The Colchester Garrison PFI project, Colchester, Essex: a report on the 2003 excavation of Areas 2, 6, 10 August-November 2003

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on behalf of
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Summary

This report provides an analysis of Stage 2 excavations, carried out in 2003 by the Colchester Archaeological Trust (CAT) in association with RPS Planning Transport and Environment (RPS), on Areas 2, 6 and 10 at the Colchester Garrison PFI site (Figs 1-2). The excavations followed extensive Stage 1 evaluations, including approximately 12km of trial-trenching in 2002. The project was carried out on behalf of RMPA Services and the MoD in advance of the construction of the new garrison. Collectively the works comprise the largest single intrusive investigation (covering an area of 101 ha) to have taken place within the Late Iron Age *oppidum* stronghold of Camulodunum. The first major archaeological work to be undertaken in the eastern part of the *oppidum* produced the following results in Areas 2, 6 and 10. In **Area 2**, there was an impressive Middle Iron Age enclosure with an internal round-house, at the centre of which was a pottery vessel (a placed deposit). A hollow way track led to the enclosure from the east. The enclosure was put out of use before a ditched trackway was constructed through it by the early Roman period. **Area 6** was dominated by trackways and field boundaries associated with the *oppidum* field layout. Fringe activities from the adjacent Kirkee McMunn Barracks Roman farmstead (including burials) spilled out into this area. **Area 10** contained Iron Age cremation burials and structures, and Late Iron Age/Roman trackways and field boundaries.

The trackways are numbered as follows:
- Area 2: an unnumbered trackway
- Area 6: the main trackway, the northern trackway, the southern trackway; and off site, the main western trackway
- Area 10: Tracks 1-3, and the main eastern trackway (Track 4).

The site locations and areas are as follows:
- Area 2: 5,250m^2, south of Ypres Road
- Area 6: 10,175m^2, to the north of Earlswood Way
- Area 10: 14,000m^2, south and east of the Driving School of Berechurch Road.

Implications of results:
- There is limited evidence for habitation and farming before the Early Iron Age and it is probable that until then the area was predominantly forested.
- The Early Iron Age burials, 4-post structures and artefacts of Area 10 suggest an intensification of settlement and farming, at least in the eastern area of the new garrison.
- Taken together, the Middle Iron Age moderate-status enclosed round-house of Area 2, combined with a residual pottery scatter in Area 6 (indicating manuring and therefore arable farming), suggest that wider tracts of land were open than previously.
- The Area 2 enclosure is similarly dated to later Middle Iron Age round-house enclosures recently excavated at the Stanway and Abbotstone sites. Taken collectively, these enclosures suggest that the area was not a blank canvas upon which the later *oppidum* of Camulodunum was imposed, but rather was already relatively productive and affluent.
- Late Iron Age settlement of the *oppidum* period appears to have centred on a farmstead at the Kirkee McMunn Barracks site. Widespread associated farmland is demonstrated by field boundaries and manuring pottery scatters in Areas 6, 2 and 10.
- These field systems were extended and augmented to form a trackway-dominated (and therefore probably predominantly pastoral landscape) following the Roman invasion and institution of the colony. The Roman farmlands appear to have been managed from a farmstead, previously identified at the site of its Iron Age predecessor at the Kirkee McMunn Barracks site.
- It is unclear whether this tract of land was confiscated for allocation to the colonists. There is no proper 'centuriation' of the landscape, whilst the continued use of the Kirkee McMunn Barracks Roman farmstead probably indicates that the area continued to be farmed by descendants of the Late Iron Age farmers.
- The Roman field ditches within all areas of the new garrison site had silted up by or in the 3rd century. This phenomenon corresponds with the apparent abandonment of the farmstead at the Kirkee McMunn Barracks site and the similar abandonment periods of farmsteads to the south-west and south of the Roman town, ie at the Abbotstone and Stanway sites and Area E of the 'Urban Village' scheme. It appears that the civil war and 'barbarian' raiding of the late Roman period may have caused the farmers to retreat to the safety of the town walls, thus leaving their estate ditches, if not the farmlands themselves, unattended.
- There is virtually no trace of 4th-century, Saxon or medieval activity within the sample excavation areas, although post-medieval ditches in Area 2 may have medieval origins. This does not necessarily mean that the landscape reverted to forest, since the gravel plateau is so well drained that drainage ditches may simply not have been required.

Introduction

This report has been prepared by the Colchester Archaeological Trust (CAT) in association with RPS Planning Transport and Environment on behalf of RMPA Services and the MoD. It presents the results of Stage 2 archaeological excavations undertaken to mitigate the archaeological effects of the construction phase of the new garrison at Colchester Garrison. The mitigation followed an evaluation process comprising geophysical survey, fieldwalking, and extensive trial-trenching (a 3% sample) of all available areas. The information contributed to the "Cultural heritage" chapter of the *Composite environmental statement* (RPS 2002a) compiled by RPS using data provided by CAT. The strategy supporting the archaeological mitigation work at the garrison was outlined within the environmental statement and is fully laid out in *Research design for archaeological excavations and watching brief at the new garrison, Colchester* (RPS 2003).

The Colchester Garrison PFI site is located approximately 1km to the south of the modern town centre (Fig 1) and is centred on National Grid Reference TL 996 244. The Garrison occupies an extensive area on the eastern flank of a plateau capped with Pleistocene gravels, sands and clay/silt. The site overlooks the River Colne to the north and the Roman River to the south. These rivers meet to the south-east of the site, before entering the Colne estuary.

Virtually the entire Garrison site forms part of a historic landscape dominated by the major Late Iron Age defended settlement (*oppidum*) of Camulodunum. A small dry valley, currently the route followed by Circular Road South, bisects the site. This valley leads eastwards to the River Colne and is presently partly filled by the Bourne and Cannock lakes. The area to the north of this valley adjoins the site of the Roman legionary fortress and town of Colonia Victricensis. The area to the north of the valley also includes the remains of the medieval St John's abbey (a Scheduled Ancient Monument). This part of the Garrison includes elements of Colchester's Romano-British and medieval suburb. To the south of the valley, the land use was rural until the 19th- and 20th-century expansion of Colchester Garrison. A short section of the Berechurch Dyke, the eastern defence of the Late Iron Age/early Romano-British *oppidum*, is included in this area.

Extensive cropmarks indicate the presence of Late Iron Age or Romano-British fields and trackways. Previous investigations have also identified the remains of rural Romano-British buildings within the Kirkee McMunn Barracks site.

Prior to the 2003 excavations described here, a total of 29 archaeological investigations and 85 watching briefs had been carried out by CAT at or within 300m of the Garrison site since 1965 (CAT Report 97).

Following the 2003 excavations, an assessment report was prepared (CAT Report 270). This was structured in accordance with guidance published by English Heritage (Olivier 1996). It included sections on methodology, results and finds, and it recommended the further structural analysis and finds work incorporated in this report.

The project was managed by Robert Masefield MIFA and Ken Whittaker MIFA for RPS Planning Transport and Environment, who were also present as Principal Contractor under CDM regulations, and for CAT by Carl Crossan (assisted by Ben Holloway, Chris Lister, Mike Ripley and Donald Shimmin).

Strategy and previous archaeological work

The archaeological excavations described here are part of a continuing strategy to mitigate the impact of development on the archaeological resource in the area of the Colchester new garrison. This strategy has been agreed with Colchester Borough Council and English Heritage (RPS 2002b: *Colchester Garrison PFI archaeological project strategy proposal*, 29 April 2002 and revised 27 June 2002). The archaeological project strategy proposal was based on guidance set out in DoE Planning policy guidance note 16 (*Archaeology and planning*, DoE 1990), and followed Colchester Borough Council's *Guidelines on the standards and practice for archaeological fieldwork in the Borough of Colchester* (CBC 2002), and the Institute of Field Archaeologists' *Standard and guidance for archaeological field evaluation* (IFA 1994, revised 1999).

A staged programme of site investigations was undertaken for each of the areas within the proposed development (Table 1). This included a desk-based assessment, magnetometer and fieldwalking survey, and trial-trenching, as described below. All reports from these stages are listed in Table 1 (below).

The desk-based assessment (DBA)
The DBA considered the entire site and adjoining areas. It reviewed the extent, date, character, condition, interpretation, importance and quality of the surviving archaeological features or deposits that may be threatened by development. The information presented in the DBA included the results of aerial photographic survey and numerous recent field evaluations, watching briefs and excavations carried out by the Colchester Archaeological Trust.

Magnetometer survey
Detailed methodology for this stage is described in RPS/CAT 2002 (*Colchester Garrison redevelopment: method statement and risk assessments for archaeological fieldwalking survey, geophysical survey, and evaluation trenching*). The geophysical survey was conducted by Bactec International within all available green fields, and also included trial surveys in a number of soft and hardstanding areas in the built-up areas. These tests demonstrated the limited potential for geophysical survey in areas affected by previous development.

The geophysical survey located the position of buried ferrous objects, which may be discarded munitions, and identified the location of possible buried archaeological features. The ferrous items could include archaeological artefacts. The geophysical data was carefully considered in drafting proposals for trial-trenching.

Fieldwalking survey
Detailed methodology for this stage is described in RPS/CAT 2002 (*Colchester Garrison redevelopment: method statement and risk assessments for archaeological fieldwalking survey, geophysical survey, and evaluation trenching*). The fieldwalking was conducted within all available arable fields.

The fieldwalking survey provided a quantified record of the distribution of artefacts exposed within the topsoil following ploughing. Basic statistical tests were used to identify concentrations which might indicate areas of archaeological potential.

The fieldwalking data was carefully considered in drafting proposals for trial-trenching. Trial-trenches were positioned to check possible archaeological features and potentially significant artefact distributions.

Trial-trenching
Trial-trenches were positioned to check possible archaeological features and potentially significant artefact distributions, and to validate and extend the non-intrusive geophysics and fieldwalking survey results. A detailed methodology is described in the area-specific Written Scheme of Investigation documents approved by CBC (RPS/CAT 2003a; RPS/CAT 2003b; RPS/CAT 2003c). Trial-trenching work was designed in two phases:

Stage 1(a) trial-trenching comprised a total 12km x 1.8m of trial-trenching. This has determined the extent and nature of archaeological remains on the new garrison, in support of both the full and outline planning applications, and has characterised the archaeology at the Urban Village locations for which outline consent was sought. The new garrison evaluation comprised a 3% sample of total new-build footprint area (including: buildings and roads, but excluding hard standings, parade grounds and service trenches) covering both the Green Field and the Built Areas. Trenches in the existing Built Area contributed to the 3% sample, but were limited by various constraints. As a result the distribution of trenches was weighted in favour of the Green Field, where the potential survival of archaeological remains is greater. A 2% sample (subject to localised site constraints and limitations) of total potential area of impact due to construction of sports fields, construction compounds, car parks and storage areas covering both the Green Field and Built Areas. This sample size reflected the lower impact risk posed by temporary works and landscaping.

The full results of the Stage 1(a) investigations are reported in five Colchester Archaeological Trust technical papers (see Table 1). Stage 1(b) investigations were designed (and continue to be designed) to identify the archaeological potential of the linked Urban Village project by Taylor Woodrow. The Stage 1a evaluation for the Urban Village outline planning application element provided evidence for Romano-British suburban activities, including cemeteries and pre- and post-Dissolution activities associated with

St John's abbey. These elements were found to be located to the north of the new garrison site and as such are not considered further here; they are reported separately.

Table 1: evaluation survey technical reports.

Organisation	Date	Title
Colchester Archaeological Trust	2000	CAT Report 97: An archaeological desk-based assessment of the Colchester Garrison PFI site, by Kate Orr
Colchester Archaeological Trust	May 2002	CAT Report 184: An archaeological evaluation by fieldwalking and geophysical survey at Colchester Garrison PFI site, Colchester, Essex, by H Brooks
Colchester Archaeological Trust	July 2002	CAT Report 197: An archaeological evaluation by trial-trenching on Area C at Colchester Garrison PFI site, Colchester, Essex, by H Brooks
Colchester Archaeological Trust	July 2002	CAT Report 203: An archaeological evaluation by trial-trenching on Areas E and F at Colchester Garrison PFI site, Colchester, Essex, by H Brooks
Colchester Archaeological Trust	August 2002	CAT Report 205: An archaeological evaluation by trial-trenching on Area KR at Colchester Garrison PFI site, Colchester, Essex, by H Brooks
Colchester Archaeological Trust	August 2002	CAT Report 206: An archaeological evaluation by trial-trenching in Areas A, B, D, GJ, H, J, N, V and YP of the Colchester Garrison PFI site, Colchester, Essex, June-July 2002, by H Brooks
Colchester Archaeological Trust	September 2002	CAT Report 207: An archaeological evaluation by trial-trenching on Areas DR, G, M, P, Q, R, RO, S and T at Colchester Garrison PFI site Colchester, Essex: May-September 2002, by H Brooks
Colchester Archaeological Trust	March 2003	CAT Report 270: Colchester Garrison PFI project: Stage 2 archaeological excavation assessment report, by H Brooks

The archaeological context of the Colchester Garrison PFI project

Introduction

The archaeological background of the Colchester Garrison area prior to the Garrison PFI project is comprehensively discussed in the desk-based assessment (CAT Report 97). The evaluation surveys described above added to that picture, and revealed the following sequence and pattern of archaeological remains.

