depth m	Conc/cc	Major pollen types	Inferred vegetation	Potential
<i>172304</i>	170184	8394	0.48-0.50	439	A single grain of <i>Plantago lanceolata</i> , Poaceae	Too little pollen to infer	None
<i>172304</i>	170184	8395	0.10-0.12	0	None	Too little pollen to infer	None
<i>172304</i>	170184	8395	0.30-0.32	875	A single grain of Asteraceae, <i>Corylus avellana</i> type, Poaceae	Too little pollen to infer	None
<i>172304</i>	170184	8395	0.48-0.50	3967	A few grains including Asteraceae, Asteraceae (Lactucoideae), Poaceae	Too little pollen to infer	None
<i>123174</i>	132144	8325	0.38-0.40	2780	A few grains of Asteraceae, Asteraceae (Lactucoideae)	Too little pollen to infer	None
<i>123174</i>	132144	8325	0.48-0.50	2956	A few grains including Asteraceae, Asteraceae (Lactucoideae), <i>Plantago lanceolata</i>	Too little pollen to infer	None
<i>172305</i>	170184	8398	auger grab sample 0.12 below excavated base	1507	A single grain of Asteraceae, Asteraceae (Lactucoideae), Rosaceae	Too little pollen to infer	None
<i>172305</i>	170184	8399	auger grab sample 0.40 below excavated base	2655	A few grains including Asteraceae, Asteraceae (Lactucoideae), <i>Plantago lanceolata</i>	Too little pollen to infer	None

### 23.4 Potential and recommendations

23.4.1 No information about the local landscape can be inferred from the very low numbers of pollen grains recorded in the eight pollen samples. There is no potential for further analysis from these particular sub-samples.

### 23.5 Acknowledgements

23.5.1 Oxford Archaeology North would like to thank the Geography Department of the University of Lancaster for the use of their laboratory. The samples were taken by Rebecca Nicholson, prepared by Sandra Bonsall and assessed by Elizabeth Huckerby.

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## 24 LAND SNAILS BY ELIZABETH STAFFORD

### 24.1 Introduction

24.1.1 A total of 151 incremental samples from 14 feature profiles from Zones 11, 14, 17, 19, 21 and 23 were collected specifically for the retrieval of land snail assemblages. The samples derived from a series of Bronze Age ring-ditches, an early Bronze Age gully, a late Bronze Age to early Iron Age ditch, a series of Roman ditches and a medieval pit. A representative selection from each sample profile, totalling 100 samples, have been processed and scanned in detail. This includes a sample from at least every context, and more if greater than *c* 10-20cm in thickness. On the broadest level the assessment aimed to;

- determine the presence/absence of identifiable shell;
- provide preliminary data on taxonomic content;
- outline requirements for further work.

### 24.2 Method

24.2.1 The volume of sediment processed for the snail samples was 2 litres. The samples were floated onto 0.5mm mesh and the fine residues were also retained to 0.5mm. Both flots and residues were air-dried. The flots were scanned under a binocular microscope and an indication of the abundance of identifiable shell along with key taxa were noted on a sliding scale (+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = >100. Habitat information follows Evans 1972 and Kerney 1999. Nomenclature follows Kerney 1999.

### 24.3 Results

24.3.1 The results are presented in tabular format in Tables 24.1-11. Table 24.1 is a summary of the sampled sequences; number of samples assessed, and includes comment on the general level of shell abundance (i.e. identifiable whole shells and apical fragments). In six of the feature profiles examined shell was either absent or poorly preserved. In the remaining eight sequences shell preservation was moderate to very good.

#### *Bronze Age*

24.3.2 *Zone 13: Early Bronze Age gully 168050 (Table 24.2)*

24.3.3 Three samples were assessed from gully 168050 which measures *c* 1.0m in depth. Only the lowermost sample assessed, at 0.40-0.50m (context 168051), produced useful quantities of shell, although numbers were still quite low at *c*

70 individuals. This sample is notable in that the assemblage wholly comprised shade-demanding species with occasional catholic species. No open country species were recorded. The composition of the assemblage suggests the sediment formed in enclosed conditions with some tree cover (eg. *Acicula fusca*, *Discus rotundatus*, Clausiliidae and various Zonitidae). The presence of *A. fusca* here may be significant. This snail is associated with ground litter in deciduous woodlands and is a species characteristic of late Boreal/Atlantic closed woodland environments, becoming rare after the Neolithic (Davies 2008: 173).

#### 24.3.4 Zone 13: Bronze Age ring-ditch 246049 (Table 24.2)

24.3.5 Of the eight samples examined from ring-ditch 246049 the lower most three (contexts 143216 and 143215) contained no shell apart from a single example of the grassland snail *Vallonia excentrica*. Shell numbers increased up-profile (from context 246051) reaching up to *c* 400 individuals at the top of the sequence. Overall the assemblages were dominated by open country species indicative of short-turved grassland. Two species of *Vallonia* were present in numbers and *Pupilla muscorum*, *Vertigo pygmaea* and *Truncatellina cylindrica* were also significant. the xerophile species *T. cylindrica* is noteworthy, a species of very dry exposed places, it is very rare today but was probably more widespread in the Neolithic and Bronze Age, particularly on chalk downland (Kerney 1999, 89). There was no indication of change within the profile apart from increasing shell numbers suggesting a slow down in the rate of sediment accumulation and increased stability of the feature edges up-profile. Occasional worn specimens in the upper fill (context 246050) of the brackish water snail *Hydrobia cf. ulvae* were probably transported to the site perhaps attached to vegetation.

#### 24.3.6 Zone 21E: Bronze Age ring-ditch 216075 (Table 24.3)

24.3.7 A total of six samples were assessed from ring-ditch 216075. Shell was extremely well-preserved, with up to *c* 900 individuals recorded at 0.3-0.4m, although the lowest two samples were less abundant. The assemblages were dominated by open country species (*Vallonia*, *P. muscorum*, *T. cylindrica*) together with *Pomatias elegans* and *Carychium tridentatum*. This suggests an open grassland environment but with areas of long grass probably around and within the feature. From 0.30-0.40m the large numbers of shells from a diverse range of species suggests increased surface stability and perhaps the growth of scrub with some tree cover.

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24.3.8 *Zone 23: Bronze Age ring-ditch 170011 (Table 4)*

24.3.9 Twelve samples were assessed from ring-ditch 170011. Shell was very poorly preserved with up to 17 individuals recorded at 0.50-0.60m in context 170013. Of the shells that were identified open country species were most prevalent with little indication of change within the profile.

24.3.10 *Zone 23: Bronze Age ring-ditch 290062 (Table 25.5)*

24.3.11 Eight samples were examined from ring-ditch 290062. In contrast to many of the sequences examined along the Scheme, shell was abundant in the lowermost sample at 1.17-1.24m (context 290148) at *c* 400 individuals. Being the lowermost fill of the feature this could imply the sediment incorporated contemporary topsoil. The assemblage was dominated by open country species indicative of well established grassland with perhaps areas bare of vegetation. However, the abundance of *C. tridentatum* indicates areas of longer more diverse grassland existed in the immediate vicinity. The other occasional shade-demanding species (*Oxychilus*, *Vitrea*, *Discus*) may actually have been attracted to the rubbly surfaces within the base of the feature (i.e. a troglophile fauna, see Evans and Jones 1973).

24.3.12 The much smaller number of shells in the samples immediately overlying indicate episodes of rapid sedimentation and erosion of feature edges, conditions not conducive to preservation. Above 0.75m, however, shell increases dramatically indicating increased stability. The open-country species are joined by a variety of more shade-demanding snails perhaps indicating the feature was becoming well-vegetated. Once again *C. tridentatum* was abundant, but other species such as the zonitids, *D. rotundatus*, *Acanthinula aculeata* and *Ena obscura* are very numerous. The consistent presence of *Pomatias elegans*, particularly in the upper fills, however, may suggest some disturbance and loose surfaces in the vicinity.

24.3.13 *Zone 23: Bronze Age ring-ditch 182044 (Table 24.6)*

24.3.14 Fifteen samples were assessed from ring-ditch 182044. Shell was less well-preserved in this profile compared to some of the others examined. The lowermost contexts produced few shells but numbers did increase up-profile to a maximum of *c* 150 individuals per sample. Once again open-country species dominated. Increases of *P. elegans* in fill 182057 may indicate some surface disturbance here. A small component of shade-demanding elements were present throughout the profile but not in significant numbers.



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*Late Bronze Age to early Iron Age**24.3.15 Zone 11: Late Bronze Age to early Iron Age ditch 189018 (Table 24.7)*

24.3.16 Shell was largely absent from the ditch 189018 apart from occasional specimens of the open country species *Vallonia costata* and catholic species *Trichia hispida* and *Cepaea/Arianta* sp.

*Roman**24.3.17 Zone 11: Roman ditch 141061 (Table 24.8)*

24.3.18 Five samples were assessed from ditch 141061. Shell was moderately to well-preserved up to c. 400 individuals at 0.70-0.80m (context 141061). No change was detected in this sequence. The assemblages appeared to be very mixed comprising a range of both open country, catholic and shade-demanding species and no clear environmental signal could be detected. It is possible that some of the shell in these assemblages represent reworked components deriving from the complex series of ditches that ditch 141061 truncated.

*24.3.19 Zone 14: Roman ditches 174191, 222039 and 173001 (Table 24.9)*

24.3.20 Fourteen samples were assessed from ditches 174191 and 222039. Shell was entirely absent from all samples apart from very occasional worn specimens of the brackish water snail *Hydrobia* cf. *ulvae* in the basal two samples of ditch 174191 (context 174193, 0.80-1.10m). These shells were probably transported to the site perhaps attached to vegetation.

24.3.21 Eight samples were assessed from ditch 173001. Although preservation was a little better here, numbers were still very low, the most abundant sample at 0.00-0.10m containing only 37 individuals, with the remaining samples 5-17 individuals. The assemblages here were mixed comprising both open-country, catholic and shade-demanding species with no clear environmental signal.

*24.3.22 Zone 19: Roman ditch 217093 (Table 24.10)*

24.3.23 Seven samples were assessed from this feature. Shell was moderately to well-preserved; up to c 450 individuals in context 217093 (0.30-0.40m). Initially the assemblages are dominated entirely by open country species indicative of a short-turved grassland environment, perhaps with some areas of bare earth (e.g. *P. muscorum*, *Helicella itala*, *T. cylindrica* and the *Vallonias*). However from 0.70m shell numbers increase dramatically indicating increased stability. The open-country species are joined by a more diverse range of catholic and shade-demanding species suggesting the feature became overgrown with rank grass and possibly a little scrub. The most numerous of these was *Carychium tridentatum*. Various zonitids and Clausiliidae were also noted.

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*Medieval*

## 24.3.24 Zone 17: Medieval pit 143037 (Table 24.11)

24.3.25 Eight samples were assessed from pit 143037 dated to the medieval period. Shell was very poorly preserved in these samples. The shell that was present comprised open-country grassland species such as the *Vallonia* and *P. muscorum* along with occasional catholic species.

**24.4 Potential**

24.4.1 The samples from the East Kent Access Road provide local environmental data for a number of the periods represented by the archaeological remains. However, since features from different phases with good preservation (largely confined to the chalk bedrock zones) are not distributed uniformly along the route it is impossible to provide a comprehensive characterisation of the development of the whole area for all periods. In addition, it is important to note molluscan evidence from archaeological features may to some extent reflect very local conditions associated with features as opposed to soil and sediment sequences that may receive deposits from a wider catchment. There are obvious taphonomic problems related to the function of features, processes of infilling, sedimentation, erosion, reworking of older sediments, and post depositional disturbance. It is important to demonstrate as far as possible if a feature has been deliberately backfilled leading to the mixing of assemblages and/or if the feature has been left open for any period, allowing sufficient time for *in situ* soil formation to occur. These issues, however, are inherent in molluscan analysis and are considered in the interpretation of the assemblages.

24.4.2 Although human activity is recorded during the Neolithic along the route, the earliest snail bearing deposits that were sampled date to the Bronze Age. The snail assemblages from the Scheme therefore cannot provide environmental data for the earliest periods of activity in the locality. There is, however, a corpus of regional environmental data available from previous investigations which can provide a general landscape context. Although pollen data for the early to mid Holocene in Kent is rather limited, evidence from Holywell Coombe (Preece and Bridgland 1998; Kerney *et al* 1980) and Watringbury (Kerney *et al* 1980) suggests locally forested conditions during the pre-boreal and boreal (*c* 9000-5500 BC), initially birch and pine, followed by hazel and then hazel and elm woodland. It has been assumed that most of south-east England was densely wooded prior to *c* 4000 BC. However, there is some recent debate concerning the natural ecological state of the assumed climax woodland of the Atlantic period. With reference to the chalklands, sites such as Willow Garth in the Yorkshire Wolds (Bush and Fenley 1987; Bush 1993),

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Cranbourne Chase, Dorset (French *et al* 2003) and Caburn, East Sussex (Waller and Hamilton 2000) provide evidence to suggest that in some areas the woodland development in the earlier Holocene may have been patchier than the traditional model suggests. Overall the extent and duration of woodland clearance in Kent is not clear. Current research suggests clearance on the chalklands of the south and south-east was predominantly a late Bronze Age phenomenon (Wilkinson 2003, 730), somewhat later than the evidence for other areas such as the downlands of Hampshire and Wiltshire. Locally, however, there may have been much variation with some areas subject to extensive and permanent clearance, and other areas where cycles of clearance and woodland/scrub regeneration occurred (Thomas 1982; Preece and Bridgland 1998; Kerney *et al* 1964; Wilkinson 2003).

- 24.4.3 For the East Kent Access Road, the samples recovered from the Bronze Age ring-ditches, located along the chalk ridge were dominated by open country species (eg. *Vallonia*, *P. muscorum*, *V. pygmaea*, *T. cylindrica*) indicative of very dry open environments, probably short-turved grassland, and are consistent with the molluscan assemblage zones e-f at Holywell Coombe (Preece and Bridgland 1998). This implies if forested conditions did indeed prevail during the early to mid Holocene, substantial clearance had occurred prior to the construction of the barrows.
- 24.4.4 In the profiles from Zones 21 and 23 there are, however, notable increases in shade-demanding elements in the secondary and tertiary fills that indicate the growth of vegetation within and around the features, rank grass and possibly some scrub. In contrast, the ring-ditch in Zone 13 (216075) shows no real evidence for this, which may suggest the feature was being maintained, perhaps also grazed. Of note here is the assemblage from nearby gully 168050 which contained a shade demanding assemblage indicative of tree cover which also included *Acicula fusca*, an indicator of undisturbed woodland. This may indicate gully 168050 was located on a boundary between open and wooded environments.
- 24.4.5 Only two features dated to the Roman period contained useful quantities of shell although a little mixed, as expected for this period, they provide evidence of largely open environments but with some areas of long grass and scrub.
- 24.4.6 On a final note, mention should be made of the occurrence of cf. *Monacha* sp. in a number of samples. *M. cantiana*'s modern day distribution is widespread, and it is regarded as a possible Roman introduction to Britain (Kerney 1999:189). At Holywell Coombe this species occurs in Romano-British and later deposits (zone f, Preece and Bridgland 1998:208). It is very plausible however that *M. cantiana* was introduced to Britain via Kent in the late

prehistoric period. In contrast the modern day distribution of the closely related species *M. cartusiana* is restricted to a few sites in the south-east, primarily Kent. It is also considered to be an introduced species, a 'weed' of cultivation during prehistoric times. It once possessed a wider distribution and was more ubiquitous on the North Downs (Kerney 1999, 188). At Holywell Coombe it was living in the valley from the Bronze Age onwards (zone e, Preece and Bridgland 1998, 203, 208).

## 24.5 Recommendations

24.5.1 Shell was well-preserved in countable numbers in a number of the Bronze Age sequences assessed. Spatial variation was noted in the assemblages between the sequences from Zones 21 and 23 on the one hand, and Zone 13 on the other. These sequences have the potential to provide data on the processes of feature infilling as well as the nature of the cleared environment, eg. grazed grassland, arable, episodes of woodland/scrub regeneration, and possibly clarify the nature of the implied boundary between woodland and open land in Zone 13. In order to address this, as well as provide a definitive species list, it is recommended one sequence from Zones 21/23 (eg. ditch 290062) and one from Zone 13 be analysed in detail (eg. ditch 246049) along with the basal sample from gully 168050 which remains unprocessed. No further work is recommended on the remaining sequences, apart from identification to species level the *Monacha* shells. However, the results of the assessment will be considered in the final report.

### *Method*

24.5.2 The detailed analysis of the Bronze Age sequences will involve picking all whole shells and apical fragments from both flots and fine residues under a low power binocular microscope. The shell will be identified with the aid of a modern reference collection and each species quantified by absolute counts. Percentage frequency histograms will be produced for each sequence to aid interpretation and diversity indices calculated if appropriate. A full interpretative report will accompany each sequence.

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**Table 24.1: Summary of route-wide mollusc samples**

Phase	Zone	Intervention	Feature	No increments	No. assessed	Shell abundance
Medieval	17	143037	Pit	8	8	x
RB	11	141061	Ditch	13	5	good
	14	173001	Ditch	10	8	x
		174191	Ditch	12	8	x
		222039	Ditch	10	6	x
	19	217098	Ditch	9	7	good
LBA-EIA	11	189017	Ditch	8	6	x
BA	13	168050	Gully	6	3	moderate
		246049	Ring-ditch	12	8	good
	21E	216075	Ring-ditch	11	6	good
		289057	Ring-ditch	12	0	good
	23	170011	Ring-ditch	12	12	x
		182044	Ring-ditch	15	15	moderate
		290062	Ring-ditch	13	8	good
Totals				151	100	

x=shell poorly preserved

Table 24.2: Zone 13 molluscs from Bronze Age features

Phase	EBA			BA							
Feature	Gully			Ring-ditch							
Intervention:	168050			246049							
Context	168053		168051	246050			246051		143216	143215	
Sample	7170	7173	7174	7151	7153	7155	7156	7158	7159	7160	7161
Depth	0.0-0.1	0.3-0.4	0.4-0.5	0.1-0.2	0.3-0.4	0.5-0.6	0.6-0.7	0.8-0.9	0.9-1.0	1.0-1.1	1.1-1.2
<b>Brackish water</b>											
<i>Hydrobia cf. ulvae</i>				+		+					
<b>Open Country</b>											
<i>Truncatellina cylindrica</i>				++++	++	++++	+				
<i>Vertigo pygmaea</i>				+++	++			+			
<i>Pupilla muscorum</i>				+++++	++++	+++	++	+			
<i>Vallonia sp.</i>		++		+++++	+++++	+++++	++++				
<i>Vallonia costata</i>				+++++	++++	+++++	++	++	+		
<i>Vallonia excentrica</i>				+++++	++++	++++	++				
<i>Helicella itala</i>		+			+	+	+				
<b>Catholic</b>											
<i>Cochlicopa sp.</i>				++	+		+				
<i>Punctum pygmaea</i>			+		++	++					
<i>Nesovitrea hammonis</i>				+	+						
<i>cf. Monacha sp.</i>							++	+			
<i>Trichia hispida</i>		+	+	+		+	++	++			
<i>Cepaea/Arianta sp.</i>					++	++					
<i>Lauria cylindrica</i>					+						
<b>Shade-demanding</b>											
<i>Pomatias elegans</i>			+	+	++						
<i>Acicula fusca</i>			+								
<i>Carychium tridentatum</i>			+++	+	+						
<i>Vertigo cf. pusilla</i>			+								
<i>Discus rotundatus</i>			+++								
<i>Vitrea sp.</i>			+								
<i>Aegopinella pura</i>			++								
<i>Aegopinella nitidula</i>			+		++						
<i>Oxychilus cellarius</i>			++								
Clausiliidae			+								
<b>Estimated total</b>	<b>0</b>	<b>9</b>	<b>70</b>	<b>400</b>	<b>200</b>	<b>350</b>	<b>70</b>	<b>22</b>	<b>3</b>	<b>0</b>	<b>0</b>

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100

Table 24.3: Zone 13 molluscs from Bronze Age ring-ditch 216075

Phase	BA					
Feature	Ring-ditch					
Intervention:	216075					
Context	216083	216082		216081	216078	216077
Sample	8005	8007	8009	8011	8013	8014
Depth	0.10 - 0.20	0.3 - 0.4	0.45 - 0.55	0.65 - 0.75	0.80 - 0.90	0.9 - 1.0
<b>Brackish water</b>						
<i>Hydrobia cf. ulvae</i>		+				
<b>Open Country</b>						
<i>Truncatellina cylindrica</i>		+	++	+++	+	
<i>Vertigo pygmaea</i>	+	+	+	++	+	
<i>Pupilla muscorum</i>	++	+++	++	+++++	+	+
<i>Vallonia costata</i>	+++++	+++++	+++++	+++++	++	+
<i>Vallonia excentrica</i>	+++++	+++++	+++++	++++	+	+
<b>Catholic</b>						
<i>Cochlicopa sp.</i>	+++	+++++	+	+	+	
<i>Punctum pygmaea</i>	+++++	+++++	+	+++	+	
<i>Vitrina pellucida</i>				+		
<i>Neso</i>	+			+++		
<i>Monacha sp.</i>				+		
<i>Trichia hispida</i>	+++	++	+			
<i>Cepaea/Arianta sp.</i>			+			
<b>Shade-demanding</b>						
<i>Pomatias elegans</i>	++	+++++	+++++	+++++		+
<i>Carychium tridentatum</i>	+++++	+++++	+++++	+++++	++	+
<i>Acanthinula aculeata</i>	+	+++++	+	++	+	
<i>Ena obscura</i>	+	++	+			
<i>Discus rotundatus</i>	+++++	+++++	+++	+		
<i>Vitrea sp.</i>	++	+++++	++	++	+	+
<i>Aegopinella pura</i>	+	++++	++	++	+	
<i>Aegopinella nitidula</i>	+++	++++	++	+		
<i>Oxychilus cellarius</i>	++	++++	+	++		
Clausilidae		+++	+	+		
	500	900	500	600	37	10

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100

Table 24.4: Zone 23, molluscs from Bronze Age ring-ditch 170011

Phase	BA											
Feature	Ring-ditch											
Intervention:	170011											
Context	170014						170012			170013		
Sample	6112	6113	6114	6115	6116	6117	6119	6120	6121	6123	6124	6125
Depth	0.00-0.10	0.10 - 0.20	0.20 - 0.30	0.30 - 0.40	0.40 - 0.50	0.50 - 0.60	0.30 - 0.40	0.40-0.50	0.50 - 0.60	0.30 - 0.40	0.40 - 0.50	0.50 - 0.60
<b>Taxa</b>												
<b>Open Country</b>												
<i>Truncatellina cylindrica</i>					+		+					+
<i>Vertigo pygmaea</i>												
<i>Pupilla muscorum</i>		+	+	+			+					+
<i>Vallonia</i> sp.		+	+	+	+	+	++	++	+	+	++	++
<b>Catholic</b>												
<i>Punctum pygmaea</i>				+						+		
<i>Cepaea/Arianta</i> sp.					+	++					+	+
<b>Shade-demanding</b>												
<i>Discus rotundatus</i>										+		
<i>Vitrea</i> sp.												+
<b>Total</b>	0	3	2	6	6	8	16	8	3	3	12	17

