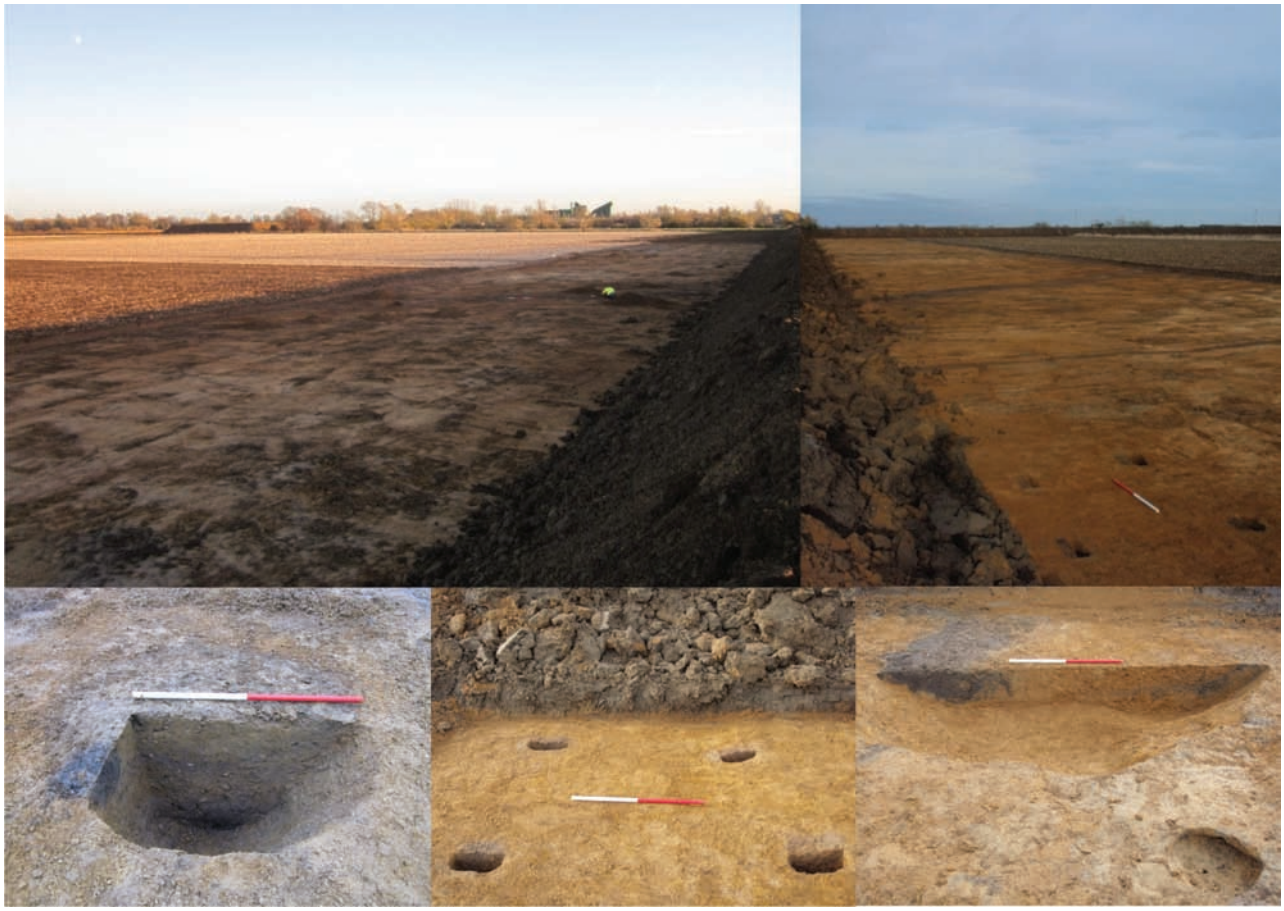
Northern Extension, Baston, No.1 Quarry, Lincolnshire

An Archaeological Excavation



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CONTENTS

LIST OF FIGURES AND TABLES		2
NON-TECHNICAL SUMMARY		3
ACKNOWLEDGEMENTS		3
1. INTRODUCTION		4
1.1 Location, topography, geology		4
1.2 Archaeological Background		4
1.2.1 Prehistoric		4
1.2.2 Roman		5
1.2.3 Medieval / Post-Medieval		5
1.3 Methodology		6
1.4 Archive		6
2. RESEARCH DESIGN		6
3. RESULTS		7
3.1 Bronze Age		7
3.1.1 Linears		8
3.1.2 Structures		8
3.1.3 Pits & post holes		11
3.2 Iron Age		12
3.3 Post-medieval		12
3.4 Discussion		13
4. CONCLUSION		18
5. REFERENCES		19
6. APPENDICIES		23
6.1 Specialist Reports		23
6.1.1 Worked Flint	*by Marcus Brittain and Lawrence Billington*	23
6.1.2 Prehistoric Pottery	*by Mark Knight*	23
6.1.3 Fauna	*by Vida Rajkovača*	24
6.1.4 Environmental Analysis	*by Anne de Verailles*	25
6.1.5 Worked Stone	*by Simon Timberlake*	31
6.1.6 Burnt Stone	*by Simon Timberlake*	32
6.1.7 Fired Clay	*by Simon Timberlake*	33
FIGURES		34
OASIS FORM		

LIST OF FIGURES AND TABLES

Figure 1. Location map with cropmarks and previously investigated areas

Figure 2. Plan of all archaeological features, also showing the location of the 2009 evaluation trenches

Figure 3. Plans of archaeological features in Areas A-C, with illustrated structures and sections marked in red

Figure 4. Plan of Structure 1

Figure 5. Interpretative reconstruction of Structure 1

Figure 6. Plan of Structures 2 & 3

Figure 7. Sections of ditches F.70 and F.99, and pit cluster F.19, 32-6

Figure 8. 1890s Ordnance Survey Map

Figure 9. 1930s Ordnance Survey Map

Figure 10. Early Bronze Age features and possible pit groups also showing part of the 2007 excavation

Figure 11. Middle Bronze Age field system and cemetery enclosure with related features also showing part of the 2007 excavation

Figure 12. Aerial photograph of enclosure with internal ring ditches, Market Deeping (HER 33431)

Table 1 Early Bronze Age post-built 'dwellings' along the fen-edge.

Table 2 Middle Bronze Age post-built 'dwellings' at Baston/Langtoft and Fengate.

Table 3 Pottery assemblage breakdown by type.

Table 4 Number of Identified Specimens for all species by period and feature.

Table 5. Environmental Bulk Soil Samples from Selected (non-Structural) Features

Table 6. Environmental Bulk Soil Samples from Structures 1-3

Table 7. Summary of Burnt Stone

NON-TECHNICAL SUMMARY

Archaeological excavations during the construction of a bund enclosing the extension area of Baston No.1 Quarry revealed considerable evidence for prehistoric activity, particularly of the Early to Middle Bronze Age. This relates to a broader prehistoric landscape in the local environs that is dominated by an extensive Middle Bronze Age ditched system of field allotment and droveways. The current programme of investigations revealed a circular Early Bronze Age dwelling consisting of a double ring of posts and eastern entrance associated with Collard Urn pottery. Two clusters of contemporary pits and a four-post structure of unknown date were located in close proximity to this dwelling. In addition, two Middle Bronze Age circular post-built structures were identified with southeast entrances and traces of central hearths. Within 20m of each other, these dwelling areas also consisted of fencelines, postholes, pits and a well, all associated with Deverel Rimbrey pottery. Situated between these Early and Middle Bronze Age deposits were two alignments of multiple linear ditches that correspond with features identified in previous investigations to the west. These appear to form part of the Middle Bronze Age field system, but in a way that is deliberately diverted around, and thereby enclosing, an earlier funerary area of ring ditches, inhumations and cremations. Measuring c.200m in diameter, this 'enclosure', although partial, has little parallel in Britain.

A single Iron Age pit represented the only post-Middle Bronze Age activity until the post-Medieval period, for which evidence has also been found of a generic agricultural landscape.

ACKNOWLEDGEMENTS

The project was commissioned by Phoenix Consultancy on behalf of Hanson Aggregates, whose assistance during the project, in particular that of Gary Coates, is gratefully acknowledged. Beryl Lott (Historic Environment Manager for the Planning Department of Lincolnshire County Council) oversaw and monitored the development control of the investigation. Alison Dickens (CAU) was the Project Manager, and the fieldwork was carried out by the author. Graphics were produced by Vicki Herring, and the site was surveyed by Donald Horne.

1. INTRODUCTION

An archaeological investigations was undertaken by the Cambridge Archaeological Unit through the commission of Phoenix Consultancy on behalf of Hanson Aggregates between the 1st and the 23rd of November 2012 in fulfilment of conditions attached to the construction of an earthen bund around the projected extension of Baston No.1 Quarry.

1.1 Location, Topography, Geology

Baston No.1 Quarry is situated at NGR TF137154 approximately 4.5km due north of the town of Market Deeping and 1.5km east of the centre of the village of Baston (Figure 1). It is bounded to the north by Baston Outgang Road, and by Cross Road to the west. The development area extends across c.18ha, with an elevation of the underlying geology between 1.8m and 0.5m AOD, and is currently fallow agricultural land. The area reported here pertaining to designated archaeological monitoring comprised a total of 1.3ha.

The underlying geology is 1st Terrace Gravel Deposits overlying Oxford Clay.

1.2 Archaeological Background

Following a desktop study (Richmond and Coates 2007) and geophysical survey (Bartlett 2009), a programme of evaluation trenching comprising of nine trenches totalling c.400m in length has previously been carried out within the development area (Hutton 2009). This revealed a low density of archaeological features thought to correspond with the edges of a system of prehistoric field allotment and historic agricultural practices. The potential was considered to be comparatively low, perhaps lying on the outskirts of an otherwise fairly dense archaeological landscape. The following is a very brief overview of the character of this landscape from the available literary and aerial photographic sources.

1.2.1 Prehistoric

A significant prehistoric landscape is at the core of the archaeological narrative of this part of South Lincolnshire. In the Baston/Langtoft evidence for the earliest inhabitants is largely restricted to a small number of individual finds of Neolithic artefacts as either surface finds or as residual elements to later contexts. Nonetheless, individual features have been identified in different areas of the locality (e.g. Cope-Faulkner 1999; Northamptonshire Archaeology 2009). With the onset of the Bronze Age there appears to be a considerable growth in activity with at least four pit clusters and an inhumation to the southwest of the development area, a ring ditch enclosing an inhumation to the south, with additional ring ditches of a probable early Bronze Age date in the broader region (Hall 2000; Hutton 2008a and b; Trimble 2000; Webley 2004), most notably 0.5km to the east (HERs 34183-6, 34191; Hayes and Lane 1992: 170-1). Small curvilinear gullies with surface finds of Collard Urn and Early Bronze Age worked flint have also been found approximately 0.6km to the northeast of the development area (Herbert 1998; Moulis 1996).

The Middle Bronze Age landscape is dominated by extensive linear 'spines' of field ditches from which rectilinear allotments and droveways radiate. These are generally oriented north-northwest to south-southeast and are associated with substantial pits, wells and clusters of postholes. Cropmarks indicate that one of these spines traverses the current development area, although this could not be confirmed during the evaluation trenching. At 1km south of the development area the field system formed one side of an enclosed settlement with at least three post-built structures, in the fields immediately to the west a cremation cemetery associated with a series of ring ditches forms a tight cluster seemingly separated from domestic activity areas. (Hogan 2012; Hutton 2008a,b; 2009; 2011; Hutton and Dickens 2010). The Deverel Rimbrey pottery thus far collected from investigations of these Middle Bronze Age communities is one of the largest domestic assemblages of this pottery type in the country, and cropmarks across the wider landscape attest to the likelihood that Bronze Age settlement patterns are extensive across the local region.

The Early to Middle Bronze Age fen-edge has been postulated as following a northwest-southwest course, broadly parallel with the field system, less than 1km to the east of the development area (Hayes and Lane 1992).

Later Bronze Age and Iron Age settlement with associated changes in salt-winning technologies have been recorded at Market Deeping (Trimble 2010) and at various locations within a 2km radius of the development area (Hall 2000; Hutton and Dickens 2010; Lane 2001; Webley 2004). This includes a full sequence of changing ceramic styles represented up to the latest phases of the Iron Age, which is a rare and important assemblage for South Lincolnshire.

1.2.2 Roman

Along the north-eastern outskirts of Market Deeping is a scheduled Roman settlement site at Priory Meadow (SAM 179; HER 30047) with extensive cropmarks aligned predominantly upon an east-west axis. Early Roman pottery has been collected through walkover survey, including Samian imports; a bronze 'crown' was also found here in 1966. Situated upon the same alignment are extensive Romano-British trackways and field systems relating to a settlement or farmstead that have been investigated to the southwest of the PDA in the 'Bluebells' site, broadly dating from the mid-2nd to mid-3rd centuries AD, with sporadic instances of 4th century AD material further to the south of this area (Collins 2010; Hutton 2007). Less than 0.4km to the west of the development area another north-south swathe of Romano-British field systems and farmsteads have been located as superimposed upon an earlier Middle Bronze Age field network (Northamptonshire Archaeology 2009; Mudd 2004). It may be postulated that these settlements are situated in relation to the Car Dyke, the largest of the Romano-British canal systems in the country that runs broadly on a north-south alignment approximately 2km to the east of the development area.

1.2.3 Medieval / Post-Medieval

Throughout the investigations over the Langtoft/Baston environs later systems of field allotment along a northeast-southwest axis have broadly been dated to the Medieval / post-Medieval periods (Collins 2010; Hutton 2007). This was also identified

throughout the investigations along the A16 Bypass development, noted in particular as ridge and furrow (Trimble 2000).

Second World War defences are also distributed over the Market Deeping/Langtoft landscape, the impact and survival of which is not clearly documented.

1.3 Methodology

The work followed specifications previously outlined by the CAU in accordance with a Design Brief for archaeological investigation issued by the Planning Department of Lincolnshire County Council.