Neolithic period

Evidence for early prehistoric activity at the Garrison site is notably sparse, and there is a very low incidence of the ubiquitous flint tools and flakes associated with Mesolithic, Neolithic and Early Bronze Age activities. An isolated pit found to the west of Roman Barracks (survey Area M) produced a low incidence of possibly Neolithic pottery and several soft hammer flint flakes of probable Neolithic date.

Late Bronze Age/Iron Age settlement and field boundaries

Late Bronze Age/Early Iron Age activity, both in terms of landscape divisions and settlement areas, is at a low level as demonstrated by occasional pits and residual pottery and flint recovered from later features. Areas of higher concentrations of Late Bronze Age/ Early Iron Age pottery, indicative of associated settlement, were encountered within the southern area of the new garrison site (survey Area R). Survey Area E (to the north of excavation Area 6 (Fig 2)) produced several flint-tempered sherds including a fragment of a large straight-sided jar of Early Iron Age date within a surviving subsoil remnant of the period.

Middle Iron Age landscape boundary, field system and isolated pits

Middle Iron Age features and finds were found sparsely across the site with isolated pits identified within Area C (adjacent to excavation Area 2) and Area E. Middle Iron Age pottery has also been found residually within Area F. Area C produced a large N-S-orientated ditch which was 2.84m in width and 1.3m in depth, extending for 13.11m obliquely through the trench. The ditch produced an assemblage of Middle Iron Age pottery in addition to burnt flint. The relatively substantial form of the ditch suggests that it may have formed a landscape boundary rather than a simple field division. The finds within this feature and from a single nearby pit hint at the possibility of associated settlement, hence its selection as the focus of an excavation area.

Middle Iron Age pottery in fresh condition was also recovered from a gully or ditch and post-hole within the southern area of the new garrison (Area R), close to an E-W-orientated cropmark with which the gully may be affiliated. Further Iron Age pottery was recovered from within an adjacent trench, again probably shown by aerial photographs as a linear cropmark feature. The cropmarks within Area R west are of particular interest, since at least two phases of landscape are represented by a major NE/SW-orientated (the main eastern) trackway cutting through or cut by a N-S/E-W-orientated coaxial field system. The Iron Age pottery within linear features similarly aligned to the field system indicates the possibility that this north-south/east-west field system is of pre-*oppidum* or *oppidum* date whilst the main eastern trackway is now known to date to the Roman period (see Area 10 results below).

Late Iron Age *oppidum* of Camulodunum

It could be argued that the principal archaeological monuments of the later prehistoric and Roman periods in north-east Essex are the Roman fortress and town (the sites of which are now occupied by the modern town centre of Colchester), and the pre-Roman Iron Age 'dykes' which enclose a 10 square mile-area of the *oppidum* of Camulodunum (Hawkes & Hull 1947; *CAR* **11**).

The Colchester dykes (Fig 1) have long been recognised as the boundaries of the pre-Roman *oppidum* of Camulodunum. Within the 20 square km-area enclosed by the dykes, three main centres of occupation or activity have been identified – a trading centre at the Sheepen site (near Colchester Institute), a 'homestead' at Gosbecks (near the Borough refuse dump), and pre-Roman activity on the later Roman farmstead site at the Kirkee McMunn Barracks site. The question which archaeologists have asked for some time is what else was happening inside the *oppidum*, and whether there were there any other centres of activity.

In the open areas of the *oppidum* between the sites at Gosbecks, Sheepen and Kirkee McMunn Barracks, cropmark photographs show enclosures and small fields, sometimes linked by trackways. The best surviving cropmarks are around Gosbecks, but a lesser group of cropmarks in the central and eastern side of the *oppidum* coincides with the excavation areas described in this report (see Fig 2).

There has been a limited amount of excavation and research within the *oppidum* (at the Sheepen site in the 1930s and 1970s, at the Kirkee McMunn Barracks site in the 1980s, and at Gosbecks in the 1930s and more recently), but the rebuilding of Colchester Garrison has presented a unique opportunity to study a large part of the *oppidum*. The evaluation techniques described above (pp 2-3) and the subsequent excavations were specifically designed to answer particular research questions on the origins, layout and development of the *oppidum*.

Berechurch Dyke

The eastern edge of the *oppidum* of Camulodunum was demarcated by a linear dyke on the east edge of Roman Barracks known as Berechurch Dyke (Fig 1). Although some parts of the Berechurch Dyke, where the earthwork bank survives extant, are designated as a Scheduled Ancient Monument, the length that passes through the Garrison is thought to consist only of the silted ditch (the earthwork bank is no longer extant within the Garrison) and is not Scheduled. The buried ditch is an important landscape feature and is to be retained by the new garrison and Urban Village projects.

Late Iron Age/Roman farm and coaxial field system

Field divisions on north-east/south west and north-west/south-east alignments were noted on aerial photographs and by the trial-trenching within the central and eastern area of the development area (Areas C, DR, F and G), where they appear to be directly associated with a previously known early Romano-British settlement at the Kirkee McMunn Barracks site. Whilst similar in form to the earlier prehistoric fields, the scale is far greater and is best regarded as a type described by English Heritage (1988) as a 'coaxial field system'. The origins of these field systems may lie in the *oppidum* period. The remains of the farmstead building at the Kirkee McMunn Barracks site included significant occupation finds material within coaxial ditches on the same alignment as those within the evaluation areas and a Romano-British hypocaust (under-floor heating system) pit containing box-flue and Romano-British tile categories (Shimmin 1998), indicative of a small farmstead. Romano-British trackway ditches adjacent to excavation Area 2 (survey Area C – see Fig 4) were spaced 6m apart. A parallel early Romano-British ditch appears to form a component of this landscape. Further fragments of Romano-British landscape are represented by coaxial ditches in Area C. Area YP to the north-west of Area 2 produced two ditches potentially associated with the Late Iron Age or Romano-British landscape. The dating evidence within these ditches was, however, limited to Romano-British tile.

The elements of the Late Iron Age/early Romano-British landscape are particularly clearly defined within areas adjacent to the Kirkee McMunn Barracks site. Two NE/SW-orientated trackways were noted running parallel to and to the east of contemporary ditches within the Kirkee McMunn Barracks site (Fig 13). These minor trackways are approximately 12m in width. A linked NW/SE-orientated trackway was recorded to the south, where the ditches were approximately 4m apart. This minor trackway was demonstrated by geophysical survey and by cropmarks and clearly extends to the south-east where it was investigated to the north-west of Roman Barracks (Area G; see Fig 3). A further 9m-wide NE/SW-orientated trackway connected with this trackway within Area F as a route leading to the south-west. The connection of these trackways was selected as the basis for excavation Area 6. Further ditches within the central area of the new garrison site also form elements of this landscape. Prior to the excavations, the dating for this landscape was based on ‘grog-tempered wares’ typical of the Late Iron Age in combination with early Romano-British pottery and tile. These finds were typically found to be concentrated within ditches adjacent to the Kirkee McMunn Barracks site. Furthermore, Romano-British tile finds from these trackway ditches included box-flue tile which almost certainly derived from the Romano-British hypocaust within the Kirkee McMunn Barracks farmstead.

Less well-defined evidence of contemporary fields within the southern garrison area (Areas M, P and R) suggest that this area was also farmed during the *oppidum*/Roman periods. However, the variable alignments of these features may indicate a less structured landscape character than was laid out immediately adjacent to the Kirkee McMunn Barracks settlement.

The main eastern trackway (Romano-British) (Fig 42)

The major landscape feature to be examined during the trenching exercise comprised a curvilinear double-ditched trackway, identified by aerial photography and geophysical survey running from south-west to north-east through the eastern and southern areas of the new garrison site (Figs 1-3). This main eastern trackway was cut by ten evaluation trenches, but, despite this, few finds were present within the excavated segments. Small sherds of probable Iron Age pottery were recovered from four ditch segments and it appeared likely at the time of the trenching that this feature was contemporary with the Late Iron Age *oppidum* as a line of communication through its eastern area. A connecting trackway running to the east towards Gosbecks was confirmed by trenching within Areas M and P (Fig 2). Several undated ditches are orientated at right-angles to the main eastern trackway and may represent contemporary field boundaries. Any metalling or rutting between the flanking ditches of these trackways and evidence for banks has been removed by ploughing which has also reduced the original depth of the ditches. The ditches were filled with low-grade homogeneous sandy silt deposits.

Roman farmstead at the Kirkee McMunn Barracks site
The Romano-British building investigated in 1994 has subsequently been covered by Garrison buildings that are to be retained and the major archaeological feature of this phase is not at significant risk. The investigations by CAT (Shimmin 1998) identified a hypocaust pit containing 2nd- to 3rd-century pottery in its backfill and a series of plot boundaries forming the farmyard and adjacent paddocks of the farmstead. These were similarly dated to the early-mid Roman period. Interestingly, two Late Iron Age ditches were identified on a slightly different (broadly east-west) alignment within the area of the later farmyard (Fig 13). These suggest an earlier occupation of the site but also suggest that the axis of the farmyard was altered by or in the early Roman period. The Roman coaxial arrangement clearly fits with the landscape identified by evaluation and targeted by excavation (Area 6) to the south-east.

Late Roman, Saxon and medieval
Virtually no features of these periods were observed during the evaluation.

WW1 and WW2 training and defence
As expected, given the history of modern military use, various training facilities and trench systems were identified. In addition there are three WW2 concrete and brick pill-boxes and a single concrete gun emplacement extant within the new garrison site. The line of a WW2 tank-trap ditch is also recorded running from east to west through the site (intersected in Area 10) and was detected by both aerial photography and geophysical survey. These training features identified by trenching comprised both linear trenches, sometimes revetted, and horseshoe-shaped ditches whose upcast was presumably intended to protect military positions. These features were concentrated within Area F (east) which is identified as a focal area for military training during WW1. Revetment was occasionally found in the form of corrugated iron panels but had in most cases been removed. The condition of these features was poor. Small bunkers within Roman Barracks were recently infilled and one feature was still extant. These features survive in moderate to good condition due to a lack of horizontal truncation.

Aims and objectives

The research potential of the above archaeological remains has been fully explored in Research design for archaeological excavations and watching brief at the new garrison, Colchester (RPS 2003).

The Overarching Research Aim for the new garrison archaeological project was: To characterise the nature of landscape utilisation and change from the Neolithic (or earlier) to the Romano-British period. The central theme of the new garrison archaeological project is the development of the landscape to include the following:

1) the evidence for early agricultural clearances in the Neolithic period,
2) the potential establishment of planned and 'owned landscapes' by the Late Bronze Age,
3) the creation of the *oppidum* in the Late Iron Age, and
4) the effect of the establishment of the Roman town on the agricultural hinterland.

The 'written schemes of investigation' (WSIs) for the three areas described here (RPS/CAT 2003a, 2003b, 2003c) stressed a number of the key project aims and primary objectives.

Of particular importance for Area 2 was Aim 3; 'what was the nature of the Middle Iron Age settlement within the area of the later *oppidum* and are there any indications of landscape division and settlement which might allude to the origins of the *oppidum?*'. The primary objective for Area 2 was to investigate a substantial N-S-orientated ditch which had been identified and dated to the Middle Iron Age during the 2002 evaluation (CAT Report 197), and Area 2 was located to facilitate this investigation. The site was located centrally with respect to the imminent new garrison development.

The primary objective for Area 6 was to investigate an apparent coaxial layout of interconnecting trackways shown by aerial photographs as cropmarks and to a lesser degree by geophysical survey in 2002. Trial-trenching in 2002 (CAT Report 203) confirmed the existence of the ditches and provided limited evidence for a Late Iron Age or Roman date for the landscape. Area 6 was a former arable field (north of Earlswood Way and south-east of

the Kirkee McMunn Barracks site) which will form part of the new garrison construction compound, following which it will be landscaped for use as sports pitches.

The primary objective for Area 10 was to investigate the main eastern trackway which has been identified by aerial photography as cropmarks and to a lesser degree by geophysical survey in 2002. The location will form part of the eastern area of the new garrison.

Area 2 excavation results

Period 1 – Neolithic and Bronze Age

There were no certain features of Neolithic or Bronze Age date, but a small group of 26 worked flints (one burnt), mostly found in a residual position in the fill of the Middle Iron Age enclosure ditch F6, indicates that there was some activity here in the Neolithic or Bronze Ages, almost certainly of a transient nature.

Period 2 – Early Iron Age

There is no evidence of activity in Area 2 in this period.

Period 3 – the Middle Iron Age

The Iron Age enclosure and associated features (Figs 4-12, Plates 1-2)

Area 2 was dominated by a sub-rectangular single ditched enclosure F229. Three sides were identified during the main excavation, while the northern side was located later by trial-trench to the north of the excavation area.

The enclosure measured 52.5m by 47.5m, giving an internal area of some 2,495 sq m (0.249 ha). The exposed length of ditch had no entrance gaps, but the presence of a linear hollow way (F113) apparently leading up to the north-eastern edge of the enclosure ditch from the east suggests an entry at that point, probably across a plank bridge. The hollow way (F113) was some 22m long within the excavation area (extending eastwards of the excavation for an unknown distance), around 3.5-5m wide, and was eroded around 0.15-0.2m into the underlying natural sands and gravels. This feature was probably created by a lengthy period of use by stock, foot and probably cart traffic. Gravel (L30, L73) had been thrown down to consolidate the hollow way after erosion episodes. The hollow way ended abruptly in a squared-off end 1.5m from the eastern ditch, which suggests access continued by a slightly raised route over the ditch (by a plank bridge). In other words, the narrow gap of undisturbed natural gravel between the west end of the hollow way and the ditch could be explained as the ground-fast position of the eastern end of a wooden bridge. A second possible, but rather less impressive, entrance point is suggested by the narrowing of the western ditch and a small eroded hollow on its outer edge which is consolidated with gravel (L61).