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100



Table 24.5: Zone 23, molluscs from ring-ditch 290062

Phase	BA							
Feature	Ring-ditch							
Intervention:	290062							
Context	290140	290141	290142		290144		290145	290148
Sample	6174	6178	6180	6181	6182	6183	6184	6185
Depth	0.10 - 0.20	0.5 - 0.6	0.65 - 0.75	0.75 - 0.85	0.85 - 0.95	0.95 - 1.07	1.07 - 1.17	1.17 - 1.24
<b>Open Country</b>								
<i>Truncatellina cylindrica</i>	++	+++	+++		+++	++		++++
<i>Vertigo pygmaea</i>	++	+	++		+			++
<i>Pupilla muscorum</i>	+++	++++	++++		++		+	++++
<i>Vallonia</i> sp. (90% <i>V. costata</i> )	+++++	+++++	+++++	+	+++++	+++		+++++
<b>Catholic</b>								
<i>Cochlicopa</i> sp.	+++	+	+		+			
<i>Punctum pygmaea</i>	++	++	+++		+++			+++
<i>Vitrina pellucida</i>							+	+
<i>Nesovitrea hammonis</i>		++	++					
cf. <i>Monacha</i> sp.					+	+	+	
<i>Trichia hispida</i>	+++		+				+	
<i>Cepaea/Arianta</i> sp.		+	+			+		++
<i>Lauria cylindrica</i>		+			+			++
<b>Shade-demanding</b>								
<i>Pomatias elegans</i>	++++	++++	+++		+			++
<i>Acicula fusca</i>								
<i>Carychium tridentatum</i>	+++++	++++	++++	+	++			++++
<i>Acanthinula aculeata</i>	++	++	++					
<i>Ena obscura</i>	+							
<i>Discus rotundatus</i>	+++++	++	+	+	+	+		+
<i>Vitrea</i> sp.	+++	++	+++		+	+		+
<i>Aegopinella pura</i>	+++	++	+					
<i>Aegopinella nitidula</i>	+++	++						
<i>Oxychilus cellarius</i>	+++	++	++		+			+
Clausiliidae		+			+			
<b>Estimated total</b>	800	400	500	4	150	28	5	400

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100

Table 24.6: Zone 23, molluscs from Bronze Age ring-ditch 182044

Phase	BA		182056																					
	Feature	Ring-ditch	182057				182058				182059				182060									
Intervention:	182044		6133	6134	6135	6136	6137	6138	6139	6140	6141	6133	6134	6135	6136	6137	6138	6139	6140	6141				
Context	182044		182057				182058				182059				182060									
Sample	6127	6128	6129	6130	6131	6132	6133	6134	6135	6136	6137	6138	6139	6140	6141	6133	6134	6135	6136	6137	6138	6139	6140	6141
Depth	0.00 - 0.10	0.10 - 0.20	0.20 - 0.29	0.29 - 0.39	0.39 - 0.49	0.49 - 0.59	0.59 - 0.69	0.69 - 0.79	0.80 - 0.90	0.90 - 1.00	1.00 - 1.16	1.10 - 1.16	1.16 - 1.26	1.26 - 1.36		0.69 - 0.79	0.79 - 0.89	0.89 - 1.00	1.00 - 1.16	1.16 - 1.36	1.10 - 1.16	1.16 - 1.26	1.26 - 1.36	
Open Country																								
<i>Truncatellina cylindrica</i>								+	++	+														
<i>Vertigo pygmaea</i>			+			+			++															
<i>Pupilla muscorum</i>	++++	++++	+++	++	++	++	+	++	++	++														
<i>Yallonia costata</i>	++	++	++	++	+++	++++	++	++++	++++	++++	++++	++												
<i>Yallonia excentrica</i>	+	+++	++	++	++	++	+	++	++	+														
<i>Helicella itala</i>		++		+	+			+																
<b>Catholic</b>																								
<i>Cochlicopa</i> sp.						+			+															
<i>Punctum pygmaea</i>																								
<i>Nesovitrea hammonis</i>									+	+														
<i>Trichia hispida</i>																								
<i>Cepaea/Arianta</i> sp.																								
<b>Shade-demanding</b>																								
<i>Pomatias elegans</i>	+	+	+	+	+	+++	++	++++	+++	+														
<i>Carychium tridentatum</i>	+		+		+	+	+	++	++	+														
<i>Acanthinula aculeata</i>									+	+														
<i>Discus rotundatus</i>	+	+	+		+	+																		
<i>Virea</i> sp.						++		+	+	+														
<i>Aegopinella pura</i>										+														
<i>Aegopinella nitidula</i>						+																		
<i>Oxychilus cellarius</i>																								
Clausiliidae																								
<b>Estimated total</b>	<b>50</b>	<b>80</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>150</b>	<b>20</b>	<b>150</b>	<b>100</b>	<b>50</b>	<b>70</b>	<b>22</b>	<b>3</b>	<b>6</b>	<b>1</b>									

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100

Table 24.7: Zone 11, molluscs from late Bronze Age to early Iron Age ditch 189018

Phase	LBA-EIA					
Feature	Ditch					
Intervention	189017					
Context	189017	189017	189020	189020	189021	189022
Sample	5454	5455	5458	5459	5460	5461
Depth (m)	0.00 – 0.10	0.10 – 0.20	0.40 – 0.50	0.50 – 0.60	0.60 – 0.70	0.70 – 0.80
Open Country						
<i>Vallonia costata</i>	+				+	
Catholic						
<i>Trichia hispida</i>		+			+	
<i>Cepaea/Arianta</i> sp.		+				
Shade-demanding						
Zonitidae					+	
Estimated total	2	2	0	0	5	0

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = >100

Table 24.8: Zone 11, molluscs from Roman ditch 141061

Phase	RB				
Feature	Ditch				
Intervention	141061				
Context	141062				
Sample	5705	5706	5708	5710	5712
Depth (m)	0.40 – 0.50	0.50 – 0.60	0.70 – 0.80	0.90 – 1-0	1.10 – 1.20
Brackish water					
Hydrobia cf. ulvae			+		
Open Country					
<i>Vertigo pygmaea</i>	++	+	++	++	+
<i>Pupilla muscorum</i>	+			+	
<i>Vallonia</i> sp.	+++				
<i>Vallonia costata</i>	++	++++	+++++	++++	+++
<i>Vallonia excentrica</i>	+	++	++	++	+
Catholic					
<i>Cochlicopa</i> sp.		+	+++	++	+
<i>Punctum pygmaea</i>		+	+	+	+
<i>Vitrina pellucida</i>		+			
<i>Nesovitreia hammonis</i>		++			
<i>Monacha</i> sp.			++	+	
<i>Trichia hispida</i>	++	++++	+++++	+++	+++
<i>Cepaea/Arianta</i> sp.			+		
<i>Helix aspersa</i>			+		+
Shade-demanding					
<i>Carychium tridentatum</i>	++	++++	++++	++++	+++
<i>Vertigo</i> cf. <i>pusilla</i>				+	
<i>Acanthinula aculeata</i>			+		+
<i>Ena obscura</i>			+		+
<i>Discus rotundatus</i>	++	++++	+++++	++++	++++
Zonitidae					
<i>Vitrea</i> sp.	+	++	++	++	+
<i>Aegopinella nitidula</i>	++	++	++++	+++	
<i>Oxychilus cellarius</i>	+	++	+++	++	
Clausilidae		++	++	+	+
Estimated total	70	170	400	200	100

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = >100

Table 24.9: Zone 14, molluscs from Roman ditch 173001

Phase	RB							
Feature	Ditch							
Intervention:	173001							
Context	173002		173003	173004				
Sample	6950	6951	6952	6954	6956	6957	6958	6959
Depth	0.00- 0.10	0.10- 0.20	0.25- 0.35	0.45- 0.55	0.65- 0.75	0.75- 0.85	0.85- 0.95	0.95- 1.05
<b>Open Country</b>								
<i>Vallonia</i> sp.						+		+
<i>Vallonia costata</i>	+++	+	+				+	
<i>Vallonia excentrica</i>	+							
<b>Catholic</b>								
<i>Cochlicopa</i> sp.		+			+	+	+	+
<i>Trichia hispida</i>	++	+	+	+	+	+	++	+
<i>Cepaea/Arianta</i> sp.	+							
<i>Helix aspersa</i>	+			+	+	+	+	
<b>Shade-demanding</b>								
<i>Ena obscura</i>							+	
Zonitidae		+						
<i>Aegopinella nitidula</i>	+			+	+		+	+
<i>Oxychilus cellarius</i>	+		+	+		+	+	+
<b>Total</b>	37	10	5	5	9	6	17	10

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = >100

Table 24.10: Zone 19, molluscs from Roman ditch 217093

Phase	RB						
Feature	Ditch						
Intervention:	217098						
Context	217093			217099			
Sample	6853	6856	6857	6858	6859	6860	6861
Depth	0.00 - 0.10	0.30 - 0.40	0.40 - 0.50	0.50 - 0.60	0.60 - 0.70	0.70 - 0.80	0.80 - 0.90
<b>Taxa</b>							
<b>Brackish water</b>							
<i>Hydrobia cf. ulvae</i>				+			
<b>Open Country</b>							
<i>Truncatellina cylindrica</i>	++	++	+		+	+	+
<i>Vertigo pygmaea</i>	+		+	+			
<i>Pupilla muscorum</i>	++++	++++	++++	++++	++++	++++	++++
<i>Vallonia sp.</i>	++	++++	+++	+++	+++	++	++
<i>Vallonia costata</i>	+++	+++++	+++++	+++++	+++	++	+
<i>Vallonia excentrica</i>	++	++	++	+++	+++		++
<i>Helicella itala</i>	+	+		+++	++++	++	++
<b>Catholic</b>							
<i>Punctum pygmaea</i>	+	++					
<i>Nesovitrea hammonis</i>		+			+		
<i>cf. Monacha sp.</i>	+	+		+			
<i>Trichia hispida</i>				++			
<i>Cepaea/Arianta sp.</i>		+	+	+			
<i>Lauria cylindrica</i>							
<b>Shade-demanding</b>							
<i>Carychium tridentatum</i>	++	++++	++++	+	++		
<i>Vertigo cf. pusilla</i>	+	++++	+++	++	+		
<i>Acanthinula aculeata</i>	+	++	+				
<i>Ena obscura</i>				+	++		
<i>Vitrea sp.</i>	+	++		+			
<i>Aegopinella pura</i>	+	++					
<i>Aegopinella nitidula</i>		++	+				
Clausiliidae		+	+	+			
	100	450	200	200	200	80	60

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100

Table 24.11: Zone 17, molluscs from medieval pit 143037

Phase	Medieval							
Feature	Pit							
Intervention:	143037							
Context	143040				143039			143038
Sample	5442	5443	5444	5445	5446	5447	5448	5449
Depth	0.0-0.04	0.04 - 0.14	0.14 - 0.24	0.24-0.34	0.34 - 0.44	0.44 - 0.54	0.54-0.64.	0.64-0.68.
<b>Taxa</b>								
<b>Open Country</b>								
<i>Pupilla muscorum</i>	+						+	
<i>Vallonia costata</i>	++	+		+				
<i>Vallonia excentrica</i>	+							
<b>Catholic</b>								
<i>Trichia hispida</i>		++		+			+	
<i>Cepaea/Arianta sp.</i>		+						
<b>Estimated total</b>	8	9	0	2	0	0	2	0

+ = 1-3, ++ = 4-12, +++ = 13-25, ++++ = 26-50, +++++ = 51-100, ++++++ = &gt;100

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## 25 GEOARCHAEOLOGICAL ASSESSMENT BY CARL CHAMPNESS

### 25.1 Introduction

25.1.1 In total 115 samples were taken by Oxford Wessex Archaeology (OWA) during excavations on the East Kent Access Road (EKA). The vast majority of samples derived from feature fills from a range of pits, ditches, wells, and structural remains covering multiple periods and locations across the route. Forty-four samples were selected for detailed assessment based on a selection of representative samples across the route.

25.1.2 The purpose of the assessment was to assess the potential of these samples to help contribute to the archaeological discussions and to propose if necessary a strategy for further more detailed sedimentary analysis. Particular emphasis has been placed in the assessment on helping to address the project research aims and to aid in the interpretation and discussion of the archaeology.

25.1.3 The main objectives of this study are summarised as follows:

- Identify key areas and sample sequences that have the potential to contain important information that will contribute to the interpretation and understanding of the archaeology of the route.
- To address the wider project specific research aims.
- Provide preliminary recommendations for further work.

25.1.4 The monolith samples were also specifically assessed in order to record and help understand:

- different sedimentary processes on site (sediments vary from coarse sands to silty clay loams);
- nature of the palaeosols and possible surfaces (buried soils, stabilization horizons, soils associated with tree-throw);
- effects of erosion (human or naturally induced);
- Influence of anthropogenic activities (background disturbance and burning, *in situ* burned mounds and cooking pits, soil-sediment), and
- Possible disturbance associated stock animal management and natural animal activity.

### 25.2 Geology and geomorphology

25.2.1 The EKA route runs from the high Chalk ridge to the north at Mount Pleasant, to Pegwell Bay to the east and the low-lying marshes (Minster Marshes) to the west. The landscape is dominated by arable agriculture with some improved pasture. Much of the proposed route therefore had not been significantly disturbed by urban development.

25.2.2 The route is divided into three main geomorphological zones:

- 
- 25.2.3 **Landscape Zone 1:** The northern end of the route runs east to west across the chalk escarpment between Mount Pleasant and Lord of the Manor (Zones 18-23).
- 25.2.4 **Landscape Zone 2:** The slope of the southern and eastern scarp has three transverse spurs, composed of Thanet Beds (sands), extending towards Pegwell Bay Spur that occupies the land that overlooks Pegwell Bay in one direction and Cottington Hill in the other (Zones 13-17).
- 25.2.5 **Landscape Zone 3:** The southern part of the route is the low-lying Ebbsfleet Peninsula that runs along a spur of Thanet sands that is surrounded by reclaimed marshland (Zones 1-12).
- 25.2.6 Assessment of the sedimentary sequences across the EKA is dependent on an understanding of the range and date of superficial deposits and geomorphological features present along and in the vicinity of the route. Within the Isle of Thanet research into these deposits has a long history of investigation by geologists, quaternary scientists and archaeologists alike.
- 25.2.7 The geomorphology and sedimentation patterns of the route span both the Pleistocene and Holocene periods. Deposits of both cold climate periglacial conditions and temperate interglacial conditions are found along the route. Deposition of loess (wind-blown silt) occurred in the vicinity of Pegwell Bay and periglacial features of patterned ground and stripping have been identified along the chalk ridge. Locally on slopes, these deposits are mixed with soliflucted chalk and gravel deposits produced by break-up of bedrock and their movement down slope under spring and summer melt-water conditions.
- 25.2.8 Sediments along the route consist of 'Head brickearth' overlying chalk within areas above *c* 5 m OD and alluvium consisting of clays, sands and gravels at elevations below 5 m OD. Head deposits usually consist of fine-grained silts and sands often mixed with coarse flint and chalk gravels near the base. Formation of these deposits is usually thought to have occurred under cold climate, periglacial conditions. These deposits usually date to the Late Pleistocene (often 10-18,000 BP) and have been well studied at Pegwell Bay (Shephard-Thorn 1988; Murton *et al.* 1998). In places the upper part of these Head deposits also contain elements of more recent colluvial deposits that may bury earlier Holocene palaeosols (Shephard-Thorn 1988).
- 25.2.9 The majority of the sediments to the south of the route corridor are likely to be associated with the in-filling of the Wantsum Channel area following sea level rises after 6000 BP. These are likely to consist of estuarine clays, silts and peats and clastic shore-face beach deposits (Robinson and Cloet 1953).

25.2.10 Sedimentation within the channel is likely to have consisted of brackish and marine clay-silt deposition in phases of high sea levels and peat formation during phases of relative sea level fall (Long 1992). This resulted in the final in-filling of the sea way between Thanet and the Mainland, probably during the medieval period. Local slope washing, particularly in response to agricultural clearance, may have occurred during the later prehistoric periods on the drier higher ground.

### 25.3 Methodology

25.3.1 In total 44 monolith samples were examined and recorded as part of the assessment. These were selected as a representative sample of the 115 monolith taken along the route, from a range of different archaeological periods, features types, site zones, geologies and topographies.

25.3.2 Each of the cores were examined, photographed and logged in detailed. The sediments were recorded according to Jones *et al* 1999, to include information about depth, texture, composition, colour, clast orientation, structure (bedding, ped characteristics etc), contacts between deposits. Note were also made of any visible ecofactual, or artefactual inclusions e.g. pottery, daub or charcoal fragments.

### 25.4 Results

25.4.1 A full list of the monolith samples taken along the route can be found in Table 25.1 and those selected for further study are listed in Table 25.2 with the logging note. The samples are listed by period rather than site zones in order to complement these discussions.

#### *Early prehistoric*

25.4.2 The earliest prehistoric period is well represented within the samples and a number of significant monuments were spatial sampled. There is therefore good potential to compare differences in sedimentation patterns, not only for the different areas of the route and feature types, but also spatial within areas of some monuments and enclosures.

#### 25.4.3 *Neolithic ring-ditch (Zone 3)*

25.4.4 Nine samples (5108-5110, 5114-5115 and 5120-5123) were examined from a possible double ditched Neolithic monument identified in Zone 3, comprising an outer horseshoe-shaped enclosure plus an inner circular enclosure. The samples from the outer enclosure indicated slightly different fill sequences between the outer and inner ditches possible relating to erosion of an inner bank. A primary pale minerogenic sand representing the primary silting of the



ditch was present throughout the monument. A secondary darker fill with pebble inclusions may represent the in-wash of sediments and soils from the surrounding area. These samples have the potential to indicate changing sedimentary and soil conditions associated with the Neolithic landscape.

#### 25.4.5 *Late Neolithic/Early Bronze Age Henge (Zone 13)*

25.4.6 Two possible henge/barrow features cut into Chalk bedrock were also sampled within Zone 13 on a low rise overlooking Pegwell Bay. Again this monument occupies the highest point of the zone. A similar sequence of natural silting deposits offers the potential to examine changing sedimentary conditions in the monument alongside sections with snail preservation.

25.4.7 The secondary and tertiary fills of the ditch have the potential to indicate the changing sedimentary and soil conditions surrounding the possible henge.

#### 25.4.8 *Early Bronze Age Barrow (Zone 23)*

25.4.9 A total of 11 samples (6101-6109 and 6169-6171) were also examined from a group of three round barrows located along the chalk ridge forming the highest point of the scheme (and of the Isle of Thanet). These were revealed in western part of route in Zones 21 and 23. The barrows have a number of different forms including single and double ditches, containing burial remains and in one instance a possible pre-barrow buried soil.

25.4.10 The sample sequences appeared to be very similar in nature, comprising a consistent tripartite sequence of sterile deposits. Only rare charcoal flecks were observed within the base of the secondary fills in an otherwise naturally dominated ditch sequence of edge erosion and sediment in-wash. No evidence of any rubbish deposits or collapsing banks/turfs could be identified within the fills. The only evidence of note was the preservation of land snails in some contexts that have the potential to inform about the changing environmental and sedimentary conditions of the barrow ditches. However, preservation was noted to be quite variable between barrows and deposits.

25.4.11 The basal fills of the barrows comprise primary silting of loose light yellowish brown silts containing frequent large poorly sorted angular lumps of chalk. Most of these deposits appear to represent erosion of the ditch sides, but some possible soil derived material was identified within sequences from barrow (290062). Work on the experimental earthwork project at Overton Down (Bell *et al* 1995) has demonstrated how quickly primary fills of chalk ditches may accumulate. Based on this research it may be assumed that the ditch profiles stabilized within first 5-20 years following their construction.

25.4.12 Distinct secondary fills were also present in the form of light to mid brown silts with rare small chalk and pebble inclusions. These appeared to represent natural silting of the ditches from the in-wash of surrounding soils and sediments. The deposits may indicate the stabilization of the ditch profile during this period through the development of well established vegetation within the ditches and the surrounding area. It is possible that these deposits accumulated more gradually over time and span the period when the monument may still have been in use. The only evidence of continued use of the monument in the ditch fills is rare flecks of charcoal that likely reflect activity within the surrounding area, and not necessary evidence of any significant re-use of the monuments.

25.4.13 Loose light brown secondary or tertiary fills would appear to represent the infilling of these barrow ditches. These deposits appear to represent the potential abandonment of the monuments and their transition into landscape features. The nature of the fills may indicate the encroachment of vegetation into the partially in-filled ditch.

25.4.14 The potential buried soil sample (141094) associated with the barrow offers the potential to compare the pre-barrow soils with the sequence of re-deposited soil material identified within the barrow ditches.

#### *Late Iron Age/Roman periods*

25.4.15 The late Iron and Roman periods are well represented by samples from a range of features along the route that include pits, hollow ways, house gullies, boundary ditches and wells. These samples are a mix of naturally derived silting deposits, eroded bank material and midden dumps. The sequences have the potential to address site-specific questions relating to the development of individual features or possible zones of activity within the site. The two possible wells appear to comprise a stratified sequence of gleyed deposits that may preserve pollen and waterlogged plant remains.

#### *25.4.16 Colluvial deposit and feature fills Zone 6*

25.4.17 A colluvial layer on the flank of Ebbsfleet Hill contained significant quantity of Iron Age metalwork and suggests possible ground disturbance and instability during this period, possible relating to vegetation clearance. This layer buried earlier prehistoric features from a Mesolithic tree-throw to Bronze Age and earlier Iron Age features (including metallised trackway within hollow way). Features like hollow ways (6652) and house gullies (7956) have particular potential to inform about different zones of activity within a settlement or enclosure.

#### 25.4.18 *Sunken-featured Buildings*

25.4.19 Monolith samples (7136 and 7951) were examined from the two backfilled Roman sunken-featured buildings in order to assess whether any buried surfaces or midden deposits were present within or underneath the backfill deposits. No such deposits were identified and the samples have only limited potential to inform about the late Roman environment.

#### *Late Roman and post-Roman periods*

25.4.20 The late Roman and post-Roman periods are less well represented in the samples than the other periods but contain a distinctively different sequence of sediments. The late Roman deposits appeared less minerogenic in nature and may indicate periods of abandonment and possible secondary scrub/woodland regeneration.

#### 25.4.21 *Rural dark earth deposit (Zone 6)*

25.4.22 A sample of the rural dark earth deposit (5325) overlying the Roman settlement and Iron Age colluvium identified in Zone 6 was examined. The dark earth deposits produced numerous finds of late Roman material. This likely formed following the abandonment of the settlement and is thought to represent decayed organic matter from collapsed mud walls, clay floors and middens (Macphail pers com). Further detailed study of this deposit could help to address questions about the abandonment phase of the settlement and later human activity.

25.4.23 Similar post-Roman colluvial deposits were also identified within Zones 12/13, sealing features of Bronze Age to Roman date, possibly indicating periods of later vegetation disturbance and erosion.

### **25.5 Potential**

25.5.1 The assessment has served well in defining the nature and patterns of feature infilling encountered along the route. It was able to identify sequences of sedimentary change within the feature fills that appear to represent changing environmental conditions, periods of ground instability and varying amounts of middening over time.

25.5.2 In general, the samples from the early prehistoric features were consistently environmental sterile (except for snails), but did exhibit a degree of sedimentary complexity. The majority of the fills were in-filled naturally through either erosion of the feature edges or the in-wash of the surrounding

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soils and sediments. Within these sequences there appear the potential to identify environmental and sedimentary change, possibly indicating periods of soil stability/erosion and use/abandonment of features. The samples do have the potential through further thin-section analysis to help indicate changing soil and environmental conditions of these monuments.