Three Areas (A-C) were fully opened for archaeological investigation during the transfer of topsoil as material utilised for a bund of 5m width and 2.5m height around the extension of the Baston No.1 quarry. Areas A-C corresponds with locations within the development area identified for their greatest archaeological potential. In order to achieve the necessary material for the required dimensions of the bund topsoil and underlying layers were removed under archaeological supervision of a tracked 360° machine using a 1.8m wide toothless bucket. This comprised an overall area of 1.3ha totalling 13,021m in length and to a width of up to 30m.

Work was undertaken in accordance to statutory Health and Safety guidelines detailed under the recommendations of SCAUM (Allen and Holt 2007). All archaeological features and deposits were excavated by hand and recorded using the CAU modified version of the MoLAS recording system (Spence 1990). Trenches and features were digitally photographed and then planned at a scale of 1:50, with trench and feature sections planned at 1:10. All plans were correlated with fixed points on the OS grid using a Global Positioning System. Progress of the excavation was monitored by the Historic Environment Manager for the Planning Department of Lincolnshire County Council.

1.4 Archive

Information detailing the character of each of the trenches was recorded on a data sheet that, along with the digital photographic record, has been catalogued together within an archive following the procedures outlined in MoRPHE (English Heritage 2006) and by the Lincolnshire Archaeology Handbook (Lincolnshire County Council 1997, revised 2012). These are being stored with the processed material finds record at the Cambridge Archaeological Unit office under the code BNE12.

2. RESEARCH DESIGN

The principle objective is to determine the presence or absence of archaeological remains and to establish their character (e.g. chronological range and quality of preservation), together situating them within their local, regional and national context.

The archaeological significance of the broader environs around the development area has been highlighted on a number of occasions (e.g. RCHME 1960; Hayes and Lane 1992), and the archaeological potential of the development area has already been provisionally measured (Hutton 2009; Richmond and Coates 2007). Taking this into account, and with reference to current East Midlands research agendas (Cooper 2006; Knight *et al*. 2012), particular attention is centred upon the prehistoric and Romano-British inhabitation observed throughout this area. In light of this four primary research aims were targeted during the project:

1. Characterise the eastern extent of the Middle Bronze Age ring ditch and cremation cemetery investigated in the Freeman's site to the west of the development area.

2. Ascertain and characterise the presence or absence of prehistoric field allotment with related settlement and activity areas.

3. Analyse the changing character of the broader archaeological landscape in association with ordinance datum variation.

4. Reassess the overall potential of the landscape for archaeological investigation in light of aims 1-3.

3. RESULTS

A total of 105 archaeological features were tested and recorded (Figure 2 & 3). The majority of these were attributable to the Early and Middle Bronze Age with three circular post structures, a four-post structure and other possible post structures, along with associated pits and a series of enclosing ditches that present the continuation of linear features observed during previous investigations in the Freeman's site to the west. Later prehistoric activity was represented by only a single Iron Age pit. No Roman or Medieval archaeology was present, and later usage of the landscape was evidenced by post-Medieval agricultural field boundaries and a small number of related features.

The archaeology had been sealed by a thin topsoil horizon varying in its thickness between c.25cm and 45cm. Subsoil was absent with the exception of occasional patches within shallow hollows in the 'natural' gravely sand geology. Plough scars were prominent across the entire site, and most notably in Area C. Nonetheless, archaeological features were generally in a good state of preservation.

3.1 Bronze Age

Extensive Early to Middle Bronze Age archaeology was located across Areas B and C, and is also likely to have also extended at a lower frequency into Area A. In total six post-built structures could be identified: three probable roundhouses (Structures 1-3), a four-post and a two-post structure, and a short fenceline or screen. Structures 1-3 are presented individually with other possible structures described together with the other postholes, all of which were generally found in close proximity to Structures 1-3. The addition of small to medium sized pits and a possible well, along with a series of linear and parallel ditches, provides a fairly dense array of features over the development area.

3.1.1 Linears

Eight linear features were identified as being of a Bronze Age date in Areas A and C, either as continuous or terminating ditches or as a series of segmented linear cuts. No Linear features were identified from within Area B, thereby attesting to the predominantly east-west orientation of those present elsewhere. Some degree of contemporaneity may be inferred for the linears investigated, which also appear to correspond with features previously recorded from within the north and southwest of the Freeman's site.

A shallow (10cm) ditch terminus (**F**.**2**) oriented northeast-southwest was found partially extending from the edge of excavation in Area A. Crumbs of pottery and bone were in too poor a condition for collection and analysis, but a prehistoric date for these is likely, and a small quantity of burnt stones may further indicate the possibility of related activity to the west of Area A (further supported by the presence of pit **F**.**1**).

Seven ditches were identified in Area C and although no finds were recovered from any of these a Bronze Age date is attributable, most probably from the middle of this period, on the basis that these form part of a system of corresponding ditches in the southwest of the Freeman's site (see below). The ditches fall into two groups based upon their alignment, although there is ground for suggesting close association between these.

Mid-way along Area C two alignments of ditch oriented north to south appear to be parallel to one another separated by a spacing of approximately 3m. **F**.**99** to the south was the largest of the ditches with a width between 2.65m and 2.77m and a consistent depth of 75cm. This was a flat-based ditch with very slight concave sides stepped on its southern edge, and contained up to eight fills, generally gravely silt in nature, but with a waterlogged organic basal deposit with degraded brushwood and an upper capping of thick (8-10cm) indurated gravel. To the north of this was three ditch segments (**Fs**.**70**, **100**, **101**) each filled with mid yellow brown gravely silt and mid grey clayey silt, and interrupted by 2-3m wide causeways. Each segment measured around 90cm in width and to a depth of 38cm, and the shortest of the segments was 4.5m in length with the other two continuing beyond the edge of excavation.

At the northern end of Area C three inter-cutting ditches (**Fs**.**72**, **73**, **74**) were tightly aligned upon an east-west axis. Ranging between 9cm and 32cm depth, and between 45cm and 95cm width, these were each discontinuous, with F.72 and F.73 terminating together at the point of the opposing terminus of F.74. Each with a soft mid grey silt filling it was not possible to ascertain any sequence in section, perhaps therefore suggesting a degree of contemporaneity.

3.1.2 Structures

Three circular arrangements of postholes in Areas B and C represent two main phases of dwelling in the development area. A double post ring structure (Structure 1) in Area C has been assigned an Early Bronze Age date on the basis of its associated ceramic and lithic assemblage, and two single ring post structures (Structures 2 and 3) located within 20m of one another in Area B are associated with a number of features from which a modest assemblage of Deverel Rimbrey ceramics was collected, thereby

positioning these within the broader landscape of Middle Bronze Age activity noted across the Langtoft/Baston environs. Relative to their antiquity, preservation of the Early Bronze Age structure was poor in comparison to the fairly good preservation of the two Middle Bronze Age structures. Central pit or post holes were present in all of the structures, although charcoal-rich deposits were only present within these for Structures 2 and 3, giving the only indication of possible hearths. Entranceways were also not obviously apparent, although could be inferred for each of the structures either through architecture or associated deposits.

Structure 1

Structure 1 was situated towards the southern extent of Area C within a broad cluster of elongated pits and small postholes, a number of which also form smaller but distinct structures (see below). Deep plough scarring was evident across this part of the site, and preservation of features comprising structure 1 ranged from good to poor, although even where truncation had most severely affected the condition of surviving post bases (with only 1-2cm thickness) these were nonetheless clearly observable as circular shadows in plan after careful cleaning by trowel. An Early Bronze Age date is assigned to Structure 1 on the basis of its association with Collard urn and other period-type fabrics.

In total thirteen structural postholes were identified, comprising an inner and outer perimeter ring (Figure 4 & 5). These all contained a fill of clayey silt varying from mid yellowish grey-brown to light grey in colour with rare charcoal flecks. The outer ring of five surviving postholes (**Fs**.**27**, **29**, **50**, **86**, **88**) formed an internal diameter of c.10.5m with a spacing of between 2.25m and 4.25m separating individual postholes. Set approximately 1m inside of this circle was an inner ring of eight surviving postholes (**Fs**.**28**, **30**, **31**, **39**, **42**, **48**, **87**, **89**) with a spacing of between 1.25m and 3m enclosing an internal diameter of c.8m. The postholes of the inner ring were seemingly paired with corresponding postholes from the outer ring, although variable preservation meant that gaps were present in this sequence. The diameter and depth of the outer ring postholes were consistently smaller that those of the inner ring, which is perhaps a reflection of the structural character of the building rather than differential preservation, and may illustrate an outer ring of smaller supporting eaves posts that generally requires a brace in support of the roof against the inner ring of larger posts (Musson 1970). The internal space of the structure contained two additional postholes; of these one to the north and immediately within the inner ring contained a single sherd of Early Bronze Age pottery, and the other (**F**.**41**) was situated at the centre of the structure. It is of possible significance that this central posthole was the largest of all the post holes associated with Structure 2, with a depth of 28cm but with no material culture; the fill was also markedly different to that of the other postholes of Structure 2, being of dark grey-brown humic silt with occasional white carbonate and dark charcoal flecks. A shallow linear 'scoop' (**F**.**44**) was also situated within the interior and contained small fragments of burnt stone. Unfortunately there was no indication of a porch or an obvious entrance, although the proximity of Structure 2 to the northeast edge of the excavated area may imply that this may still be revealed in future investigations. Nonetheless, six irregular shallow hollows (**Fs**. **46**, **47**, **102**, **103**, **104**, **105**) arranged in a linear east-west series from the south of the central posthole F.41 to the limit of excavation may offer some light in this regard. These were no larger that 45cm in width and 5cm depth, but extended over an area of 6.75m and

were filled with a fine silvery sandy silt sat upon a base of iron pan. Small amounts of burnt stone and Collard Urn rim were collected from these hollows that may be better considered as a single feature formed through repetitive erosive movement such as might be observed in a throughway. Accepting this, then an east-facing entrance may be postulated. A similar 'trample' deposit was found to the south in the Glebe site, also associated with Collard Urn (Hutton 2008: 6). Whilst oriented north-south and perhaps not a part of a post-built structure, it is interesting that such features are present elsewhere within this landscape.

Structure 2

A slightly elongated ring of seven postholes (**Fs**.**51**, **57**, **58**, **59**, **60**, **68**, **69**) within Area B enclosed an internal space of c.7.5m by 6.5m with a pit or posthole (**F**.**53**) 1m south of its centre filled with very dark grey silt richly infused with charcoal (Figure 6). A 'porch' of four post holes (**Fs**.**7**, **8**, **55**/**56**, **67**) formed an entranceway with an orientation to the southeast. A line of five pits or postholes (**Fs**.**61**, **62**, **64**, **65**, **66**) were excavated 3m to the northwest and are described further below.

A number of the postholes contained bone, burnt stone and Deverel Rimbrey pottery which broadly positions Structure 2 within the Middle Bronze Age.

Structure 3

A circular ring of ten postholes (**Fs**.**9**, **13**, **20**, **77**, **78**, **79**, **80**, **81**, **82**, **83**) also within Area B enclosed an internal space with a diameter of c.6.75m and the centre of which were two small postholes or rounded pits, one of which contained a fill of black clayey silt richly infused with charcoal (Figure 6). A small pit (**F**.**75**) containing bone, burnt stone and pottery was also located within this internal area. Two post holes (**F**.**14** and **F.37**) positioned to the exterior and on opposite sides of the main ring may have proved a supporting function to the overall structure, and are not considered to represent a building assigned to a separate phase from the overall group. A probable entrance porch framed by outlying post hole (**F**.**12**) was oriented to the south-southeast, but was truncated by a tight cluster of Middle Bronze Age pits (**Fs**.**19**, **32**, **33**, **34**, **35**, **36**) that extends eastwards beyond the excavation area. An outlying post hole (**F**.**84**) and pit (**F**.**75**) were noted within the vicinity and are of the same broad phase if not directly related to activities associated with Structure 3.

As with Structure 2, a number of the postholes of Structure 3 contained material culture that includes Deverel Rimbrey pottery thereby providing a broad Middle Bronze Age. However, it is probable that Structures 2 and 3 were not contemporary, and the truncation of Structure 3 by a cluster of Middle Bronze Age pits supports the view that these were single episode constructions and that further structures to the south may be found in future investigations.

3.1.3 Pits and Postholes

In addition to the post holes that comprised Structures 1-3, an additional 16 post holes were recorded across Areas B-C (none were identified in Area A). These were generally filled with mid to dark grey clayey silt, often with varying degrees of charcoal inclusion. Dimensions ranged between 11cm and 37cm diameter to a depth of up to 35cm. Variation in size was not grouped in specific areas, but in some instances where postholes occurred in near proximity similarity in morphology may be an indication of a structural relationship. In Area B for example, an alignment of four postholes (**Fs**. **61**, **62**, **65**, **66**) formed a fenceline to the rear of Structure 2 that was later cut by a small pit (**F.64**) also of a probable Middle Bronze Age date. In Area C five small postholes (**Fs**. **92**, **93**, **94**, **95**, **96**) to the south of Structure 1 are likely to also be of an Early Bronze Age date, and may have formed two separate 2- and 3-post structures (Fs.95-96, with Fs. 92-94). To the north of Structure 1 an additional six postholes (**Fs**.**21**, **22**, **23**, **24**, **25**, **26**) represented a small 2-post structure (Fs.25-26) of possible Early Bronze Age date, and a 4-post structure (Fs.21-24) of either Early or Middle Bronze Age origin (see frontpiece, bottom-centre and top-right). The posts of the 4-post structure were considerably larger than any others encountered during the excavation programme, with sub-square post holes up to 40cm wide and 35cm deep that would have formed a robust construction. The fills of these posts also contrasted with other postholes for these were generally mid yellowish brown sandy silt with small degrees of charcoal, even degraded waterlogged wood and burnt stone (F.22), and in two of the postholes (F.23 and F.24) faint signs of post pipes were also present.

A total of seventeen pits were recorded: one in Area A (**F.1**), ten in Area B (**Fs**.**19**, **32**, **33**, **34**, **35**, **36**, **64**, **71**, **75**, **85**), and six in Area C (**Fs**.**40**, **44**, **45**, **90**, **91**, **97**). With the exception of a single cluster (F.19 and Fs. 32, 33, 34, 35, 36), these were individual features generally associated with either of the structures, and therefore of either Early or Middle Bronze Age in date, although with one possible Iron Age pit (F.85). These are briefly discussed in a chronological order.