The enclosure ditch was most substantial on the eastern side of the enclosure at 2.8m in width and approximately 1.3m in depth. It was recut at least once[1], thus indicating a relatively long period of use. A circular pit approximately 2m in diameter and approximately 3m in depth was excavated in the south-east corner of the enclosure where the recut ditch was at its deepest (F62; Figs 9, 11)[2]. Whether this was a sump or an animal watering hole is difficult to say. It has rather steep sides (too steep to allow animals to approach it easily), so an interpretation as a sump (to remove excess water) or even a well from which water could be drawn (if the water table were high enough) may be more appropriate. The lower fill comprised a waterlogged alluvial silt from which a column sample was extracted for pollen analysis. Unfortunately the results were poor.

Gravelled layer L17 in the south enclosure ditch (Fig 10, F14/F51 Sx 1) suggests that the ditch had two phases, with gravel laid down to consolidate the ground over earlier ditch silts. A stony horizon (L68) in the south-western corner of the enclosure may also represent a consolidation phase (Fig 12, F136 Sx 2).

Environmental sampling of the enclosure ditch revealed fragments of twigs, thorn, seeds and fruit stone fragments in the eastern ditch. Val Fryer has suggested that this is evidence of a hedge close to the ditch (see specialist report below). Although the position of the hedge is not known, it is presumed to have been on top of an internal bank. There is a corresponding lack of evidence for a hedge on the western side. Taken along with the

[1] recut of eastern side - F61, F59; southern side - F14, F136; western side - F136, F52, F53, F57, F56

[2] pollen sampling of layers within this sump was not productive

correspondingly larger amount of pottery dumped there as domestic debris[3], and the lesser size of the ditch, this leads to the conclusion that this western side of the site was not intended to appear as impressive as that on the east.

Fragments of an Iron Age loomweight from the eastern ditch fill suggests that weaving was one of the activities carried out within the enclosure.

Plate 1 Area 2 – Middle Iron Age round-house, view north-west.

The round-house (Figs 7-8)

The interior of the enclosure was dominated by a circular structure defined by a penannular gully 11.8m in diameter[4] (F4/F44; Figs 5, 10). Such features are invariably interpreted as eaves drip gullies of round-houses (designed to collect rainwater from the eaves of a pitched thatched roof). Further evidence for the building, in the form of burnt daub with wattle impressions, was found in a Middle Iron Age pit to the north of the circular building (F43).

A break in the eaves drip gully on the northern side of the circle could represent an entrance. This conclusion may be supported by post-holes for a potential porch (F171, F180, F182-F183?, F185-F186?). However, part of the east side of the gully was removed by a later ditch, and it is perhaps more likely that the entrance was on the eastern side, given the usual east-facing aspect of round-houses. The shallow gully has produced a relatively small assemblage of Middle Iron Age pottery (17 sherds, 80 grammes), which indicates that it is contemporary with the lower ditch fills of the enclosure.

A circular arrangement of post-holes close to the eaves drip gully appears to represent the outer wall of the round-house, whilst an inner ring of post-holes presumably housed roof supports. With the maximum extent of the building at 11.8m diameter (and the thatch overhanging slightly), this was a relatively large and impressive structure.

The round-house, though relatively central, was situated noticeably closer to the southern and western side of the enclosure. This position is striking since the round-house would have had a greater visual impact on the visitor coming in through the eastern enclosure entrance, than if it had been central. This wish to impress, prior to and at the point of entry into the settlement, was also represented by the much more substantial and impressive nature of the enclosure ditch (and its presumed bank) on the eastern side of the enclosure than on the southern and western sides. Indeed, the western side was notably less substantial at 0.5m-0.75m deep and 1.3m-2.3m wide (where it was hidden away behind the round-house). It is also interesting to note that domestic debris (in the form of discarded sherds of pottery) was dumped in greater quantities in the western ditch than in the southern and eastern ditches.

[3] west side of ditch: 9.15m excavated in 7 segments; average sherd count 26, average sherd weight 152g – east side of ditch: 11.6m excavated in 4 segments; average sherd count 12, average sherd weight 97g

[4] measured from centre of gully on each side

Environmental sampling has revealed a lack of debris in features associated with the round-house. A reasonable interpretation of this is that the house was kept clean, and that rubbish was not allowed to accumulate anywhere inside or around it.

The placed deposit (Fig 8)

A shallow pit containing the disturbed remnants of a placed pottery vessel (F49) was located in the centre of the round-house. The pot has the appearance of a cremation burial, but no burnt bone was found in the sieved samples. Instead, two tiny crumbs of unburnt mammal bone were identified. Whether or not this pot originally contained cremated bone, which has not survived the acid soils, its central position defines it as a ritual deposition apparently significant to the owners of the round-house. It is possible that the placed pottery deposit itself was intended to commemorate the construction of their building and, if it was a burial, to link it directly with their ancestors. This type of offering has been postulated elsewhere for buried human remains and other placed depositions within round-houses, as 'foundation deposits'. Alternatively the deposit may have been placed during the lifetime of the settlement.

If the placed deposit did originally contain cremated bone, which on balance seems unlikely (given survival of cremated bone from Early Iron Age cremations in Area 10), then a possible parallel for the use of a Middle Iron Age pot for a cremation comes from Mucking, near Thurrock in Essex. Here an 'omphalos jar' in a sandy, therefore usually characterised as Middle Iron Age fabric, was found with cremated bone (Elsdon 1975).

Plate 2 The south-east corner of the Middle Iron Age enclosure ditch, view south.

Internal features of the enclosure (Fig 7)

Internal features of Middle Iron Age date were sparse within the enclosure, although a cluster of small pits and post-holes was identified south of the round-house[5]. Some of them do fall in a convincing arc (F50, F38, F42, F7), and maybe even a circle (if F78 is included). Some of these posts may define '2-post' structures (usually interpreted as drying-racks) of the type identified for instance at Little Waltham (Drury 1978, 34). Going beyond that is to risk over-interpreting the features. A larger but relatively shallow oval pit (F43) to the north of the round-house contained a small assemblage of Middle Iron Age sherds and burnt daub, potentially derived from the round-house. The original function of the pit is likely to have been the storage of food substances, although no clues to its precise function were forthcoming from the soil-sample analysis.

Features external to the enclosure (Figs 5-6)

[5] F5, F7, F38, F42, F50, F73-F74, F77

West of the western enclosure ditch were two smaller gullies (F48, F84). Neither is dated by finds, but the fact that the former appears to follow the alignment of the main enclosure ditch suggests contemporaneity with it. This gives the western side of the enclosure a double ditch. The function of these outer ditches is not obvious, although they were possibly associated with stock management (ie stock funnels to separate young animals and/or to funnel stock to the entrance through the western enclosure ditch).

Reconstructing the round-house

An attempt has been made to reconstruct the plan of the round-house (Fig 8). The post-holes within the gully would normally be interpreted as having formed an inner and an outer circle, with other posts perhaps representing an earlier phase[6] or a repair phase when the building was rebuilt slightly farther to the east[7]. However, the inner circle is not concentric with the outer post circle. This creates a potential problem in a structure where both circles of posts rise to roof level. This is simply because the posts of the west side of the inner circle would meet the inside of the roof higher up than those on the east side. If the inner circle posts were simply lashed to the rafters, there would be no problem with this interpretation, but if the posts were lashed to a tie-beam, then the tie-beam must have sloped slightly. Of course, it may be the case that the inner circle was not structurally significant, as may be demonstrated by the reconstructed houses at Flag Fen (FF)[8] and Castell Henllys (CH)[9]. Both the FF and CH houses have an outer wall, clad in daub to give it some 'deadweight' to counteract movement, but neither has an inner post ring. The structural strength is provided by a tie-beam which acts as a tension ring linking the top of the outer circle of posts with another tie-beam (or two) part-way up the roof line. The roof tie-beams have the principal rafters attached to them, and it has been found that some of the rafters can finish at tie-beam level, allowing only a few to rise to the apex of the roof. This greatly reduces the weight of the roof and reduces the number of long rafters needed.

The virtue of this type of reconstruction is that the FF and CH buildings are still standing. The problem, naturally, is that in the FF and CH buildings, an inner circle of posts is superfluous. Inner post-holes were excavated at CH, where they are reconstructed as internal partitions. Some of our posts could easily be interpreted as partition lines, but it is doubtful whether they were partitions rather than slightly mis-built structural posts.

Dating Area 2

The basic sequence and finds

The main stratigraphical sequence in Area 2 can be summarised as follows: the enclosure ditch F229 had two phases, the later one of which was cut by the trackway ditches. The round-house was also cut by the same trackway.

With regard to dating the initial cutting of the enclosure ditch, most of the pottery in the lower fill is sand-tempered, which leads Paul Sealey to suggest a date of *c* 100 BC for that event (pre-Belgic pottery report below). The C14 date ranges are compatible with this date although they do allow for an earlier origin (see paragraph below). The Middle Iron Age pottery in the lower fills of the ditch is broadly contemporary with the 'placed deposit' in the centre of the round-house, and there is no reason to suspect that they are not contemporary.

The uppermost levels of the enclosure ditch contained Middle Iron Age pottery in association with Late Iron Age grog-tempered pottery, and therefore the top fill of the ditch accumulated early in the period *c* 50-25 BC. This gives a *terminus post quem* of *c* 50-25 BC for the Late Iron Age/early Roman trackway ditches, which cut the enclosure.

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[6] presumably without the existing gully

[7] this kind of repair would be necessary if the weight of the thatch roof had caused the structure to shift slightly to one side, especially if some of the supports had rotted through

[8] article on Bronze Age and Iron Age round-houses at Flag Fen at http://www.flagfen.com/iron_age_roundhouse.htm

[9] articles on 'The reconstruction of the Chieftain's roundhouse' and 'Roundhouses in the landscape', both by P Bennett, at http://castellhenllys.pembrokeshirecoast.org.uk/english/articles/ApproachingPast.htm

The C14 dates (Fig 10)
In an attempt to improve the site dating, two samples from a layer of dumped charcoal (fast growing species) within the ditch were radiocarbon-dated. The samples were taken from L7 in the middle of the sequence of ditch fills, and so they should represent a time:
- after the initial cutting of the ditch,
- and after the partial silting of the ditch,
- probably contemporary with the laying of gravel deposits across the ditch,
- but significantly earlier than the Late Iron Age/early Roman trackway cut across the ditch fills.

The results, in conventional radiocarbon dates, are 2120±40 BP, and 2150±60 BP (160 BC and 190 BC). These conventional dates are translated into calendar dates via the correction curve. Expressed at Cal BC and at 2 sigma (95% certainty), the dates are expressed as:
- 380-40 BC
- 350-310 BC and 210-40 BC.

In other words, the corrected dates give a generally Middle Iron Age/Late Iron Age date range, but, beyond that, they are so broad as to be largely unhelpful. Whereas the later end of the date range would fit with Paul Sealey's pot dating of the horizon above the sampled layer (50-25 BC), the C14 evidence allows for a much earlier *terminus ante quem* for the lower ditch fills (and therefore the cutting of the ditch). The compromise suggested here, based partially on the averages of the conventional dates and those at 2 and 1 sigma, combined with the pottery fabrics, is that the sampled deposit should be dated *c* 200-100/75 BC.

How does this leave the general site dating? The following broad outline suggests itself.
- *c* 250-100 BC: digging of enclosure ditch (round-house and placed deposit presumed to be contemporary). Initial ditch silting.
- by *c* 200-100/75 BC: ditches have partially silted up, some gravel laid over silted ditches (C14 horizon).
- *c* 50-25 BC: ditches completely silted up, Late Iron Age trackway cuts across them.

Important note: if the placed deposit were a cremation, that rite would be more typical of the Late Iron Age, although the pottery fabric suggests an earlier (Middle Iron Age) date for the placed deposit. In this case, the most appropriate period for its deposition would have been the transition of Middle Iron Age to Late Iron Age, perhaps the period 100 BC-75/50 BC.

Faunal remains
Unfortunately, there was only a tiny quantity of animal bone from Area 2 due to soil acidity. Apart from the two tiny specks of mammal bone from the placed deposit, there was a very small quantity of mammal bone from the south enclosure ditch (F143/F14), but the group was too small to make any positive statement about agriculture or the rural economy.

Periods 4 and 5
The later Iron Age and Roman trackway and landscape
Following abandonment of the enclosure, and presumably the levelling of its banks, a double-ditched trackway cut through the enclosure on a NNW-SSE alignment (F2, F11, F12, F24, F27, F35). The trackway also cut through the round-house gully (whether anything was visible of the round-house at this time is unknown, but seems unlikely).

The trackway alignment is identical to that of the eastern and western sides of the enclosure. This trackway was very similarly aligned to the Late Iron Age/early Roman system of double-ditched trackways in Areas 6 and 10.

A function associated with stock management is inferred, probably as part of the farmlands associated with the Late Iron Age to mid-Roman farmstead recorded in the south-eastern corner of Kirkee McMunn Barracks.