- 25.5.3 The later prehistoric and Roman samples comprise much more complex localised sedimentary sequences that reflect greater anthropogenic and animal input into the feature fills. The greater complexity of fills makes the interpretation of the changing sedimentary environments more difficult to establish. The samples have the potential to address site and feature related questions about the formation and sedimentation patterns of specific deposits and site areas. These could help address site related questions about periods of environmental change, the function of features and areas of special activity.
- 25.5.4 The late and post-Roman periods are represented by a few samples that have the potential to reveal information about the changing post-Roman landscape. Specifically, these samples can address questions about the abandonment of settlement areas in the late Roman period and its environmental and sedimentary consequences. Questions relating to the development of the 'dark earth' deposits in Zone 6 and changing sedimentary environments possible represented in the upper fills of the later Roman features and basal Saxon features fills could also be addressed.

## **25.6 Recommendations**

- 25.6.1 In general the sedimentary sequences across the route were not particularly rich in terms of artefacts or organic rich fills, most were sterile in nature and produced little direct evidence for changing sedimentary conditions across the route over time. Most of the samples were derived from feature fills with their own taphonomic issues related to very localised infilling sequences. The potential of most samples was therefore limited to informing about the specific type of feature or nature of the deposit. However, where sequences of environmental or cultural change were potentially identified from feature fills, then a targeted approach of individual features or sequences, using thin-section and soil chemistry, could potentially help provide additional information, especially for the early prehistoric fills in particular, which were predominantly naturally derived.
- 25.6.2 Therefore it is recommended that further more targeted soil analysis should be considered for the two buried soils identified in Zones 23 and 6. The buried soil (141094) identified from the barrow in Zone 23 has the potential to inform about the pre-barrow landscape, specifically whether the barrows were

constructed in a recently cleared landscape or one that had been cleared for some time. Further thin sections from the primary and secondary fills of the barrows in this area will also help to indicate the changing soil conditions surrounding these monuments. The secondary fills of the Neolithic enclosure within Zone 3 and Henge in Zone 13 may also help to establish the extent of woodland cover and clearance present during the earlier period. Finally thin section analysis of the rural dark earth soil deposits (133028) identified in Zone 6 will also help to identify the nature of these deposits and the conditions of the late Roman period. No further work is recommended from the remaining sequences along the route.

### *Method*

25.6.3 A targeted programme of 7 thin sections and associated soil chemistry is proposed for the two buried soil sequences from Zones 23 and 6. Further thin section analysis is also recommended from the barrow ditch fills of Zone 23 and the Neolithic horse enclosure in Zone 3. This will help to identify the changing soil types (ie grassland, scrub or woodland) within these sequences, and look for evidence of possible animal manuring/grazing, cultivation, micro artefacts and soil erosion within the ditch fills. Further sedimentary analysis of the earlier prehistoric monuments has the potential to significantly contribute to the limited evidence of the early prehistoric landscape. Specifically the changing nature and timings of woodland clearance, cultivation and regeneration of the island landscape.

## 25.7 References

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Table 25.1. List of soil micromorphology samples

SAMPLE NO	PARENT SAMPLE	CUT	DEPOSIT	INTERPRETATION	DEPOSIT TYPE	LANDSCAPE
<b>Natural features</b>						
6816	6816	193068	261044	Natural feature	Natural	999 Unphased
5439	5437	143068	143081	Palaeochannel	Secondary Fill	000 Prehistoric
5464	5462	143068	143083	Palaeochannel	Secondary Fill	000 Prehistoric
5465	5462	143068	143081	Palaeochannel	Secondary Fill	000 Prehistoric
6157	6157	141094	141094	Buried soil	Buried soil	000 Prehistoric
8227	8227	172232	172233	Alluvium spread	Secondary Fill	330 Late Bronze Age or Early Iron Age
7167	7167	163013	163014	Tree throw	Secondary Fill	315 Middle Bronze Age
<b>Late Neolithic</b>						
5117	5116	204017	204018	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5118	5116	204017	204019	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5114	5113	206029	206030	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5115	5113	206025	206027	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5120	5119	167035	167042	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5121	5119	167035	167040	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5123	5123	167035	167038	Ring Ditch	Primary Fill	040 Late Prehistoric 1
5108	5108	206004	206007	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5110	5110	206018	206019	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5109	5109	206015	206017	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
5107	5107	205038	211002	Ring Ditch	Secondary Fill	040 Late Prehistoric 1
<b>Bronze Age</b>						
6718	6718	206099	206103	Ring Ditch	Tertiary Fill	305 Early Bronze Age
6733	6733	206144	206149	Ring Ditch	Tertiary Fill	305 Early Bronze Age
5227	5226	197134	197143	Ditch	Tertiary Fill	315 Middle Bronze Age
5228	5226	197134	197143	Ditch	Tertiary Fill	315 Middle Bronze Age
5235	5234	174142	174147	Ditch	Secondary Fill	315 Middle Bronze Age
5236	5234	174142	174154	Ditch	Secondary Fill	315 Middle Bronze Age
6169	6168	290062	290140	Ring Ditch	SOther fill	300 Bronze Age
6170	6168	290062	290140	Ring Ditch	SOther fill	300 Bronze Age
6171	6168	290062	290143	Ring Ditch	Other fill	300 Bronze Age
8001	8000	216075	216083	Ring Ditch	Tertiary Fill	300 Bronze Age
8002	8000	216075	216081	Ring Ditch	Secondary Fill	300 Bronze Age
8016	8016	289057	289058	Ring Ditch	Secondary Fill	300 Bronze Age
8017	8017	289057	289059	Ring Ditch	Secondary Fill	300 Bronze Age
6107	6106	182044	182060	Ring Ditch	Tertiary Fill	300 Bronze Age
6108	6106	182044	182057	Ring Ditch	Secondary Fill	300 Bronze Age
6109	6106	182044	182055	Ring Ditch	Secondary Fill	300 Bronze Age
6101	6104	195025	195026	Ring Ditch	Secondary Fill	300 Bronze Age
6102	6104	195025	195027	Ring Ditch	Secondary Fill	300 Bronze Age
6103	6104	195025	195028	Ring Ditch	Secondary Fill	300 Bronze Age
6105	6105	198016	198017	Ring Ditch	Tertiary Fill	300 Bronze Age
7178	7178	246049	246050	Ring Ditch	Secondary Fill	300 Bronze Age
6732	6732	265004	265006	Barrow Ditch		300 Bronze Age
6729	6728	273093	273094	Barrow Ditch	Secondary Fill	300 Bronze Age
6730	6728	273093	273094	Barrow Ditch	Secondary Fill	300 Bronze Age
7166	7166	168050	168053	Gully	Secondary Fill	300 Bronze Age

SAMPLE NO	PARENT SAMPLE	CUT	DEPOSIT	INTERPRETATION	DEPOSIT TYPE	LANDSCAPE
<b>Iron Age</b>						
7980	7980	246153	301142	Ditch	Primary Fill	410 Early Iron Age
8339	8338	301162	301181	Ditch	Secondary Fill	410 Early Iron Age
8340	8338	301162	301178	Ditch	Secondary Fill	410 Early Iron Age
8341	8338	301162	301178	Ditch	Secondary Fill	410 Early Iron Age
8353	8338	301158	301169	Ditch	Secondary Fill	410 Early Iron Age
8354	8338	301158	301157	Ditch	Secondary Fill	410 Early Iron Age
5233	5233	182083	182098	Ditch	Secondary Fill	425 Middle or Late Iron Age
6649	6649	202074	202078	Ditch	Secondary Fill	425 Middle or Late Iron Age
6650	6649	202074	202078	Ditch	Secondary Fill	425 Middle or Late Iron Age
6651	6649	202074	202076	Ditch	Secondary Fill	425 Middle or Late Iron Age
6720	6719	301040	301006	Ditch	Secondary Fill	425 Middle or Late Iron Age
6721	6719	301040	301008	Ditch	Secondary Fill	425 Middle or Late Iron Age
6652	6652	174123	174128	Hollow way	Secondary Fill	430 Late Iron Age
6723	6723	301042	301011	Ditch	Alluvial fill	430 Late Iron Age
5451	5450	189015	189017	Ditch	Deliberate Backfill	401 Iron Age
8466	8464	243143	243153	Ditch	Secondary Fill	401 Iron Age
8467	8464	243143	243153	Ditch	Secondary Fill	401 Iron Age
8342	8338	301160	301174	Ditch	Secondary Fill	401 Iron Age

**Early RB**

7136	7136	191125	191126	Sunken Featured Building	Deliberate Backfill	515 Early Romano-British
8347	5999	132144	123274	Well	Secondary Fill	515 Early Romano-British
8348	5999	132144	123274	Well	Secondary Fill	515 Early Romano-British
8349	5999	132144	123274	Well	Secondary Fill	515 Early Romano-British
8350	5999	132144	123274	Well	Secondary Fill	515 Early Romano-British
8351	5999	132144	123274	Well	Secondary Fill	515 Early Romano-British
8352	5999	132144	123274	Well	Secondary Fill	515 Early Romano-British
7129	7129	156146	156147	Pit	Deliberate Backfill	515 Early Romano-British
7130	7129	156146	156147	Pit	Deliberate Backfill	515 Early Romano-British
7131	7129	156146	156147	Pit	Deliberate Backfill	515 Early Romano-British
7132	7132	156146	156154	Pit	Deliberate Backfill	515 Early Romano-British
8395	8391	172302	172304	Well	Deliberate Backfill	515 Early Romano-British
7970	7970	132144	132150	Well	Secondary Fill	515 Early Romano-British
7971	7971	132144	132145	Well	Deliberate Backfill	515 Early Romano-British
7998	7999	132144	132151	Well	Deliberate Backfill	515 Early Romano-British
8324	7999	132144	132152	Well	Deliberate Backfill	515 Early Romano-British
8325	8325	132144	132152	Well	Deliberate Backfill	515 Early Romano-British
7939	7946	262110	262109	Ditch	Secondary Fill	515 Early Romano-British
7940	7946	262110	262107	Ditch	Secondary Fill	515 Early Romano-British
7941	7946	262110	302114	Ditch	Secondary Fill	515 Early Romano-British
7951	7951	130228	130229	Sunken Featured Building	Deliberate Backfill	515 Early Romano-British
8394	8391	172306	172303	Well	Deliberate Backfill	515 Early Romano-British
7975	7973	137333	137340	Well	Secondary Fill	520 Early or Middle Romano British
7974	7973	137335	137334	Pit	Deliberate Backfill	565 Middle Romano-British
5325	5325	133028	133028	Midden	Midden	598 Late Romano-British
5324	5324		133017	Dark earth deposit	Midden	598 Late Roman/Saxon
5323	5323		133017	Dark earth deposit	Midden	598 Late Roman/Saxon
7945	7946	262124	262113	Ditch	Secondary Fill	460 Late Iron Age or Early Romano-

SAMPLE NO	PARENT SAMPLE	CUT	DEPOSIT	INTERPRETATION	DEPOSIT TYPE	LANDSCAPE
						British
5220	5219	151008	151010	Ditch	Secondary Fill	460 Late Iron Age or Early Romano-British
5221	5219	151008	151010	Ditch	Secondary Fill	460 Late Iron Age or Early Romano-British
5222	5219	151008	151010	Ditch	Secondary Fill	460 Late Iron Age or Early Romano-British
7956	7955	300001	300002	Ring gully	Secondary Fill	460 Late Iron Age or Early Romano-British
5468	5467	171035	171036	Ditch	Pit	500 Romano-British
5469	5467	171035	171043	Ditch	Secondary Fill	500 Romano-British
5470	5467	171035	171044	Ditch	Secondary Fill	500 Romano-British
6995	6994	222039	222040	Enclosure Ditch	Secondary Fill	500 Romano-British
6996	6994	222039	222044	Enclosure Ditch	Secondary Fill	500 Romano-British
6963	6962	174191	174193	Ditch	Secondary Fill	500 Romano-British
6964	6962	174191	174192	Ditch	Secondary Fill	500 Romano-British
6936	6988	173001	173002	Enclosure Ditch	Secondary Fill	500 Romano-British
6937	6988	173001	173004	Enclosure Ditch	Secondary Fill	500 Romano-British

**Early Medieval**

7019	7017	264021	264053	Pit	Deliberate Backfill	600 Saxon
6949	6949	175086	175094	Pit	Secondary Fill	600 Saxon
5138	5136	172002	172004	Ditch	Secondary Fill	715 Early Medieval
5137	5136	172002	172008	Ditch	Tertiary Fill	715 Early Medieval
8465	8464	182325	243157	Ditch	Secondary Fill	425 Middle or Late Iron Age

**Unphased**

5438	5437	143086	143088	Ditch	Secondary Fill	999 Dating is undecided
5440	5440	143086	143088	Ditch	Secondary Fill	999 Dating is undecided
5463	5463	143086	143088	Ditch	Secondary Fill	999 Dating is undecided
6731	6731	130193	130195	Ring Ditch	Secondary Fill	999 Dating is undecided
5471	5467	171038	171047	Ditch	Secondary Fill	999 Unphased
7018	7017	264022	264057	Pit	Deliberate Backfill	999 Dating is undecided
5452	5450	189018	189019	Ditch	Deliberate Backfill	330 Late Bronze Age or Early Iron Age



Table 25.2: Samples selected for assessment

SAMPLE NO	PARENT SAMPLE	CUT	DEPOSIT ZONE	GEOLOGY	FEATURE	LANDSCAPE	LOGGING NOTES
<b>Natural features</b>							
6157	6157	141094	23	Chalk	Buried soil	000 Prehistoric	Buried soil of prehistoric barrow with clear soil horizons present (A/BC) - no signs of any modern disturbance
7167	7167	163013	13	Chalk	Tree throw	315 Middle Bronze Age	Stratified treethrow hollow with signs of possible up turned soil horizon within the sequence.
<b>Late Neolithic</b>							
5107	5107	205038	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	
5108	5108	206004	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	Horizontal laminated primary fills and less minerogenic secondary fill possible indicating a period of stablization or erosion of soil and sediments from the surrounding area
5109	5109	206015	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	Loose light fine sandy fills with a sequence of stratified primary and secondary fills. Evidence of possible stabilisation and oxidation within the main secondary fill.
5110	5110	206018	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	
5114	5113	206029	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	Loose light fine sandy fills with a sequence of stratified primary and secondary fills. Evidence of possible stabilisation and oxidation within the main secondary fill.
5115	5113	206025	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	
5117	5116	204017	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	Loose light coloured sandy well-stratified primary and secondary fills.
5118	5116	204017	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	
5120	5119	167035	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	Loose light coloured sandy well-stratified primary and secondary fills.
5121	5119	167035	3	Thanet beds	Ring Ditch	040 Late Prehistoric 1	
<b>Bronze Age</b>							
6718	6718	206099	13	Thanet beds	Ring Ditch	305 Early Bronze Age	Moderately stratified sequence of primary and secondary fills.
6733	6733	206144	13	Thanet beds	Ring Ditch	305 Early Bronze Age	
5235	5234	174142	13	Brickearth	Ditch	315 Middle Bronze Age	Moderately stratified sequence of primary and secondary fills.
5236	5234	174142	13	Brickearth	Ditch	315 Middle Bronze Age	

SAMPLE NO	PARENT SAMPLE	CUT	DEPOSIT	ZONE	GEOLOGY	FEATURE	LANDSCAPE	LOGGING NOTES
6169	6168	290062	290140	23	Chalk	Ring Ditch	300 Bronze Age	Loose light yellowish brown silty stratified sequence with a firm chalky primary fill, soil derived secondary fill and more organic tertiary fills. Collapse turfs may be present and signs of rooting present within the primary fills of this feature. Snails present throughout the sequence.
6170	6168	290062	290140	23	Chalk	Ring Ditch	300 Bronze Age	
6171	6168	290062	290143	23	Chalk	Ring Ditch	300 Bronze Age	
6107	6106	182044	182060	23	Chalk	Ring Ditch	300 Bronze Age	Loose to friable calcareous sequence of stratified silty primary to tertiary fills with signs of naturally derived eroded soil material within the secondary fills. Deposits suggest a sequence of possible gradual environmental change represent in these samples.
6108	6106	182044	182057	23	Chalk	Ring Ditch	300 Bronze Age	
6109	6106	182044	182055	23	Chalk	Ring Ditch	300 Bronze Age	
6101	6104	195025	195026	23	Chalk	Ring Ditch	300 Bronze Age	Loose to friable calcareous sequence of stratified silty primary to tertiary fills with signs of naturally derived eroded soil material within the secondary fills. Snail rich sequence with a concentration of <i>Pomatias Elegans</i> in tertiary fills.
6102	6104	195025	195027	23	Chalk	Ring Ditch	300 Bronze Age	
6103	6104	195025	195028	23	Chalk	Ring Ditch	300 Bronze Age	
6105	6105	198016	198017	23	Chalk	Ring Ditch	300 Bronze Age	Shallow sequence of homogeneous yellowish brown silt with partially stratified chalk and pebbles inclusions.
7178	7178	246049	246050	13	Chalk	Ring Ditch	300 Bronze Age	
6732	6732	265004	265006	8	Thanet beds	Barrow Ditch	300 Bronze Age	Series of samples taken through a possible barrow/Henge. Homogeneous fill sequence suggesting natural silting with a sedimentary environment that remained unchanged for some time.
6731	6731	130193	130195	8	Thanet beds	Ring Ditch	Bronze Age	
6729	6728	273093	273094	8	Thanet beds	Barrow Ditch	300 Bronze Age	
<b>Romano-British</b>								
6652	6652	174123	174128	12	Brickearth	Hollow way	430 Late Iron Age	Compact-firm brown silt with frequent pebble inclusions
7956	7955	300001	300002			Ring gully	460 Late Iron Age or Early Romano-British	
7136	7136	191125	191126	13	Chalk	Sunken Featured Building	515 Early Romano-British	Backfill deposits with no signs of any buried floor surfaces or collapse episodes.
8351	5999	132144	123274	6	Thanet beds	Well	515 Early Romano-British	Low-energy gleyed deposits with potential for WPR and pollen
8352	5999	132144	123274	6	Thanet beds	Well	515 Early Romano-British	Low-energy gleyed deposits with potential for WPR and pollen
7129	7129	156146	156147	13	Chalk	Pit	515 Early Romano-British	
8324	7999	132144	132152	6	Thanet beds	Well	515 Early Romano-British	Low-energy gleyed deposits with potential for WPR and pollen
8325	8325	132144	132152	6	Thanet beds	Well	515 Early Romano-British	Low-energy gleyed deposits with potential for WPR and pollen
7951	7951	130228	130229	6	Thanet beds	Sunken Featured	515 Early Romano-British	Backfill deposit with no signs of any stratification.

SAMPLE NO	PARENT SAMPLE	CUT	DEPOSIT ZONE	GEOLOGY	FEATURE	LANDSCAPE	LOGGING NOTES
5325	5325	133028	6	Thanet Beds	Building		
6995	6994	222039	14	Brickearth	Midden	598 Late Romano-British	Possible rural dark earth deposit formed through the decay of organic material/mud brick/floors etc. Only limited signs of any stratification.
6996	6994	222039	14	Brickearth	Enclosure Ditch	500 Romano-British	Midden rich feature fills with a combination of natural silting and middening episodes.
					Enclosure Ditch	500 Romano-British	
<b>Early Medieval</b>							
6949	6949	175086			Pit	600 Saxon	
5138	5136	172002			Ditch	715 Early Medieval	Stratified sequence of deposits with evidence of middening and backfill.

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**26 HUMAN BONE** BY *JACQUELINE I. MCKINLEY***26.1 Introduction**

26.1.1 Human bone, cremated and unburnt, was recovered from most of the zones within the scheme. Some of the attributed dating is currently unconfirmed, being by association with adjacent features rather than datable material recovered from the deposits themselves, and further refinement will be forthcoming in many cases, however, at least a broad provisional date could be attributed to almost all the deposits (five are currently classified as undated).

26.1.2 Unburnt bone was collected from 234 contexts across 13 zones (Table 26.1). The nine Bronze Age contexts were confined to Zones 21 and 23, and were mostly associated with the various ring ditches in this north-western part of the scheme. Burials, as singletons and small groups, had been made within the areas described by two ditches and within the fill of one other ditch. Fragments of skull vault, possibly curated and 'placed', were recovered from the fill of the Late Bronze Age/Early Iron Age enclosure ditch in Zone 19. The 20 Iron Age contexts were dispersed across four zones ranged along the length of the scheme (Zones 6, 13, 21 and 24), with a further 47 Late Iron Age/Early Romano-British deposits from Zones 7, 12 and 19.

26.1.3 The Iron Age deposits comprised singletons and small groups of burials, the largest of which lay in Zone 13 (17 burials) where there were two concentrations to the north and east of the trapezoidal enclosure. Fragments of redeposited skull vault were recovered from several pits within the enclosure and from other contemporaneous features both here and elsewhere within the scheme, particularly in Zone 6.

26.1.4 A small linear cemetery of Late Iron Age/Romano-British date lay to the east of the Iron Age field system/enclosures in Zone 12, other burial remains being scattered, as previously, in small groups and as singletons.

26.1.5 A substantial proportion of the unburnt bone is of Romano-British date (67 contexts) and was recovered from seven zones (4, 6, 7, 9, 13, 19 and 20). Most was found in one of the three mixed-rite (predominantly inhumation) cemeteries within Zones 19 and 20, though one other enclosed cemetery of this type lay in Zone 10A. Small burial groups and scattered singletons were found in the southern zones, particularly Zone 6.

26.1.6 The Anglo-Saxon material, whilst representing the greatest number of deposits from any one period (85 contexts), was more confined in its distribution. All the material was recovered from one of the five cemeteries excavated; one

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small grave group was located in Zone 14 and parts of four others were excavated along the length of the scheme in Zone 19. Four of the graves in three of the cemeteries within Zone 19 contained the remains of multiple interments; in two cases the bodies had been laid adjacent and in two others they had been placed one above the other.

- 26.1.7 Cremated bone was found in many of the same zones as the unburnt remains but had a slightly wider (16 zones), if generally more dispersed (114 contexts), distribution (Table 26.2). The temporal range shows a slightly stronger prehistoric content, though the highest proportion are of Romano-British date.
- 26.1.8 The 30 Bronze Age deposits (including nine Early, three Middle and 11 Late) were spread across eight zones (4, 8, 10, 11, 13, 14, 21 and 23), those in the latter zone – as with the unburnt bone – being associated with the ring ditches. The nature of some of these – and later – cremation-related deposits is currently unclear, but include the remains of three urned and a possible seven unurned burials, most inclusive of redeposited pyre debris. Three other deposits may represent cenotaphs or similar forms of deposit given the very small quantities of cremated bone recovered (where taphonomic factors could be excluded).
- 26.1.9 The 21 Iron Age deposits (including four Late and three Late Iron Age/Early Romano-British) were confined to the central area of the scheme (Zones 7, 10, 12 and 13), where they formed small groups or dispersed singletons, including the remains of one urned and five unurned burials, some of the latter incorporating redeposited pyre debris. There was some overlap in distribution between the Iron Age and the more common Romano-British deposits (63 contexts, minimum three Early) which extended further to the north (Zones 6, 7, 10A, 11, 19 and 20).
- 26.1.10 The bulk of the Romano-British deposits came from the mixed rite cemetery in Zone 19; the mixed rite cemetery in Zone 20 included smaller numbers of both cremation and inhumation burials. Elsewhere, the deposits comprised small groups of up to four burials and dispersed singletons. A minimum of 11 urned and 12 unurned burial remains are represented, several inclusive of what appear to have been deliberate ‘token’ deposits of bone made in associated accessory vessels (ceramic grave goods). Other deposit types currently seem to represent cenotaphs (two) and ‘placed’ deposits of vessels possibly associated with the mortuary rite.