Early Bronze Age Structure 1 encircled a small pit (F.40: 29cm by 10cm, depth) containing burnt stone and an elongated pit or hollow (F.44: 3.75m x 88cm x 21cm) with burnt clay and burnt stone. It is likely that other nearby pits are also related to activities associated with Structure 1, which is confirmed by Collard Urn with burnt clay daub in a linear pit (2.6m long, 27cm deep) 10m to the east, with a similar feature (F.90) also containing burnt stone. A smaller oval pit 2.5m to the northwest of Structure 1 contained a reddened soil suggestive of in situ burning, and it is probable that other pits lie unexposed in the vicinity. The largest of all the pits, F.97 (see frontpiece, bottom-left, at 1.33m diameter and 77cm depth, contained four fills of clay and gravely silt overlying a peaty basal deposit, and although little artefactual evidence was present this did contain the disarticulated bones of dog or fox. This was cut by a later charcoal-filled post hole (**F**.**98**), and the position of both of these features (equidistant to Structure 1, the 4-poster and ditch F.99) suggests that it could be either Early or Middle Bronze Age. In this light it is interesting to note the similarity of the fill sequence and form of F.98, as well as the dominance of animal bone finds, with Early Bronze Age pits previously found at Baston No.2 Quarry (Webley 2004: 7).

Pits containing Deverel Rimbrey associated ceremics were present in the vicinity of both Structures 2 and 3, either cutting the aforementioned fenceline of Structure 2 (e.g. F.64: 90cm by 76cm by 27cm), or cutting the entrance to Structure 3. The latter of these was a sub-circular cluster of six pits (F.19, F32-36; see frontpiece, bottom-right) that together covered an area 3.5m in diameter and included fragments of a hammer stone and a saddlequern within its assemblage of pottery, animal bone and burnt stone. Similarly, pit F.75 (68cm by 20cm) on the northern outskirts of Structure 2 contained five fills of sandy silt with Deverel Rimbrey pottery, animal bone and burnt stone. At the western limit of Middle Bronze Age activity in Area B two pits (F.71 and F.52) also contained burnt stone, daub, pottery and bone. One of these (F.52) is perhaps a well that was only partially excavated owing to its truncation by a post-Medieval field boundary.

3.2 Iron Age

A single circular pit (**F**.**85**) measuring 19cm in diameter with a depth of 28cm was found to contain one rim sherd of Iron Age pottery with small quantities of animal bone, burnt stone, and marine shell. No other Iron Age deposits were observed.

3.3 Post-Medieval

Nine features of post-Medieval date were tested in Areas A-C, forming part of a broader open agricultural landscape. This included three linear features, one (**F**.**43**) represented on OS maps as a field boundary up to at least the 1930s and in alignment with hedgelines visible today (Figure 8), whilst the other two either form part of the same co-axial alignment (**F**.**15**) or are later curvilinear box cuts (**F**.**6**) most likely deriving from sub-soiling activities. A number of other linear features were not tested in the current programme of investigations owing to the aforementioned results from similar examples or having been previously examined during the evaluation phases (Hutton 2009). Nonetheless, topsoil removal confirmed the character of two parallel ditches (**F.106** and **F.107**) on a northwest-southeast alignment that correspond with the entrance to the field and are shown on early to mid-Twentieth Century OS maps (see Hutton 2009, Trench 5; Figure 9). Other features in Area B included two series of posthole bases (tested as **Fs**.**16**, **17**, **18**, **65**) again corresponding with current field boundaries, and various dark peaty hollows (e.g. **F**.**76**) in some cases masking or removing prehistoric features, but most probably relating to allotment gardens marked on the 2nd Edition OS map of 1904. Perhaps the most unusual feature was an oval pit or watering hole (**F**.**4**: 1.65m by 1.5m in plan) cutting through the water table to a depth of at least 80cm. The sides were lined with silty mottled blue and orange clay, and two soft primary fills of dark humic silt held a waterlogged organic component that was capped with a firm mid grey brown clayey silt containing fragments of nineteenth century ceramic drain. There were no other features in association with this pit, and it is not wholly unusual to find sporadic features, especially those connected with water, in an otherwise agricultural landscape.

Discussion

The excavations at Baston No.1 Quarry have provided a significant addition to the Bronze Age archaeology of the region, and with a series of comparatively rare features for this period that offer considerable enhancement to the overall narrative of the prehistoric landscape at Langtoft/Baston. The implications of this are briefly considered here with regards to an overall understanding of the wider Early to Middle Bronze Age landscape in the local environs along with the potential of this landscape for its contribution to an understanding of the broader regional development of Bronze Age settlement.

Early Bronze Age

Patterns of Early Bronze Age activity across the Langtoft/Baston environs have thus far appeared to be fairly dispersed as either secondary deposition within later features or in the form of certain or possible Beaker-associated single grave crouched inhumation burials. The development area is situated on the western margins of Deeping Fen, for which it has previously been suggested that a 'high level of Early Bronze Age activity' is likely to be encountered (Hayes and Lane 1992: 171). As previously outlined, comparable features and deposits nearest to the development area are a single pit with Collard Urn (Knight in Hutton 2011: 13; F.579) and an inhumation both approximately 0.3km to the southwest (Hutton 2008a), with possible Collard Urn associated features 0.6km to the northeast (Moulis 1996). Pockets of more concentrated Beaker, Collard Urn and Food Vessel related activity have likewise occurred as pit clusters 2km to the southwest (Webley 2004) and centred upon a ring ditch 1.5km to the southeast (Hutton 2008a), the former being linked with settlement activities and the latter most likely funerary in nature. Individually the pits within the clusters ranged through various dimensions, but were generally fairly sizeable reaching depths of up to 1.3m. The possibility that pit F.98 fits within this category has already been noted, with its mainly sterile sandy gravel fills overlying a waterlogged organic basal deposit. Finds from within these pits are mainly restricted to the upper fills, with occasional mid-way deposits, all predominated by fauna, and the dog/fox remains from mid-way within pit F.98 are consistent with this pattern. Dog within Early Bronze Age contexts is not widespread (Harcourt 1974), but has been noted from within other fen-edge contexts during this period (e.g. Olsen 1994), and is argued to have been an important participant within contexts of Bronze Age hunting and herding (Pryor 1998: 96-100).

In following the line of argument that F.98 is an Early Bronze Age pit it is not unreasonable to suggest that this was a part of a broader grouping and it is possible that F.579 within the Freeman's site immediately to the west also falls within the descriptive category of these earlier Bronze Age pits. This has formerly been placed within the distribution of Middle Bronze Age pit-wells along the Freeman site (Hutton 2011: 5); although at 66cm depth it is notably shallower than other examples within this class. It too contains a series of sterile gravely fills with a mid-way fill containing fauna; no other finds were identified. Unfortunately the intersection of Cross Road between the Freeman's site and Area C of the current development will hinder any view of a connecting distribution of any similar pits that may, in this case, have formed an Early Bronze Age grouping. Nonetheless, a second grouping of early Bronze Age features, to the south of Structure 1, appears to extend eastwards and

perhaps also towards Cross Road. The pits of this grouping markedly differ in form to those just described, with elongated, almost rectilinear, pits interspersed with smaller shallow sub-circular forms. Fills of these are soft mid grey clayey silts, which contrasts with the sandy gravels of the larger pit groups to the north and elsewhere.

The distribution of these two pit groups (Figure 10) is most likely framed by the position of Structure 1. As Webley (2004: 9) notes, material deposition when confined to the upper portions of pit fills is most likely to illustrate clearance of midden debris. Proximity of pit groups to dwelling stations may therefore be inferred, but is notoriously difficult to present with empirical certainty. The lack of flint within the pit groups across the Langtoft/Baston environs has contributed to this uncertainty, although perhaps indicating selectivity in the range of 'domestic' activities that are carried out at these locations. Alternatively, the paucity of locally available quality lithic resources may also point towards expedient usage and discard of this material. The small size of core discards that have been found in Early Bronze Age contexts along the gravels of the fen-edge would further support this view (see Brittain & Billington, below).

Arguably one of the most striking of the findings from the current programme of investigation is the double post ring architecture of Structure 1. Circular Early Bronze Age structures, broadly interpreted as roundhouses, are not overly prevalent in Britain, although recent surveys in North and Central Britain indicate that the number is growing (Pope 2003). In many contexts the presence or absence of these structures is largely contingent upon the conditions of preservation which, in turn, is reflective of the structural nature of these dwellings in comparison to many of their later counterparts (see below, for example). At Langtoft/Baston, whilst it is noted that the overall level of survival is comparatively good, post-depositional factors have clearly impacted upon the finer picture of the Bronze Age landscape and, given the shallow depth of a number of the postholes of Structure 1, it is unsurprising that other structures have not as yet been identified. Indeed, Structure 1 is only partially represented, with a number of gaps resultant from the reduction of topsoil and heavy ploughing. Elsewhere along the fen edge, where overlying deposits are generally thicker and survival of prehistoric elements is often of a remarkably high standard, roundhouses associated with either Beaker or Collard urn have been found, all within unenclosed contexts. However, these are constructed using a single ring of posts and are each several meters smaller in internal diameter (see Bamford 1982; Gibson 1980; Gibson and Knight 2002; 2006; Knight *et al. forthcoming*; Martin and Murphy1988; Table 1). However, at Langtoft/Baston and elsewhere there is a consistent orientation of the doorway either to the east or the southeast (as is found for many roundhouses in Britain throughout the Bronze and Iron Ages), whilst the survival of associated hearths is variable.

An increasing number of Early Bronze Age dwellings and settlement-related features have been found across Britain over the past twenty years. Many of these structures are 'lightly' constructed of stakes with an arrangement that is suggestive of ephemeral and short-lived occupation, such as at Hockwold-cum-Wilton along the fen-edge in Norfolk (Bamford 1982). This broadly translates into the model for Early Bronze Age communities outlined by Brück (1999b) of a mobile economy perhaps bound to seasonal transhumance. However, other more durable constructions have also been noted along the fen-edge at Bradley Fen (Gibson and Knight 2006; Knight *et al.*

forthcoming), and elsewhere in central and southern England. In many respects Structure 1 at Baston/Langtoft shares elements of ephemerality with durability. Whereas the survival of the two post rings is partial, the central post was relatively substantial with a depth of 28cm, and the 'trample' hollow is not likely to have formed through short-term passage. It may be that the structure was essentially 'light' with supporting eaves posts holding a weighted roof cover held solid by a more substantial central post and perhaps a cross-brace (Figure 5). This could facilitate both disassembly and reassembly on a seasonal basis, with repeated clearance of occupational debris into nearby pits. Whilst further work may be required to support this view, it is worth noting that settlement continuity has been postulated for Early Bronze Age habitations at Stackpole Warren in Wales where two phases of construction were identified (Benson *et al*. 1990: 189), and at Lairg in northern Scotland where evidence for successive roundhouses have been recorded upon the same spot (McCullagh and Tipping 1998: 38).

Structural features	**Site**				
	BNE12 No.1	King's Dyke Stonald Field	Bradley Fen Collard Urn	Bradley Fen Beaker	West Row Fen
Shape in plan	Circular	Circular	Circular	Circular	Circular
No. of rings	2	1	1	1	1
Internal Dimensions (width x length) metres	8	3.5	4	5.15	5
Entrance orientation	E?	N/A	SE	E	SE
Hearth	No	No	Possible	Yes	No
Post diameters (m)	0.14-0.34	0.45-0.55	0.8-0.35	0.2-0.33	NA
Post depths (m)	0.03-0.28	0.13-0.32	0.17-0.34	0.16-0.43	NA

Table 1. Early Bronze Age post-built 'dwellings' along the fen-edge.

Clearly the Baston/Langtoft landscape holds a considerable Early Bronze Age component that is consistent, whilst somewhat dispersed, over the broader environs. Given the relative density of the features representing this period in Area C, the possibility of associated features in Area A, and the identification of Collard Urn deposits in positions lining the outskirts of the development area, there is a clear likelihood that additional features and perhaps structures will emerge in future investigations. Difficulties remain in phasing potentially related features, such as the four-post structure to the north of Structure 1 and another in the Freeman's site to the south (Fs.684-687: Hutton 2011). Their relative proximity to Structure 1 is perhaps suggestive of storage or processing activities, but they may equally relate to the pit-wells aligned across the Middle Bronze Age field system, or to the cemetery area to the north. Either way, a range of activities is emerging for this period, perhaps taking place within unenclosed pasture or a relatively open fenced system that has survived elsewhere across the fen edge such as at Northey and Must Farm (Britchfield 2010; Knight *pers. comm.*), punctuated by localised but distinct practices of burial, pit digging, middening or other means of accumulation, with storage and processing. The specific character of these practices at Baston/Langtoft is not easily defined, although an overall review of the evidence to date will be advantageous.

Middle Bronze Age

It is becoming increasingly evident that the nature of Middle Bronze Age settlement and land management within the British Isles differs in numerous ways on a regional basis. Whilst considerable interaction and complex settlement dynamics may be shown across the chalklands of Wessex and Sussex (Brück 1999a), much slighter indications of settlement activity are for example presented by limited unenclosed clustering of pits and postholes throughout Kent (Champion, in Booth 2011). Evidence for Middle Bronze Age settlement along the fen-edge is generally poor (Evans *et al*. 2009: 250), although some presumed later Bronze Age dwellings such as Fengate's Storey's Bar Road Structure 2 (Pryor 1980: 61) may prove to be of an earlier origin. Nonetheless, the picture now emerging from Baston/Langtoft lies somewhere between the two examples, with circular post-built dwellings and other less-distinct but perhaps similar structures that lie in groups within small rectilinear enclosures seemingly annexed to pre-existing field boundaries (e.g. Hutton 2008a), or individual and unenclosed circular dwellings with associated pits and perhaps wells or ponds (e.g. Hutton and Dickens 2010; and Area B). These consistently display a south-east entrance with an internal diameter between 6.5m and 9m, and at most only scant evidence for an associated hearth (Table 2).