The dating of the trackway is as follows. First, it cuts ditch fills dated ceramically to 50-25 BC. Second, the west ditch contained Roman pottery of 1st- or 2nd-/3rd-century date, and fragments of Roman brick. The west ditch contained a Roman *tessera* and a graffito

floor tile (Fig 36.2). Therefore there is no doubt that these ditches silted up during the Roman period, but they could easily have been cut soon after *c* 50-25 BC. There are also small finds of Roman wire and part of an iron sheet. These finds, along with the *tessera* and the tile, are the type of 'background noise' to be expected from a nearby Roman habitation site; presumably the Kirkee McMunn Barracks Roman farmstead site, unless there is another undetected site nearby.

Period 6

The post-Roman landscape

There were no finds or features of Saxon or medieval date. The final phase of activity was represented by field ditches F10, F12, F36 forming a T-shaped junction of three post-medieval fields. F10 produced medieval or post-medieval pottery.

Area 6 excavation results (Figs 14-25)

Periods 1 and 2 [10] – Neolithic, Bronze Age, Early Iron Age

Paul Sealey dates the bulk of the Area 6 prehistoric pottery to the Middle Iron Age. However, there is a small quantity of flint-gritted and flint-with-sand tempered pottery in F15 (on the west edge of the site). This may be an earlier (ie Early Iron Age) placed deposit.

A total of nine struck flints was found, very thinly spread over the whole Area 6. Some are Neolithic blades, others are generally indicative of intermittent visits by Neolithic and Bronze Age people who knapped flints for whatever activity they were carrying out and then moved on. There are no features or pottery to suggest permanent settlement. Whether their activities were conducted within an open and farmed landscape or a forested environment remains uncertain. However, Hazel Martingell points out that at least two flints could actually be of Iron Age date (these are discussed below in the flint report). Both came from ditch F5, located in the south-western corner of Area 6, where Middle Iron Age activity is suspected.

Slightly over 1.2 kilogrammes of burnt flints were found in Area 6. Most were thinly spread over the site and there were no obvious concentrations. However, one feature (F222) contained a large proportion of the burnt flints (838g = 69% of the group by weight). Such a quantity of flints in a feature may indicate that it was a fire pit or cooking pit. Burnt flints are not intrinsically datable, but they are often found in prehistoric and specifically Bronze Age contexts. On the basis that cooking is normally carried out adjacent to a centre of occupation, it is tempting to infer some form of activity in the vicinity of F222.

Period 3 – Middle Iron Age (*c* 150-50/25 BC) (Fig 22)

The first evidence of occupation in the vicinity takes the form of a spread of Middle Iron Age pot sherds. These were mainly found in a residual position in the fills of later ditches[11] and graves[12]. A few sherds were found in features which may be contemporary tree-throw holes[13]; if so, then active clearance of woodland or standards was still going on in this period. There was a heavier weight of sherds over the west side of the site, and most of the large groups were found within 10 m of the west edge of the site. At a simple level, these sherds can only mean one of two things: either they are (more or less) *in situ* evidence of Middle Iron Age activity on this spot, or they have been brought here from elsewhere. Paul Sealey argues persuasively (below) that they were transported here as manure scatter (from a nearby site). This seems a logical conclusion; if the sherds were brought out with manure and spread on Middle Iron Age fields, then Area 6 was an arable area in the Middle Iron Age. The location of these sherds towards the western side of the site suggests an origin on or close to the Kirkee McMunn Barracks farmstead. The 1984 excavations identified a number of prehistoric features. Whether these indicate general prehistoric activity on the site, or anything more specific to the Middle Iron Age sherds collected on Area 6, is difficult to say.

[10] the period descriptions in this report are project-wide – not all areas have activity in all periods
[11] F2, F4, F5, F61, F90, F259-F260, F304
[12] F227, F231, F233
[13] F74, F204, F252-F253, F352

However, there is other site evidence to take into account, principally a shallow curvilinear gully in the central eastern area of the site (F46) with possibly associated finds of loomweight fragments (Fig 36.7). The interpretation of this feature as a stock funnel connected with the Late Iron Age and Roman field boundaries is proposed below, but there is another option which is worth exploring. Could the gully be part of an eaves drip gully of the type commonly found around prehistoric houses[14]? If so, an adjacent pit (F13) containing Middle Iron Age pottery could be associated with it. The fact that the gully is only present on the north side could simply be due to the slope of the site[15], or that it may never have been a complete circle. The curvilinear gully F46 and one of the post-holes (F13) contain fragments of Middle Iron Age/Late Iron Age loomweight, and a further fragment comes from Sx 6 of ditch F4, 10 m to the west. These finds clearly indicate that weaving has taken place at or close to this location [16]. Unfortunately, it is more difficult to be certain that the finds are actually connected with the gully (ie with a weaving hut), or whether they are Middle Iron Age or Late Iron Age. The importance of the date lies in the fact that Middle Iron Age weaving would be an isolated incident (whether or not in a hut) which would pre-date the field boundaries here, whereas Late Iron Age weaving could be contemporary with them, and could be taking place to one side of a rather wide field entrance.

The alternative interpretation of this gully is that it formed a stock funnel linking into the north ditch of the main trackway in the Roman period (see below). This would have been used to guide stock from Field 2 into the southern trackway, and to fields beyond. It would presumably have had an accompanying bank and hedge. In this interpretation, the Middle Iron Age/Late Iron Age weaving evidence would be independent of the presence of the gully.

If it is accepted that there was Middle Iron Age/Late Iron Age weaving here, then there is less need to invoke manuring as a mechanism for transporting the prehistoric sherds here – they may simply be domestic debris (*pace* Paul Sealey). A date for this pottery of *c* 150 BC is suggested by Paul Sealey, and that may be taken as the beginnings of clearance for agriculture and possibly other activities in Area 6.

A pit in the north-west corner of the site (F14) contained a large group of Middle Iron Age sherds (24, weighing 312 grammes), the largest Middle Iron Age group on the site. It is unlikely that this is rubbish disposal (why bury it?), so an interpretation of placed deposit is preferred for this feature. It is not close to a boundary or field ditch, so its precise purpose remains obscure. However, the notable higher density of residual Middle Iron Age sherds in the western area of Area 6 may suggest that there was a settlement to the west, perhaps even ancestral to the Late Iron Age and Roman occupation in the south-east area of the Kirkee McMunn Barracks site.

Period 4 – Late Iron Age and early Roman period: the first landscape divisions

The Late Iron Age and early Roman trackway and landscape (cover, and Fig 23)

The 2002 trial-trenching and the 2003 excavation have confirmed the existence of a 'coaxial landscape' within the eastern area of the *oppidum*, and parts of it run through Area 6. Figures 14 and 15 show that the main trackway ditches run unbroken, NW/SE, through the centre of the site (F2/F304, F4).

The ditches were recut at least once, suggesting a long period of use. This is confirmed by the wide date range of pottery from the ditch fills; Middle Iron Age, Late Iron Age, and Roman (1st-3rd century). The Middle Iron Age pottery is certainly residual, but the Late Iron Age material suggests that (at least some of) the ditches were probably originally cut in the Late Iron Age, and were then recut during the Roman period (probably several

[14] if gully F46 were an eaves drip gully, it would surround a structure 16m in diameter. While this may be larger than the average prehistoric round-house, it is by no means the biggest even in Essex (structures of 16m diameter are known from Stansted Airport (Havis & Brooks 2004, 102, fig 71) and at Little Waltham (Drury 1978, 34, fig 24))

[15] the slope of the site down from W to E is demonstrated by the 70cm fall in the height of the base of ditch F2/F304

[16] in fact, it is unlikely that this material has travelled too far from its source; while it is possible that fragments of loomweight can travel as manure scatter, the total weight of loomweight fragments in Area 6 (1.6 kg) is too much of one type of find to be explained as manure scatter. Further, a sizeable proportion of the group (42% = 692g) is from gully F46 and adjacent pit F13. A further 145g (= 8%) is from adjacent ditch F4

times). Although the multiple recutting of the ditches seems beyond doubt, it is much more difficult to untangle various phases from the evidence (especially since recutting of ditches will inevitably remove some or all of the previous cuts and their fills). However, two phases are reasonably well identified. The first is in the Late Iron Age/very early Roman period, and the second exclusively in the Roman period (for which, see below).

The first phase of ditches can be postulated on the basis that they only contain Late Iron Age and 1st-century Roman finds. These are either side of the southern trackway (F259, F307). The angle of the west ditch of the southern trackway, turning out to the west, suggests that the first phase of the ditch did run west along the course of the later recut (ie F2), but had been completely removed by it. It is presumed that the east side of the trackway (ditch F307) originally matched this by turning out to the east. In fact, a small section of ditch (F475), also containing exclusively Late Iron Age pottery (albeit in very low density), remains to show where the early phase might have run. Again, the length of the original eastern arm has been recut as F304. With the proposed configuration of field ditches, a wide trackway appears to open out into a large field lying to the north. Similar configurations are recorded at Fengate (Pryor 1991, 109, fig 85), at Stansted Airport[17], and the A41 Aston Clinton Bypass, Buckinghamshire (Masefield forthcoming). The presence of Roman pottery in gully F305 (which cuts off the field entrance) suggests that the field entrance was not closed off by a fence until the Roman period.

There is a small number of features whose pottery dating suggests possible contemporaneity with the first phase of ditches. The first is a Late Iron Age cremation burial pit F63 (Plate 3). This appears to have been deliberately positioned at a point close to a field boundary (Figs 15-16). The circular burial pit contained four complete pots arranged upright around one edge, a fragment of sheet iron (possibly from a pyre deposit), and a spread of the cremated bone of an unsexed adult. The pots are dated by Stephen Benfield to Late Iron Age and probably pre-AD 5, a date which is in keeping with the ceramic dating of this landscape phase (see Late Iron Age and Roman pottery report below). Other contemporary features are pits F3, F78 and F79. These contained very small quantities of Late Iron Age pottery, and their function is not clear.

Plate 3 The Late Iron Age burial F63, view south.

The burial is presumably derived from the pre-Roman phase of occupation at the Kirkee McMunn Barracks farmstead, which lay only 150m to the north-west. Excavations at Kirkee McMunn Barracks on that site uncovered Late Iron Age ditches, suggesting that the site was originally Late Iron Age, but continued in use into the Roman period.[18] Intriguingly, however, the Late Iron Age ditches at the Kirkee McMunn Barracks site are orientated almost east-west, rather than NW/SE as in Area 6. This may suggest that the Late Iron

[17] Stansted Airport Social Club site (Havis & Brooks 2004, 30-31)

[18] if so, this implies that the Kirkee McMunn Barracks Roman farmstead was originally 'native' with its roots in the Late Iron Age, rather than a Roman imposition on the landscape following the invasion (confiscation of land and allocation to veterans has been suggested for farmlands around the early Roman capital at Colchester)

Age ditches at the Kirkee McMunn Barracks site actually pre-date those with a possible Late Iron Age/earliest Roman origin within Area 6.

Late Iron Age or early Roman pottery was also recovered from F74, F127 and F362. However, these tend to be large and rather amorphous features which are probably tree-throw holes into which stray sherds have made their way rather than settlement features. An isolated post-hole or small pit (F14) containing Late Iron Age pottery and earlier residual sherds was apparently located 15m north-west of the cremation burial. Though impossible to prove, this may be a 'placed deposit' of ritual significance.

Period 5

The Roman period – enlargement of the landscape (Figs 15, 24)

The basic layout of the Period 4 ditches was expanded in the early Roman period by the enclosure of what had apparently been open land in Period 4. A ditch (F4) was dug parallel to the existing ditch (F2/F304) to create the main trackway across the site (aligned NW/SE), and, extending off that, F61 (SW/NE) and F90 (NW/SE). This created a system of separate fields which will be discussed below. Multiple recuts of the ditches indicate a prolonged period of use, certainly into the early 3rd century AD, but probably not much longer.

These linear divisions therefore demonstrate the continuity of a coherent landscape which originated in the Late Iron Age/early Roman period and was in use until probably the 3rd century AD[19]. These ditches define the sides of enclosures or fields, for convenience numbered Fields 1 to 5.

Field 1

Field 1 in the south-west area of the excavation (Figs 15, 23) was bordered by the main trackway and southern trackway (F259). The east ditch of the Period 4 southern trackway was not recut in this period. Instead, the east side was redefined by the cutting of a new ditch F260. The full extent of Field 1 is shown by aerial photographs as a square plan field with an area of 4,500 square metres. The main feature within Field 1 was a wide silt-filled hollow (F1), approximately 0.25 m in depth. This probably represents erosion by stock from continuous use of this area as a stock-holding pen (perhaps for feeding or milking). The possible association with stock was successfully tested by phosphate analysis, which showed a much higher level of phosphate over F1 compared with the ditch fills to the immediate north (report by Dr P Clogg, below). It seems reasonable to associate the high levels of phosphate with use of the F1 area by various stock. A moderate quantity of abraded Late Iron Age and 1st- to 3rd-century Roman pottery has been recovered from F1, indicating use in the early-mid Roman period.

Excavation of sections across F1 exposed a series of stake holes and post-holes[20]. Attempts to extract building plans out of these features has proved problematic. Whereas it is possible to visualise wall/fence lines in the eastern and southern parts of this group, this is less straightforward in the western and northern areas. It appears that the group of post-holes does not have sufficient structural integrity to suggest a single building. It is more likely that a series of light fences, tethering posts or similar structures erected over the years has produced this spread of post-holes and stake holes. Such structures would fit in with the interpretation of stock-holding pens suggested by the phosphate results.