## 26.2 Methods

- 26.2.1 Twenty of the vessels from cremation-related features, including both those functioning as urns and as accessory vessels, were lifted with the contents *in situ* for excavation by the osteoarchaeologist. Most of the vessels were Romano-British (Zones 6 and 19), but several Bronze Age vessels (Zones 11, 14, 23 and 26) were also recovered in this manner (denoted <sup>s</sup> in Table 26.2). The fills of each were excavated in a series of spits and quadrants by the writer, with annotated scale drawings and a photographic record being made at each stage. This will enable a detailed analysis of the burial formation processes in later stages of the project.
- 26.2.2 All the bone was subject to a rapid scan to assess its condition, the age and sex of individuals, the potential for metric data recovery and indices calculation, and the presence of pathological lesions. All the cremated bone was weighted by context, the presence of animal bone was noted and any artefactual remains observed were recorded and removed for assessment by the appropriate specialist. Deposits comprised entirely of animal bone were separated-out for assessment by the archaeozoologist.
- 26.2.3 The condition of the unburnt bone was recorded following the writer's system of grading (McKinley 2004a, fig 6). Assessments of age and sex were based on standard methodologies (Buikstra and Ubelaker 1994; Scheuer and Black 2000). A preliminary assessment of the cremation-related deposit types represented was undertaken using the results of the osteological scan in conjunction with the written primary site data.
- 26.2.4 A basic summary of the results is presented by zone in Tables 26.1 (unburnt bone) and 26.2 (cremated bone). The results will be discussed in chronological order with zones indicated as appropriate.

## 26.3 Results

- 26.3.1 There was evidence for disturbance to graves as a result of plough damage in many areas, doubtless resulting in truncation and a reduction in the surviving depth of the graves, and in some zones (e.g. 6 and 12) there was heavy damage sustained during machine stripping of the site. Nonetheless, most of the inhumation graves survived to more than 0.15m in depth, with a very broad range extending from <0.01m to 1.11m for the Romano-British graves in Zones 6 and 10A respectively (Table 26.1). Other than in a few cases where the depth fell below 0.10m it is unlikely that much if any bone was lost from the graves via this mechanism. There is no consistency in depth associated with specific periods or locations, though no shallow graves were observed in

Zones 4 and 10A (Romano-British) or Zone 13 (Iron Age). Intercutting between graves, and occasionally truncation of graves by other features, was observed in some zones; in the 'organised' cemeteries the disturbed remains from the underlying graves were often incorporated in the later grave fill (e.g. Zone 12). In Zone 19 several of Romano-British and Anglo-Saxon burial remains appear to have been disturbed by some currently unknown mechanism and replaced within their original grave.

- 26.3.2 The condition of the unburnt bone is very variable, both intra- and inter-cemetery/zone and sometimes within individual graves (Table 26.1). Relatively little of the bone is well preserved (grades 0-2), the Iron Age remains from Zone 6 probably representing that most consistently in good condition. Most of the material from Zones 10A and 12 is moderately well preserved (grades 2-3), but the majority of the bone lies within the moderate-poor range (grades 3-4) with most of that from Zones 20-24 being poorly preserved (>grade 4), and some from most zones scoring grade 5. The majority of the sites lay on the acidic natural brickearth, with a few (Zones 13, 19, 23-24) laying on the chalk and Zones 20-21 on a mix of the two. The nature of the natural often exerts a major influence on the burial environment and represents a major factor affecting bone preservation, however, the variability within zones lying on the same geology illustrates that other issues were also of relevance. In general the date of the material is of little significance to its preservation, but the Romano-British material from Zones 6 and 19 tends to be less well preserved than the Iron Age and Anglo-Saxon material (respectively) from the same zones; this may indicate the effects of different cultural or environmental factors within the different periods. There does not appear to be a consistent direct link between surviving grave depth and bone preservation.
- 26.3.3 The surviving depth of the cremation graves was less variable than that of the inhumation graves with a range of 0.07-0.54m, both extremes being amongst the Romano-British features in Zone 19. Most graves lay in the 0.15-0.25m range, with very few below 0.10m in depth. Although the cremation-related fills of some features were evident at the level of the stripped surface, it is unlikely that much if any bone was lost as a result of disturbance in most cases. In this regard it is pertinent to note that the undisturbed remains of an urned burial was recovered from a grave of 0.12m depth in Zone 20 and those of an unurned burial from a feature of 0.14m in Zone 19.
- 26.3.4 Despite the acidic burial conditions (brickearth) prevalent in most zones, which often had the commonly observed detrimental effect on bone survival (slightly worn appearance and loss of all/much of the trabecular bone), at least

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some of the remains (urned and unurned) from most areas were well preserved and inclusive of trabecular bone. Several of the burial contexts from Zone 19, situated on the chalk, include a common trabecular component; however, the link with the nature of the natural was not consistent since the few deposits from Zone 13, also on the chalk, were poorly preserved.

- 26.3.5 A minimum of 227 individuals are represented, 197 from the unburnt bone assemblage (Table 26.3) and 48 from the cremated bone assemblage (Table 26.4). The greatest number within the former were recovered from the Anglo-Saxon cemeteries in Zones 14 and 19 (MNI 76), but in the assemblage as a whole the highest proportion fall in the Romano-British period (MNI 87), and the Iron Age is also well represented (MNI 62). Inevitably, with development schemes of this nature, many of the cemeteries and small burial groups lie on the margins of the areas of archaeological investigation.
- 26.3.6 In several cases it is clear that the excavated graves related to larger cemeteries, as, for example, with the Iron Age cemetery in Zone 21 and the Romano-British and Anglo-Saxon cemeteries in Zone 19. In the case of some small burial groups the same is likely to be the case but less obviously so, e.g. the small Romano-British group on the north-western margin of Zone 6, the Late Iron Age/Romano-British and Romano-British groups in Zone 7 and the Iron Age group in Zone 13. In a few cases, however, the excavated graves appear to represent complete discrete groups; e.g. the late Iron Age/Romano-British group in Zone 12, the Romano-British groups in Zones 10A and 20 and the Anglo-Saxon cemetery in Zone 14.
- 26.3.7 A broad age range is represented within both the cremated and unburnt bone assemblages (Tables 26.1 and 26.2). In the former case, although the refinement of the adult age ranges in particular will form part of the full analysis, it is interesting to note the apparent fall in the percentage of immature individuals recorded from the Bronze Age to the Romano-British period (Table 26.4). This may be reflective of cultural influences, though the small numbers involved render the possible validity of such an observation debatable. The proportion of immature individuals attributed to different temporal phases within the unburnt bone assemblage also varies, but here the figures for either end of the range are low, representing only *c.* 22% and *c.* 17% within the Bronze Age and Anglo-Saxon assemblages respectively, compared with *c.* 35% and 40% in the Iron Age and the Romano-British (Table 26.3). The latter two fall within what would be considered the 'normal' range for a domestic population, though the lower figures are not grossly out of kilter with what is commonly seen in archaeological cemetery populations. This, together with the possibility that some parts of the assemblage may have



derived from incompletely represented cemetery populations (see above), means that any interpretation of this data must be viewed with caution. The high proportion of immature individuals within the Iron Age assemblage from Zone 13 may, for example, be due to young individuals being concentrated in this part of the cemetery, and the same may be true of the immature individuals and adult females in the Romano-British cemeteries in Zone 19 (and the adult females in the Anglo-Saxon cemeteries in the same Zone).

26.3.8 The constantly low proportion of immature individuals within the Anglo-Saxon assemblage, particularly the apparently complete cemetery in Zone 14, may, however, be indicative of genuine cultural factors at work. Mays and Anderson (1995) felt neonates may have been deliberately excluded from cemeteries of this date in Kent, and the absence of any such young individuals from this part of the EKAR assemblage is further highlighted by their presence in both the Iron Age and Romano-British groups. The composition of the small, Romano-British assemblage from Zone 20 is clearly non-‘normative’ comprising as it does the remains of immature individuals and adult males; most of the neonatal remains from here were recovered in association with contemporaneous sunken-featured buildings.

26.3.9 A preliminary view of the adult age ranges within the unburnt bone assemblage (which will undoubtedly be refined during full analysis) indicates that most within the overall population fall within the ‘mature adult’ category of *c.* 30-45 yr. The exception would be the Bronze Age females, most of which are in the young adult (*c.* 18-30 yr.) category. Similar proportions of Iron Age males and females fall within the young and older adult (>45 yr.) categories (*c.* 11-12% of the adults). A higher percentage of the Romano-British adults appear in the young adult range (*c.* 17%), which includes slight more males than females, and all the older adults (*c.* 11%) are male. Similar proportions of male and female Anglo-Saxon adults are represented within both the young and older adult categories, but a higher proportion of these individuals appear to be living longer than in the earlier phases (*c.* 22%; *c.* 11% young adults).

26.3.10 Few pathological changes were observed in any of the cremated remains (Table 26.4), but lesions of various form, type and severity were observed in many of the unburnt skeletal remains, predominantly, but not exclusively, those of adults (Table 26.3). In common with most archaeological assemblages, dental lesions and those associated with the various forms of joint disease were most frequently observed. The former yield valuable data regarding diet and the latter can reflect the severity and form of physical stresses experienced by individuals and populations. Two adult males, one

Romano-British (Zone 10A) and one Anglo-Saxon (Zone 14), had spinal lesions indicative of diffuse idiopathic skeletal hyperostosis (DISH), a condition predominantly seen in older males and linked with diabetes and obesity (Rogers and Waldron 1995, 47-54; Aufderheide and Rodríguez-Martín 1998, 97-9). Despite its flamboyant manifestations the symptoms of the disease are generally minimal other than for understandable stiffness and some aches/pains.

- 26.3.11 Indications of infection were limited to a few cases of sinusitis (mostly secondary to dental disease) and what currently appears to represent non-specific periosteal new bone. One Romano-British adult male from Zone 10A has a possible case of brucellosis. This is a recurrent or acute occupational disease of individuals working with cattle or other animals which may form a host for these intercellular parasitic organisms infection by which, though rarely fatal, can be debilitating and prolonged (Aufderheide and Rodríguez-Martín 1998, 192-3; Rogers and Waldron 1995, 89-95).
- 26.3.12 Traumatic lesions were observed in the remains of several Iron Age and Romano-British individuals. Healed fractures were seen in the remains of 11 individuals (six females and five males); three of the males had multiple lesions and two of the females had healed but un-united fractures. The latter indicate a lack of 'medical' care, particularly in the case of the Romano-British female from Zone 19 who had bi-lateral lesions in the ulnae. These, together with the healed lesion in the right ulna of an Iron Age female from Zone 23, suggest the women had suffered inter-personal violence ('parry' fractures). Further, direct evidence for violent trauma is provided by the remains of four individuals, including those of two of the male recidivists. Both the latter (one Early/Middle Iron Age and the other Roman-British) have evidence for ?unhealed sharp-weapon trauma. One other Romano-British male and an unsexed Early/Middle Iron Age subadult had blunt weapon trauma to the skull, healed in the former and unhealed in the latter (fragments of potentially 'curated' skull vault).
- 26.3.13 Stress indicators such as dental hypoplasia (reflecting interrupted enamel growth) and *cribra orbitalia* (indicative of childhood iron deficiency anaemia) do not, judging from the crude prevalence rates (CPR, i.e. number of individuals affected), appear to have been common, though CPRs can be deceptive. There seems to have been a relative peak in both conditions in the Anglo-Saxon period (12% and 18% respectively), with no hyperplasia in the two earliest phases and a low of 2% for *cribra orbitalia* in the Iron Age. One of the Iron Age neonates shows a possible case of scurvy (Vitamin C deficiency; Roberts and Cox 2003, 104). Since the dietary needs of the infant

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would have derived from its mother's milk, the condition, if correctly diagnosed, suggests a nutritional deficiency in the mother.

26.3.14 Pyre goods, in the form of a few fragments of cremated animal bone, were observed in a minimum of four Romano-British cremation burials. Unburnt animal bone was recovered from a further five cremation graves, at least some of which is likely to represent grave offerings rather than intrusive material. Various metal items were recovered from graves containing the remains of unurned burials during excavation, most, though possibly not all of which represent the remains of grave goods (some may have been pyre goods; see Jones). However, one of the Romano-British urned burials from Zone 19 (grave 252066), excavated by the writer, presented a hitherto unrecorded example of grave offerings from this period. Although the grave had been truncated (0.12m deep) and the upper levels of the vessel removed the contents were undisturbed. Excavation revealed the unexpected and very unusual presence of copper-alloy grave goods in the form of two bracelets and a ring, which had been laid on top of the bone within the urn prior to burial. Although grave goods, generally in the form of ceramic items, are frequently found in cremation graves of this date, personal items such as these are generally placed on the body for cremation, ie. they form pyre goods. The inclusion of additional graves goods directly over the bone as seen here is an occurrence generally limited to the Anglo-Saxon period in Britain.

26.3.15 The majority of the surviving cremated bone is well oxidised (white), though a few fragments of incompletely oxidised bone (blue/grey) are evident in some Iron Age and most Romano-British deposits; in a few of the latter most of the bone is incompletely oxidised. All of the Late Bronze Age deposits from Zone 4, many of the Iron Age and Late Iron Age/Romano-British unurned deposits and some of the Romano-British unurned burials incorporated fuel ash, often in copious amounts, in the backfills of the cuts. In some cases it has not yet been possible to determine if these deposits represent the remains of unurned burials with pyre debris (i.e. the remains of two separate acts of deposition) or just pyre debris (a single deposit).

26.3.16 Several apparently cremation-related deposits were either devoid of bone or contained very little. Although various taphonomic factors need to be considered in the interpretation of such deposits it appear probably that at least some may prove to represent cenotaphs, a deposit type for which there is increasing evidence from various periods of use of the cremation rite (McKinley 2000; 2004b; in press a; Toynbee 1996, 54). The inclusion of small quantities of bone in accessory vessels/grave goods within at least two Romano-British graves (Zones 11 and 19), i.e. elsewhere than with the main

concentration of ‘buried’ cremated bone may, at least in some cases prove to be deliberate. Similarly, the presence of one fragments of adult bone within an Iron Age neonatal burial (Zone 13) could represent a deliberate placement.

## 26.4 Potential

26.4.1 The large overall size of the bone assemblage will make a significant contribution to osteological data from Kent and, particularly for the Romano-British and Anglo-Saxon periods, presents a rare opportunity to undertake comparative studies between closely contemporary and adjacent rural population groups.

26.4.2 Kentish burials of Early-Middle Iron Age date are sparse (Parfitt 2004, 16), Mays and Anderson citing a MNI of less than five in their review (1995, 380-1). The numbers have increased over the last decade, particularly due to the work undertaken at Cliffs End Farm situated immediately to the south of Zone 13, but they remain relatively small (McKinley 2006a; forthcoming; Moody 2008, 124; Perkins 1995a; 1995b). Any addition to these sparse remains is important, and should the radiocarbon analysis of a sample of the remains from the small cemetery in Zone 21 confirm the postulated Iron Age date of the burials, particularly should they prove to be Early-Middle, they would represent a significant addition. Even a latter date would render the cemetery of interest since most such burials from the county are of cremated remains with the notable exception of Mill Hill, Deal (Parfitt 1995; 2003, 16). The recovery of several Iron Age pit burials presents the opportunity to demonstrate, by radiocarbon dating, whether they are of Early or Middle Iron Age origin; a potential early date for this type of burial within the county has yet to be confirmed (McKinley forthcoming; Perkins 1995b, 21–4).

26.4.3 Most osteologically recorded Kentish burials of Romano-British date comprise singletons or small groups distributed in dispersed clusters across the northern half of the county. More substantial cemeteries comprise Pepper Hill (Biddulph 2006), Clubb’s Pit, Isle of Grain (Cameron 1985), Cranmer House and St. Dunstan’s, both in Canterbury (Frere *et al* 1987; M. Diack *pers. comm.*). The combined figures for the period from EKAR place it amongst these larger groups, and although not representative of a single population it does present the opportunity to directly compare remains from closely contemporary groups at least some of which are likely to have interacted with one another.

26.4.4 Despite the prolific number of known Anglo-Saxon burial sites in Kent, the number of osteological reports are relatively few due to sites representing old finds with no osteological analysis or non-recovery/survival of the bone,

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which limits the amount and detail of local comparative data (Anderson and Andrews 1997, 214; McKinley 2006b; 2009; Mays and Anderson 1995, 381-2; Powers and Cullen 1987, 197-8; Powers 2006; Tester 1968, 128).

- 26.4.5 Analysis will provide more detailed demographic data with regard to the number, age and sex of individuals within all temporal groups. For the unburnt bone assemblages this will take the form of refining what in some cases are still relatively broad age ranges for the adult categories. Adults age categories are currently largely undefined within the cremated bone assemblage, where detailed analysis of the material is required in order to recover this data. Similarly, more confident estimation of the MNI requires a careful consideration of the context and detailed osteological data in order to define the deposit types represented. The demographic data, once confidently defined, will reflect the nature of the various assemblages and can be used to assess potential factors affecting temporal and spatial similarities and variations between individual burial groups. This is of particular interest with respect to the several contemporaneous Romano-British and Anglo-Saxon cemeteries within Area 19 which provide a rare opportunity to study contemporaneous groups living in, presumably, close proximity within a similar economic landscape. The data can be used to help illustrate cultural factors such as the age and gender-links between different forms of grave good and deposit type.
- 26.4.6 Although much of the unburnt bone is in relatively poor condition and is often heavily fragmented, reconstruction of adult bone will allow the recovery of some metric data in a proportion of the remains from all periods. Stature – influenced by the individual's childhood health, diet and potentially social status – can be estimated for a limited number of individuals; *c.* 40-50% of the adults in all except the Anglo-Saxon assemblage where the proportion is likely to be far lower (*c.* 24%). Cranial index, one of a number of indices reflective of population homogeneity, will be even more limited due to the heavy fragmentation and/or warping of many skulls; *c.* 30% of adults, again excepting the Anglo-Saxon assemblage where only *c.* 8% of adults have sufficiently well preserved skulls. The various metric data and indices, although of limited scope, will assist in assessing intra- and infra-cemetery homogeneity and possibly broad genetic links between individuals, and may reflect health and status.
- 26.4.7 A study of the pathological lesions will enable assessment of the health and, by inference, the status of individuals and the various temporal and spatially distinct contemporaneous population groups. The latter is of particular interest given the proximity of the individual burial groups within Zone 19, and may

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assist in understanding how those apparent discreet communities interacted with one another. Wider comparisons with data from other cemeteries both within the county and further afield may shed further light on the nature and variations between the communities burying their dead within these cemeteries, on their health and, by inference, their lifestyles and status.

26.4.8 Data from the analysis of the cremated remains, used in corroboration with the site data and that from the environmental analysis, should inform on aspects of the mortuary rite, which will be considered in its regional and national context. There are several unusual deposit types within the assemblage, one of which currently appears unique; the detailed understanding these deposits and their formation processes could have important implications for advancing our understanding of the meaning and origin of the cremation rite at different periods of its use.

## **26.5 Recommendations**

26.5.1 Analysis of the cremated bone will follow the writer's standard procedure (McKinley 1994, 5-6; 2004b). All unsorted <4mm residues will be subject to a rapid scan to extract any identifiable material, osseous or artefactual. Cremated animal bone will be extracted for further analysis by the archaeozoologist. Detailed analysis of the formation processes of at least some of the urned burial remains will be facilitated by the quadrant/spit excavation undertaken by the writer.

26.5.2 Taphonomic factors potentially affecting differential bone preservation will be assessed using a combination of site records and osteological data.

26.5.3 The minimum number of individuals will be assessed following McKinley 2004a. The age of individuals will be assessed using standard methodologies (Brothwell 1972; Beek 1983; Buikstra and Ubelaker 1994; Scheuer and Black 2000). Sex will be ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994; Gejvall 1981).

26.5.4 Where possible a standard suite of measurement will be taken (Brothwell and Zakrzewski 2004) and non-metric traits recorded (Berry and Berry 1967; Finnegan 1978). The metric data will be used to calculate various skeletal indices according with Trotter and Gleser (1952, 1958), Brothwell (1972) and Bass (1986).

26.5.5 Pathological lesions will be recorded in text and via digital photography; several lesions are likely to warrant photographing for publication purposes. It will be necessary to make X-radiographs of skeletal elements showing

evidence of trauma and infection to ascertain as far as possible the full nature of the lesions.

26.5.6 It is recommended that up to 25 samples of unburnt bone, predominantly from inhumation graves, be submitted for radiocarbon dating. This will enable those burials exclusive of firmly associated grave goods to be set in the correct temporal context. The selection includes one sample of redeposited skull vault from Zone 6; although recovered from an Iron Age deposit, this forms one of several examples of potentially 'curated' human skull recovered from the scheme, and it is necessary to confirm whether the date of the mortuary practice conforms with that of the context from which it was recovered. The selected samples will be taken from deposits in Zones 4 (one), 6 (one), 12 (two), 13 (four), 14 (three), 21 (seven), 23 (one) and 24 (one). Ten samples of cremated bone from Zones 4, 7, 11, 12, 13, 14 and 23 are also recommended for dating; each comprising a single sample with the exception of Zones 4 (two) and 12 (three).

26.5.7 It is also recommended that consideration is given to undertaking Strontium/Oxygen (Sr/O) isotope analysis on some of the Iron Age remains from Zone 13 and the Anglo-Saxon remains from Zone 19, to ascertain the individual's place of origin. In the former instance the recommendation is dependent on the outcome of the radiocarbon dates. Should this place the burials in the Early-Middle Iron Age, it would be valuable to compare the origin of these individual's with the relatively large groups of similarly dated migrants recently identified from the site at Cliffs End *c.* 50m to the south (McKinley forthcoming). This may further illustrate the potential reasons for the differences in mortuary rite between the two adjacent sites. Tracing the origins of individuals within the various Anglo-Saxon cemeteries may identify one reason for their separation in death.