Structural features	**Site**						
	BNE12 No.2	BNE12 No.3	Glebe 2008 No.1	Glebe 2008 No.2	Glebe 2008 No.3	Glebe 2010	Storey's Bar Road Structure 2
Shape in plan	Sub-Circular	Circular	Circular	Sub-Circular	Sub-Circular	Sub-Circular / rectilinear	Circular
No. of rings	1	1	1	1	1	1	1
Internal Dimensions (width x length) metres	7.5 x 6.5	6.75	9	9	8	3.75 x 4	3
Entrance orientation	SE	S-SE	SE	N/A	N/A	N/A	E-SE
Hearth	Possible	Possible	No	No	No	No	No

Table 2. Middle Bronze Age post-built 'dwellings' at Baston/Langtoft and Fengate.

Again, varying degrees of preservation may have blurred the overall picture, although particularly in the case of Structure 3 with posthole depths reaching up to 33cm this seems less likely to have been the case for the Middle Bronze Age than it may have been for the Early Bronze Age. Nevertheless, the evidence from the current investigations confirms that the eastern margins of the Middle Bronze Age system of field allotment and droveways was a focus for settled, albeit transient, 'domestic' activities. The significance of this position may relate to subtle topographic variation, perhaps marking a cusp along a landfall into lower gradient fen deposits to the east.

The association of Structures 2 and 3 with the exact course of the field system is not entirely clear at present, although cropmark evidence allied with previous investigations provide some useful insights. The morphology, fill patterns and course of linears Fs.72, 73 and 74 appear to correspond with a short length of ditch exposed

in the north corner of the Freeman's site (F.573: Hutton 2011) that turns slightly from an east-west orientation towards the northwest and corpmarks following this axis in fields to the north. Whilst F.72 and F.73 terminate in Area C, F.74 joins with F.573 to the west; it is possible, therefore, that F.72 and F.73 continue eastwards for a short distance before turning southeast along the course of a cropmark tested during evaluation (Hutton 2009: 10; Trench 6). A number of postholes were also identified from within this trench during evaluation. The 'kink' or brief change in course of this linear, momentarily deviating from the broader northwest-southeast field system, appears to be a very deliberate diversion around the cremation and ring ditch cemetery. This is not an altogether uncommon phenomenon of later prehistoric ditch digging where respect of pre-existing funerary monuments is found in many other contexts (see Bradley 2002). However, there are additional ditches that also appear to respect the cemetery and potentially hold a direct relationship to the kinked linear. For example the dimensions and multiple fills of F.99 are distinctive and share characteristics with F.10 from Trench 7 of the evaluation to the north (Hutton 2009: 12), and F.550 (with F.683, F. 909 and F.910) in the Freeman's site to the southwest (Hogan 2012; Hutton 2011). Similarly, the segmented ditch alignment of Fs.70, 100 and 101 may also continue into the Freeman's site terminating with an L-shaped ditch segment (F.690: Hogan 2012). Taking these relationships into account, two-thirds of the cemetery area is enclosed by both the field system to the north and a double arm of segmented ditches from the east to the southwest, together forming a considerable internal cemetery space of around 200m diameter (Figure 11). A fuller understanding of the character of these enclosing ditches will be possible from future investigations.

It is assumed that these enclosing ditches belong to a Middle Bronze Age date, although unfortunately no artefacts have as yet been recovered from these features, although radiocarbon assays would certainly be possible from *at least* the organic basal fills of F.99. However, a number of important statements can be made from the current picture:

First, the redirection of the field system alignment around the cemetery provides a basic sequence in which at least one element of the cemetery pre-exists the establishment of Middle Bronze Age field allotment. Two poorly preserved crouched inhumations were found within the cemetery which could prove to be Early Bronze Age, and perhaps the earliest phase of the cemetery. Hutton (2011) has suggested that to the immediate east of these a small earthen mound or barrow may have covered cremation burial F.596, the largest and best preserved of all the cremation burials in the cemetery. Whilst Middle Bronze Age ring ditches have been found in significant numbers within Essex (Brown 1999; Clarke and Lavender 2008), the evidence for small burial mounds and ring ditches elsewhere during this period remains broadly inconclusive (e.g. Lambrick *et al*. 2009: 298-300). However, in lieu of confirmation through radiocarbon dating there seems to be a reasonable argument that F.596 is also Early Bronze Age, although perhaps of a later date than the inhumations. The upstanding mound may therefore have been the focus upon which the enclosing ditches and broadly contemporary Deverel Rimbrey cemetery were positioned.

Second, this inferred contemporaneity of the cemetery development and the enclosing ditches is unusual for the Middle Bronze Age. As mentioned, with the exception of examples from Essex, Middle Bronze Age ring ditches are rare with burial generally relating to the reuse of earlier prominent funerary locations and their development

into cemeteries for urned and unurned cremation burial. Therefore the identification of five ring ditches of a possible Middle Bronze Age date is significant. However, whilst fairly large Early Bronze Age enclosures are known to have been reused as cemeteries in the Middle Bronze Age, such as the four oval and circular enclosures at Eye Kettleby in Leicestershire, each over 50m diameter (Finn 2011), the direct enclosure of the cemetery at Baston/Langtoft by a field system and auxiliary ditches is unparalleled. Clearly a programme of dating is necessary to further deduce the sequence and development of construction before the significance of these findings can be fully determined. However, it is of interest to note that approximately 4km to the southwest of the cemetery are cropmarks of two probable ring ditches at the centre of enclosing ditches also partially aligned with a broader ditch system and enclosing an area of approximately 175m diameter (HER 33431; Figure 12). These have previously been thought to be geological ice wedge polygons (Challands 1992: 4); but along with a similar example identified from aerial photography near to the Holmfield Interchange thought also to be of a Bronze Age date (Brown et al. 2007, 72), it might be that we are witnessing a particular tradition of funerary enclosure perhaps characteristic to the East of England.

Iron Age

Little can be said of the Iron Age context with only a single pit having been identified. However, this is reflective of the localisation of activity during this period, which is increasingly aligned with marine inundation channels (where present), salt production, and animal husbandry. However, given this localised distribution, this may represent an outlying feature of a denser assemblage to the north of the development area, although deflation of fen deposits may have affected visibility of this distribution.

4. CONCLUSION

Given the limited scale of investigation during the current programme of works at Baston No1 Quarry considerable progress has been made with respect to the four original research aims. The extent of the cemetery has been more clearly defined and funerary deposits do not appear to extend into the development area or away from the nucleus of the ring ditch cluster, but a considerable area around the cemetery is enclosed by field allotment and ancillary ditches of a probably Middle Bronze Age date. Understanding of the character of the prehistoric landscape has been greatly enhanced, although further work is clearly required. In light of the new findings there is opportunity for broadening the landscape narrative of the overall Langtoft/Baston environs, although this now requires finer empirical detail, particularly with regards to spot-dating, chronological sequencing and environmental characterisation. As far as future excavations are concerned within the No.1 Quarry extension, the following aims may be of particular value:

1. Ascertain a clearer relationship of the Middle Bronze Age field system with the cemetery enclosing ditches.
2. Define the full southern extent of the Middle Bronze Age settlement activity.
3. Define the full extent and character of the Early Bronze Age settlement activity.
4. Characterise the prehistoric features identified within Area A, and determine their relationship to Early and Middle Bronze Age features to the west and the east.

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6. APPENDICES

6.1 Specialist Reports

6.1.1 Worked Flint

Marcus Brittain and Lawrence Billington

The archive catalogue lists ten items of flint retrieved from four features (Fs.39, 47, 73 and 99) in Areas B and C. Seven of these, all from F.99, are natural and unworked and are therefore not included in the following analysis. The remaining two flints are from Structure 1 and were recovered from a 'trample' hollow (F.47) possibly associated with an entrance throughway, and a posthole (F.39) from the structure's inner ring. With Collard Urn identified from both of these features an Early Bronze Age date has been postulated. This is confirmed by the lithic assemblage, with F.47 producing a heavily worked small flake core with multi-directional percussion and retained cortication. This was a dark blackish-brown material that is locally rare but nonetheless obtainable in the gravels. Similar items have been found in other Collard Urn contexts along the fen edge, particularly ring ditches, but also in pits, and are considered to be characteristic to the Early Bronze Age (Beadsmoore in Evans *et a*l. 2009: 166-7; see also Edmonds, in Gibson and Knight 2006: 82). In posthole F.39 a possible arrowhead was identified with fine inverse retouching. This was broken at the tip, and one side had been completely removed by frost shattering. Cortication had been retained on the other side, which might indicate a later Neolithic provenance, although given the context within which it was found an Early Bronze Age date is possible.

6.1.2 Prehistoric Pottery

Mark Knight

The assemblage comprised fifty-six sherds weighing 248g (Table 3). The majority of the pieces were small and abraded (MSW 4.4g) although the collection also included large and reasonably fresh fragments. Feature sherds were rare (four rim and one base), as was decoration (two sherds). Two principal opening materials were identified: Shell (Fabrics 1, 2 and 3) and Grog (Fabric 4). The bulk of the assemblage was made up of shell-rich fabrics (76.8% by number and 82.7% by weight) belonging to Middle Bronze Age or Deverel-Rimbury forms. A fabric typical of Early Bronze Age, and in particular, Collared Urn, constituted the other main type (21.4% by number and 16.9% by weight). A single, very small Iron Age rim fragment weighing less than 1g and made of a compact sand-rich fabric represented the site's sole post-Bronze Age prehistoric component.

	Number	**Weight (g)**	**Fabric**	**MSW (g)**
Collared Urn/EBA	12	42	4	3.5
Deverel-Rimbury	43	205	1, 2, 3	4.8
Iron Age	1	1	5	1.0
Totals:	*56*	*248*	*5*	*4.4*

Table 3: Pottery assemblage breakdown by type

Collared Urn

Pieces of Collared Urn were identified in three different contexts (Fs.39, 44, 47) whilst two other contexts contained fragments assignable to the Early Bronze Age on the basis of fabric (F.91 and possibly F.102). A large, refitting rim/collar fragment decorated with impressed twisted cord was retrieved from F.47. Its decoration comprised two parallel lines on top of an internally bevelled rim and filled triangles around the collar.

Deverel-Rimbury

The Deverel-Rimbury assemblage included fourty-one plain body sherds, one T-shaped rim (F.19) and one base fragment (F.33). The majority were small (F.'s 52, 64 and 75), although large pieces, including thin-walled sherds (5mm), came from Fs. 9, 19, 51 and 80. The body sherds belonged to medium to large diameter barrel-shaped vessels typical of the Deverel-Rimbury tradition.

Discussion

The balance in favour of Deverel-Rimbury (82.7%) over Collared Urn (16.9%) corresponds to a pattern already established at several other Langtoft sites (Webley 2004a; 2004b; Hutton 2008a; 2008b) and at other landscape-scale investigations situated along the lower reaches of the Welland valley (Daniel 2009; Pickstone & Mortimer 2008; Murrell *forthcoming*). By way of contrast, the opposite pattern exists along the equivalent stretch of the adjacent Nene and, in particular, the Flag Fen Basin. (Knight *et al*. *forthcoming*).

6.1.3 Fauna

Vida Rajkovača

Excavations at Langtoft resulted in the recovery of a small faunal assemblage totalling 36 fragments with a total weight of 149g (Table 4). Identification of the assemblage was undertaken with the aid of Schmid (1972), and reference material from the Cambridge Archaeological Unit. Preservation was quite poor, with surface erosion and longitudinal cracks, as well as severe weathering recorded on the majority of the material. One specimen was recorded as charred and another seven as calcined, all from Structure 3. The only identifiable bone came from Early to Middle Bronze Age pits, and cattle, sheep/goat and dog were the three species recorded from the assemblage.

Taxon	BA			?IA	Post-Medieval	Total NISP
	Structure 2 (F.64)	Structure 3 and associated (F.9, 12, 75)	Pits (F.19, 33, 52, 97)	F.85	Post Hole F.17	
Cow	.	.	4	.	.	4
Ovicaprid	.	.	2	.	.	2
Dog	.	.	1	.	.	1
Sub-total to species	.	.	**7**	.	.	**7**
Cattle-sized	.	3	4	1	.	8
Sheep-sized	2	14	4	.	1	21
Total	**2**	**17**	**15**	**1**	**1**	**36**

Table 4. Number of Identified Specimens for all species by period and feature.

6.1.4 Environmental Analysis

Anne de Verailles

34 bulk soil samples from various Bronze Age features were taken during the excavations. Of these 20 were processed using an Ankara-type flotation machine and analysed for this assessment report. The flots were collected in 300µm aperture meshes and the remaining heavy residues washed over a 1mm mesh. The flots and heavy residues were dried indoors prior to analysis. The >4mm fractions of the heavy residues were sorted by eye (by J. Hutton). Dry flots were separated through a stack of sieves; fractions were sorted and macro remains identified under a low power binocular microscope (6x-40x magnification) by the author. Nomenclature follows Zohary and Hopf (2000) for cereals and Stace (1997) for all other flora. All environmental remains are listed in Tables 5 and 6.

Preservation

All archaeobotanical remains recovered were charred and not very well preserved, with most of the seeds and grains presenting broken and pitted surfaces making identifications difficult. Charcoal was quite well preserved, many larger lumps (>4mm) being found in all but sample 5. The “vitrified parenchyma” found in a few samples describes small (<4mm) lumps of heavily burnt storage tissue which cannot be identified to any particular vegetative part. One fragment however, found in pit F.23, has retained what appears to be the outer dermis and could be a little piece of wild fruit. Although waterlogged remains were not examined for this assessment, three samples of the remaining 14 do seem to have been taken from wet or waterlogged contexts. These should be analysed during further investigations.

Modern, intrusive rootlets and the blind burrowing snail *Ceciloides acicula* were present in all flots, indicating a low level of bioturbation through which ancient plant remains may have been displaced and/or destroyed.

Results

Cereal remains – A total of four grains were found, three of which came from the MBA pits F.19 and F.35. The large grass seeds in F.19, even if wild as opposed to cultivars, were probably considered crop. Chaff was not recovered.