The silt-filled hollow was drained by a contemporary (early Roman) gully which extended down-slope south-eastwards (F5) from its southern side and fed into the contemporary western ditch of the southern trackway (F259). A later phase of activity was represented by a hearth pit (F34) cut through the hollow's silts. The pit contained extremely well-preserved charred remains of oak firewood, but, although it appears to post-date the 2nd/early 3rd century by stratigraphy, it was otherwise undated.

An indication of the range of activities being carried out in the vicinity is given by the large group of Mayen lava quern fragments from F1, from adjacent ditches F4, F259 and F260 and from cut F480 (total weight of group 1.06kg). In addition, millstone grit fragments were found in F1 and pit F467 (total weight 2.08kg). These quern fragments show that the

[19] this date is indicated by early 3rd-century pottery in the ditch fills

[20] F261-F262, F282, F449-F450, F457-F459, F462-F465, F499-F500, F502, F507-F559, F562-F566, F568-F580

grinding of grain to produce flour was taking place at the home farm from which these finds derived.

A curious feature was a circular (less than 1m diameter), vertical-sided pit F467, in the extreme south-western corner of the site. A ring of stake holes were found around the base of the pit with a concentric ring of vertical stake holes at a higher level cut into the sides of the pit. These suggest that the pit was wattle lined. If so, the pit was probably a storage feature of some kind, although its precise function is unknown. The fill contained quern and pottery fragments and a group of hobnails still in the shape of a shoe. Hobnails are most commonly found in graves, so there is a temptation to regard this as a burial. However, the relatively large element of broken pottery in this feature, as well as the non-grave shape (compared with other Roman inhumations on this site), may suggest a final use as a rubbish-pit. Alternatively the smashed pottery, quern and intact shoe could have been ritually placed, a possibility more in keeping with the remote location of the pit.

Plate 4 View along main trackway with Field 1 (left) and Field 2 (right); in the foreground are stake holes of presumed fence line closing off the north end of the main trackway between Fields 1 and 3, view north-west.

Field 2

Field 2 appears to have been much larger than Field 1, with its western side shown by aerial photographs and trial-trenching to have been demarcated by an early Roman trackway (the main western trackway) which in turn demarcated the eastern edge of the Kirkee McMunn Barracks farmstead compound. The field contained a large number of tree-throw holes, but relatively few pits. A notable exception was the identification of a pair of inhumation grave pits (Figs 15, 19), adjacent and parallel to the main trackway at the western end of the site (F17, F28). These rather shallow graves contained 21 iron coffin nails, although no human bone had survived the acid gravel soils. Both graves contained

moderate quantities of 2nd- or 3rd-century Roman pottery sherds. The dating of the graves suggests that they were contemporary with the nearby Roman farmstead.

Stock management within the farm was highlighted in unusual detail at the point of connection of the southern trackway with the main trackway. It has been suggested above that the curvilinear gully (F46) in Field 2 could have been an eaves drip gully belonging to a round-house. However, an alternative and probably more plausible suggestion is that it was connected with the northern ditch of the main trackway (F4). This possibility is neither confirmed or refuted by the stratigraphy, since the gully was shallow at the point of connection with the trackway ditch and a relationship could not be discerned. However, the gully did not continue to the south of the main trackway's northern ditch and therefore probably connected to it. The gully thus formed an open-ended enclosure opposite the connection with the southern trackway. Gravel metalling (L5) was evident both between the main trackway's flanking ditches and above the silts of the northernmost of its ditches, at the point of connection with the southern trackway and the curvilinear gully within Field 2. This metalling suggests an attempt to prevent soil erosion as stock crossed from Field 2. It is considered that the curvilinear gully may represent a (presumably hedged) stock funnel into which animals could be driven from Field 2 onto the main trackway and then onto the southern trackway or into Field 3 (through a further post-hole-defined gate) as necessary. This crossing point of the main trackway is emphasised by the narrowing of the main trackway's southern flanking ditch to a shallow gully (with two phases) facilitating the passage of stock over the drainage system. A series of stake holes and post-holes in the base of the gully appears to define a fence and gateway across the entrance to the southern trackway (Fig 17, Plate 4). The structure appears likely to have been a wattle-style hurdle with a central wooden gate (this area is shown in detail on Fig 18).The use of a 'stock funnel' would be appropriate given that the entrance to the southern trackway was via the centre of the field rather than via its corner. Gateways are more usually located in field corners so that stock can be easily funnelled into the entrance. Thus, where there is no other means to corral the stock, a gully and hedge barrier such as this (though possibly unknown in the archaeological literature) would be appropriate.

There was further evidence of gravel metalling of the main trackway in the form of a gravel layer (L7) slumped into the partially-silted southern ditch, to the east of the crossing point, and a further patch between the ditches. This implies that the trackway was eroded into the subsoil as a hollow way and was either extensively metalled or was patched with metalling. The southern trackway's western ditch (F259) connected with the main trackway's southern ditch (F2) via a recut curvilinear gully (F461). The gully widened and deepened to the south. The eastern flanking ditch was wider and more shallow than its counterpart. Both contained early Roman pottery and lava quern stones (from the Rhineland) implying an arable component to the local economy.

Field 3

Field 3, defined on two sides by the southern trackway and main trackway, produced few features of note other than occasional tree-throw holes.

Field 4

Field 4 was defined on three sides by the northern trackway's western ditch F61 (the ditch is not paired within Field 3), a right-angled Roman field ditch forming the northern side of the field (F90) and the main trackway. Several burnt patches to the north of the main trackway's northern ditch within Field 4 (F229, F230, F234, F352) may represent small scale burning hearths (analysis failed to reveal any cremated bone, so these burnt patches were not cremation burials). Ditch F61 contained Roman brick and residual Middle Iron Age sherds. There were no finds in ditch F90, which is probably a reflection of its distance from the Kirkee McMunn Barracks site.

Burials are certainly represented by a series of five inhumation burials of Roman date parallel with the western boundary of Field 4 (F227, F228, F231, F233, F238: Plate 5). The graves comprise two particularly deep adult graves (F231, F238 – approximately a metre in depth), a further adult grave (F227), and two child-sized graves (F228, F233). Once again, no bone material had survived. The coffins were represented by iron nails and, in one case, by the charred rectangular plank apparently forming the base of a coffin (F238). The wood was not identifiable, but was probably oak. Nails of the lid and the base of the coffins were represented by nails on two levels within the grave fills. There were no grave

goods within these examples and they were datable only by occasional sherds of Roman pottery in the grave fills. These sherds spanned the 1st to the 3rd centuries, suggesting a burial date in the 2nd to early 3rd century, and probably broadly contemporary with the burials in Field 2.

Plate 5 Two inhumation graves (F227 and F228) on the west side of Area 6 Field 4, view south-west.

The graves of this probable family group were much deeper and more carefully excavated than those in Field 2 to the west, possibly reflecting their status. If the Field 4 graves were contemporary with those on the south edge of Field 2, the different treatment of burials may represent a difference in rank or status; for example servants or farm workers in Field 2, and a family in Field 4. These individuals were also likely to have been residents or staff of the Kirkee McMunn Barracks farmstead. It is clear that that the burials in both locations are aligned with regard to boundary features (ditches and hedges) rather than to a ritual orientation (for example east/west for Christian graves).

Field 5

The entrance between Field 4 and Field 5 appears to have been on the path of the northern trackway (defined by a double ditch) in Field 5. A gate structure may be represented by an interrupted row of stake holes (F93-F96, F211-F214) in the base of the ditch (F90) between Fields 4 and 5 at that location (detail on inset of Fig 14). The western ditch of the northern trackway (F61) was relatively shallow and contained several Roman tile fragments and a Dressel 1 amphora sherd. This is a fragment of a vessel probably produced before 10 BC. There is no knowing how long it was in circulation before being deposited in F61, but a date earlier rather than later in the 1st century AD is probably appropriate. The eastern ditch of the northern trackway (F70) was wider and shallower and terminated within Field 5. Both ditches of the trackway continue to the north, as shown by aerial photographs.

Environmental sampling of ditch fills has shown an extremely low level of burnt debris and other organic material (sometimes only single seeds of grain were identified). This must be due to poor survival conditions. Such debris as has been detected may be due to wind-blown debris from elsewhere (closer to the Kirkee McMunn Barracks farmstead?).

Period 6 – the post-Roman landscape

Intriguingly, there were no landscape features of this period in Area 6. Whether this means that the landscape was abandoned and reclaimed by woodland or, as appears more likely, was no longer drained by ditches due to the fact that the gravel plateau is so well drained that it does not really require ditches, is unknown (see below).

Area 10 excavation results (Figs 26-35)

Period 1 – Neolithic to Bronze Age

A scatter of residual flints found in later features and in the ploughsoil indicates low-level activity in the Neolithic and Bronze Age. Whether this took place in an open or forested environment is unknown.

However, there is also one small cluster of flints on the western edge of Area 10 north (ie close to the intersection of the later Tracks 1 and 2) where 16 out of the total 36 Neolithic and Bronze Age flints from Area 10 were found within a 20 m radius[21]. Only a small number of flints is involved, so there might be a danger of over-interpreting them. It is probably appropriate to interpret the cluster as a slightly higher density of flint-knapping than is generally found over the remainder of the site.

There were no certain features of Neolithic or Bronze Age date to suggest permanent settlement in Area 10.

Periods 2 and 3 – the Early and Middle Iron Ages

The site evidence for these periods is difficult to interpret. Essentially, there are isolated cremations, 4-post structures (or possible round-houses), and possible 'ghost' evidence for previous boundaries. None of these have stratigraphical relationships with each other and the extent to which elements were contemporary remains unclear. With regard to dating, the ceramic groups are small and broadly Early Iron Age. There is a radiocarbon date from one of the cremations. There is a number of configurations of the data, any one of which may be correct. What is offered here is the 'best-fit' solution.

Early Iron Age cremations

The earliest features on Area 10 are one (and possibly both) of the isolated cremation(s) F276 and F296. F276 was a shallow pit less than 1m in diameter, containing 1 gramme of cremated human bone (of an adult of unknown sex), and 35 sherds of Darmsden-Linton pottery apparently representing several vessels. Many of the sherds had been deliberately placed vertically (on their edges) within the fill. This vertical arrangement of sherds could not be the result of casual discard, and demonstrates an unusual form of ritual placed deposition, probably associated with a cremation rite. F296 contained a single Early Iron Age sherd, a small quantity of unburnt animal bone (food offering in burial?), one gramme of cremated human bone[22], and a wide range of macrobotanical debris (including pyre debris and hazelnut shells). The hazelnut shells have been radiocarbon-dated, and have given a date of Cal BC 780-410.[23]

The position of the cremations and the question of missing field boundaries

Cremations F276 and F296 are close to apparently later ditches. Is this a coincidence? Cremation pit F296 is of particular interest, since its position suggests that it was deliberately dug in the corner of a field defined by ditches F13 and F287. These ditches contained Late Iron Age and Roman pottery, so they were certainly in use in those periods. The location of the cremation therefore suggests that it was contemporary with the Late Iron Age/early Roman field. In considering the Area 10 pre-Belgic pottery overall, Paul Sealey makes a case that it is largely Early Iron Age in character and likely to date to between 600 and 300 BC. So, the complication with regard to F296 is that the only sherd from it is sand-tempered and probably Early Iron Age. This leaves us with choice of three options:

- F296 is an isolated Early Iron Age cremation which has no relation to the adjacent field ditches.
- the pottery in F296 is residual (or had been curated), and the cremation is dated by the field ditches with which it seems to belong (ie it is Late Iron Age/Roman) [24].
- F296 is an Early Iron Age cremation which was placed close to contemporary field boundaries.

The third option is possible if the ditches have been recut so many times that evidence of their origin has been removed. There should be no academic difficulty with the proposition

[21] (three others were identified by Hazel Martingell as potential Iron Age flakes)
[22] the cremated bone in F296 could not be aged or sexed
[23] 2 sigma calibration: 95% probability
[24] the problem is that if we see everything as residual, we will begin to unravel all the site phasing

that the ditches were originally Early Iron Age, since Bronze Age field boundaries are now commonplace in the region[25], and some are even claimed to be Neolithic[26].

There remains a fourth possibility that no ditches were dug in the Early Iron Age since the gravel plateau here is so well-drained naturally. In this case, field boundaries could have been demarcated by hedges. These are unlikely to leave any archaeological trace but could have been used as the blueprint for later ditch and hedge defined landscapes (hence the term ghost landscape).

The possible ghost of an Early Iron Age field system

If it is accepted that these field boundaries were Early Iron Age in origin[27], then a field system is implicit (see Fig 31). This could consist of on large field (**Field 2**), with a well-defined entrance gap in its south-west corner. The area of this field is a little over 6,000m^2, but more lies off-site. The earliest cuts of the ditches on either side of Track 2 produced Early Iron Age pottery, so they could be contemporary. Similarly, the boundary between Fields 1 and 2 produced Middle Iron Age/Late Iron Age loomweight fragments. Track 2, therefore, gives the impression of leading off to fields to the north of the site, and curving around an area (**Field 4**) where (off-site) Early Iron Age/Middle Iron Age settlement may be indicated by other finds. **Field 1** lies north of Field 2. Its size is unknown (approximately 800m^2 on-site).