## 26.6 References

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Table 26.1: Unburnt Human Bone Assessment Summary

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
<b>Zone 4</b>								
147256	147255	inh. burial	RB	c. 90%	subadult c. 16-17 yr. ??female	calculus; supernumerary tooth?	4; little reconstruction, skull warped; few indices, no stature	0.35m
147257	147255	inh. burial	RB	c. 75%	adult c. 35-50 yr. ?female	dental caries; aml; calculus; ?periodontal disease; cortical defect – right distal fibula	3-4 (LL best); skull warped; some reconstruction, p.cranial indices; one of 'pelvic' bones = animal. Above 147256.	0.35m
177324	177322	coffined burial	RB	c. 68%	subadult c. 14-16yr. ??female	hypoplasia; impacted mandibular M3; <i>cribra orbitalia</i>	3; skull incomplete; some reconstruction, few indices	0.17m
<b>Zone 6</b>								
123232	123231	redep. (ditch fill)	RB	frag. s.	subadult/adult c. 13-25 yr.		1-2	
126239	126238	coffined burial	RB	c. 60%	adult c. 20-30 yr. ??female	caries	4-5+ (dry eroded & dark staining), few indices; two sets of teeth mixed – some from an older adult; animal bone with skull	0.16m
130012	-	redep.	RB	r. femur	adult c. 20-35 yr. ?male		2; joining frags., fresh breaks single bone;	
132157	132156	inh. burial	RB	c. 75%	adult >40 yr. male	calculus; dental caries; osteoarthritis – right: hip; osteophytes – prox. femur, S1 bsm, L, T; enthesophytes – femur, tibia, patella, right prox. ulna, right iliac crest	0-1; some reconstruction, p.c. indices; fresh breaks left LL, no joins; animal bone with left scapula, skull, spine & 'misc. '	0.08m
136101	136099	redep. (ditch fill)	RB	c. 5% s.	adult 25-40 yr. ?male		2; some fresh breaks no joins; no indices;	
136192	136191	?coffined burial	RB	5% u.l.	adult >35 yr. ??male	op – prox. femur.	5+; no indices; animal bone in grave fill	0.04m
153091	153098	redep. (ditch fill)	LIA/ ERB	c. 10% s.	adult >30 yr. ??male		1-2; fresh breaks;	
153096	153095	inh. burial	RB	c. 35%	adult c. 30-50 yr. male	calculus; osteoarthritis – T, costo-vertebral; enthesophytes – patella	2-3; badly damaged by machine, freq. fresh breaks; some reconstruction, few p.cranial indices.	<0.01m
173286	173275	redep. (pit)	E/MIA	1 frag. s.	adult >18yr. ??female		1-2 (worn); dark stained	
173287	173275	redep. (pit)	E/MIA	1 frag. s.	juvenile c. 7 yr.		1-2 (worn); dark colour.	
176030	176031	inh. burial	RB	c. 90%	juvenile/subadult c. 11-13 yr.	calculus; cortical defects – humerus, clavicle; periosteal new bone – right humerus	1; some reconstruction; cut in ditch fill not seen; animal bones with LL	?
176107	176106	inh. burial	RB	c. 90%	juvenile c. 6-7 yr. ?male	cortical defect – prox. humeri; surface defects – femoral heads; mv – wormian bones	1-2; some machine damage/loss; some reconstruction skull; animal bone with vertebrae, teeth & ribs	0.17m
176141	176140	inh. burial	IA	c. 78%	neonate 0-2 weeks		1-2; some loss in stripping.	0.17m
207051	207049	inh. burial	RB	c. 40%	adult c. 18-25 yr.		4-5+ (little trabecular bone); few p.cranial indices;	0.29m

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
246150	246148	inh. burial	RB	c. 65%	?male adult c. 18-30 yr. male	mv – metopic suture	animal bone with pelvis & 'misc. 4-5+ (degraded); few indices (inc. stature); animal bone with left leg, chest area	0.25m
248191	248190	redepos. (ditch)	E/MRB	c. 5% s.	juvenile c. 10-12 yr.	calculus	2-3; smashed & incomplete	
254021	254020	coffined burial	RB	c. 40%	subadult-adult c. 16-20 yr. ??male	dental caries; calculus	5 (degraded), little trabecular bone, v. few indices; modern truncation	0.18m
258270	258230	redepos. (post hole)	E/MIA	c. 4% s.	subadult 13-18 yr.	unhealed blunt weapon trauma – depressed fracture right parietal	1; animal bone	
260027	260017	coffined burial	RB	c. 1% s.	infant c. 6-9 mth.		mostly tooth crowns only	0.39m
263050	263052	?redepos. or ?in situ (well)	IA	c. 28% s. a. u.	adult >40 yr. male		1-2; heavily fragmented, little trabecular bone; some skull reconstruction, few indices; clear canid gnawing to innominate; 'feet?' = animal bone	1.20m
278171	278172	inh. burial	RB	c. 88%	neonate c. 1-3 mth.		1-2	0.25m
288147	288146	redepos. (ditch)	M/LIA	1 frag. s.	subadult/adult c. 14-35 yr.		1-2; old breaks; dark colour	
289027	289030	redepos. (ditch)	ERB	1 frag. s.	adult >35 yr.		1-2 (abraded) old dry bone breaks, longitudinal fissuring	
292076	292075	pit burial	E/MIA	c. 58% a.u.l.	adult c. 30-40 yr. male	healed fracture – left distal fibula, ?compression fracture LT?; sharp weapon trauma? – L1; destructive lesion – 2L; op – T; osteoarthritis – costo-vertebral; pitting – left acetabulum; enthesophytes – iliac crest	1-2; some reconstruction, post-cranial indices. 'hand bone' = animal, also 'disarticulated'; head removed in antiquity	0.63m
297079	297080	inh. burial	LIA	c. 56% a.u.l.	juvenile c. 5-6 yr.		1-2; truncated in antiquity; probably inserted over body.	0.12m
297090	297092	inh. burial	ERB	c. 25% s.a.l.	neonate 0-2 weeks		2 (eroded); disturbed inc. in stripping.	0.07m
297119	297120	redepos. (grave fill)	ERB	c. 3% s.	adult >18 yr.	mv – wormian bones	4 (eroded) old & fresh breaks.	
298103		redepos. (cobbled surface)	IA	c. 3% s.	adult >18 yr. ??female		1-2 (abraded)	
298113		redepos. (cobbled surface)	IA	1 frag. s.	subadult/adult >13 yr.		2 (abraded)	
<b>Zone 7</b>								
136136	136136	inh. burial	LIA/RB	<1% ?l.	>infant		5+ (small bag dust)	0.06m
136140	136139	inh. burial	LIA/RB	c. 1% s. ?	adult ≥18 yr.		5+ (several small bags dust)	0.11m
150082	150083	inh. burial	RB	c. 90%	adult >50 yr. male	dental caries; hypoplasia; osteoarthritis – left knee, both elbows; healed fracture – left fibula; op – L; surface defect – left 1 <sup>st</sup> foot phalanx; destructive lesion – right 1 <sup>st</sup> foot phalanx	2-3 (eroded, esp. trabecular) needs reconstruction, & indices (some cranial & post-)	?
248102	248103	inh. burial	RB	c. 75%	adult c. 30-40 yr.	op – C; Schmorl's node - T	1-2; heavily fragmented (much recent) will	0.05m

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
267090	267091	coffined burial	LJA/ERB	c. 52%	female adult >40 yr ?male	exostoses – femur; mv – wormian bones	reconstruct, p.cranial indices, most skull missing 3-4 (degraded, little trabecular), heavily fragmented, much fresh. Limited reconstruction, few indices	0.45m
297016	297017	inh. burial	RB	c. 45% a.u.l.	adult c. 30-40 yr. male	pitting – acetabular rim; op – S1; ?destructive lesion – S1	2-3 (degraded); badly truncated upper body gone; heavily fragmented (many fresh breaks) some reconstruction few p.cranial indices (?machining). Legs mixed in processing.	?
297021	297022	inh. burial	RB	c. 57%	adult c. 30-35 yr. female	dental caries; calculus; apical cyst (?abscess); amti; ?sinusitis; mv – metopic suture, wormian bones	2-3 (degraded, some trabecular poor); some p.cranial & cranial (with reconstruction) indices, truncated by later feature	?
<b>Zone 10A</b>								
176335	176334	coffined burial	ERB	c. 12% s.u.l.	adult c. 25-40 yr.	dental caries; calculus; amti; mandibular tori	4-5+ (heavily degraded & fragmented), no reconstruction possible, no indices. Skull found between legs.	0.36m
179269	179267	coffined burial	ERB	c. 15% s.u.l.	infant/juvenile c. 4-5 yr.		2-3 (skull)/4-5+ (p.cranial) heavily fragmented; no measurements	0.45m
182342	182340	inh. burial	ERB	c. 85%	adult c. 25-35 yr. male	dental caries; calculus; amti; cortical defect – clavicle; surface defect – clavicle	3-4, some reconstruction, some post-cranial indices (inc. stature), skull will reconstruct basic indices only.	0.72m
239264	239260	redeposited (placed) in grave	ERB	1) c. 57% 2) c. 20%.	1) adult c. 25-35 yr. female 2) neonate 0-2 weeks ?= 239262	1) extensive dental caries; amti; apical cysts (inc. abscesses); cortical defect – clavicle; healed fracture – T spinal process	1-2; skull fragmented but will reconstruct (basic indices), some reconstruction for p.cranial (inc. stature) indices. Siding done on site by excavator not correct.	
239268	239266	inh. burial	ERB	c. 74%	adult c. 40-50yr. female	extensive amti; dental caries; osteoarthritis – right temporo-mandibular; T; ddd - C	2-3 (degraded) some reconstruction for p.cranial indices (inc. stature); several cranial indices. Fe stain right humerus	0.12m
239281	239278	coffined burial	ERB	c. 98%	adult >50yr. male	amti; dental caries; apical cysts; calculus; fracture (healed) – depressed fracture in frontal vault; <i>cribra orbitalia</i> ; osteoarthritis – left wrist, C (ankylosis) T, L, left temporo-mandibular; ddd – C; DJSH; infection – T, C, L (?brucellosis), left temporo-mandibular; enthesophytes – femora, tibiae, fibulae, patellae; op – scapulae; pitting – left clavicle, acetabular rims	2-3; some reconstruction for p.cranial indices (inc. stature), skull heavily fragmented (fresh) should reconstruct (major indices)	1.11m
247314	247315	?partial; skeleton	RB	c. 1% l.	adult >20 yr.		4 (degraded); fragmented	0.38m
248220	248221	prone burial	ERB	c. 80%	adult c. 21-25 yr. ??female	calculus; dental hypoplasia; cortical defects – proximal humeri, clavicle	2-3 (degraded, esp. trabecular); few indices (?stature), skull heavily fragmented should reconstruct (basic indices); frag. cremated bone	0.45m
258344	258342	inh. burial	RB	c. 99%	adult c. 40-50 yr. male	calculus; dental caries; amti; dental abscesses; sinusitis (healed); infection in palate; osteoarthritis	1-2; most p.cranial & main cranial indices with some minor reconstruction.	0.90m

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
<b>Zone 12</b>								
126013	136049	inh. burial	LIA/ ERB	c. 85%	adult c. 21-25 yr. male	calculus; dental caries	2-3 (eroded); most p.cranial indices (additional skull from haulk at later date)	?
126015	-	redeposited colluvium	LIA/ ERB	1) 4 frags. a 2) 3 frags. a.u. 3) 40 frags. s.a.u.l.	1) young infant 2) juvenile 3) min. 1 adult >25 yr.	3) dental caries; op - L	2-3 (degraded); frags bone from colluvium; currently 3 bags kept separately.	
136030	136031	inh. burial	LIA/ ERB	c. 60%	infant c. 3-4 yr. male??	<i>cribra orbitalia</i>	2-3 (degraded, esp. trabecular), heavily fragmented, skull may reconstruct ?	?
136034	136033	inh. burial	LIA/ ERB	c. 90%	adult c. 25-29 female	calculus; dental caries; mv - metopic suture	4 (degraded); most post-cranial indices (inc. stature) some cranial indices with reconstruction; infant/juvenile left scapula with left UL bones	0.32m
136035	136033	redeposited (grave)	LIA/ ERB	c. 14% a.u.	juvenile c. 5-6 yr.		1-2; probably = 136035	
136036	136037	inh. burial	LIA/ ERB	c. 15% l.	juvenile c. 5-6 yr.		1-2; cut by grave 136033	?
153012	153011	inh. burial	LIA/ ERB	c. 88%	subadult c. 13-15 yr. ?female	dental caries; calculus; mv - marked rotation mandibular right canine	3. skull heavily fragmented (may reconstruct); machine damaged	0.20m
153016	153014	inh. burial	LIA/ ERB	c. 28% l.	infant c. 1-1.25 yr.		2-3, very fragile; some animal bone	0.10m
153027	153028	inh. burial	LIA/ ERB	c. 98%	adult c. 30-40 yr. male	calculus; dental caries; dental abscess; healed fracture - compression fractures in left knee joint surfaces; trauma (healed) left scapula; spondylolysis - L5; osteoarthritis - costo-vertebral; op - S1, L, T; enthesophytes - calcanea; mv - Vastus notch	1; some reconstruction, esp. skull, all p.cranial indices, most cranial; some recent disturbance (in excavation)	0.10m
153039	153040	inh. burial	LIA/ ERB	c. 80%	juvenile c. 7-9 yr. ??female		1-2, heavily fragmented; bone dark colour; some left femur with left arm	0.15m
153042	143043	inh. burial	LIA/ ERB	c. 96%	subadult c. 12-14 yr. ??male	calculus; <i>cribra orbitalia</i>	2-3 (degraded + precipitate adhering), some fresh breaks, skull to reconstruct.	0.15m
153047	153048	prone burial	LIA/ ERB	c. 87%	adult c. 30-35 yr. female	periosteal new bone - left fibula (lamella); Schmorl's node - T; plastic changes - left tibia	2-3 (legs best); no cranial indices, some p.cranial (inc. stature), some animal	0.21m
153054	153055	inh. burial	LIA/ ERB	c. 88%	adult c. 30-45 yr. male	amtl; calculus; excessive tooth wear; apical cysts; enthesophytes - patella; osteoarthritis - C; ddd - C; op - scapula; destructive lesion - S1/L5; op - L; ossification longitudinal ligament	1-2; minor reconstruction for most p.cranial indices; machine damage (& bone loss), fresh breaks with no joins, poss. some cranial index with reconstruction	0.15m

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
166001	166002	prone burial	L1A/ ERB	c. 20%	adult c. 25-40 yr. male	Schmorr's node - L	3-4; eroded, degraded 'dry'	0.20m
166004	166005	inh. burial	L1A/ ERB	c. 75%	adult 35-55 yr. female	amtl; dental caries; apical cyst; healed fracture – left clavicle	2-3 (trabecular poor); some reconstruction for p.cranial indices (inc. stature), skull may reconstruct (major indices only); dark staining (?fungal); Fe stain left humerus	0.18m
<b>Zone 13</b>								
126128	126127	inh. burial	IA	c. 45%	adult 25-30 yr. female	calculus; Schmorr's node – T; palatal tooth	4 (extensive root erosion); most cranial & some p.cranial indices.	0.20m
126143	126141	?in situ (pit fill)	IA	c. 57%	neonate c. 2-5 mth	?scurvy	2-3 (degraded, very dry)	0.67m
136128	136128	inh. burial	IA/?AS	c. 82%	adult c. 35-50 yr. male	amtl; dental caries; enthesophytes – femur, patellae; infection – L4-5; Schmorr's node – T; op - T	4 (degraded, esp. trabecular bone, root etching); reconstruction required for p.cranial indices (main only), skull not reconstructable; fresh breaks indicate machine damage	0.71m
136131	136132	inh. burial	IA/?AS	c. 23% u.l.	adult >20 yr. ??male		5+ (highly degraded, root marking; no trabecular); no indices	0.14m
145233	248097	inh. burial	IA/?AS	c. 35%	juvenile c. 9-12 yr.		4 (degraded/root etched), little trabecular bone); not originally recognised as articulated on site – disturbed ?in machining; includes animal bone	0.18m
150058	150050	redep. (quarry pit)	ERB	c. 2% s.a.u.	infant c. 4-5 yr.		3-4 (degraded); – from sample	
156169	156166	redep. (pit)	IA/?RB	1 frag. vault	adult >18 yr.		0; had 'fresh' appearance ?'boiled' look	
159119	159118	redep. (pit)	?IA	c. 12% s.a.u.	adult c. 35-55 yr. female		5+ (heavily degraded, decalcified), no indices. Not at base of pit, in chalk rubble at sides. 2 pieces struck flint from axial bone.	1.18m
159124	159118	redep. (pit)	IA	c. 20% s.a.l.	neonate 0-4 weeks		5 (heavily degraded) inc. 1 adult tooth. From sample 5806	
159140	159139	redep. (pit)	IA	<1% s.	subadult/adult >13 yr.		5 (heavily degraded/root marked); temporal vault only	
166111	166108	redep. (ring ditch)	BA	1% s.	adult >18 yr.		1-2 (root etched); joining frags. parietal vault	
173179	173161	redep. (pit)	?IA	c. 4%	infant c. 6-9 mth		3-4 (degraded & fragmented); few frags. all skeletal areas. Some animal bone.	
173193	173188	redep. (pit)	IA	c. 2% s.	adult >25 yr. male	mv – coronal ossicles	3; adjoining frags. frontal vault	
174057	174060	redep. (SFB)	IA	c. 5% s.	adult >35 yr. ?male	?trauma	3-4 (root etching); anterior cranium, some indices	
174233	174231	redep. (ditch)	IA	c. 2% s.	juvenile/subadult c. 10-14 yr.		2; frontal only, some indices	
175154	175153	redep. (pit)	IA	2 bones (hand)	subadult/adult c. 15-40 yr. ??female		2 (root etched)	

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
177086	177085	inh. burial	IA	c. 75%	adult 35-50 yr. male	calculus; osteoarthritis – C; ddd – C, L; ankylosis – C; infection – S1-L5 body surfaces; enthesophytes – femur shafts	4-5 (heavily root etched); fragmented, needs reconstruction, few p.cranial indices (not stature), skull many reconstruct, some indices	0.29m
200066	200062	inh. burial	IA	c. 78%	adult c. 25-35 yr. male	calculus; dental caries; amtI; alveolar infection?; enthesophytes – femur shaft, patella; plastic changes – massive deltoid attachment on right humerus; mv – vastus notch	4-5 (root etched); most p.cranial indices (inc. stature), skull will reconstruct but few indices; fragments of rib, lower limb, hand & foot & pelvis with skull – all suggests bioturbation but none recorded by excavator; animal bone from samples, with hand bones, & skull	1.02m
200089	200090	inh. burial	?BA/IA	c. 98%	adult c. 45-60 yr. male	calculus; amtI; excessive tooth wear; healed fracture – right distal ulna; osteoarthritis – left shoulder, hip joints, C1-2; enthesophytes – patellae, ischial crest, iliac crest; calcified cartilage – thyroid; Schmorl's node – L; ddd – C, T; op – right shoulder joint, S1 bsm, L; pitting – auricular surface; ankylosis – right auricular surfaces; plastic changes – strongly marked deltoid attachment left humerus; mv – cervical ribs (one ankylosed to 1 <sup>st</sup> rib, other separate), metopic suture	2-3 (eroded); fragmented (fresh breaks, some crushed) need reconstruction for p.cranial indices (inc. stature); skull should reconstruct (basic indices); animal bone with left foot	0.38m
203002	203001	inh. burial	IA(?AS)	c. 12%	subadult/adult >15 yr. ??female		5+ (eroded 'moth-eaten appearance)	0.17m
220093	220092	prone burial	IA	c. 97%	subadult c. 13-15 yr.		3; skull badly smashed (fresh) will reconstruct, feet removed by machine;	0.25m
221016	221014	inh. burial	IA(?AS)	c. 65%	adult >40 yr. ?female		4-5 (root eroded) some fresh breaks no joins; little trabecular, some p.cranial indices (no stature); skull too degraded (no indices)	0.27m
230116	230115	inh. burial	IA(?AS)	c. 2% s.a.	infant c. 2-3 yr.		5+ mostly teeth;	0.21m
230119	230118	inh. burial	IA(?AS)	c. 7%	infant/juvenile c. 4-8 yr.		4-5; partial mostly fragments	0.20m
246012	246011	inh. burial	IA	c. 90%	adult c. 30-50 yr. male		4-5 (root etching); some p.cranial indices inc. stature; skull should reconstruct for main indices	0.42m
248012	248013	inh. burial	IA	45%	juvenile c. 6-8 yr.		4 (root eroded); animal bone with left upper limb	0.52m
248039	248037	inh. burial	IA/?RB	50%	adult >18 yr. ??female		4-5 (root eroded); heavily fragmented, no indices; arm bones slightly mixed (humerus distal right labelled left), metatarsals with arm bones	0.19m
248059	248058	redep. (pit)	IA	c. 10% I.	adult c. 18-40 yr. ?female		2 (root etching); some p.cranial indices (inc. stature)	-
248088	248087	redep. (quarry pit)	IA	3 frags. s.a.	infant + juvenile + subadult/adult		0-2; old breaks; infant vertebral body; juvenile skull polished appearance; other skull frag. root eroded	-
248092	248091	inh. burial	IA	c. 99%	subadult c. 15-16 yr. male		1-2; fragmented (fresh), skull will reconstruct, most major indices. Animal bone in most samples, with vertebrae & skull	0.16m

**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
<b>Zone 14</b>								
126031	126030	inh. burial	AS	c. 35%	adult >45 yr. ?male	amtl; periosteal new bone – tibiae; ddd – C; osteoarthritis – C	4; old breaks, eroded, dark/black staining UL, r. femur & skull (metallic?); no indices	0.20m
126046	126045	inh. burial	AS	c. 5% l.	juvenile c. 5 – 12 yr.		5; old breaks & eroded frags.	0.12m
126058	126057	inh. burial	AS	c. 75%	adult >45 yr (prob. older) female	amtl; calculus; dental caries; periodontal disease; impaction; Schmorl's nodes - L, op – right knee	2-3; old breaks; a few indices; animal bone with left pelvis; some patchy dark staining; small individual	0.07m
126060	126061	inh. burial & redep.	AS	c. 30%	adult >18 yr. male		4; old damage + machine damage; few/no indices; disarticulated components incorporated so only plans/photos to go from	0.03m
133045	133046	inh. burial	AS	c. 50%	adult >45 yr. female	calculus; ?ddd - S1; ?osteoarthritis – L5 & S1; pitting – patellae; bipartate roots – canine; mv - wormian bone – lambda	3-5+; old breaks; a few p.cranial indices; small individual	0.17m
136051	136052	inh. burial	AS	c. 30% s. u. l.	adult c. 18-25 yr. ??female	hypoplasia	4-5+; old breaks, ends gone; no indices	0.21m
136057	136056	inh. burial	AS	c. 15% a. l.	adult >18 yr.		4; old breaks; no indices; disarticulated bone probably same individual, disturbed as very shallow (depth not recorded)	0.01m
136060	136059	inh. burial	AS	c. 35% u. l.	adult >18 yr.	?periosteal new bone – left tibia	4-5+; old breaks, ends gone	0.06m
136063	136062	inh. burial	AS	c. 60%	adult >25 yr. male	dental caries; hypoplasia; periodontal disease; ?impaction; mv - wormian bone, non-masticatory tooth wear	2-4; mostly 3-4; some new breaks but too damaged/eroded (old) to reconstruct; no indices	0.11m
136086	136085	inh. burial	AS	c. 65% a. u. l.	adult >45 yr. male	osteoarthritis - ?L5, hips (?septic/osteomyelitis); op – S1 bsm, knees, distal radii; enthesophytes – right distal femur	1-3, mostly 2-3; breaks mostly old; refit right femur head; several p.cranial indices; very large individual	0.06m
166033	166032	inh. burial	AS	c. 55% s. u. l.	adult c. 25-45 yr. male	calculus, hypoplasia; op – C1; non-masticatory tooth wear	3-5; breaks old, no reconstruction or indices; pelvis & ankle with leg	0.32m
166036	166035	inh. burial	AS	c. 30% s. a. l.	juvenile c. 6-12 yr.	hypoplasia; <i>cribra orbitalia</i> ;	1-3; old breaks	0.23m
166044	166043	inh. burial	AS	c. 45%	adult >50 yr. female	amtl; ?abscess; calculus; dental caries; hyper eruption; op – patellae; mv - wormian bones	3-5; old breaks; a few p. cranial indices; small individual	0.12m
166052	166051	?						
176044	176043	inh. burial	AS	c. 80%	adult c. 35-45 yr. male	amtl; dental caries; calculus; op – left rib, right navicular; pitting – right distal radius; osteoarthritis – right distal ulna; non-masticatory tooth wear; mv - wormian bones	2-5+, mostly 2-3; some new breaks, some reconstruction; limited indices	0.25m
176047	176046	inh. burial	AS	c. 40%	adult >45 yr. female	amtl; dental caries; granuloma/abscess; hypoplasia; periosteal new bone – sphenoid; non-masticatory tooth wear; mv - variant M2s	3-5+, mostly 5-5+; skull warped & eroded; no indices; slight dark staining	0.24m
176052	176053	inh. burial	AS	c. 35%	adult >45 yr. ?female	?amtl; granuloma; extreme tooth wear	3-5+, mostly 5-5+; fairly new breaks in skull, rest old & no ends.	0.13m
176056	176055	inh. burial	AS	c. 90%	adult >45 yr. female	amtl; dental ?abscess; calculus, periodontal disease; sinusitis; ddd – C, S1; osteoarthritis – L, T; op – C	3-5+; skull warped, some indices inc. stature	0.12m