Wild Plant Seeds – A small range of wild plant seeds survived. Pit F.44 within Structure 1 had six seeds, whilst other features only contained four or less. Other than hazel-nuts (*Corylus avellana*), plants which may represent collected/harvested crops are large wild grasses, black mustard (*Brassica nigra*) and flax (*Linum usitatissimum*). The flax seeds were 3mm long which is consistent with that of the cultivated variety of flax (Zohary and Hopf, 2000). The crushed and pitted state of the seeds suggests they were ground into oil. Fibres may also have been turned into linen but as the retting process does not involve fire, archaeobotanical evidence is unlikely to be found. Flax has been identified at other Bronze Age sites in Britain such as at the waterlogged fen edge site of West Row, Mildenhall, Suffolk (Martin and Murphy 1988), and in unusually high numbers of charred seeds at Fengate's Edgerley Drain Road (Simmons and de Vareilles, in Evans *et al*. 2009). Four species are indicative of damp, clay-rich soils. However, there are as yet too few seeds to be certain of environmental conditions.

Other small finds – Samples richest in other finds such as animal bone fragments, pottery sherds and flint also contained the most charred plant remains. This pattern suggests the features were either intentional 'bins' or simply close to areas of diverse activities.

Conclusion and Recommendations

The samples conform to East Anglian Bronze Age trends by containing just a few grains of hulled cereals, no chaff and some collected wild foods, namely hazel-nuts. Flax seeds are an infrequent and intriguing addition to this assemblage. Whilst one cannot deny that the Bronze Age occupants were mixed farmers, the intensity and regularity of their crops remains enigmatic. As to where crops were stored and processed – and whether this was done by individuals or as a community – also remains unanswered.

The remaining 14 samples should be sorted and the overall assemblage studied more closely in connection with other findings from the site and its hinterland.

Table 5. Environmental Bulk Soil Samples from Selected (non-Structural) Features

Sample number		**16**	**18**	**32**	**14**	**25**	**22**	**31**
Context		147	160	33	73	222	42	52
Feature		70	73	23	40	97	19	35
Feature description		Encl. ditch		4-pst strc	Pit	Pit	Pit	Pit
Phase / Date		MBA		BA	EBA	EBA?	MBA	MBA
Sample volume - litres		12	12	7	7	15	15	15
Flot fraction examined -%		100	100	100	100	100	100	100
large charcoal, incl. from heavy residue (>4mm)			-	-	+	+	++	-
med. charcoal (2-4mm)				-	-	-	++	-
small charcoal (<2mm)		+	+	++	++	+++	+++	+++
estimated charcoal volume - mililitres		<1	<1	<1	<1	1	6	<1
CEREAL GRAINS AND CHAFF								
Hordeum vulgare sensu lato.	hulled Barley grain						2	
Triticum dicoccum/ spleta L.	Emmer or spelt wheat grain							
Indeterminate cereal grain fragments								1
WILD PLANT SEEDS								
Thalictrum flavum/minus L.	Common/Lesser Meadow-rue							
Corylus avellana L.	Hazel-nut shell fragment							
Stellaria sp.	Chickweed							
Brassica nigra type (coarse textured form)	Black mustard							
Medicago / Trifolium sp.	Medics or Clover							
Linum usitatissimum L.	Flax							
Solanum dulcamara L.	Bittersweet							
Stachys sp.	Woundworts							

Sample number		**16**	**18**	**32**	**14**	**25**	**22**	**31**
Context		147	160	33	73	222	42	52
Feature		70	73	23	40	97	19	35
Feature description		Encl. ditch		4-pst strc	Pit	Pit	Pit	Pit
Phase / Date		MBA		BA	EBA	EBA?	MBA	MBA
Sample volume - litres		12	12	7	7	15	15	15
Flot fraction examined -%		100	100	100	100	100	100	100
Anthemis cotula L.	Stinking Chamomile							
large *Carex* sp.	trilete Sedge seed							
indet. Large Poaceae	wild or cultivated grass seed						2	
large Poaceae	large wild grass							
small Poaceae	small wild grass							
Indet wild plant seed	non-identifyable seeds	1						
OTHER BIOLOGICAL ITEMS								
Poaceae or *Linum* sp. Culm node	Wild grass or flax straw node							
Indeterminate culm node								
charred bud								
vitrified parenchyma		-		- fruit?				
modern, intrusive seeds		-		++	-	-	+	-
animal bone fragments (burnt), >4mm				-	-		++(-)	-
>4MM ARTEFACTS FROM THE HEAVY RESIDUES								
pottery sherds							+	
baked clay				+			++	-
burnt stone								
worked (burnt) flint							- (+)	

Key: '-' 1 or 2, '+' ≤10, '++' 11-50, '+++' >50 items. All specimens are charred. All flots contain intrusive rootlets and Ceciloides acicula. and Ceciloides acicula.

Table 6. Environmental Bulk Soil Samples from Structures 1-3

Sample number		**5**	**8**	**7**	**10**	**13**	**1**	**2**	**9**	**17**	**28**	**3**	**33**	**19**
Context		86	92	65	61	71	3	1	109	151	183	5	190	176
Feature		44	45	29	27	39	9	9	54	51	75	10	83	80
Feature description		Struct.1 Pits		Struct.1 post-holes			Structure 2 post-holes				Str.3 Pit	Struct.3 post-holes		
Phase / Date		Early Bronze Age					Middle Bronze Age				Middle Bronze Age			
Sample volume - litres		15	8	13	7	6	12	10	6	2	15	5	5	10
Flot fraction examined -%		100	100	100	100	100	100	100	100	100	100	100	100	100
large charcoal, incl. from heavy residue (>4mm)			++	+	+	+	++	++	+	++	++	+++	+	++
med. charcoal (2-4mm)		-	+++	+	+	-	++	+	-	++	++	+++	+	++
small charcoal (<2mm)		++	+++	+++	++	++	+++	+++	+++	+++	+++	+++	+++	+++
estimated charcoal volume - mililitres		<1	6	<1	<1	<1	3	2	1	1	3	300	2	4
CEREAL GRAINS AND CHAFF														
Hordeum vulgare sensu lato.	hulled Barley grain													
Triticum dicoccum/ spleta L.	Emmer or spelt wheat grain												1	
Indeterminate cereal grain fragments														
WILD PLANT SEEDS														
Thalictrum flavum/minus L.	Common/Lesser Meadow-rue	1												
Corylus avellana L.	Hazel-nut shell fragment						1	3				1		2
Stellaria sp.	Chickweed										1			1
Brassica nigra (coarse textured)	Black mustard							1						
Medicago / Trifolium sp.	Medics or Clover	1												
Linum usitatissimum L.	Flax			4 cf.										1cf.
Solanum dulcamara L.	Bittersweet						1 cf.							
Stachys sp.	Woundworts												1	
Anthemis cotula L.	Stinking Chamomile	1		1 cf.										
large *Carex* sp.	trilete Sedge seed						1							
indet. Large Poaceae	wild or cultivated grass seed													
large Poaceae	large wild grass					1								

Sample number		**5**	**8**	**7**	**10**	**13**	**1**	**2**	**9**	**17**	**28**	**3**	**33**	**19**
Context		86	92	65	61	71	3	1	109	151	183	5	190	176
Feature		44	45	29	27	39	9	9	54	51	75	10	83	80
Feature description		Struct.1 Pits		Struct.1 post-holes			Structure 2 post-holes				Str.3 Pit	Struct.3 post-holes		
Phase / Date		Early Bronze Age					Middle Bronze Age				Middle Bronze Age			
Sample volume - litres		15	8	13	7	6	12	10	6	2	15	5	5	10
Flot fraction examined -%		100	100	100	100	100	100	100	100	100	100	100	100	100
small Poaceae	small wild grass	3					1				1			
Indet wild plant seed	non-identifyable seeds					1								1
OTHER BIOLOGICAL ITEMS														
Poaceae or *Linum* sp. Culm node	Wild grass or flax straw node				1									
Indeterminate culm node											1			
charred bud		1												
vitrified parenchyma		-		+			-	-	-	-				
modern, intrusive seeds		-	-	+	+	+	+	+	-	-	+			-
animal bone fragments (burnt), >4mm			-				++(+)	++	+	+	+	-	+	++
>4MM ARTEFACTS FROM THE HEAVY RESIDUES														
pottery sherds								-		-	-			++
baked clay			-									+		
burnt stone							-							+
worked (burnt) flint				-		- (+)	(+)							

Key: '-' 1 or 2, '+' ≤10, '++' 11-50, '+++' >50 items. All specimens are charred. All flots contain intrusive rootlets and *Ceciloides acicula*.

6.1.5 Worked Stone

Simon Timberlake

Two fragments of worked stone (70g) were recovered from this site, both from the same Middle Bronze Age pit (F.33). This consisted of a tiny piece from the surface of a probable saddlequern, as well as a small fragment from the end of a burnt and broken-up cobble hammerstone. These were found amongst the fragments of burnt stone, having been re-used for the purposes of cooking. This is usually an indicator of the proximity of dwellings.

<020> F.33 [47]. A fragment from a small flat-topped boulder saddlequern of pink quartzite/ quartzitic sandstone (probably originally no more than 150mm diameter when complete). Dimensions: 40mm x 30m m x 35mm. Weight: 54g. This has a very well polished and smooth area of grind surface preserved (area 20mm x 35mm) from close to the quern rim. Cracked and heat-broken.

<020> F.33 [47]. A small fragment from close to the end of a small pebble hammer. Dimensions: 25mm x 30mm x 15mm. Weight: 16g. Surviving is very small (20mm x 10mm) slightly convex faceted worked surface from pounding use. White quartzitic sandstone. Heat cracked and burnt.

6.1.6 Burnt Stone

Simon Timberlake

A total of 3.26 kg (107 pieces) of burnt stone was recovered from the excavation of test pits and features during this phase of trenching (Table 7). The largest amounts of burnt stone came from F.19 (744g) and F.33 (538g). The small size of the burnt fragments implies repeated firings of the stone and perhaps the use of this for cooking or boiling. The relative absence of re-worked stone (i.e. heat-fragmented saddlequern) suggests Bronze Age rather than Early-Middle Iron Age use (see Timberlake in Evans & Tabor 2012). However, this is a small assemblage, and little more can be said about it at the present time.

Cat. No.	F. No.	Context No.	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
024	40	73	1	30	22	arkosic sstn	
048	64	129	6	20-50	234	fine gr pink sstn + Jurassic lmstn	mostly frags of 1 cobble
002	9	1	4	10-55	128	soft white micac sstn + ferruginous sstn (LGS)	
020	33	47	16	15-60	538	pink quartzite + white quartzitic sstn + soft white sstn + fine-med gr sstn pebble+ vein quartzite + metaquartzite	x2 piece to WS (incl saddlequern frag + hammerstone frag?) x1 piece to BC
023	39	71	1	35	16	med gr whitish sstn	
007	9	3	4	15-35	64	pinkish quartzitic sstn + white sstn/ siltstone	

Cat. No.	F. No.	Context No.	Nos. frags	Size (mm)	Weight (g)	Geology	Notes
						+ chert	
008	10	6	7	20-75	224	white metasiltstone + soft grey-brown micac sstn	grey-brown sstn all one cobble
027	44	84	1	40	30	white micac quartz sstn with fossil roots (Jurassic Estuar Ser?)	
026	44	81	1	35	28	white med gr sstn	
044	60	119	2	15	6	soft white sstn	
064	92	209	3	15-40	38	white + yellow sstn	
061	90	205	2	20-30	24	white metaquartzite + quartzitic sstn	
041	52	276	1	30	18	limestone/chalky boulder clay	
060	85	194	6	15-90	278	BF or chert + ironstone/ limestone	
016	19	42	28	15-60	744	arkosic grit (Millstone Grit?) + metaquartzite + quartzite + quartzitic sstn + siltstone + soft white sstn + lmstn	
017	22	28	1	55	26	pink quartzite	heat-fractured spall off of the side of a cobble
067	99	234	1	50	48	quartzite pebble	
069	105	252	3	25-55	66	white sstn + brown quartzitic sstn	
054	75	183	5	15-35	92	white quartzitic grit + white quartz micac sstn + white sstn + grey muddy limestone	
025	41	75	1	45	46	white sstn	
036	47	97	2	40	54	white sstn + reddish sstn	
050	71	155	9	20-110	346	qtz siltstone + soft grey muddy fossil limestone	
032	46	95	5	30-50	170	BF + qtz siltstone + qtz sstn + pink quartzite	
030	44	86	2	20-30	16	white sstn	

Table 7. Summary of Burnt Stone

6.1.7 Fired Clay
Simon Timberlake

Some 548g of poorly fired/unfired to well-fired burnt clay was recovered from ten features on site. Generally this was in small amounts (<40g), the largest amount being from F.71 (144g), with the next largest being from F.33 (40g) and F.64 (24g). At least three and possibly four different burnt clay (daub) fabrics were recognized. This included a mostly unfired coarse chalky daub, some pieces of which were well fired and brick-red in colour, with a burnt-out porous texture. It is possible that some of this is briquetage. Most of those features producing small amounts of burnt clay were

Early to Middle Bronze Age pits or postholes, some of the latter associated with Structures 1-3, which may represent dwellings.

<020> F.33 [47]. A squarish pressed lump of light grey-coloured chalky daub with inclusions of grog unfired clay, burnt organic (seeds or nut shell fragments), fired clay and shell. Fairly coarse fabric but dense. Dimensions: 50mm x 25mm x 30mm. Weight: 40g. Poorly fired daub (waste lump?).

<048> F.64 [129]. A smaller lump of daub composed of identical fabric to the above. Dimensions: 40mm x 20mm x 20mm. Weight: 24g. Poorly fired daub, with possibly an external (and mildly sooted) surface.

<043> F.54 [109]. x9 small lumps of light grey-coloured chalky daub with inclusions of unfired grog. Similar to above. Either poorly fired or unfired material. Perhaps made from chalky boulder clay? Pieces rang from 10mm – 25mm and weigh 22g (total).

<051> F.71 [155]. x4 lumps of coarse-textured chalky daub, three of which have been burnt to a denser consistency and brick-red colour, the largest being buff-yellow coloured with shell fragment inclusions and a porous texture. The heavily burnt fragments are considerably more porous, with indications of burnt-out organic (chaff?). At least two of the latter have flattish external surfaces (walling?). Dimensions: smallest 23mm – largest 85mm. Weight: 144 g (total)

<003> F.9 [1]. A small indeterminate lump of pinkish burnt clay (daub). Of quite different fabric from above, and significantly harder and more burnt. Includes traces of burnt-out organic inclusions, possibly grasses or chaff. Dimensions: 20mm x 15mm x 10mm. Weight: 4g.