Other evidence of Early Iron Age activity

As well as the isolated cremations, a quantity of Early Iron Age pottery was found residually in later features. This must indicate some kind of Early Iron Age activity here. Two possibilities suggest themselves: either the sherds represent contemporary Early Iron Age occupation site which is not otherwise apparent, or they were carried out from a nearby settlement with the farmyard manure and scattered over Area 10 on fields whose boundaries have been discussed in the section above. The manure scatter hypothesis is convincing, though it still requires a nearby Early Iron Age occupation site to generate the debris. Exactly how close this site was remains unknown. However, several strands of evidence are in favour of Area 10 being relatively close to an occupation site: first, there is a background scatter of contemporary sherds over this area (concentrated on the west side of Area 10); second, there are fragments of loomweights; and third, the configuration of later field ditches at the junction of Tracks 1-3 may suggest that a settlement site lies to the west.

The structures – environmental evidence and interpretation

Broadly contemporary with the cremation burials and putative field boundaries is a group of post-holes or pits on the north edge of Area 10[28]. Within this group, two '4-post' structures were identified. These were located close to cremation F276, and are labelled Structure 1 and Structure 2 on Figure 26 (and see Plate 6).

Of course, the interpretation of 4-post structures is largely guesswork. The commonest interpretation is that they were above-ground grain-storage boxes, but other suggestions include houses, agricultural buildings, excarnation platforms, or even look-out towers. In her report on the environmental evidence, Val Fryer notes that samples from Structure 1 were barren, with the exception of a single possible vetch cotyledon and charcoal fragments. However, all four post-holes of Structure 2 contain seed assemblages, with a wide variety of weed taxa (both field weeds and grassland herbs) from post-hole F57. Val Fryer considers it unlikely that the assemblages were derived from either granaries or excarnation platforms[29], although, in fact, 4-post structures rarely produce such evidence from their post-holes, despite sometimes clear evidence that they were granaries (J D Hill pers comm). However, it is perhaps of note that the material within sample 64 is closely paralleled by macrofossils recovered from Early Iron Age cremation F276 approximately 12 m to the north of Structure 2. The environmental evidence, therefore, suggests that both sampled features were cut into very similar agricultural landscapes. We cannot be sure

[25] for example, well-publicised examples at Fengate, and the Dartmoor reaves
[26] a local example is at Brightlingsea (CAT Report 214)
[27] or earlier?
[28] F17-F21, F45-F50, F52-F58, F61, F129-F131, F154-F155, F255-F256, F277, F284
[29] one would expect quantities of similar grain types to be found near a grain store, for example

that these were contemporary, as very similar landscapes may have existed for long periods and the features may have been cut at similar times of year, but years apart.

Apart from the 4-post structures, are there any more structures here? Several possible, although not wholly convincing patterns can be postulated in this group of features. There are two fairly complete rings of posts (although their distribution is very uneven)[30], an ellipse[31], and the two 4-post structures mentioned above[32]. None of these can really be contemporary, since their alignments share the same features. It must therefore be decided which structures are the more convincing. Either (but not both) of the two circles would make convincing prehistoric round-houses of approximately 8.5 m diameter (slightly smaller than the Area 2 round-house at 11.8m). Against this interpretation is the fact that none of the usual porch structure post-holes were observed. The two 4-post structures are clearly the most convincing explanation. They were identically aligned, with sides consistently 2.5m in length, typical of the dimensions of standard Iron Age 4-post 'granaries' as excavated in considerable numbers within Iron Age hill forts such as Danebury (Cunliffe 1984, 29). Although 4-post structures have not commonly been identified around Colchester, two were excavated at the CIS site at Stansted Airport (Havis & Brooks 2004) and two also at Little Waltham (Drury 1978). The Waltham examples were approximately 2.4m square, which compares well with the Area 10 examples. In addition, RPS have recently excavated three Iron Age sites with identical structures during the A41 Aston Clinton Bypass in Buckinghamshire (Masefield forthcoming). Nine of those examples appeared to date to the Early Iron Age whilst two were of Late Iron Age date. The ellipse is perhaps the least convincing alignment, but it cannot be ruled out altogether because it could exist independently of the 4-post structures.

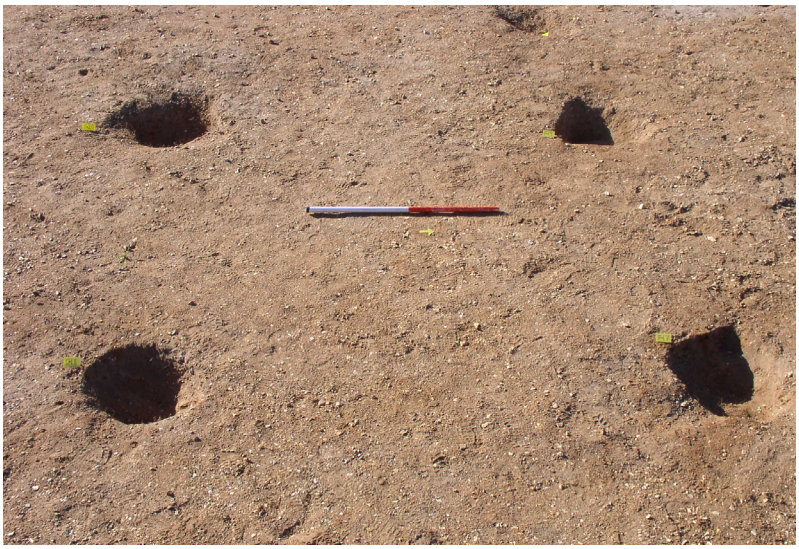

Plate 6 Area 10 – '4-post' Structure 2, view east.

Finds from the structures

Very few finds are associated with any of these potential structures. Two of the post-holes of Structure 2 produced Early Iron Age sherds – F55 and F57 – but at a total weight of 18 grammes, this is not a large ceramic group. One of the component features of the ellipse (F44) contained a sherd of Early Iron Age pottery. Apart from those, no associated finds were retrieved.

Post-hole patterns and depths

Well-preserved round-houses might be expected to show more or less complete circles of regularly-spaced posts, a hearth, and a porch structure. Unfortunately, this is a typical

[30] the first defined by F56, F18, F131, F48, F18, and the second by F55, F58, F50, F47, F131, F130, F129
[31] defined by F149, F46, F45, F255, F21
[32] defined by F17-F20, F55-F58

heavily-ploughed Essex site where many of these features may have been ploughed away. An interesting suggestion is that Structure 2 was the porch of one round-house. This is unlikely, however, since round-house entrances are usually on the eastern side.

Post-hole depths have been examined in order to determine the most appropriate interpretation of these features, given the two almost perfect circles of features in this area which must be regarded as potential round-houses (Fig 28). It might be imagined that one structure would have post-holes of more or less the same depth, and that by measuring post-hole depth, we might be able to suggest which post-holes belong to which building. However, there is a problem with such data analysis, which is well illustrated by the fact that the round-house in Area 2 has post-holes which vary in depth between 8cm and 39cm. Therefore no conclusions can really be made purely on post-hole depth.

Structures in the southern part of Area 10

A third 4-post structure of apparent Iron Age date (Structure 3) was excavated in the southern area of Area 10 south about 15m to the east of Track 4. Though this structure looks starkly isolated on plan, there is one sherd of probably Early Iron Age pottery in one of its post-holes (F313), in adjacent feature F326 and in ditch F1 Sx 11 and Sx 13. An interpretation of this structure as a granary would be perhaps less appropriate than for Structures 1 and 2 (which are clearly in occupied areas); perhaps this was an excarnation platform.

Iron Age tree clearance?

Several other features contained Early Iron Age pottery. One was pit F212. This was rather large and amorphous, and was probably a tree-throw hole. There were also a great many other similar features on this site, most of which were sample excavated. Some of these features were probably of natural origin, but many others were probably tree-throw holes. If so, then there is clear evidence of tree clearance on this site in the Early Iron Age.

Environmental evidence for prehistoric farming regimes in Area 10

A post-hole associated with Structure 2 yielded a wide variety of seeds and weeds (none of which are likely to have been in storage if this was a granary building). Early Iron Age cremation F276 produced the richest group, including cereals, grassland herbs and bedstraws. This suggests a mixed economy with arable and pasture close by.

Area 10 – the beginnings of an evolving Iron Age landscape

The evidence presented above gives an impression of an early landscape where Early Iron Age cremations were possibly placed against existing boundaries, and 4-post structures, whatever their function, are part of the same agricultural scene. In fact, they might be a slightly later addition; though these structures are often Early Iron Age, there is no implicit reason why they should not be Middle Iron Age[33]. Associated finds of Middle Iron Age/Late Iron Age loomweight fragments show that there was contemporary activity immediately adjacent to this point (in Field 4). One of the peculiarities of the pottery dating of Area 10 is that all pre-Late Iron Age pottery is dated by Paul Sealey to the Early Iron Age. Whether this indicates a real or imaginary lull in activity in the Middle Iron Age is not clear, although Sealey suggests that this was the case in his report on the pre-Belgic pottery below. If he is correct, it is hard to imagine how the Early Iron Age boundaries survived to be later utilised in the Late Iron Age and Roman period.

Periods 4 and 5 – Late Iron Age and Roman

Description of the adaptation of a possible earlier layout of fields in Area 10

(Figs 33-35)

Paul Sealey (CM) and Stephen Benfield (CAT) have dated the pottery from Area 10 and have shown that material from the ditches covers a wide date range, from Early Iron Age and Middle Iron Age to Roman 2nd and 3rd centuries. In general, the Early Iron Age pottery is presumed to be always residual in the field ditches, and the Late Iron Age and Roman pottery contemporary with the creation and (multiple?) recutting of the ditches. The

[33] the 4-post structures at the SCS site (Stansted Airport) are certainly Middle Iron Age

broad site analysis described above makes it possible to suggest four separate phases of field systems in the Roman period (Periods 5a-5e).

Three trackways defined by double ditches (Tracks 1-3) converged on a junction in the north-west part of the excavation area, although this system may have evolved gradually. Track 1 (defined by ditches F4, F5) was orientated NE/SW, similarly but interestingly not identically aligned to the main eastern trackway (Track 4: defined by ditches F1, F3) which extended unbroken through Area 10 to the east of Track 1. Track 2 (defined by ditches F8, F10) was at right-angles to Track 1, orientated NW/SE, whilst Track 3 (defined by ditches F12, F13) ran NNW/SSE and apparently connected with Track 1 at an angle of approximately 135 degrees.

The form of the connection between Tracks 1, 2 and 3 strongly suggests that they were contemporary. This conclusion is prompted by the curvilinear nature in plan of the connection points between the trackway ditches as they met at the junction. If the trackways were originally of separate phases, they would simply have crossed one another to form acute angles. Although the archaeological phasing of the ditches is confused by numerous recutting episodes, where some of the ditches fell out of use and others continued as recuts, this basic landscape form as an earliest phase holds good. It appears that Track 4 was not contemporary with the laying-out of Tracks 1-3. The present dating evidence from Track 4 shows that it post-dates Tracks 1-3 in its latest phase. However, this is not to say that it could not have been contemporary with them in an earlier phase (the evidence suggests that Track 4 was recut, potentially removing much of an earlier phase).

Fields

If we assume that Track 4 was once contemporary with Tracks 1-3, then a number of possible fields can be suggested for that phase (Fig 33). It is accepted that these 'fields' need not have represented open agricultural fields, but this is the most likely scenario. The area enclosed by the northern ditches of Tracks 1 and 2 is labelled **Field 1**. **Field 2** is postulated between Tracks 1 and 4, whilst **Field 3** is postulated to the west of Track 3 with an entrance way onto the field from Tracks 3 and 4. The southern ditch of Track 2 had a southern offshoot (F11), which rapidly swung westwards to enclose a possible field (**Field 4**). An alternative interpretation is that Field 4 is actually a curvilinear enclosure, lying mostly off-site. A further **Field 5** and **Field 6** are postulated to the east of Track 4, separated by an EW-orientated ditch (F287).

The chronology of the ditch system as indicated by stratigraphy alone is as follows. Ditch fragment F9, the earliest form of Track 2's northern ditch, is clearly an early survival and produced Early Iron Age pottery. This ditch has two later versions indicating a long period of use. The earliest version of the southern ditch of Track 2 (F272), where the ditch curves west to enclose 'Field 4', also produced prehistoric sherds with no Roman material. Dating of the prehistoric pottery indicates that there was an Early Iron Age centre of activity in or close to Field 4, but this may be too early a date for the trackways considered here. It is assumed, given the manner of connection of ditches F9 and F272 with Tracks 1-3, that all were contemporary at one time. However, Track 1, probably as a recut form, truncated ditch F9 of the earliest version of Track 2. The ditches of Track 1 produced almost exclusively prehistoric pottery with the exception of one Roman 'grey ware' sherd within the fill of ditch F5 (the northern of the two flanking ditches). This may suggest a Roman date for the latest use of ditch F5 and, by implication, of Track 1, although it may be significant that the southern ditch (F4) produced only prehistoric pottery, thus suggesting the possibility that the Roman sherd may be intrusive. The pottery finds from Track 1 are therefore somewhat ambiguous[34]. In this respect it is of note that ditch segment F272, of ditch F11, was recut (as F273) and that this recut included early Roman pottery in low density amongst a predominantly prehistoric assemblage.