**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
220002	220001	inh. burial	AS	c. 45%	subadult c. 14-18 yr. ?male	calculus; hypoplasia; non-masticatory tooth wear	3-5, mostly 3-4; some reconstruction and p.cranial indices; greyish mottling	0.17m
223006	223004	inh. burial	AS	c. 10% u. l.	subadult/adult >15 yr.		4-5+; old breaks; no indices	0.10m
223009	223007	inh. burial	AS	c. 20% s. u. l.	adult >18 yr.	pitting – right patella	4-5+; old breaks; no indices	0.11m
223012	223010	inh. burial	AS	c. 55% s. u. l.	adult c. 20-30 yr. male	amt; calculus; dental caries; cortical defects – left tarsals	3-5; old breaks, some p.cranial indices; bags of skull frags & teeth from 223031 in box – relocated	0.15m
223015	223013	inh. burial	AS	c. 35%	adult >45 yr. ?male	calculus; ?non-masticatory tooth wear	4-5+; old breaks; no indices; animal bone with skull, & poss. with l. arm; small individual	0.20m
223031	223033	coffined burial	AS	c. 50%	adult c. 30-40 yr. female	hypoplasia	3-5; old breaks; limited p.cranial indices	0.16m
<b>Zone 19</b>								
126055	126054	inh. burial	AS	c. 70%	adult c. 23-29 yr. female	calculus; Schmorl's nodes – T, L; ddd – T (premature)	2-4; most breaks old, some machine damage; some p.cranial indices inc. stature	0.13m
126092	126091	inh. burial	AS	c. 40%	juvenile c. 8-10 yr.		3-5; heavily fragmented	0.14m
126101	126101	coffined burial	RB	c. 37% u. l.	adult >35 yr.	enthesophytes – patellae	4 (root etching; some p.cranial indices (inc. stature)	0.30m
126184	126183	redepos. (grave)	AS	6 bones & 2 frags. u.	subadult >16 yr.		3-4; mostly old breaks (few)	
126205	126204	inh. burial	AS	c. 90%	adult >45 yr. male	amt; ?abscess; calculus; dental caries; granuloma; <i>cribra orbitalis</i> ; Schmorl's nodes – T, L; ddd – C, L; osteoarthritis – left 1 <sup>st</sup> carpo-metatarsal joint, 1 <sup>st</sup> MTP joints (feet); op – right acetabulum, T, L, S1 (?sacralisation/lumbarisation) bsm, distal radii & left ulna, right scapula, right knee, right tarsals; pitting – medial right clavicle; exostoses (?fracture) – right proximal 4 <sup>th</sup> & 5 <sup>th</sup> MIC; mv- wormian bones; extreme tooth wear	2-3; mostly old breaks, some fresh & reconstructable; some cranial and p.cranial indices	0.22m
126215	126214	inh. burial	AS	c. 95%	adult c. 35-45 yr. female	amt; calculus; hypoplasia; ddd – L; op – L apj; pitting – T bsm, L apj, right scapula, right acetabulum; mv - wormian bones	1-2; some fresh breaks, long bone reconstruction needed; most cranial and some p.cranial indices	0.18m
126224	126223	inh. burial	AS	c. 90%	adult >45 yr. male	amt; abscess; calculus; dental caries; ?ankylosing spondylitis/?DISH; Schmorl's nodes – T, L; ddd – C, T, L; osteoarthritis – C, T; op – C, T, L bsm, proximal ulnae, scapulae, acetabulae; pitting – right acetabulum; enthesophytes – innominate; mv - developmental anomaly left temporo-mandibular joint; non-masticatory tooth wear	1-3; some fresh breaks, skull incomplete; some p.cranial indices; very large, robust individual	0.25m
126332	126331	inh. burial	RB	c. 25%	infant c. 6-9 mth		2-5 (degraded); fragmented.	0.26m

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
136108	136109	inh. burial	AS	c. 55%	infant c. 1.5-2.5 yr.		3-4; some fresh breaks	0.04m
136112	136111	redep.	AS	1 phalanx & a few scraps u.	subadult/adult		2; complete, small, from one of the three individuals in this grave	0.29m
136113	136111	inh. burial (triple)	AS	c. 75%	adult c. 18-25 yr. female	calculus; dental caries; hypoplasia; cortical defect – right 1 <sup>st</sup> proximal phalanx (foot); mv - wormian bone (coronal)	2-5; skull & legs good, rest poor; some cranial & p.cranial indices; some skull reconstruction; general greyish mottling, green cu alloy staining l. tibia	0.29m
136114	136111	inh. burial (triple)	AS	c. 55%	juvenile/subadult c. 12-14 yr.	calculus; hypoplasia; ?puncture crush left clavicle (?post-depositional); mv - wormian bones	3-5+, part of skull best, axial & legs poorest; old breaks; greyish mottling of most; C, scapula fragment, epiphyses & hand bones with skull	0.29m
136115	136111	inh. burial (triple)	AS	c. 45%	juvenile/subadult c. 12-14 yr.	metopic suture; non-masticatory tooth wear	3-5+, skull best, axial poorest; cu alloy stain l. forearm;	0.29m
136151	136150	inh. burial	AS	c. 90%	juvenile c. 7-9 yr.	calculus; dental caries; hypoplasia; <i>cribra orbitalia</i>	2-4, mostly 2-3; old breaks	0.24m
150099	150097	coffined burial	RB	c. 40%	infant c. 3-4 yr.	endocranial new bone – sphenoid; <i>cribra orbitalia</i>	4-5+ (degraded/root etching)	0.48m
153033	153034	inh. burial	AS	c. 95%	adult c. 35-45 yr. female	abscess; calculus; dental caries; <i>cribra orbitalia</i> ; secondary sinusitis; Schmorl's nodes – T, L; dorsal slippage - L; osteoarthritis – L5 & S1; op – L, S1 bsm, costo-vertebral, right knee; ossified cartilage; mv - metopic suture, occipital suture, wormian bones, congenital absence M3, <i>os acromiale</i>	1-3, mostly 2-3; old breaks; some reconstruction; p.cranial indices inc. stature; Fe stain – mandible, cu-alloy stain – l. forearm, L	0.14m
153057	153058	inh. burial	AS	c. 95%	adult c. 35-45 yr. male	amtl; abscess; calculus; granuloma; ?secondary sinusitis; Schmorl's nodes – T, op – T & L bsm, costo-vertebral, right elbow & wrist; pitting – clavicles; enthesophytes – innomimates, calcanea; ossified cartilage; extreme tooth wear; fused coccyx & sacrum; mv - wormian bones, double occipital condyles.	1-2; most breaks old, some fresh & will reconstruct; some cranial & p.cranial indices inc. stature; mandible not present in burial	0.33m
153077	153075	inh. burial	AS	c. 65%	adult c. 30-35 yr. female	calculus; Schmorl's node – T; op – C1; pitting – C1; enthesophytes - ?parturition tubercle	1-4, most 2-3; breaks old; a few indices; cu-alloy stain – sacrum;	0.25m
153086	153084	inh. burial	AS	c. 8%	adult >45yr ??female	extreme tooth wear (non-masticatory)	5-5+; very poor, teeth & a bit of mandible only	0.23m
153093	153092	inh. burial	AS	c. 48%	juvenile c. 6-8 yr.		5-5+ (eroded/roots; trabecular very poor)	0.13m
166103	166102	inh. burial	AS	c. 15%	adult c. 25-35 yr. ??male		4-5+; fairly robust	0.57m
166101	166100	?redep. (pit)	?AS	c. 2% s.a.u.	infant			
166106	166105	inh. burial	AS	c. 40% a. u. l.	adult >40 yr female		3-4; old breaks; a few p.cranial indices	0.47m
166117	166116	inh. burial	AS	c. 85%	adult c. 30-35 yr. female	calculus; dental caries; periodontal disease; Schmorl's nodes – T, op – costo-vertebral; ossified	1-3, mostly 1-2; some old & some fresh breaks; most cranial & p.cranial indices incl. stature; lower	0.35m

**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
166126	166125	inh. burial	AS	c. 65%	infant c. 1.5-2.5 yr.	cartilage; MV - wormian bones, sacralisation L5	half of skeleton disturbed and placed over <i>in situ</i> upper half - disarticulated remains amalgamated by excavator destroying the contextual integrity, need to double check siding etc. prob. all the same individual	0.07m
166142	166141	redeposited inh. burial	AS	c. 10%	adult >18 yr.		ribs, Cs, clavicle & finger bones with skull	0.75m
166147	166146	redeposited (pit)	?IA	1 fragment s.	adult >18 yr.		5	
176343	176342	coffined burial	RB	c.85%	adult c. 30-35 yr. female	calculus; healed but unfused fractures – both ulnae; <i>cribra orbitalia</i> ; sacralisation of L5; op - T	4-5 (root etching); some reconstruction (inc. skull), main indices (inc. stature & cranial); green Cu-alloy stain – left humerus shaft	0.15m
176346	176346	coffined burial	RB	c. 30% u.l	infant c. 2-3 yr.		4-5+ (no trabecular bone); truncated by modern pipe-trench.	0.16m
205108	205111	pit burial	IA	c. 94%	adult c. 40-50 yr. male	aml; dental caries; apical cyst (abscess) calcified cartilage (thyroid); osteoarthritis – C; ddd – C; op - L; enthesophytes – femur shaft, iliac crest; exostoses – fibula; pitting – medial clavicles; plastic changes (parietal vault (longitudinal)); mv – wormian bones	2 (root etching) some minor reconstruction, most indices, axial skeleton badly crushed, skull almost complete. Animal bone	0.15m
209244	209243	?coffined burial	AS	c. 98%	adult 35-55 yr. male	aml; calculus; dental caries; apical cysts inc. abscesses; calcified cartilage; enthesophytes – patella; femur shaft; ddd – C, L; op – L; Schmorl's node – T, L	4-5 (root erosion, upper limb esp. poor); little reconstruction most indices, skull complete	0.28m
220012	220011	inh. burial	AS	c. 35%	adult c. 25-35 yr. ?/?female	calculus; hypoplasia; Schmorl's nodes – T	3-5+; most 5; old breaks, no indices; Cu alloy staining – left pelvis	0.07m
220096	220095	inh. burial	AS	c.45%	adult c. 30-35 yr. female	calculus; ddd – C; Schmorl's nodes – T, L; op – C1 & 2, T, L, costo-vertebral	3-5, mostly 3-4; a few p.cranial indices; pelvic area disturbed during 'metal-detecting'	0.10m
220056	220054	coffined burial	RB	c. 94%	adult c. 40-50 yr. female	aml; calculus; dental caries apical cysts; osteoarthritis – both knee, C, T; pitting – clavicles; op – left scapula, acetabular rims; ddd – S1, L; Schmorl's node – L, T; healed fracture – left rib	4 (root etching); some reconstruction most p.cranial measures, complete cranium; 2 fragments cremated bone with 'loose bone'	0.45m
220062	220060	inh. burial	RB	c. 8% s.a.u.	neonate 3-6 mth.		3-4 (degraded) very fragmentary.	0.24m
220097-8	220095	redeposited (ditch?)	AS	3 bones, s. u. l.	adult >18 yr.		5; greyish mottling; ?same as 220096	0.10m
220110	220109	inh. burial	AS	c. 98%	adult c. 30-40 yr. female	aml; dental abscess; calculus; dental caries; hypoplasia; fracture – un-united left rib; mv - metopic suture	1-4; mostly 2-3; limited cranial & p.cranial indices inc. stature	0.33m
220113	220112	coffined burial	RB	c. 84%	adult c. 35-55 yr. female	aml; dental caries; op – left patella, finger phalanges, L; ddd – C; ?compression fractures – L, T; enthesophytes – left patella; cortical defect – clavicle; pitting – medial clavicle, acetabulum;	4 (degraded, root etching, upper limb trabecular bone lost); some reconstruction, almost complete cranium, most indices	0.48m

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
220134	220133	redep. (pit)	AS	c. 35%	adult c. 30-40 yr. female	calcified cartilage (thyroid) dental abscess; dental caries; periodontal disease; crowding & rotation; pnb – left maxilla; plastic changes – occipital condyle; mv - wormian bones aml; dental abscess; calculus; dental caries; hypoplasia; periodontal disease; infection – maxilla; thickened skull vault; ddd – L; Schmorl's nodes – L; op – C, L bsm, T & L apj; pitting – lateral right clavicle; mv - wormian bones	1-3; moderately to heavily fragmented; old breaks; limited indices; bag of bits to sort	
220137	220136	inh. burial	AS	c. 65%	adult c. 35-45 yr. ??female		1-3; breaks old, machine damage to skull; some indices inc. stature	0.14m
248106	248105	coffined burial	RB	c. 3% s.u.l.	infant c. 2-4 yr.		heavily degraded (5+) except one finger phalanx (2-3)	0.25m
248109	248107	inh. burial	RB	c. 80%	juvenile c. 9-10 yr. ??female		4-5 (degraded/root eroded); skull shattered; 'rib fragments' = upper limb bones, 'scapulae' = left scapula & sacrum	0.48m
248268	248267	inh. burial	AS	c. 10% s.a.	adult c. 35-50 yr. ??male	aml; dental caries; apical cysts (inc. abscess)	4 (degraded); badly fragmented, severely damaged in machine stripping	0.16m
251046	251044	inh. burial	AS	c. 99%	adult c. 18-23 yr. male	calculus; hypoplasia; <i>cribra orbitalia</i> ; mv - congenital absence M3, metopic suture, wormian bones (sagittal), asymmetric C, lumbarised S1	1-4, most 2-3; some old breaks; several indices inc. stature; large individual	0.32m
251062	251061	inh. burial	AS	c. 85%	adult c. 35-45 yr. male	calculus; ddd – T; Schmorl's nodes – T, L, S1; op – C apj, T bsm; pitting – C apj; thickened skull vault; cortical defect – left calcaneum	1-4; skull & arms heavily fragmented, rest minimal, some reconstruction; some perianal indices inc. stature; bag of bits to sort; large individual	0.18m
253012	253011	redep. (enclosure ditch)	LBA/ EIA	c. 8% s.	adult >25 yr. ??female	mv – wormian bones	2; fresh breaks (most of cranium exc. frontal) adhering precipitate	
266019	266018	inh. burial (double)	AS	c. 50%	subadult c. 12-14 yr.		3-5+; heavy fragmentation; purplish grey staining – ribs	0.20m
266020	266018	inh. burial (double)	AS	c. 65%	adult c. 23-29 yr. female	calculus; crowding & rotation; <i>cribra orbitalia</i> ; <i>spina bifida occulta</i> ; Schmorl's nodes – T; mv - lumbarised S1	3-5; mostly old breaks; greyish mottling throughout; few indices; clavicle bagged with skull; small individual	0.20m
267025	267026	inh. burial (disturbed)	AS	c. 80%	adult c. 35-45 yr. female	calculus; hypoplasia; periodontal disease; crowding & rotation; osteoporosis/osteopenia; osteoarthritis – C, costo-vertebral; enthesophytes - parturition tubercles; mv - wormian bones inc. sagittal	2-3; most indices, some reconstruction; most of axial and lower limbs disturbed	0.44m
267033	267034	redep. (pit)	AS	scraps	unidentifiable		5	
275004	275002	inh. burial (disturbed)	AS	c. 40% u. l.	adult >25 yr.	non-masticatory tooth wear	5-5+; old breaks; no indices	0.45m
286015	286013	redep.	AS	c. 5% s.	adult >18 yr. ?male		3-5; mostly old breaks	?
<b>Zone 19A</b>								
137216	137217	inh. burial	AS	1 bone l.	adult >18 yr.		5-5+ (degraded, no articular surfaces)	

**East Kent Access (Phase II)**  
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context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
151050	151050	inh. burial	RB	c. 27%	??female adult c. 30-45 yr.	mv – wormian bone	4-5; fragmentary – no indices	0.06m
171170	171168	inh. burial	AS	c. 10%	??female adult c. 35-45 yr.	calculus	5-5+; old breaks; Cu-alloy stain – mandible & ?clavicle	0.89m
171193	171191	inh. burial	RB	c. 93%	subadult c. 13-15 yr.	impacted maxillary premolar; mv – wormian bones, maxillary M3 absent	4-5+ (degraded & root etched), skull will reconstruct; pelvic bones with legs	0.20m
189176	189174	inh. burial	AS	c. 3% s. a. l.	adult c. 18-30yr.	hypoplasia;	5 – 5+	0.82m
189179-80	189178	inh. burial (disturbed)	AS	c. 15%	adult >30 yr.	op – L. apj	3-4; heavily fragmented, no indices	0.92m
205114	205112	inh. burial	AS	two bones & a few scraps a. l.	infant c. 0.5 – 1.5 yr.		4-5+; old breaks	0.60m
205117	205115	inh. burial	AS	c. 85%	adult c. 30-40 yr. female	aml; ?dental abscess; calculus; dental caries; periodontal disease; skull thickening; hyperporosity; <i>cribra orbitalia</i> ; <i>spina bifida occulta</i> ; osteoarthritis – costo-vertebral, T; op – C bsm, costo-vertebral; pitting – temporo-mandibular joints, right glenoid; mv - wormian bones, odd depression posterior C1; heavy chipping of teeth	1-3; some reconstruction; some indices inc. stature; Fe stain – left forearm	0.50m
205120	205118	inh. burial	RB	c. 86%	adult c. 35 – 45 yr. male	aml; dental caries; dental abscess; op – L; enthesophytes – patella; massive deltoid muscle attachments; pitting – medial clavicle; op – right clavicle, acetabulae	4 (root eroded); most indices (inc. stature) some minor reconstruction, skull will reconstruct	0.40m
216005	216004	inh. burial (disturbed)	AS	c. 15% u. l.	adult >18 yr. ??female		5-5+; frags., no indices	0.70m
216011	216010	inh. burial	RB	c. 68%	adult c. 35-45 yr. male	op – L; ankylosis – L (smooth no new bone); Schmorl's node – T; mv – wormian bones	4-5 (degraded/root erosion); few indices inc. stature; green stain to right prox. femur, right metacarpal; some animal bone with 'disarticulated'	0.34m
217316	217315	redep. (in grave)	AS	a few scraps long bone	?		5+; unidentifiable	?
218205	218203	inh. burial (disturbed, stacked)	AS	c. 80%	adult c. 25-35 yr. male	calculus; ddd – C, T/L; Schmorl's nodes – T; op – T/L bsm, costo-vertebral; mv – wormian bones, occipital suture; non-masticatory tooth wear	0-3, mostly lower limb, some indices & reconstruction; some <i>in situ</i> , some disarticulated ?one individual, black localised patches - ?grave goods/ furniture?	0.35m
218207	218203	inh. burial (stacked)	AS	c. 15% s. u. l.	adult >50 yr. female	aml; ?dental abscess; pitting – left temporo-mandibular joint; extreme tooth wear	1-5+; most 5-5+; moderate-heavy fragmentation; small individual	0.69m
228045	228044	inh. burial (disturbed)	AS	c. 90%	adult c. 35-45 yr. female	calculus; periodontal disease; tooth crowding; Schmorl's nodes – L, T; op – T apj; pitting – L & T apj; enthesophytes – arms; <i>os acromiale</i> ; mv - asymmetric S	2-3; all cranial & many p. cranial indices, inc. stature; Cu alloy stains – ribs, clavicle	0.46m
228048	228050	inh. burial	RB	c. 45%	adult c. 28-35 yr. female	calculus; dental caries; apical cyst	4 (degraded/root eroded), heavily fragmented; badly machine damaged (esp. lower limb)	0.11m

**East Kent Access (Phase II)**  
*Post-Excavation Assessment*

context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
250052	250050	1) inh. burial 2) redep.	AS	1) c. 20% u. l. 2) 2 bones & scraps l.	1) adult >18 yr. 2) adult >18 yr.		1) 4-5+; no indices. 2) 1-3; limited indices. 'lower' burial in two intercutting graves (see 250054)	0.97m
250054	250053	1) semi-articulated inh. burial 2/3) redep.	AS	1) c. 3% l. 2) c. 8 % 3) c. 4% a.	1) adult >18 yr. (?= 2 or 3) 2) adult >50 yr. female 3) adult >25 yr.	1) cortical defect/cyst – tarsals 2) antl; granuloma; op – MTT, scapula; extreme tooth wear (non-masticatory)	MNI: 2. 1) 3; old breaks; greyish hue. 2) 3-4; old breaks; limited indices; ?poss. refit with 25052 2 <sup>nd</sup> individual; poss. more than one individual (arm); Fe stain - humerus. 3) 4; old breaks. N.B. see 250052 comments	0.97m
250057	250057	inh. burial	RB	c. 50%	adult c. 25-35 yr. female		5+ (heavy root etched), very heavily fragmented (many fresh breaks); little trabecular bone; few/no indices	0.22m
252075	252073	inh. burial (stacked)	AS	c. 15% a. u. l.	adult >30 yr. ??male	fusion – right hip (?trauma); enthesophytes – innominate; plastic change – right femur shaft	3-5+, most 5-5+	0.90m
252079	252073	inh. burial (stacked)	AS	c. 35% s. u. l.	adult c. 20-30 yr. female		skull 3-5+, rest 4-5+; some fragmentation of skull; breaks old; small individual	?0.90m
257015	257016	inh. burial	RB	c. 74%	adult c. 30-35 yr. female	<i>cribra orbitalia</i> ; Schmorl's node – L, T; smooth, non-proliferative ankylosis - T9-10 & T11-12 (?congenital); osteophytes – L bsm; mv – fully sacralised L6	5; few fresh & old breaks; cranium almost complete (needs reconstruction) most indices (inc. stature); cut by later ditch – lower limb missing but fresh breaks with no joins. Green Cu-alloy stains left temporal.	0.21m
257018	257019	inh. burial	RB	c. 83%	adult c. 35-45 yr. ??female	calculus; periosteal new bone - ?left tibia; osteoarthritis – left wrist; surface defect/destructive lesion (?RA) left 1 <sup>st</sup> MFT; headed fracture/soft tissue trauma – right radius; pitting – medial clavicle; op - right scapula	5-5+ (degraded root erosion); top of skull removed by later ditch; Fe stain right ulna shaft; most p.cranial indices	0.32m
262043	262044	inh. burial	RB	c. 50%	adult c. 30-35 yr. female		4-5 (degraded/root etched); some p.cranial indices (no stature); no cranial; damaged by machine resulting in bone loss	0.09m
262061	262063	inh. burial	AS	c. 50%	adult c. 35-45 yr. male	calculus; dental caries; hypoplasia; periodontal disease; crowding & rotation; spondylolysis – L5; ddd – C, L; Schmorl's nodes – T, L; osteoarthritis – costo-vertebral; op – occipital condyle, T & L api, L bsm, costo-vertebral, sterno-clavicular; mv - sternal aperture	2-3; some reconstruction, a few indices; ?hobnails?	0.17m
267071	267072	coffined burial	AS	c. 10%	adult 25-45 yr. ??female	hypoplasia	5-5+	0.60m
278058	278060	inh. burial	RB	c. 96%	adult c. 18-20 yr. female	<i>cribra orbitalia</i> ; dental caries; mv – absence maxillary 2 <sup>nd</sup> incisors	4-5 (root eroded); some reconstruction, most p.cranial indices inc. stature; skull will reconstruct, main indices; green cu-alloy stain left distal maxilla; NB. acute gsn counter all other sexing criteria (inc. sub-pubic); animal bone with	0.20m