<063> F.91 [207]. Four small lumps of pinkish-reddish burnt clay (daub) – as above. Dimensions of largest is c. 12mm. Weight: 2g.

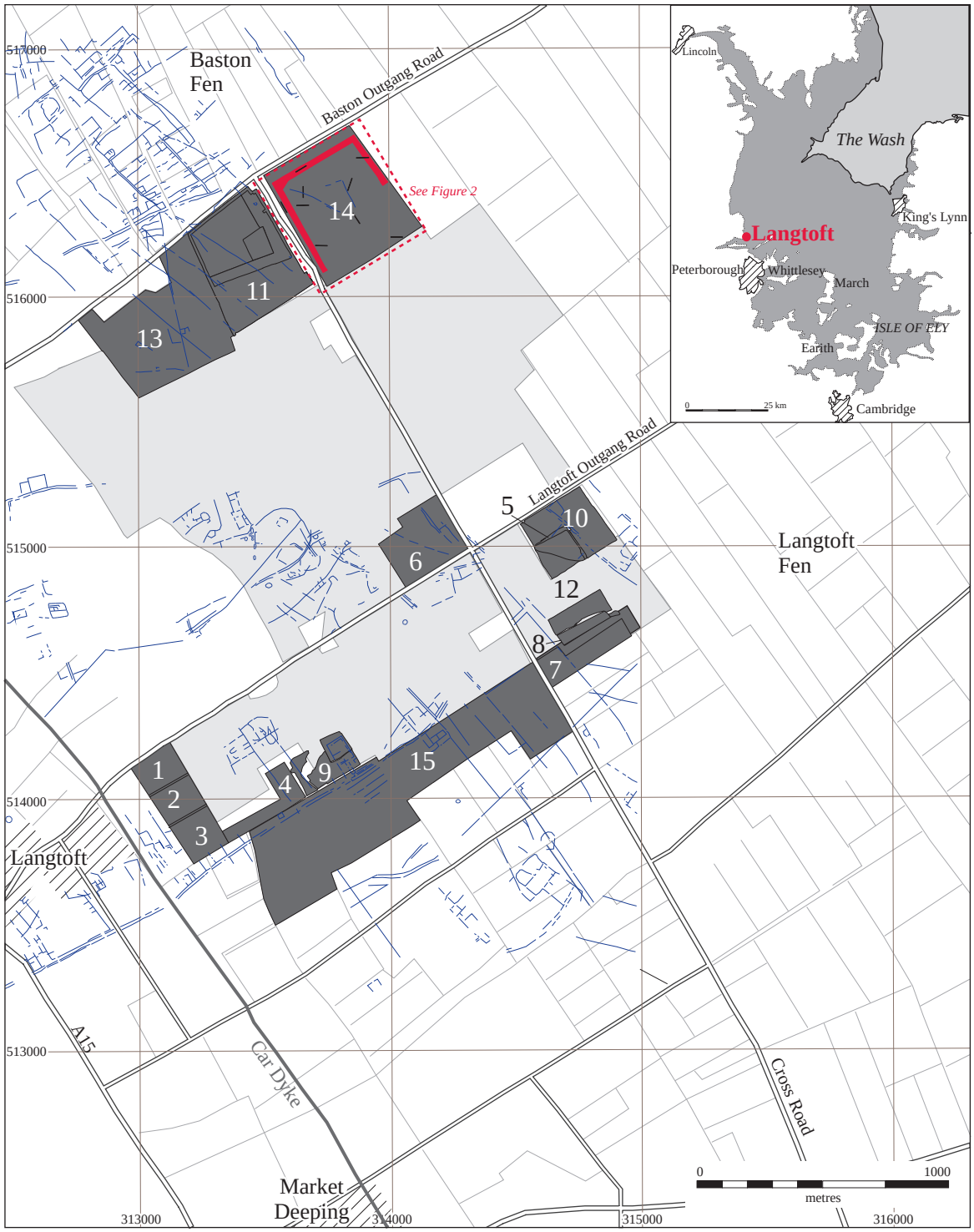
<033> F.46 [95]. Lump of dense brick-red coloured burnt clay with grey reduced interior. Contains small medium sized inclusions of sand, grog particles and burnt-out organic. Could be briquetage? Dimensions: 30mm x 25mm x 20mm. Weight: 22g

<070> F.19 [42]. Irregular lump of reddish-brown burnt clay (daub). Dimensions: 20mm x 20mm. Weight: 14g.

<045> F.60 [119]. Very small lump of reddish coloured burnt clay with a fairly coarse porous texture. Traces of a possible (brown coloured) external surface. Dimensions: 9mm x 9mm. Weight: <1g.

<029> F.44 [86]. A very small lump of reddish coloured burnt clay, similar to above. Dimensions: 10mm. Weight: <1g.

NOT BURNT CLAY Some of the pieces resembling the chalky daub turned out to be natural – either as hardened chalky boulder clay or as a muddy fossiliferous (local) limestone. Sample <015> labelled as burnt clay from F.19 [42] is probably a iron ochre concretion (iron pan?) formed around roots and other organic material.



Excavation area (BNE12)

Quarried Areas

Previous Investigations

1. Baston Quarry Area A (1998)
2. Baston Quarry Area B (2001)
3. Baston Quarry Area C (2002)
4. Baston Quarry Areas D-E (2003)
5. Outgang Road Excavation (Heritage Lincs.)
6. Outgang Road Watching Brief (Heritage Lincs.)
7. Cross Road Watching Brief (1998-99)
8. Langtoft Common Watching Brief (2001)
9. Areas F-H The Bluebell Land (2006)
10. Glebe Land (2007 and 2008)
11. Freeman Land (2007-2012)
12. Whitfield Land (2007)
13. Northampton Archaeological Unit (2007)
14. Baston Quarry (2009) Evaluation
15. 2010 Evaluation

Figure 1. Location map with cropmarks and previously investigated areas

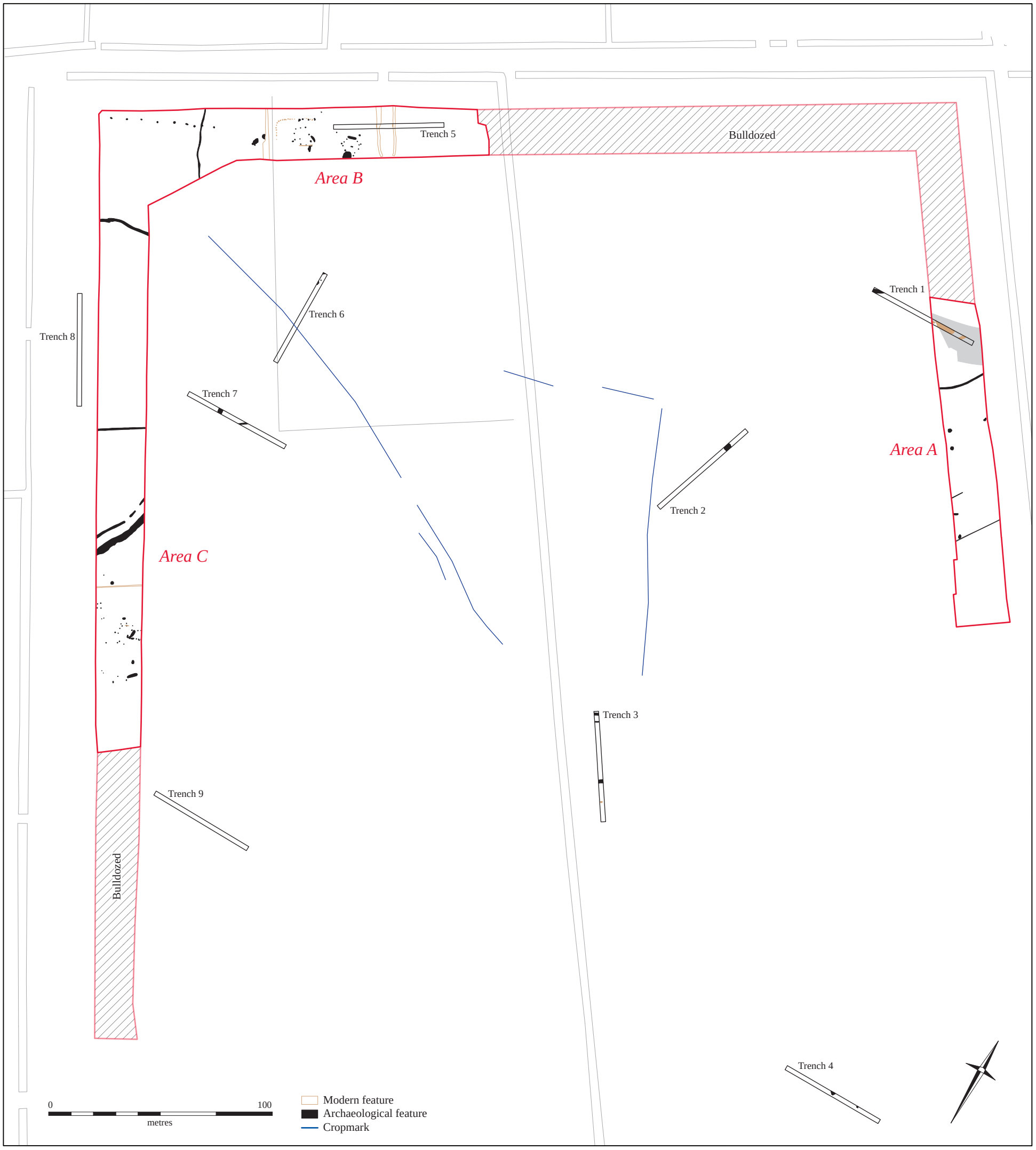


Figure 2. Plan of all archaeological features, also showing the location of the 2009 evaluation trenches.

Figure 3. Plan of archaeological features in Areas A-C, with illustrated structures (Figures 4-6) and sections (Figure 7) marked in red