At first glance it seems strange that ditch F9 effectively cut off the southern end of Track 1 (in its presumed earlier phase), whilst ditch F5 of Track 1 forms a boundary across the end of Track 2. However, it is considered that there must have been wooden bridges across these drainage ditches at the trackway terminals to facilitate and perhaps control stock movement into a 'box junction' at the connection point of the trackways. From here,

[34] OSL dating was used to better define the ditch dates, but did not produce useful results

stock may have been divided/selected for movement elsewhere via another droveway, or have been herded into the adjacent fields. Such heavy use of this junction by stock may be demonstrated by the creation of a deeper 'hollow' at this location (which later required metalling as consolidation). A similar droveway, terminating abruptly at a right-angled enclosure ditch, has been excavated at Gosbecks, and there the use of a wooden bridge to cross the ditch was postulated (S Benfield pers comm).

The southern ditch of Track 1 (F4) appeared to curve into ditch F13 of Track 3 to the south. The surviving (probably recut) phase of this ditch contained 'prehistoric', Late Iron Age and one or two early Roman sherds, suggesting final silting in the early Roman period. This early Roman phase (possibly 1st century) was given further definition by the recutting of the north western end of ditch F9 of Track 2 by ditch F8, since a diagnostic copper-alloy rear-hook brooch was recovered from the fill (this has a date range of AD 40 to AD 60/65: small finds report by N Crummy below). The brooch is a reliable dating item as it was found in good condition with its pin intact (ie had probably been buried in the ditch soon after it was lost or discarded). From this evidence it appears that Tracks 1-3 were recut in the mid-late 1st century AD.

The south-eastern terminal end of ditch F14 appears to respect the western ditch of Track 4 (F3), with a gateway-sized gap between the two features. This gateway was further illustrated by a later attempt to narrow the gap by means of a short curvilinear offshoot from ditch F3. Ditches F14 and F3 were at right-angles to one another and clearly formed elements of a landscape post-dating the earlier Tracks 1-3 (this combined earlier Fields 1 and 2). The dating of main eastern trackway (Track 4) is clearly important. Eight of the fill contexts of the western ditch F3 produced only prehistoric pottery whereas six produced Roman pottery (including specifically early Roman sherds). Although no certain recuts were noted, it is probably significant that the eastern ditch of the trackway (F1) was observably recut in two of the excavated segments. Dating evidence from ditch F1 includes prehistoric pottery solely from six contexts whilst Roman pottery was recovered in low density from seven of the ditch contexts. Two of the Roman sherds suggest a 2nd- to mid 3rd-century and later 2nd-century date respectively, which accord well with the later 2nd-century samian pottery from right-angled ditch F14. Again the frequency of prehistoric pottery and the recut nature of ditch F3 suggest the possibility of an extended period of use for Track 4. The prehistoric pottery was probably entirely residual, derived from adjacent ploughsoil, and the recut version was an earlier Roman form.

The southernmost segment of the eastern ditch of Track 3 was cut off by Track 4 and therefore pre-dates the western ditch of Track 3. The implication is that the remainder of this ditch (Ditch 13) continued in use, but simply fed into the western ditch of Track 4. The cut-off segment of F13 surprisingly produced a Roman rim sherd of probable 1st-/2nd-century date, suggesting that Track 4 may date only to the early-mid Roman period. This former ditch terminal therefore relates to the earlier landscape. The terminal was located a few metres south of the eastern ditch of Track 4 where it appears to respect the earliest phase of a complementary terminal for an E-W-orientated ditch (F287). Ditch F287 ran east-west through the central section of Area 10 south. The earlier phase terminal appears to have formed an entrance way with the terminal of ditch F13 into a field encompassing the north-east part of Area 10. Ditch F287 was later extended towards the eastern flanking ditch of Track 4, again leaving an entrance way-sized gap between the ditches. This extension shows that ditch F287 was, in its latest phase, part of the landscape bisected by Track 4. A fragment of Roman tile and an Aucissa-type brooch from the later phase of F287 demonstrate that the ditch was probably silting up in the mid-late 1st century AD, before the latest use of Track 4. The Aucissa-type brooch is a type usually associated with the military in the Claudian/Neronian period (AD 43-60), and demonstrates a very early Roman dating for the recut phase of ditch F287. It is certainly plausible that the earlier version of ditch F287 pre-dates the Roman conquest based on this evidence. Interestingly, the brooch found in ditch F8 of Area 10 north (a Dolphin brooch) similarly dates from AD 50-60 and is also from the recut of an earlier trackway ditch (flanking Track 2). Given the *colonia* status of Camulodunum, it is tempting to in interpret the Aucissa brooch as having been lost by a veteran now working the land.

The abandonment of the trackway ditches was represented by the next phase, the construction of a gravel metalled layer (L5) over the silted ditch fills at the junction of Tracks 1-3. This was designed to consolidate the apparently stock-worn and seasonally wet area of the 'box junction'. Several fragments of possible Roman tile suggest a Roman

date for the metalling. Although the ditches were silted and metalled over, the fact that the metalling was deemed necessary here suggests that the trackways were still in use. It is plausible that their alignments remained defined by hedged banks or by hurdle-style fences. The latter was in fact archaeologically represented by a series of stake holes along the length of gully F12, the western side of Track 3[35]. These stake holes were not dug deeply enough into the base of the gully/ditch to stand up unless the drainage feature had previously silted up. Therefore, this later phase, associated with the silting of the trackways Tracks 1-3 and the metalling of the junction (and perhaps metalling of other areas of the trackways, where gravel was preserved within local erosion holes), may be associated with flanking fences along the alignments of the silted ditches.

The final abandonment of use of Tracks 1-3 may be evidenced by the disuse of the metalling represented by silting layer L4 above. L4 produced pottery of possible early 2nd-century date. Confirmation that the trackways were abandoned came from ditch F14/F10 which was cut on the line of the southern ditch of Track 2 which itself cut away the earlier ditch but continued its line further south-eastwards. The ditch cut through the metalled surface at the junction and severed the alignments of the Tracks 1 and 3. The surviving version of this ditch seemingly had two earlier but shorter versions, represented by a former recut terminal just to the south-east of the former junction (F139 and F140). Ditch F14 was widest and deepest where it cut through the former junction and its base sloped down from both directions to form a sump at that location. The deeper ditch here either emphasised a persistent problem with drainage at the former junction, or was a statement of closure of the former routes. The lowest silts in the deep sump of F14 produced large and relatively unabraded sherds of samian ware of a bowl form datable to the late 2nd century. This date is not contradicted by several other early Roman sherds from the ditch.

Phasing of the ditched landscape

An attempt is made here to subdivide the archaeological information presented above into a series of phases, as follows:

Period 5a – mid-late 1st century AD (Fig 32)

The Period 2/3 field system continued in use, except that the absence of Roman material in the contemporary cut of the east ditch of Track 2 suggests that it had shrunk to a single ditch/field boundary in this period. A new trackway was formed (Track 1) by the digging of a ditch parallel to the existing boundary between Fields 1 and 2. An erosion hollow began to form at the point where Track 1 emptied out into Field 3. Contemporary finds consist of early Roman (Claudian?) pottery in the ditch between Fields 3 and 2, and 1st-century pottery in the north ditch of the new Track 1.

In this period, the main entrance to Field 2 (originally established in Period 4) continued in use, although it is unclear whether people were still aware of the centuries-old cremation burial which originally marked the entrance. Other fields were approached via Track 1.

The existence of trackways implies a mixed farming economy, with the trackways giving farmers control over the flocks and herds and allowing them to move animals from one field to the next. Although it could be argued that all these fields were stock pens, it is difficult to envisage a Late Iron Age landscape without some arable fields.[36]

Period 5b/5c – late 1st century/early 2nd century AD (Fig 33)

During this period, the landscape underwent major changes. Recuts of an earlier ditch line (east side of Track 2) and the creation of Track 3 by the addition of a ditch line on the outer side of the west ditch of Field 2 created a complex junction where Tracks 1-3 met. In addition, a new trackway (Track 4) was created.

The new Track 4, extending across the landscape at a different angle from the pre-existing Track 1, implies a major reorganisation of the farmed landscape, with old fields being split and others created. The creation of Track 3 at the same time as Track 4 implies that they were contemporary, and Track 3 seems to have led into the new Track 4, with

[35] F23-F24, F26-F31, F107-F112, F142-F153

[36] for a number of reasons: (1) some of our pre-Belgic pottery is probably from manure scatter, (2) the limited environmental evidence at least hints at arable somewhere in the area, (3) Strabo's list of exports includes grain, which must have been grown somewhere (some of Cunobelin's coins show a head of grain)

perhaps a plank bridge spanning the open ditch to allow movement of stock between trackways.

A later event (Period 5c) was the deposition of a layer of gravel metalling (L5) over the previous erosion hollow, and partly over the east ditch of Track 3. Several fragments of Roman tile suggest a Roman date for the metalling. Although the east ditch of Track 3 was silted and metalled over, the fact that the metalling was deemed necessary here suggests that the trackways were still in use. It is plausible that, although their ditches were filling up, their alignments remained defined by hedged banks or by hurdle-style fences. The latter was in fact archaeologically represented by a series of stake holes along the length of gully F12, the western side of Track 3 [37]. These stake holes were not dug deeply enough into the base of the gully/ditch to stand up unless the drainage feature had previously silted up. Therefore, this later phase, associated with the silting of the trackways (Tracks 1-3) and the metalling of the junction, may be associated with flanking fences along the alignments of the silted ditches.

The creation of the new Track 4 led to a minor but possibly significant change to the southern boundary (F287) of the old Field 2, now defined as Field 5 in this period. This was recut and extended a few metres west to make a better-sized entrance way into Field 5. This must imply that close control was still required here, presumably control of stock moving into fields. A fragment of Roman tile and an Aucissa-type brooch from the fill of the recut demonstrate that the ditch was probably silting up in the mid-late 1st century AD, before the latest use of Track 4. The Aucissa-type brooch is a type usually associated with the military in the Claudian/Neronian period (AD 43-60) and its presence here in the recut of ditch F287 shows that the ditch was silting up in the mid to late 1st century AD. This might appear to create a problem with the dates of the field boundaries, but there is no reason why a hedge should disappear just because its ditch is silting up.

Period 5d – 2nd to 3rd century AD (Fig 34)

This period saw the culmination of events begun in Period 5, in the sense that the old field system based on Tracks 1-3 was completely put out of use by a new landscape based on Track 4. In this new landscape, the position of Track 4 and a new ditch (F14/F10) running almost at right-angles to Track 4 created new Fields 1/2 and 3/4, whilst retaining Fields 5 and 6 from the previous period. A short gap at the junction of the new ditch and Track 4 allowed the passage of stock through at this point.

The final abandonment of Tracks 1-3 in this period is shown by the silting over (ie the disuse) of the metalling. This silting layer (L4) produced pottery of 2nd-century or later date. Confirmation that the trackways were abandoned came in the form of ditch F14/F10 cut on the line of the southern ditch of Track 2 which cut away the earlier ditch but continued its line further south-eastwards. The ditch cut through the metalled surface at the junction and severed the alignments of Tracks 1 and 3. Ditch F14 was widest and deepest where it cut through the former junction, and its base sloped down from both directions to form a sump at that location. The deeper ditch here either emphasised a persistent problem with drainage at the former junction, or was a statement of closure of the former routes. The lowest silts within the deep sump of F14 produced large and relatively unabraded sherds of samian ware of a bowl form datable to the late 2nd century. This date is not contradicted by several other early Roman sherds from the ditch.

The end date of the Area 10 landscape

Pottery in the Period 5d recuts of the ditches of Track 4 is consistently later 2nd to 3rd century AD, giving a date of digging (probably) in the 2nd century, and a period of disuse which is more difficult to define but probably late 2nd and early 3rd century. In one sense, it is conventional to say that there is no evidence for the continuity of this landscape beyond the 3rd century, but that is actually quite wrong – what we are dating here is ditch fills, and there is no reason why the accompanying hedges should not have continued in use for centuries, thus preserving this 'fossilised' landscape into the Saxon period.

Environmental evidence for Roman farming regimes in Area 10

Environmental sampling of the largely early Roman ditch fills has shown that cereals were probably grown nearby, but there were insufficient examples for detailed analysis.

[37] F23-F24, F26-F31, F107-F112, F142-F153

Period 6 post-Roman landscape

No medieval or post-medieval features of note were observed within Area 10 north. The known line of a WW2 tank-trap, effectively the last line of defence to the south of Colchester, was investigated in the south-eastern corner of Area 10 north. The tank-trap extended from east to west and was 4 m in width. A machine-dug segment confirmed the expected steep-sided and flat-bottomed profile, with a full depth of about 2 m.

Plate 7 Excavating the WW2 tank-trap, view south.

The finds reports

Small finds, ironworking debris, and structural clay

by N Crummy

Small finds

This small assemblage is catalogued below by Area and within area by material. Summaries of the iron nails from the Areas are given at the end of each catalogue. The functional categories given for each object in the catalogue and in Table 1 are those defined in *CAR* **2**.

Of six small finds from Area 2, two are of Middle Iron Age date. Fragments of copper-alloy wire from the fill of F81 (part of the enclosure ditch) are almost certainly from the spring and pin of a brooch of La Tène 1 or 2 form (eg Hull & Hawkes 1987, pls 23-34, 36, 38-41), and fragments of at least one triangular loomweight, a form that originated in the Middle Iron Age, came from F6, which is also part of the enclosure ditch. Of four objects from the fill of Roman ditches on Area 2 two are undiagnostic of date (copper-alloy wire and iron sheet fragments), but two are Roman, a block of basalt (Fig 35, 1) and a fragment of ceramic tile with an incised irregular lattice on at least one face (Fig 35, 2).