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context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
279037	279036	inh. burial	AS	c. 95%	adult c. 35-45 yr. female	amtl; abscess; calculus; dental caries; granuloma; periodontal disease; <i>cribra orbitalia</i> ; ?spondylolysis – L5; op – scapulae; right sterno-clavicular; right patella; mv - non-masticatory tooth wear	vertebrae; 'pelvis' inc. cervical vertebrae?, 'shoulder girdle' in with 'vertebrae' = pubic bone 3-4; ends gone, some reconstruction, limited indices; Cu-alloy stains – shoulders	0.20m
280023	280022	coffined burial	AS	c. 5% s. u. l.	adult >45 yr. ??female	heavy tooth wear	5+; old eroded breaks	0.75m
282016	282014	?redep.	AS	4 scraps	?		5+; unidentifiable	0.72m
286011	286009	redep.	AS	c. 3% s. u. l.	adult c. 25-35 yr.	mv – wormian bones; non-masticatory tooth wear	1 (skull & MtC) & 5+ (long bones); Cu- alloy stain – MtC; could be more than one individual (MNI 1)	0.90m
<b>Zone 20</b>								
126067	126066	coffined burial	RB	c. 30%	adult >45 yr. male	ddd - C	5+ (heavy root etching); no indices	0.10m
128086	128084	coffined burial	RB	c. 46%	adult c. 30-45 yr. male		4-5+ (root etching); few indices (no stature)	0.27m
182242	182241	inh. burial	RB	c. 5% s.	infant c. 2-3 yr.		5-5+	?
198301	198301	coffined burial	RB	c. 35% u. l.	subadult c. 12-14 yr.		5 (root etching)	?
205137	205135	inh. burial	RB	c. 45%	neonate c. 0-2 weeks		4-5; animal bone in samples	0.20m
205149	205147	?redep./in situ (pit)	RB	c. 30%	neonate 0-2 weeks (?=205147)		5 (root etching). Animal bone in sample	0.30m
216095	216094	?coffined burial	RB	c. 53% s. u. l.	adult 18-25 yr. ?male	calculus	4-5+ (root etched); few indices (no stature), some cranial measures.	?
249059	249049	?redep./in situ (SFB)	RB	c. 33% c. 20%	2 x neonate 0-2 weeks		5-5+ (root etched). Some bone mid-dark brown, minority pale brown	?0.32m
252103	252101	inh. burial	RB	c. 68%	neonate 0-3 weeks ??female		2-3 (root etching)	0.05m
267001	267003	?redep./disturbed coffined burial remains within original grave.	RB	c. 65%	adult >40 yr. male	amtl; apical cysts; <i>cribra orbitalia</i> ; op – acetabulae; mv – mandibular tori	5-5+ (root eroded); some reconstruction needed, most p. cranial indices (inc, stature), some cranial reconstruction give some measurements but no indices	0.47m
271058	271052	redep./in situ (SFB)	RB	c. 40%	neonate 0-2 weeks (?=245137/205147)		4-5 (root eroded). Animal bone in sample.	?0.07m
273126	273124	redep. (ring ditch)	RB	1 frag. l.	adult ?20 yr. ??male		4-5 (root etching).	

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context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
<b>Zone 21</b>								
125232	125232	?grave fill	?	1 tooth	adult >40 yr.			
126005	126004	inh. burial	BA	c. 86%	adult c. 35-50 yr. ?female	calculus; op - T	4-5 (root etched) 3-4 (degraded); heavily fragmented (much machine damage – much displaced bone + fresh breaks); skull will probably reconstruct, most main indices	0.96m 0.30m
126181	126180	inh. burial	BA	c. 97%	adult c. 40-55 yr. male	am1 (extensive); calcified cartilage (thyroid); surface defect – tibia; enthesophytes – right fibula; smooth angled ankylosis right 1 <sup>st</sup> MIP joint; vertebral body collapse – L; ddd – C; osteoarthritis – C; op – right scapula, S1 bsm, left acetabulum, L	3-4 (root erosion) some reconstruction (upper limb badly fragmented), most main indices (skull warped)	0.20m
132094	132093	redepos. (pit)	?	c. 16 frags. u.	subadult/adult		5, heavily fragmented; scraps ?upper limb bone shaft	
132096	132095	inh. burial	BA	c. 71%	infant/juvenile c. 5-6 yr. ?female	<i>cribra orbitalia</i>	4-5 (root marking; dry longitudinal fissures). Some animal.	0.20m
136102	136103	inh. burial	?IA	c. 70%	adult c. 35-45 yr. male	dental caries; Schmorl's node – T; ddd – C; op – C bsm; enthesophytes – femur shafts; mv – metopic suture	5 (root etching); some p.cranial indices with reconstruction (no stature), no cranial reconstruction	0.36m
136105	136106	inh. burial	?IA	c. 15% a.l.	adult c. 35-50-yr. male	op - acetabulum	5 (root etching), few p.cranial measurements	0.29m
153065	153066	inh. burial	?IA	c. 50%	adult >40 yr. male	dental caries; enthesophytes – femur shafts; osteophytes - C2	5-5+ (root erosion); fragmentary, few indices no reconstruction (trabecular poorly preserved). Green staining left proximal ulna.	0.15m
166093	166092	inh. burial	?IA	c. 6% l.	adult >18 yr. ?male		5 (mostly foot bones).	0.06m
166096	166095	redepos. (natural feature)	?	12 frags. a.	subadult/adult >15 yr. ?male		5+; highly degraded scraps bone inc. greater sciatic notch	
166098	166097	inh. burial	?IA	c. 53%	adult >45 yr. male	am1; osteoarthritis – C; ddd – C, L; enthesophytes – femoral shafts; op – right scapula, right acetabulum, L	5-5+ (root erosion); fragmented (many fresh) limited reconstruction, few indices (no stature). Some 'left' arm = right	0.13m
216092	216091	inh. burial	BA	c. 34%	adult c. 25-30 yr. ?female		4 (little trabecular; eroded smooth ?water); few measurements, no indices.	0.60m
220053	220051	inh. burial	?IA	c. 90%	adult c. 25-30 yr. female	calculus; mv – metopic suture	4-5 (root etching), some 'dry' longitudinal splitting; some p.cranial indices (no stature – trabecular bone poor), skull should reconstruct	0.32m
246136	246134	inh. burial	BA	c. 80%	subadult/adult c. 17-20 yr. female		3-4 (degraded, slight root erosion, ?water wear); some reconstruction for p.cranial indices (inc. stature); adhering carbonate precipitate on much bone; feet mixed; 'chest' inc. all axial, some upper limb & skull; 'disartic', mostly hand & rib	0.50m
246141	246139	inh. burial	BA	c. 25%	infant c. 9-12 mth			
275008	275007	redepos.	?IA	2 teeth & scraps s.	adult >18 yr.		4 (degraded) heavily fragmented.	0.19m
							5	



context	cut	deposit type	phase	quantification	age/sex	pathology	comment	grave depth
275009	275007	(grave) inh. burial	?IA	c. 78%	adult c. 28-35 yr. male		4-5; some reconstruction required, some p.cranial indices (inc. stature); skull may reconstruct; some machine disturbance	0.28m
302083	302082	redep. (ring ditch)	BA	10 frags u.l.	?adult		5++ (very degraded), probably human long bone (upper & lower limb) but major cortical erosion.	
<b>Zone 23</b>								
290482	290481	inh. burial	?BA	c. 94%	adult c. 21-25 yr. female	calculus	4-5 (root etched); left legs shattered (recent ?machine disturbance); most major indices inc. stature, skull may reconstruct but very fragile/thin.	0.50m
<b>Zone 24</b>								
198244	198245	inh. burial	IA	c. 88%	adult >45 yr. female	calculus; ?well healed fracture – right ulna; pitting – medial clavicle; ddd – C; Schmorl's node - L; ?infection – S1; osteoarthritis – costo-vertebral	4-5 (root etching); some reconstruction, main p.cranial indices (inc. stature), no cranial indices; some animal bone	0.27m
<b>Zone 29</b>								
159023	159009	redep. (cremation grave)	?	2 frags. a.	>infant		3; 2 scraps rib shaft	

KEY: s.a.u.l. - skull, axial skeleton, upper limb, lower limb (skeletal areas represented where not all are present); amlt - *ante mortem* tooth loss; op - osteophytes; ddd - degenerative disc disease; bsm - body surface margins; mv - morphological variation; C/T/L/S - cervical/thoracic/lumbar/sacral vertebrae, MtP/MtT - metatarsophalangeal/metatarsal, MtC - metacarpal; apj - articular processes (vertebrae); SFB - sunken featured building

Table 26.2: Cremated Bone Assessment Summary

context	cut	deposit type	phase	bone weight	age/sex	pathology	comment	feature depth
<b>Zone 3</b>								
149011	149010 (ditch)		med.?	5g			animal bone	-
151006	151004 (ditch)		BA	13g			animal bone	-
<b>Zone 4</b>								
220140	220139	?redepos.	LBA	21.3g	subadult/adult >13 yr.		small frags., long bone shaft. No bone observed in excavation.	0.12m
220142	220141	?	LBA	?			supposed to be some bone & fine particle fuel ash	0.12m
252210	252209	?rpd/?un.b. + rpd	LBA	13.5g	>infant (>5yr.)		very small frags., heavily eroded, no trab.	0.16m
252212	252211	?rpd/?un.b. + rpd	LBA	13.3g	subadult/adult >13 yr.		small, worn frags. shaft & skull	0.12m
252214	252213	?rpd	LBA	4.8g	subadult/adult >13 yr.		small worn long bone	0.13m
252216	252215	?rpd/?un.b. + rpd	LBA	435.7g	adult >18 yr.		small frags., some trab., slightly worn	0.23m
252218	252217	?rpd/?un.b. + rpd	LBA	1.1g	immature <18 yr.		very small frags.	0.20m
252220	252219	?rpd	LBA	1.6g	>infant (>5 yr.)		small scraps, no trab.	0.15m
252224	252223	?rpd/?un.b. + rpd	LBA	11.8g	?immature <18 yr.		very small frags., no trab.	0.21m
252226	252225	?rpd	LBA	0.6g	>infant (>5 yr.)		small frags.	0.08m
252228	252227	?rpd	LBA	18.2g	subadult/adult >13 yr.		small frags., slightly chalky, no trab.	0.10m
<b>Zone 6</b>								
193105 <sup>s</sup>	278177	placed deposit	RB	-			fuel ash in vessels, no bone	0.15m
247151 <sup>s</sup>	170073	urned burial *	RB	37.7g	young infant c. 0-3 yr.		spits (6) and quads	0.30m
<b>Zone 7</b>								
179103	179102	?un. b. + rpd	LIA/ RB	176.1g	subadult/adult >13 yr.		3 'samples' (quads.); worn & chalky, small frags., no trab.	0.10m
179132	?	urned burial	LIA/ ERB	127g	adult >21 yr.		some trabecular, few blue/grey	?
271010	271009	?burial	LIA/ RB	1088g	adult c. 18-40 yr.		2 'sample' nos; trab. & compact, moderate frags., some blue/grey	0.11m
<b>Zone 8</b>								
273030	274001	?redepos. (ditch)	?EBA	0.2g	?human/animal		eroded scraps	-
273032	274001	?redepos. (ditch)	?EBA	0.1g	?human/animal		eroded scraps	-
274005	274001	?redepos. (ditch)	?EBA	1.6g	?human		eroded scraps	-
<b>Zone 10</b>								
123002	123001	?redepos. (pit)	?EBA	1.8g	immature <18yr.			-
123003	123001	?redepos. (pit)	?EBA	1.6g	immature <18yr.			-
177039	177037	?	IA	3g	Missing			
197143	197134	?redepos. (ditch)	?EBA	6g	subadult/adult >13 yr.			?
227011	227010	?redepos. (pit)	?EBA	0.4g	subadult/adult >13 yr.			-
<b>Zone 10A</b>								

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context	cut	deposit type	phase	bone weight	age/sex	pathology	comment	feature depth
176312	176311	urned burial	RB	1292g	adult c. 21-40 yr.		trab. & compact, moderate-large frags. Some animal (sheep); few blue/grey.	0.23m
247316	247315	crd	RB	263.2g	adult >18 yr.		moderate frags., trab. & compact.	0.38m
248220	248221	?redep. (pit)	RB	10.8g	adult >18 yr.		moderate frags., no trab., some blue/grey.	?
<b>Zone 11</b>								
147139	209118	un.burial	ERB	379.3g	adult >18 yr.		moderate frags., trab. & compact.	0.16m
153020 <sup>s</sup>	153017	urned burial*	MBA	168g	infant c. 0.5-5 yr.		spits (6) & quads; very small frags., little/no trab.	0.20m
171024	171923	?rpd	?LIA	47.2g	subadult/adult >13 yr.		small frags., worn, no trab.	0.29m
189052	189050	?rpd/?un.b. + rpd	?LIA	23g	infant/juvenile c. 0.5-12 yr.		small frag., some blue/grey	0.14m
189054	189053	?ass. 189052	?LIA	4.3g	immature <18 yr.		no trab.	?
209121	209118	?grave fill/= 147139	ERB	49.2g	subadult/adult >13 yr.		quads (not apparent from bags); worn & chalky, no trab., small-moderate frags.	0.16m
209123 <sup>s</sup>	209118	? 'token' accessory deposit** (see 147139)	ERB	12.7g	subadult/adult >13 yr.		quads.; worn & chalky, no trab.; pot frags.	0.16m
<b>Zone 12</b>								
126002	126001	?un. b. + rpd	?LIA	367.6g	adult >18 yr.		4 spits; little trab., moderate frags.	0.38m
146013	146016	?un.b. + rpd/ ?rpd	IA/ ?BA	90.8g	subadult/adult >13 yr.		quads. & spits; small frags., little trab. few blue/grey	0.22m
146014	146016	crd	IA/ ?BA	16.9g	>infant (>5 yr.)		spits & quads; small scraps	0.12m
146015	146016	bioturbation = 146014	IA/ ?BA	5.2g	>infant (>5 yr.)		spits & quads.; very small frags., no trabecular	-
214043	214042	?rpd/?un.b. + rpd	?IA	163.5g	adult >18 yr.		moderate frags., some trab.	0.31m
<b>Zone 13</b>								
130129	208022	?redep.	?BA	0.8g	?human		Scrap	-
159125	159118	redep.	IA	7.2g	immature <18 yr.		very small; blue/grey	-
159126	159118	?rpd	IA	1.1g	see below			-
159127	159118	?rpd	IA	3.1g	see below			-
159128	159118	redep.	IA	1.2g	see below			-
159130	159118	rpd	IA	0.8g	see below			?
159131	159118	?redep. burial + rpd	IA	1.3g	young infant c. 0.5-3 yr.		159125-31 all looks like same individual, much blue/grey	0.85m
159133	159132	?un.burial + rpd	?BA	336.3g	adult >18 yr.		moderate-large frags., slightly chalky, no trab.	0.13m
186134	186135	?redep.	?BA	5g				0.13m
200065	200062	crd	IA	1g	foetus/neonate c. 0-6 mth.		tiny frags. some trab. One ?intrusive/foetus adult bone frag.	-
292016	292015	?redep.	IA	4g	subadult/adult >13 yr.		moderate frag., very worn	0.33m
296001	296004	?redep.	IA	5g	subadult/adult >13 yr.		moderate frag., no trab.	0.23m
<b>Zone 14</b>								
166052	166051	?un.burial + rpd	?BA	472g	adult >18 yr.		moderate-large frags., slightly worn & chalky, charcoal stained.	0.12m

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context	cut	deposit type	phase	bone weight	age/sex	pathology	comment	feature depth
220025 <sup>s</sup>	220024	urned burial	LBA	19.7g	infant c. 0-5 yr.		Little trab. spits (4) & quads; very small frags., no trab.	0.08m
<b>Zone 19</b>								
126101	126100	redcp. (inh. grave)	RB	3.7.g	?juvenile/subadult c.5-18 yr.		moderate frags., Fe stain on some. Prob. = 126107	-
126104	126103	?redcp.	RB	1.g	>infant (>5 yr.)		small-moderate frags. ?=126107	-
126107	126106	?un. burial + rpd	RB	63.7g	infant/juvenile c. 0.5-12 yr.		slightly chalky, small-moderate frags., inc. trab. U/b adult cuboid ?accident/?deliberate inclusion - cut by RB inh. grave poss. from there.	0.20m
126108	126106	crd	RB	31.7g	infant c. 0.5-5 yr.		small frags., slightly chalky, inc. trab.	0.20m
126111	126110	crd	RB	93.7g	subadult/adult >13 yr.		small-medium frags., inc. trab.; slightly chalky	0.32m
126112	126110	?un. burial	RB	630g	adult >18 yr. ?female		moderate frags., trab. well represented. ?immature animal	0.32m
126196 <sup>s</sup>	126195	urned burial**	RB	782g	adult >18 yr. ?male		spits (6) & quads; large-moderate frags., much trab., much blue/grey.	0.21m
126225	126223	redcp. ?urned burial (in AS grave fill)	RB	78g	adult >18 yr.		large frags., inc. trab.	
126337 <sup>s</sup>	126334	?token? accessory deposit/accidental inclusion **	RB	5.6g	>infant (>5 yr.)		spits (3); mostly u./b immature animal bone.	?0.14m
126339 <sup>s</sup>	126334	accessory vessel	ERB	?				?0.14m
126340 <sup>s</sup>	126334	?token? accessory deposit**	RB	39g			spits (2). No bone present? 2 halves. Possible wt. recorded under wrong no. (126342?) since none noted by osteo. in excavation	?0.14m
126342	126334	un. burial**	RB	558g	adult >18 yr.	enthesophytes – femur shaft	large-moderate frags., inc. trab.	?0.14m
150101	150100	crd	RB	60.8g	subadult c. 13-18 yr. ?female		moderate frags., some trab. Unburnt animal bone (grave goods).	0.13m
150103	150100	?un. burial	RB	108.5g	subadult/adult >13 yr.		moderate frags., slightly worn & chalky; unburnt animal bone (grave goods)	0.13m
153061	153060	?rpd	RB	94.4g	adult >18 yr.		small-moderate frags., some trab.; animal bone (pyre goods)	0.20m
153064	153060	crd	RB	56g	subadult/adult >13 yr.		small frags., some trab., some animal bone (pyre goods)	0.20m
153069	153068	crd	RB	230g	adult >23 yr.		spits but no quads.; small-medium frags., common trabecular	0.27m
153070	153068	un.burial **	RB	315g	adult >21 yr.		moderate-large frags., common trabecular; green stain to petrous temporal	0.27m
166078	166077	?cenotaph**	RB	34g	?subadult c. 13-18 yr.		small frags., no trab.	0.35m
166083	166082	crd	RB	30.3	adult >21 yr.		moderate-small; trab. common	0.24m
166084/78 <sup>s</sup>	166082	urned burial**	RB	1860g	adult c. 30-45 yr. ?female	op – L, C; Schmorl's node -	spits (8) & quads. Large-moderate frags., frequent trab., few blue/grey	0.24m

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context	cut	deposit type	phase	bone weight	age/sex	pathology	comment	feature depth
166090 <sup>s</sup>	166082	accessory vessel ?'token' **	RB	4.6g	subadult/adult >13 yr.	T	spits; one blue	0.24m
166101	166100		?LIA/ RB	4g	?			
177482	177480	?un.b. + rpd/?rpd **	RB	179g	adult >18 yr. ?female		large frags., common trab., much blue/grey. Fe item (?pyre good)	0.45m
220055	220054	redep. (inh. grave)	RB	4g	>infant (>5 yr.)		scraps, long bone. ?ass. 126107 in adjacent grave	-
220056	220054	redep. (inh. grave)	RB	1.4g	infant/juvenile c. 0.5-12 yr.		moderate frag. ?ass. 126107 in adjacent grave	-
220058	220057	?bioturbation = 220059	RB	26.1g	subadult/adult >13 yr.		moderate frags., mostly u/b animal bone (grave goods?)	0.54m
220059	220057	un. burial ?+rpd **	RB	1450g	adult c. 35-55 yr. ?female	op - T, L	large frags, very common trab.	0.54m
220061	220060		RB	7g	?			
220063	220064	?un. burial	RB	253.3g	adult >18 yr. ?female		large-moderate frags. some trab. slightly worn	0.22m
220069 <sup>s</sup>	220068	placed deposit	RB	-				0.10m
220073	220072	crd	RB	75.3g	adult >21 yr. female	destructive lesion - odontoid process.	small-moderate frags., slightly chalky, common trabecular	0.10m
220075	193051	?cenotaph	RB	44.9g	adult >18 yr.		small-moderate frags., common trab.	0.20m
220103	220099	crd	RB	27g	subadult/adult >13 yr.		quads; small frags., little trab., some blue/grey	0.14m
220104	220099	urned burial	RB	522g	adult >20 yr.		large frags., common trab. Much blue/grey	0.14m
220116	220115	?un. burial	RB	86g	adult >30 yr. ??female	op - C1	moderate frags., inc. trab.	0.07m
220118	220117	see below	RB	34g	subadult/adult >13 yr.		moderate frags., no trab	0.07m
220118	220117	?un. burial	?RB	204g	subadult/adult >13 yr.		very small fragments, worn appearance, little/no trab.	0.07m
220120	220119	crd	?RB	24.4g	?immature <18 yr.		small frags., no trab.	0.17m
220121	220119	urned burial	?RB	244g	adult >18 yr.		small-moderate frags., some trab.	0.17m
220130	220129	crd	RB	316.4g	adult >30 yr. ??male	op - C2	moderate frags., some unburnt animal bone (?grave goods)	0.22m
239108	239107	crd	RB	120.5g	adult >21 yr.		small-moderate frags., common trab.; some blue/grey/ Some animal bone (pyre goods)	0.58m
248261	248260	see 248263	RB	0.6g	subadult/adult >13 yr.		small frags.	0.10m
248263 <sup>s</sup>	248260	urned burial	RB	126.6g	adult >18 yr.		moderate frags., common trab., some blue/grey.	0.10m
279097	279096	grave good	RB	3g			unburnt animal bone only	0.29m
279098 <sup>s</sup>	279096	urned burial**	RB	427g	adult >30 yr. ??male		spits (4) & quads; large frags., frequent trabecular.	0.29m
<b>Zone 20</b>								

**East Kent Access (Phase II)**  
**Post-Excavation Assessment**

context	cut	deposit type	phase	bone weight	age/sex	pathology	comment	feature depth
215191 <sup>s</sup>	215193	urned burial*	RB	1416g	adult c. 23-35 yr. ?female		spits (4) & quads; small-moderate frags., common trab., few blue/grey.	0.16m
215192 <sup>s</sup>	215195	urned burial	RB	960g	adult >18 yr.		spits (5) & quads; small-medium frags., little trab., few grey	0.09m
215194	215193	= 215191 (spill)	RB	0.5g	subadult/adult >13 yr.		very small frags., with pot sherds	-
215197	215199	?burial	RB	360g	juvenile/subadult c. 8-13 yr.		large frags., very common trab., very few blue/grey	?
228058 <sup>s</sup>	228055	placed deposit	RB	-			2 bags material (site & lab.); no bone just shell, pot & ?Fe frags. (all v. small).	0.12m
252067 <sup>s</sup>	252066	urned burial**	RB	510g	subadult/adult >15 yr. ??female		Spits (4) & quads. Small-moderate frags., limited trab., few blue/grey; grave goods over bone deposit (3 bracelets + ring)	0.12m
252069 <sup>s</sup>	252068	placed deposit/ accessory	RB	0.6g	subadult/adult >13 yr.		single frag. long bone	0.08m
<b>Zone 21</b>								
125222	125220	urned burial	BA	183.3g	subadult/adult >13 yr.		moderate-large frags., little trab.	0.17m
125223	125220	redep?/token?	BA	18.9g	infant/juvenile c. 0.5-12 yr.		small frags., little trab.	0.17m
<b>Zone 23</b>								
128067 <sup>s</sup>	128031	placed deposit	?EBA	-			ON 910	0.12m
141084	141083	?rpd /?un.burial + rpd/?cenotaph	EBA	45g	juvenile/subadult c. 5-18 yr.		Small frags., some trab., slightly worn; few blue.	0.16m
<b>Zone 26</b>								
213002/73 <sub>s</sub>	213001	?cenotaph/ ?placed deposit	MBA	103g	?Missing or this is res. wt.		NB. no bone observed by osteo. in excavation	0.04m
222002	222001	?cenotaph/ 'token'	MBA	54g	?Missing or this is res. wt.		NB. no bone observed by osteo. in excavation. Spits (3)	0.15m
<b>Zone 29</b>								
159101	159101	crd	RB	70.9g	adult >18 yr.		small-moderate frags., common trab.	?
159014	159009	crd	RB	32.5g	adult >21 yr. ??female		small frags., some trab.	?
159014	159009	crd	RB	201g	adult >18 yr. ??female		large-moderate frags., common trab. Some slightly grey	?
159023	159009	?	?RB	1g	>infant (>5 yr.)		single frag.	?