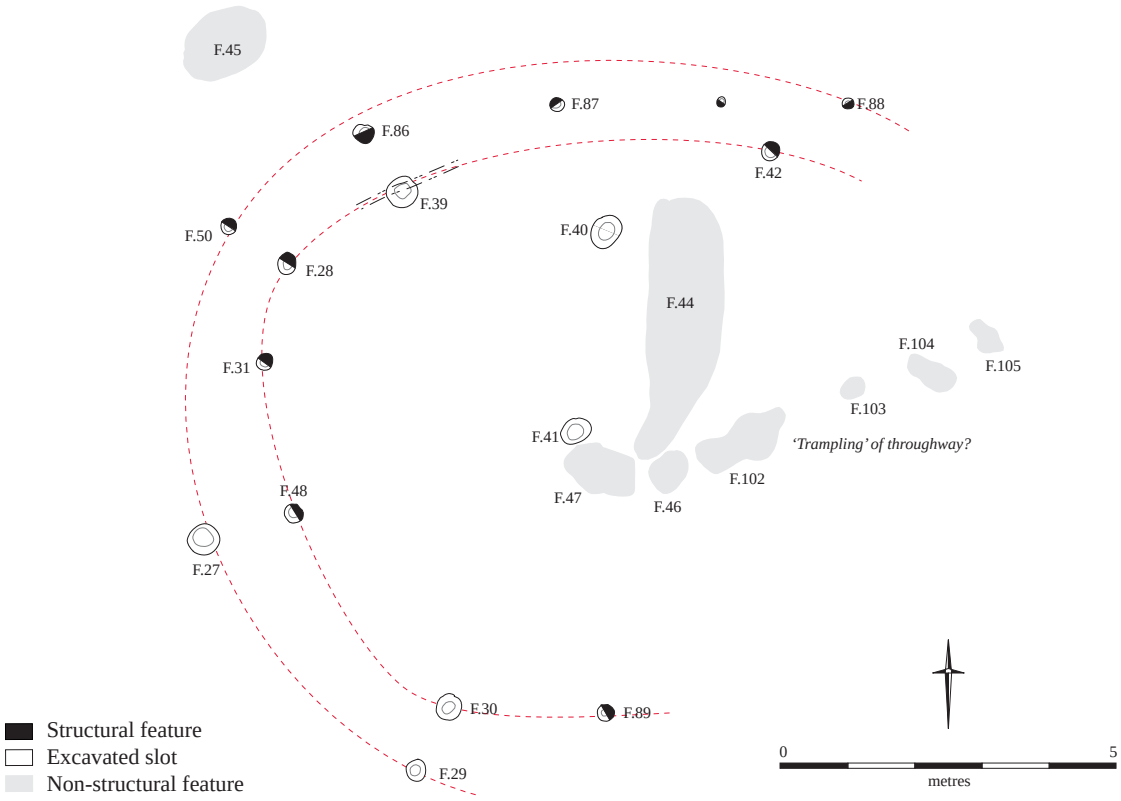


Figure 4. Plan of Structure 1

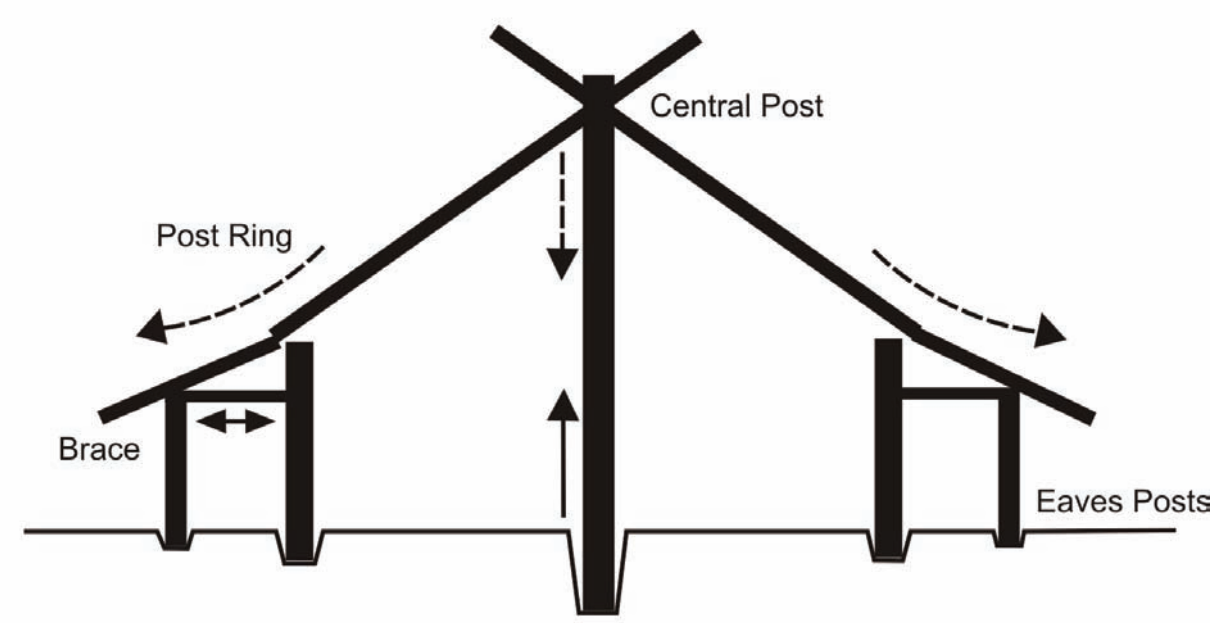


Figure 5. Interpretive reconstruction of Structure 1

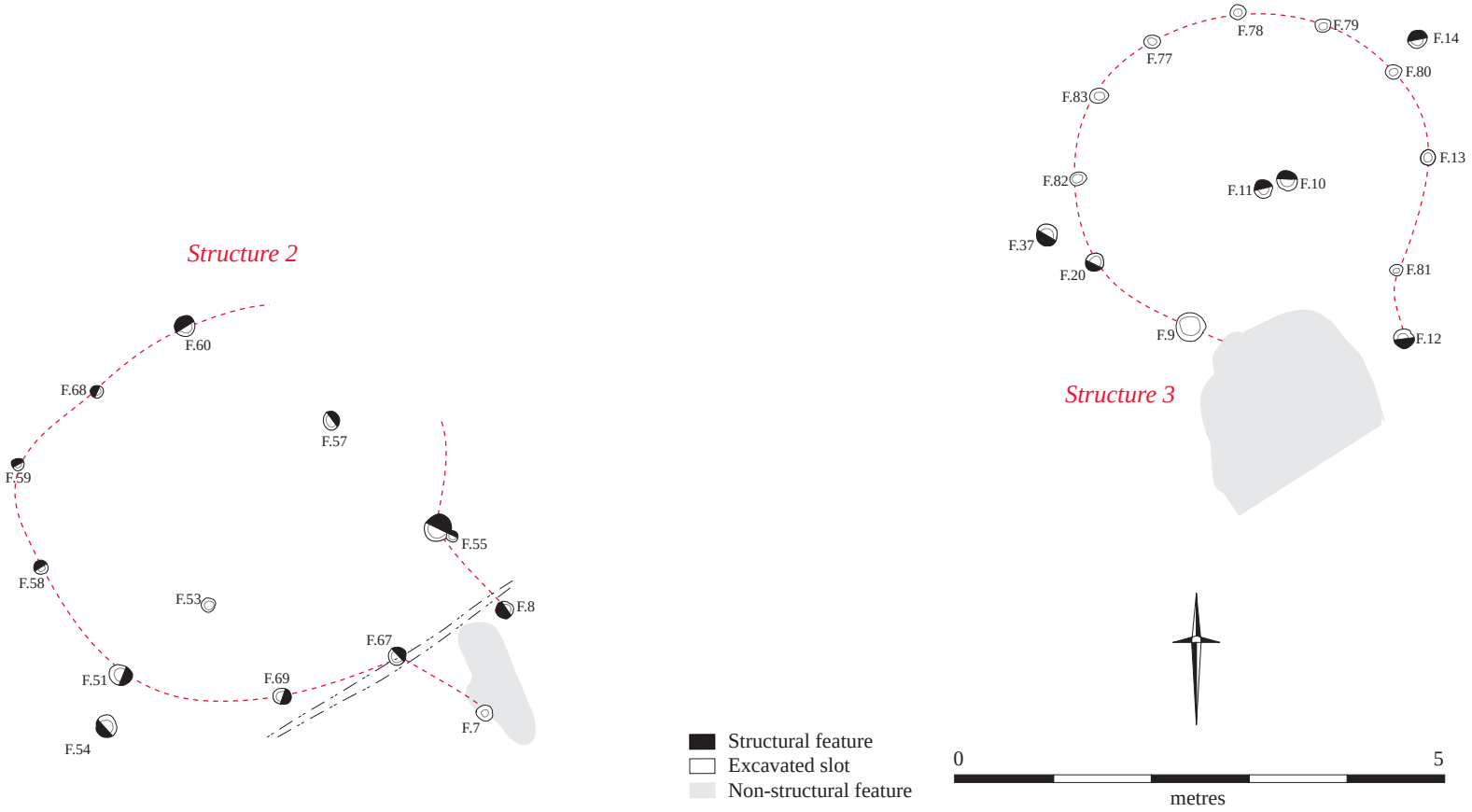


Figure 6. Plan of Structures 2 and 3

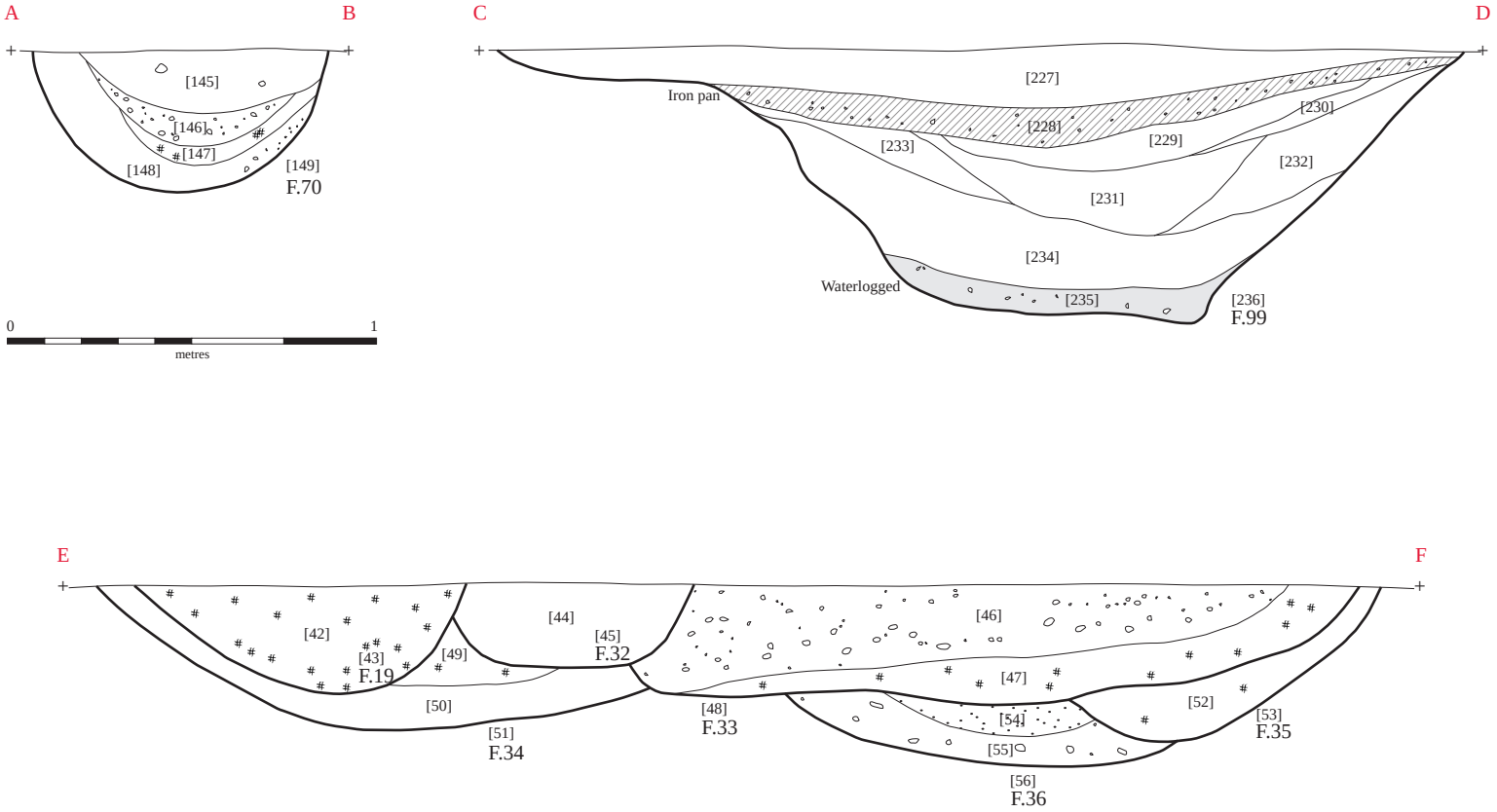


Figure 7. Sections of ditches F.70 and F.99, and pit cluster F.19, 32-36 (locations shown on plan in Figure 3)