KEY: \$ - lab. excavation by osteoarchaeologist; \* - largely undisturbed deposit; \*\* - undisturbed deposit; un.b. - unurned burial; rpd - redeposited pyre debris; crd - cremation-related deposit; redep. - redeposited; op - osteophytes; C/T/L/S - cervical/thoracic/lumbar/sacral vertebrae

Table 26.3: Minimum number of individuals (MNI) by phase and zone; unburnt bone

Zone	Bronze Age	Iron Age	Romano-British	Anglo-Saxon
4			MNI: 3 Imm: 2 (2 subadult F) A: 1 (F)	
6		MNI: 6 Imm: 3 (neonate, juvenile, subadult) A: 3 (2M, 1F)	MNI: 13 Imm: 6 (2 neonate, 1 infant, 1 juvenile, 2 juvenile/subadult (1M)) A: 7 (1 F, 6M)	
7		MNI: 3 (LIA/RB) A: 2 (1M) +?	MNI: 4 A: 4 (2F, 2M)	
10A			MNI: 9 Imm: 2 (neonate, infant/juvenile) A: 7 (3F, 3M)	
12		MNI: 13 (LIA/RB) Imm: 6 (2 infant, 2 juvenile (1F), 2 subadult (1F, 1M)) A: 7 (3F, 4M)		
13	MNI: 1 A: 1	MNI: 20 Imm: 9 (2 neonate, 2 infant, 1 infant/juvenile, 2 subadult (1M)) S/A: 1 (F) A: 10 (4F, 6M)	MNI: 1 Imm: 1 (infant)	
14				MNI: 23 Imm: 3 (2 juvenile, 1 subadult (M)) S/A: 1 A: 19 (8F, 8M)
19	MNI: 1 (LBA/EIA) A: 1F	MNI: 2 A: 2 (1F, 1M)	MNI: 20 Imm: 7 (neonate, 4 infant, juvenile (F), subadult) A: 13 (10F, 2M)	MNI: 53 Imm: 10 (3 infant, 3 juvenile, 2 juvenile/subadult, 2 subadult) A: 43 (26F, 11M)
20			MNI: 10 Imm: 6 (4 neonate, 1 infant, 1 subadult) A: 4M	
21	MNI: 6 Imm: 2 (infant, infant/juvenile) S/A: 1F A: 3 (2F, 1M)	MNI: 7 A: 7 (1F, 6M)		
23	MNI: 1 A: 1F			
24		MNI: 1 A: 1F		
total	MNI: 9 2 Imm., 1 S/A 6 A (4F, 1M)	MNI: 52 18 imm., 1 S/A, 1? 32 A (11F, 20M),	MNI: 60 24 Imm., 36 A (17F, 17M)	MNI: 76 13 Imm., 1 S/A, 62 A (34F, 19M)

KEY: (see Table 1 for age ranges) Imm. - immature individuals, A - adults, S/A subadult/adult, F - female, M - male

**Table 26.4: Minimum number of individuals (MNI) by phase and zone; cremated bone**  
(see Table 26.2 for age ranges)

Zone	Bronze Age	Iron Age	Romano-British
4	MNI: 2 Imm: 1 A: 1		
6			MNI: 1 Imm: 1 (infant)
7		MNI: 3 (LIA/RB) S/A: 1 A: 2	
8	MNI: 1 (?)		
10	MNI: 1 Imm: 1	MNI: 1? (missing)	
10A			MNI: 2 A: 2
11	MNI: 1 Imm: 1 (infant)	MNI: 2 Imm.: 1 (infant/juvenile) S/A: 1	MNI: 1 A: 1
12		MNI: 2 S/A: 1 A: 1	
13	MNI: 1 A: 1	MNI: 2 Imm: 2 (foetus/neonate, infant)	
14	MNI: 2 Imm: 1 (infant) A: 1		
19			MNI: 18 Imm: 2 (infant/juvenile, subadult F) S/A: 1 A: 15 (6F, 3M)
20			MNI: 4 Imm: 1 (juvenile/subadult) S/A: 1 (F) A: 2 (1F)
21	MNI: 2 Imm: 1 (infant/juvenile) S/A: 1		
23	MNI: 1 Imm: 1 (juvenile/subadult)		
26	?cenotaphs		
29			MNI: 1 A: 1F
total	11 6 Imm., 1 S/A, 3 A, 1?	10 3 Imm., 3 S/A, 3 A, 1?	27 4 Imm., 2 S/A, 21 A (9F, 3M)

KEY: Imm. - immature individuals, A - adults, S/A subadult/adult, F - female, M – male



## 27 EAST KENT ACCESS: LIST OF DOCUMENTS ISSUED

Document Reference	Issue Status	Description
001_EKA_P2_AW_DP_REV0	Final	Update Archaeological Project Design, Stage 1 Preliminary Surveys and Strip, Map and Characterisation Programme
002_EKA_P2_AW_DP_REV0	Final	Baseline Archaeological Programme
003_EKA_P2_AW_DP_REV0	Final	Community Archaeology and Outreach Strategy
004_EKA_P2_AW_DP_REV0	Final	Update Archaeological Project Design, Stage 2 Further Archaeological Works
005_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 1
006_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 2
007_EKA_P2_AW_DP_REV0	Final	Research Design
008_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zones 11, 12 and 17: Interim Statement
009_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 3
010_EKA_P2_AW_DP_REV0	Final	Method Statement for Archaeological Watching Brief of Targeted Investigation of Potential Unexploded Ordnance
011_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zones 1 and 3: Interim Statement
012_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 4
013_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zones 6, 7 and 8: Interim Statement
014_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 5
015_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 6
016_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zone 10: Interim Statement
017_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zones 13, 14 and 15: Interim Statement
018_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 7
019_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zone 9: Interim Statement
020_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zones 18 to 24: Interim Statement
021_EKA_P2_AW_DP_REV0	Final	Preliminary Surveys: Zone 26: Interim Statement
022_EKA_P2_AW_DP_REV0	Final	Archaeological Evaluation Report: Zone 26
023_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 8
024_EKA_P2_AW_DP_REV0	Final	Method Statement for Stripping under Electricity Pylons
025_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 9
026_EKA_P2_AW_DP_REV1	Final	Archaeological Progress Report - No 10
027_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 3
028_EKA_P2_AW_WB_REV0	Final	Zone 29: Archaeological Method Statement
029_EKA_P2_AW_FAWD_REV2	Final	Further Archaeological Works Design: Zone 3
030_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 11
031_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 12
032_EKA_P2_AW_CP_REV0	Final	Environmental Sampling Advice: Zones 6, 17 and 26
033_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 10
034_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 10
035_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 13
036_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 11 E
037_EKA_P2_AW_FAWD_REV2	Draft	Further Archaeological Works Design: Zone 11 E (Draft)
038_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 14
039_EKA_P2_AW_CP_REV1	Draft	Archaeological Characterisation Report: Zone 11 N (Draft)
040_EKA_P2_AW_FAWD_REV1	N/A	Further Archaeological Works Design: Zone 11 N
041_EKA_P2_AW_CP_REV1	Draft	Archaeological Characterisation Report: Zone 12
042_EKA_P2_AW_FAWD_REV1	N/A	Further Archaeological Works Design: Zone 12
043_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 13
044_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 13
045_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 15
046_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 16
047_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 17

Document Reference	Issue Status	Description
048_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 18
049_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 19
050_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 20
051_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 14
052_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 14
053_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 21
054_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Gas Diversion G17/18
055_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Gas Diversion G17/18
056_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 22
057_EKA_P2_AW_CP_REV0	Final	Method Statement for Midden Strip in Zone 6 Revised
058_EKA_P2_AW_DP_REV1	Draft	Community Open Days Proposal
059_EKA_P2_AW_CP_REV1	Draft	Archaeological Characterisation Report: Zone 21 E
060_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zones 18, 19 and 20 E
061_EKA_P2_AW_PR_REV1	Final	Press Release: Archaeology Road Show 15th/16th May 2010
REV2	Final	Press Release: Open Day 22nd/23rd May 2010
062_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 23
063_EKA_P2_AW_CO_REV0	Final	Community Outreach: Events Schedule
064_EKA_P2_AW_CO_REV0	Final	Community Outreach: Exhibitions Programme
065_EKA_P2_AW_CO_REV0	Final	Community Excavation: H&S Briefing Note
066_EKA_P2_AW_CO_REV0	Final	Community Excavation: Volunteer Induction Form
067_EKA_P2_AW_CO_REV0	Final	Community Excavation: Visitor Induction Form
068_EKA_P2_AW_CO_REV0	Final	Community Outreach: Volunteer Attendance Register
069_EKA_P2_AW_CO_REV0	Final	Community Open Days: Daily Guided Tours Register
070_EKA_P2_AW_CO_REV0	Final	Community Excavation: Method Statement
071_EKA_P2_AW_DP_REV1	Final	Archaeological Progress Report - No 24
072_EKA_P2_AW_DP_REV0	Final	Method Statement for Preservation In Situ of Barrows at Whites Access Road Revised
073_EKA_P2_AW_CO_REV0	Final	Method Statement for Open Days at Zones 23 and 13
074_EKA_P2_AW_DP_REV1	Final	Archaeology Programme
REV2	Final	Archaeology Programme
REV3	Final	Archaeology Programme
REV4	Final	Archaeology Programme
REV5	Final	Archaeology Programme
077_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 1 N
078_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 25
079_EKA_P2_AW_CP_REV0	Final	Community Display Board: Archaeology: Exploring the Past
080_EKA_P2_AW_CO_REV0	Final	Community Display Board: The Road to Thanet
081_EKA_P2_AW_CO_REV0	Final	Community Display Board: Meet the Archaeologists
082_EKA_P2_AW_CO_REV0	Final	Community Display Board: Artefacts
083_EKA_P2_AW_CO_REV0	Final	Community Display Board: Sites
084_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 7
085_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 8
086_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 26
087_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zones 18, 19 and 20 E
088_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 27
089_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 7
090_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 28
091_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 8
092_EKA_P2_AW_DP_REV1	Draft	Archaeological Progress Report - No 29
093_EKA_P2_AW_CO_REV0	Final	Method Statement for Open Days at Zone 6
094_EKA_P2_AW_CO_REV0	Final	Risk Assessment for Community Open Days
095_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zones 22 and 23

Document Reference	Issue Status	Description
096_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zones 22 and 23
097_EKA_P2_AW_CO_REV0	Final	Community Display Board: Ebbsfleet IA Village
098_EKA_P2_AW_CO_REV0	Final	Community Display Board: A Bird's Eye View
099_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 30
100_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 20(W)
101_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 20(W)
102_EKA_P2_AW_CP_REV0	Final	Archaeological Characterisation Report: Zone 6(N)
103_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design: Zone 6(N)
104_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 31
105_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 32
106_EKA_P2_AW_CP_REV0	Void	Void
107_EKA_P2_AW_FAWD_REV1	Draft	Further Archaeological Works Design Addendum: Zone 6
108_EKA_P2_AW_FAWD_REV1	Void	Void
109_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 33
110_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 34
111_EKA_P2_AW_DP_REV0	Final	Method Statement for Mitigation of Zones 19 and 20(E)
112_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 35
113_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 36
114_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 37
115_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 38
116_EKA_P2_AW_DP_REV0	Final	Archaeological Evaluation Report: Zone 2
117_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 39
118_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 40
119_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 41
120_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 42
121_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 43
122_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 44
123_EKA_P2_AW_DP_REV0	Final	Archaeological Progress Report - No 45
124_EKA_P2_AW_PX_REV1	Draft	Post-Excavation Assessment Programme
125_EKA_P2_AW_PX_REV1	Draft	Post-Excavation Summary Report
<b>Code Key</b>		
Design Phase	DP	
Characterisation Phase	CP	
Futher Arch. Works Design	FAWD	
Community Outreach	CO	
Press Release	PR	
PX Phase	PX	

**28 EAST KENT ACCESS: CONTEXT AND INTERVENTION TOTALS BY ZONE**

<b>Zone</b>	<b>Contexts</b>	<b>Interventions</b>
1	644	245
2	184	57
3	934	326
4	(796)	(291)
5	125	47
6	7969	2720
7	2124	743
8	709	177
9	120	47
10	824	245
10a	(848)	(251)
11	1803	609
12	1859	667
13	2885	732
14	1686	589
15	18	6
16	-	-
17	67	12
18	128	54
19	1058	368
20	699	201
21	490	126
22	426	177
23	813	106
24	27	20
25	-	-
26	562	167
27	-	WB
28	-	WB
29	115	22
Unallocated	-	209
<b>Total</b>	<b>27,913</b>	<b>9216</b>

Numbers in brackets are March 2011 totals, but where further excavation in April – May 2011 has taken place

**29 EAST KENT ACCESS: FINDS TOTALS BY NUMBER AND ZONE****Zones 1 - 12**

Material	Number of objects	Number by Zone											
		1	2	3	4	5	6	7	8	9	10	11	12
Amber	3						1					1	
Animal bone	67,062	625		896	943	157	22,695	2260	58	5	1543	1067	2984
Burnt flint	10,553	32		479	184	13	3187	625	81	1	590	407	294
Burnt stone	2						1						
CBM	869	45		26	15	4	159	48	12		7	25	12
Clay pipe	7	2					2						
Copper alloy	500	5		3	19	1	264	12			4	12	2
Fired clay	4321	9		57	45	31	1089	63	2	2	84	225	213
Flint	1065			56			39	1			100	102	186
Glass	360			2			15	1			2	7	1
Gold	6				2		4						
Human bone	930			3	22		118	42	3		5	18	92
Iron	2466	18		136	20		533	174		2	10	51	39
Jet	2			1									
Lead	52			1	1		39						1
Other metal	2												
Pottery	70,835	359	3	865	2992	483	30,552	4535	268	39	1375	3534	2375
Shale	36						6				18		1
Shell	17,953	640		396	10	109	650	2		5	1152	1541	62
Silver	19						11					1	
Slag	752	1		6	16		190	17		2	7	12	50
Stone	1414	1		23	18	4	328	13	1		11	112	19
Unid.	38						15						

**Zones 13 - 29**

Material	Number of objects	Number by Zone												
		13	14	15	17	18	19	20	21	22	23	24	26	29
Amber	3	1					1							
Animal bone	67,062	15,031	10,745	60	145	106	1946	3322	313	145	1331	22	284	379
Burnt flint	10,553	3159	941			3	345	46	5	23	15		122	1
Burnt stone	2	1												
CBM	869	15	18		4	3	5	377	8	1	47		2	36
Clay pipe	7								1	1	1			
Copper alloy	500	12	8				91	55	7	1	4			
Fired clay	4321	948	1067	1	1	4	103	329	2	4	6		27	9
Flint	1065	183	75		10			1			301		11	
Glass	360	1	4				316	4	1		1			5
Gold	6													
Human bone	930	184	26			1	271	33	104	1	1		5	1
Iron	2466	43	121		3		735	466	12	57	23			23
Jet	2	1												
Lead	52	6						1			1			1
Other metal	2													2
Pottery	70,835	9783	1275	14	50	51	2694	7139	672	176	802	7	542	250
Shale	36	5	2				1	3						
Shell	17,953	1466	9489	148	25	1	572	1153	158	269	58		41	6
Silver	19						6	1						
Slag	752	28	42	1			24	317	4		25		2	8
Stone	1414	65	618		1		15	172	1	2	4	1	3	2
Unid.	38	4					10				8			1

**30 EAST KENT ACCESS: FINDS TOTALS BY WEIGHT (GRAMS) AND ZONE****Zones 1 - 12**

Material	Weight of objects	Weight by Zone											
		1	2	3	4	5	6	7	8	9	10	11	12
Amber	36						34					1	
Animal bone	718,571	3467		7382	5279	1049	364,677	16,930	299	20	12,857	8152	18,066
Burnt flint	572,105	3038		15,372	29,288	2609	168,192	19,954	1326	33	9340	10,533	10,239
Burnt stone	369						45						
CBM	73,544	2093		2449	1738	114	15,508	1085	400		116	1969	668
Clay pipe	60	25					28						
Copper alloy	2707	38		2	446	1	1220	68			15	44	29
Fired clay	139,363	53		793	1182	569	29,935	536	23	19	418	3159	5062
Flint	17,518						5017						
Glass	532			10			47	1			2	14	1
Gold	71				60		11						
Human bone	17,180			18	585		1981	1679	4		5	1060	422
Iron	55,361	260		1054	671		23,275	1836		7	323	840	583
Jet	3			2									
Lead	1861			77	42		1542				29	9	
Other metal	51												
Pottery	1,005,704	2936	5	12,458	30,526	5876	427,886	46,245	2128	312	17,321	49,511	30,737
Shale	817						229				19		
Shell	201,727	278		3147	1	2	9024	8		104	14,886	18,140	794
Silver	29						21					1	
Slag	19,702	12		106	1562		1880	38		424	129	326	1047
Stone	541,978	18		2372	13,701	294	226,365	3370	121		1254	14,000	14,293
Unid.	427						222						

## Zones 13 - 29

Material	Weight of objects	Weight by Zone												
		13	14	15	17	18	19	20	21	22	23	24	26	29
Amber	36	1												
Animal bone	718,571	150,292	68,596	556	1031	757	11,455	35,242	1577	623	7581	245	712	1726
Burnt flint	572,105	262,176	13,701			43	16,222	2349	412	2218	3216		1729	95
Burnt stone	369	324												
CBM	73,544	367	1698		345	52	124	37,805	323	130	5494		27	1039
Clay pipe	60								3	1	3			
Copper alloy	2707	95	40				436	244	10	1	18			
Fired clay	139,363	39,1666	46,501	23	6	17	2477	8666	9	18	240		208	283
Flint	17,518							12,500					1	
Glass	532	1	10				338	37	2		3			66
Gold	71													
Human bone	17,180	1410	682			1	5623	3111	343		43		157	56
Iron	55,361	1603	2793		131		12,032	8765	184	48	76			880
Jet	3	1												
Lead	1861							26			16			17
Other metal	51													51
Pottery	1,005,704	194,065	17,617	282	838	316	38,215	97,224	9361	1427	6841	32	9074	4471
Shale	817	157	272				58	82						
Shell	201,727	11,707	116,705	1259	266	12	3261	11,855	5173	4839	218		28	20
Silver	29						4	3						
Slag	19,702	494	5283	345			425	17,303	67		190		1	70
Stone	541,978	26,245	162,287		125		4111	36,282	30,500	2500	59	105	3367	609
Unid.	427		13				7				31			154



**31 EAST KENT ACCESS: SAMPLE TOTALS BY TYPE AND ZONE**

Zone	CPR	Waterlogged	Micromorphology	Snails	Artefact	Crem bone	Other	Total
1	13	-	-	-	-	-	-	13
2	-	-	-	-	-	-	-	-
3	22	-	13	-	-	-	4	39
4	37	-	1	-	3	12	-	53
5	-	-	-	-	-	-	-	-
6	146	-	23	-	75	-	-	244
7	44	-	3	-	21	7	3	78
8	29	-	6	-	-	-	1	36
9	4	-	-	-	-	-	-	4
10	28	-	8	-	1	-	3	40
10a	21	-	3	-	18	6	4	52
11	67	-	12	21	-	10	6	116
12	65	1	4	-	79	5	14	168
13	119	-	7	11	94	10	10	251
14	126	-	11	37	120	1	23	318
15	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-
17	3	-	-	8	-	-	1	12
18	-	-	-	-	-	-	-	-
19	63	-	-	8	257	12	43	383
20	86	-	-	-	18	2	1	107
21	5	-	5	23	63	2	14	112
22	5	-	-	-	-	1	-	6
23	7	-	14	40	4	-	8	73
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	9	-	-	-	-	2	1	12
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
<b>Total</b>	<b>899</b>	<b>1</b>	<b>110</b>	<b>148</b>	<b>753</b>	<b>70</b>	<b>136</b>	<b>2117</b>





a r c h a e o l o g y

**Oxford-Wessex Archaeology Joint Venture**



*Wessex Archaeology*

Oxford Archaeology

Janus House, Osney Mead, Oxford, OX2 0ES  
t: 01865 263800 e: oasouth@oxfordarch.co.uk



Wessex Archaeology

Portway House, Old Sarum Park, Salisbury, SP4 6EB  
t: 01722 326867 e: info@wessexarch.co.uk