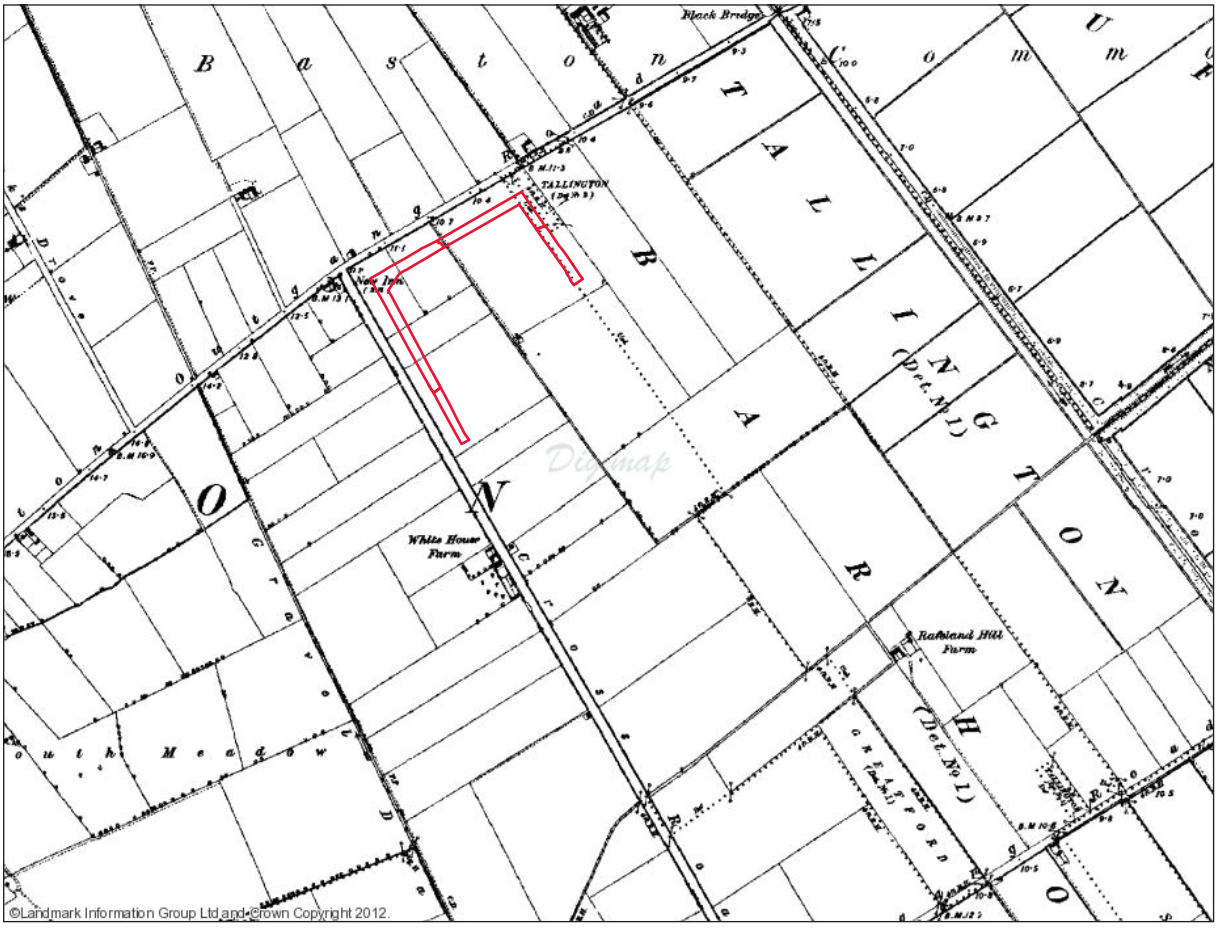


Figure 8. 1890s Ordnance Survey Map

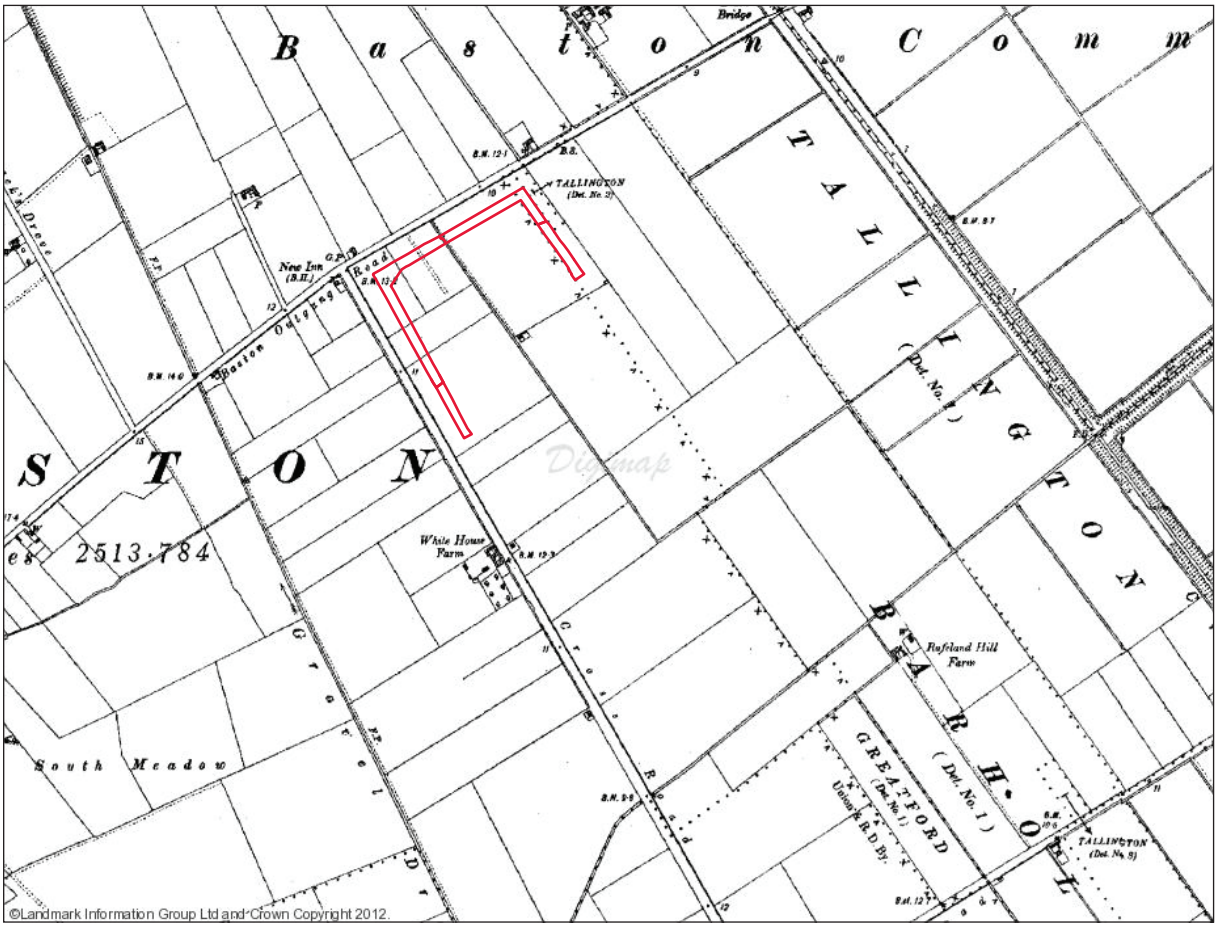


Figure 9. 1930s Ordnance Survey Map

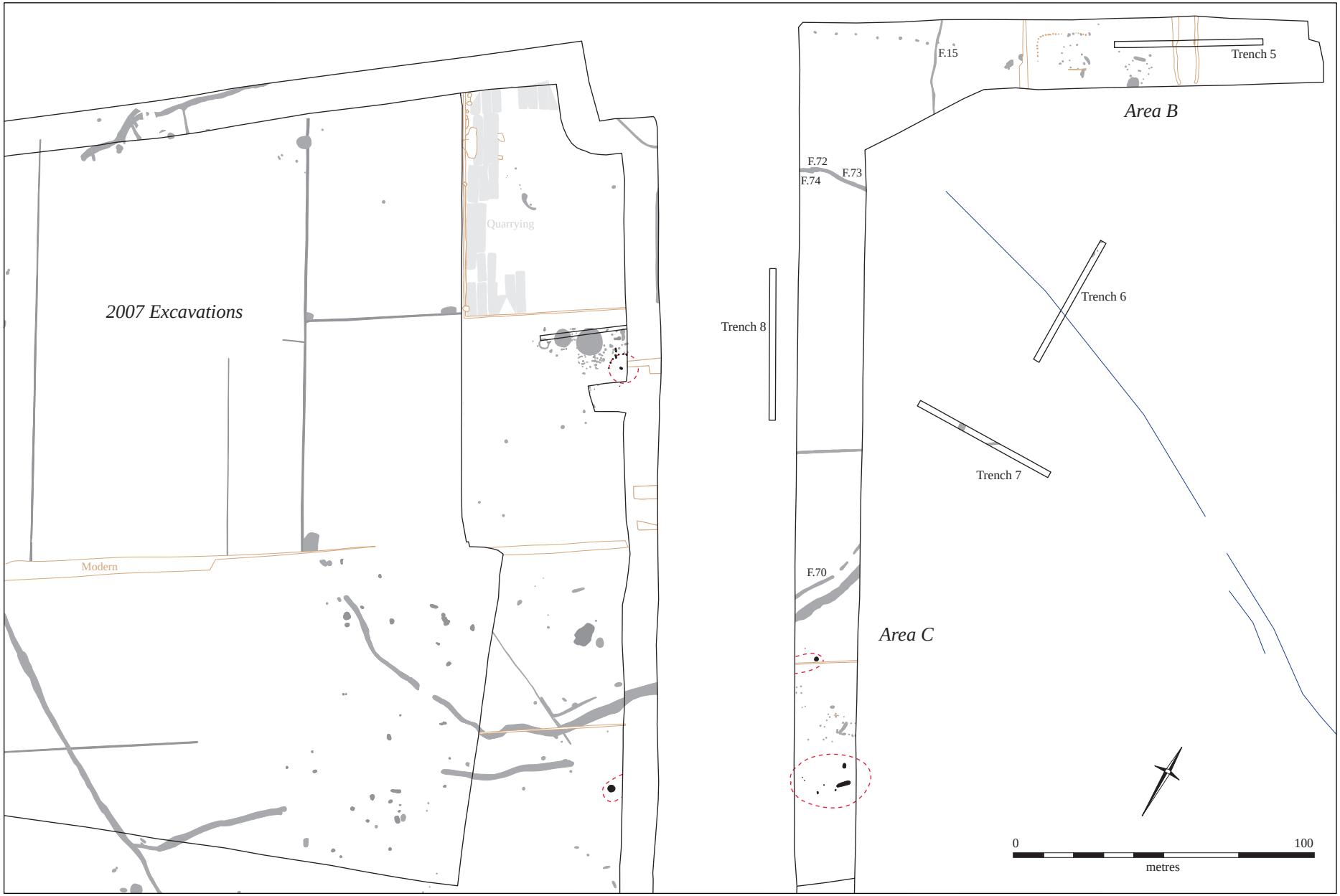


Figure 10. Early Bronze Age features and possible pit groups also showing part of the 2007 excavation

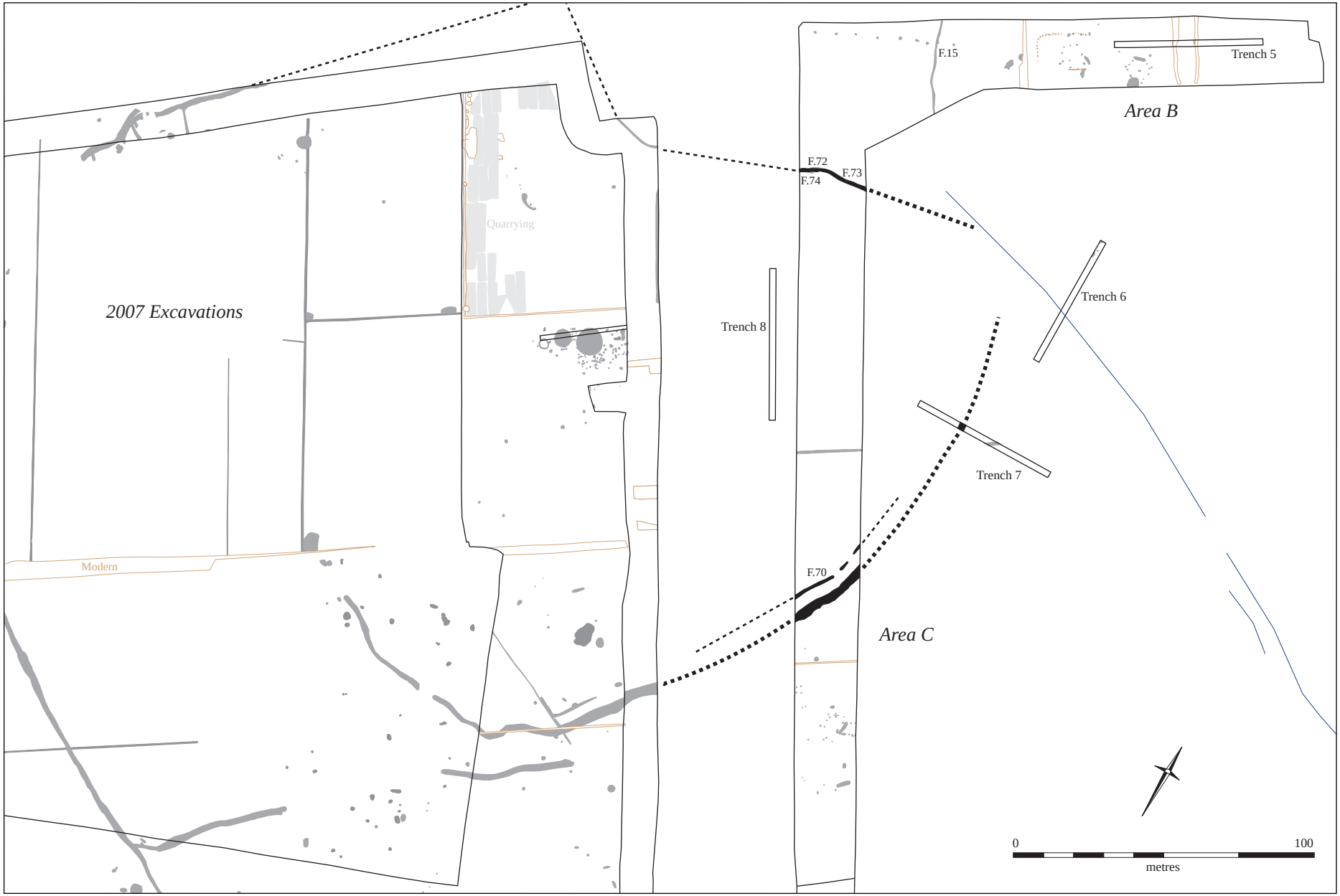


Figure 11. Middle Bronze Age field system and cemetery enclosure with related features also showing part of the 2007 excavation

Figure 12. Aerial photograph of enclosure with internal ring ditches, Market Deeping (HER33431)

OASIS DATA COLLECTION FORM: England

OASIS ID: cambridg3-145955

Project details	
Project name	Northern Extension, Baston No.1 Quarry, Lincolnshire An Archaeological Excavation
Short description of the project	Archaeological excavations during the construction of a bund enclosing the extension area of Baston No.1 Quarry revealed considerable evidence for prehistoric activity, particularly of the Early to Middle Bronze Age. This relates to a broader prehistoric landscape in the local environs that is dominated by an extensive Middle Bronze Age ditched system of field allotment and droveways. The current programme of investigations revealed a circular Early Bronze Age dwelling consisting of a double ring of posts and eastern entrance associated with Collard Urn pottery. Two clusters of contemporary pits and a four-post structure of unknown date were located in close proximity to this dwelling. In addition, two Middle Bronze Age circular post-built structures were identified with southeast entrances and traces of central hearths. Within 20m of each other, these dwelling areas also consisted of fencelines, postholes, pits and a well, all associated with Deverel Rimbrey pottery. Situated between these Early and Middle Bronze Age deposits were two alignments of multiple linear ditches that correspond with features identified in previous investigations to the west. These appear to form part of the Middle Bronze Age field system, but in a way that is deliberately diverted around, and thereby enclosing, an earlier funerary area of ring ditches, inhumations and cremations. Measuring c.200m in diameter, this 'enclosure', although partial, has little parallel in Britain. A single Iron Age pit represented the only post-Middle Bronze Age activity until the post-Medieval period, for which evidence has also been found of a generic agricultural landscape.
Project dates	Start: 01-11-2012 End: 23-11-2012
Previous/future work	Yes / Yes
Any associated project ref codes	BNE12 - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Industry and Commerce 5 - Mineral extraction
Monument type	POSTHOLES Post Medieval
Monument type	POSTHOLES Early Bronze Age
Monument type	PITS Early Bronze Age
Monument type	POSTHOLES Middle Bronze Age
Monument type	PITS Middle Bronze Age
Monument type	WELL Middle Bronze Age
Monument type	DITCHES Middle Bronze Age
Significant Finds	POTTERY Early Bronze Age
Significant Finds	POTTERY Middle Bronze Age
Significant Finds	BONE Middle Bronze Age
Significant Finds	FLINT Early Bronze Age
Significant Finds	CHARCOAL Middle Bronze Age

Investigation type	"Open-area excavation"
Prompt	Planning condition

Project location	
Country	England
Site location	LINCOLNSHIRE SOUTH KESTEVEN BASTON Baston No.1 Quarry
Postcode	PE6 9QA
Study area	1.30 Hectares
Site coordinates	TF 137 154 52 0 52 43 26 N 000 18 58 W Point
Lat/Long Datum	Unknown
Height OD / Depth	Min: 1.00m Max: 2.00m

Project creators	
Name of Organisation	Cambridge Archaeological Unit
Project brief originator	Consultant
Project design originator	Alison Dickens
Project director/manager	Alison Dickens
Project supervisor	Marcus Brittain
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Hanson Aggregates

Project archives	
Physical Archive recipient	Cambridge Archaeological Unit
Physical Archive ID	BNE12
Physical Contents	"Animal Bones","Ceramics","Environmental","Worked stone/lithics"
Digital Archive recipient	Cambridge Archaeological Unit
Digital Archive ID	BNE12
Digital Contents	"Animal Bones","Ceramics","Environmental","Survey","Worked stone/lithics"
Digital Media available	"Database","Images raster / digital photography","Images vector","Spreadsheets","Survey","Text"
Paper Archive recipient	Cambridge Archaeological Unit
Paper Archive ID	BNE12
Paper Contents	"Animal Bones","Ceramics","Environmental","Worked stone/lithics"
Paper Media available	"Context sheet","Correspondence","Diary","Matrices","Notebook - Excavation',' Research',' General Notes","Photograph","Plan","Report","Section","Survey "

Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
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