The majority of the objects came from Area 6. Most are of Roman date, but fragments of triangular loomweights from F4 and F22 (Fig 35, 7) may be residual Middle or Late Iron Age, while a fragment of a Puddingstone quern may date to either the Late Iron Age or Roman periods (Major 2004). Fragments of Baldock type tweezers (Fig 35, 3) came from ditch F304. The form has an easterly distribution within the tribal/*civitas* region of the Catuvellauni and Trinovantes and dates to the second half of the 1st century and into the 2nd century (Stead & Rigby 1986, fig 56, 264; Wardle 1990, fig 124, 110, 113-16; Crummy & Eckardt 2004, 51). The high proportion of the small finds from Area 6 are fragments of Mayen lava quernstones, imported from Germany from *c* AD 43; there is some evidence that the trade in these quernstone declined in the later Roman period. There are also two fragments of Millstone Grit querns from the Pennines, which may date to as early as the beginning of the 2nd century, though the majority of examples found in Essex come from late Roman contexts. The larger of these two fragments was reworked as building stone.

No small finds were deposited as grave goods in the burials found on the Area 6, though a fragment of sheet iron from cremation F63 may be from a pyre deposit. Groups of well-preserved coffin nails came from burials F28 and F231.

Middle/Late Iron Age material is represented on Area 10 by a spindlewhorl (Fig 36, 9) from ditch F11, a small fragment of a triangular loomweight from ditch F4, and a fragment of iron sheet and three nail shank fragments from ditch F13. A British-made copper-alloy Rearhook brooch (Fig 36, 10) came from ditch F8 and dates to *c* AD 40-60/5. The brooch was complete when buried, though the spring and pin are now separate. The bow has been partly snapped and twisted at the lower end, deliberate damage which suggests that this brooch is a selective placement, though it came from the upper fill of the ditch. The Rearhook method of attaching the spring is almost certainly of Icenian origin (Mackreth 1991, 122-3), but the distribution of the type is very wide. Of similar date, though unlikely to pre-date AD 43, is an imported Aucissa brooch, a type used by the Roman military, from ditch F287. Again the brooch is complete but in fragments, and it is broken across the bow. The pin is fixed wide open, suggesting that this may be a casual loss, but if the brooch was deliberately broken it may again be a deliberate deposit, though it also came from the upper fill.

The functional categories represented in these three groups of material are very limited (Table 1). Iron nails, Category 11, are omitted from the table.

Table 1: area small finds assemblages by functional category (*CAR* 2).

Category 1...dress accessories; Category 2...toilet instruments; Category 3...textile manufacture; Category 4...household; Category 9, building materials; Category 1...tools; Category 11...fittings; Category 18...miscellaneous.

Category	1	2	3	4	9	10	11	18	Totals
Area 2	1	-	1	-	2	-	-	2	**6**
Area 6	1	1	2	13	[1]	2	1	4	**24**
Area 10	2	-	2	-	-	-	-	1	**5**

Dress accessories are present on all the sites, though the only example from Area 6 is a fragmentary nailed shoe sole. The two mid 1st-century brooches in the upper fill of two ditches on Area 10 suggests that both features were almost completely filled in by *c* AD 60/5, while the paucity of brooches from Area 6 may be an indication of slightly later occupation, as brooch use declined in this region from *c* AD 80. Toilet instruments associated with personal grooming are only present on Area 6, while textile manufacture is represented on all three Areas and in each case is either certainly, or probably, of Iron Age date. Household equipment is represented only by the quernstone fragments on Area 6, where they form over half the total assemblage, a pattern of high quernstone/low metalwork deposition similar to that at the farmstead at the Abbotstone site, to the south and west of this site (CAT Report 312 in prep), and at other sites in the Essex and the wider region, for example Ardleigh, Chigborough Farm at Little Totham, Essex, and Orton Longueville, Cambridgeshire (Major 1998a; Major 1998b; Major 1998c; Major 1999a; Major 1999b; Mackreth 2001).

A fragment of purple basalt, an import into this region, and a tile with an irregular lattice pattern incised into at least one surface form the building materials from Area 2 in Category 9. The bracketed item in Category 9 from Area 6 is a fragment of quernstone reworked as building stone. Also from Area 6, the tools in Category 10 consist of an awl used for leather-working (Fig 35, 5), and a fragment of a large knife or cleaver (Fig 35, 6) that may have been used in butchery. A fragment of a padlock bolt from Area 6 is the only fitting apart from nails. Miscellaneous items (Category 18), generally small scrap fragments of metalwork, come from all three areas, but one of these pieces, from the base of pit F1 on Area 6, is an unusual bilobate fitting, possibly inlay of some kind (Fig 35, 4).

Too little material is present to allow a definition of the pre-Roman assemblage characteristics, beyond noting that loomweights often occur on both the Middle and Late Iron Age sites and represent both sheep-rearing and domestic production of textiles, but the similarity of the Roman assemblage from Area 6 to other rural assemblages in the region has been noted above. A general paucity of metalwork and high proportion of quernstones presents a picture of a lifestyle little affected by the consumer goods available

in the nearby *colonia*, though the presence of tweezers is indicative of sufficient leisure for personal grooming and the barrel padlock hints at a degree of wealth and the desire to protect it. The absence of bone objects is probably a result of local soil conditions.

Area 2

SF 96. Area 2, 82 F81, Sx 2. Fill of Middle Iron Age ditch recut? Eight fragments of copper-alloy wire, diameter 2 mm, five curved and three straight. Lengths 8, 8, 7, 7, 14 mm (curved), 9, 4, and 12 mm (straight). The degree of curvature and the diameter of the wire suggest that these fragments are from the spring and pin of a La Tène I or II type brooch, but closer identification and dating are not possible. Functional Category 1.

SF 95. Area 2, 134 F2 Sx 8. Fill of Roman ditch. Curved fragment of copper-alloy wire, possibly part of a brooch pin. Length 27.5 mm (bent), D 2 mm. Functional Category 18.

SF 82. Area 2, 6 F2 Sx 1. Fill of Roman ditch. Curved fragment of sheet iron in ten pieces, not all of which now fit together as the metal has delaminated and flaked in places. Maximum surviving length 129 mm, width 46 mm. Functional Category 18.

SF 128. Area 2, 152 F6 (L24), Sx 5. Fill of east ditch of Middle Iron Age enclosure. Seven small fragments from one or more loomweights, total weight 186 g. The fabric is hard, fired black internally and brown externally, and contains some small flint pebbles and flint grit, and voids from vegetable tempering. Functional Category 3.

Fig 35, 1. SF 81. Area 2, 17 F11 Sx 1. Fill of Roman ditch. Block of dark purple basalt, probably used for paving rather than wall veneer, with the upper surface polished and worn, the lower polished to a lesser degree. The edge surfaces are quite rough. Maximum dimensions 58 by 34.5 by 41 mm. Functional Category 9.

Fig 35, 2. SF 80. Area 2, 10 F11. Fill of Roman ditch. Fragment of tile with a short part of one edge remaining. The upper surface is marked with an irregular lattice of incised lines. The underside is reduced and most has broken off, but where it remains it may also have been latticed. Length of edge 58 mm, maximum width 107 mm. Functional Category 9.

Area 6

Fig 35, 3. SF 24. Area 6, 284 F304 Sx 3. Fill of Roman ditch. Two fragments from the blades of copper-alloy tweezers of the Baldock Type, each with the characteristic marginal grooves on the external face. Functional Category 2.

Fig 35, 4. SF 64. Area 6, 437 F1. Fill of Roman pit. A bilobate fitting with each half more or less ovoid; one is of narrow plano-convex section, the other is thin and flat. The flat half has a fine central groove. Length 18 mm, width 7 mm. The alloy is unusual, with a brown patina. The upper surface is smooth, the underside slightly rough, which would agree with an interpretation of this object as inlay, but whether from a dress accessory or an item of furniture is uncertain. Functional Category 18.

SF 13. Area 6, 223 F1 Sx 2. Fill of Roman pit. Iron ring, worn in places and probably of round section. Internal diameter 27 mm, thickness 7 mm. Functional Category 18.

SF 26. Area 6, 358 F1 Sx 3. Fill of Roman pit. Fragment from an iron barrel padlock, with the stop-ridge, tapering haft and either parts of the case or the springs corroded onto the stop-ridge. Length 56 mm, diameter 32 mm. Functional Category 11.

SF 20. Area 6, 335 F1 Sx 3. Fill of Roman pit. Fragment of an iron strip; possibly part of the same padlock as SF 26. Length 22 mm, width 10 mm. Functional Category 18.

Fig 35, 5. Area 6, 97 F2 Sx 5. Fill of Roman ditch. Stout iron awl of Manning's Type 4b (1985, 40), with tapering square-section tang. Length 95 mm. Functional Category 10.

SF 7. Area 6, 126 F63. Cremation. Fragment of iron sheet with part of a tapering shank attached by corrosion. Maximum dimensions 25 by 24 mm, length of shank 11 mm. Functional Category 18.

Fig 35, 6. SF 19. Area 6, 324 F304. Fill of Roman ditch. Fragment of an iron knife or cleaver blade. Length 70 mm, maximum width 36 mm. Functional Category 10.

See Fig 15 for location. SF 27. 483 F467. Fill of Roman pit. Two fragments of an adult's nailed shoe or sandal sole with several detached hobnails. Both pieces, probably coming from the heel and the outer part of the tread of a right-foot shoe, have parallel rows of closely-set hobnails, placing them within Rhodes' Type C nailing pattern (1980, 107). Maximum surviving length 71 and 64 mm. Average length of detached hobnails 15 mm. Functional Category 1.

SF 127. Area 6, 96 F4 Sx 6. Fill of Roman ditch. Four abraded fragments from a loomweight, one with part of a perforation. The fabric is very sandy with a little grit but no visible organic tempering. Total weight 145 g. Functional Category 3.

Fig 35, 7. Area 6, 23 F22. Fill of Roman pit. Seven fragments (three fitting) of at least one loomweight. Total weight 808 g. Only the fitting fragments are illustrated; they form most of one perforated corner of a loomweight, though the triangular face has broken off. Maximum surviving dimensions: height 113 mm, width 105, thickness 65 mm. One of the remaining fragments is also broken across a perforation. The fabric is a dull orange-brown and hard, with some small grits and voids from pebbles; the core is reduced in patches. Some of the loomweights from the Middle Iron Age settlement at Stanway were made from a closely comparable fabric, and these pieces may therefore be residual from that period. Functional Category 3.

SF 15. Area 6, 188 F61 Sx 8. Fill of Roman ditch. Small fragment of Puddingstone from a quernstone. Part of the smooth grinding surface remains. Weight 175 g. Functional Category 4.

SF 21. Area 6, 345 F1 Sx 3. Fill of Roman pit. Fragment from the rim of the upper-stone of a Mayen lava quern. The grinding surface is smooth; there is vertical tooling on the rim. Thickness at rim 58 mm. Weight 381 g. Functional Category 4.

SF 2. Area 6, 8, F4. Fill of early Roman ditch. Weathered fragment of a Mayen lava quernstone, probably from the rim of a lower-stone. There are no visible tooling marks. Weight 218 g. Functional Category 4.

SF 28. Area 6, 482 F5 Sx 6. Fill of Roman ditch. Weathered fragment of Mayen lava quernstone in three pieces. There are no visible tooling marks. Weight 399g. Functional Category 4.

SF 1. Area 6, 11 F5. Fill of Roman ditch. Small fragment of Mayen lava quernstone with all the surfaces evenly abraded, suggesting that this piece may have been used as a rubbing tool. Weight 118 g. Functional Category 4.

SF 3. Area 6, 15 F12. Fill of shallow pit, ?Roman. Many weathered, small/powdery fragments of Mayen lava quernstone. Total weight 292 g. Functional Category 4.

SF 14. Area 6, 175 F61 Sx 5. Fill of Roman ditch. Many weathered, small/powdery fragments of Mayen lava quernstone. Total weight 271 g. Functional Category 4.

SF 32. 310 F259 Sx 2. Fill of Roman ditch. Many weathered, small/powdery fragments of Mayen lava quernstone. Total weight 66 g. Functional Category 4.

SF 18. Area 6, 309 F260 Sx 2. Fill of Roman ditch. Many weathered, small/powdery fragments of Mayen lava quernstone. Total weight 229 g. Functional Category 4.

SF 29. Area 6, 485 F480. Fill of Roman ?pit. Fragment of weathered Mayen lava quernstone, in four pieces. Weight 19 g. Functional Category 4.

SF 11. Area 6, 161. U/S. Rim fragment from the upper-stone of a Mayen lava quern. There are traces of vertical tooling on the rim. Thickness at rim 45 mm. Weight 610 g. Functional Category 4.

Fig 36, 8. SF 25. Area 6, 341 F1 Sx 3. Fill of Roman pit. Fragment from the upper-stone of a Millstone Grit quernstone, reworked for use as building stone. The original outer face is uneven and the grinding surface is worn but retains traces of grooving. The stone has been cut twice radially to form a block and the shorter of the resulting faces was worked smoothed and may even have been polished, though it is now weathered and spalled. Thickness 80 mm. Weight 1734 g. Functional Category 4/9.

SF 36. Area 6, 498 F467. Fill of Roman pit. Fragment of Millstone Grit from a quernstone. The grinding surface has slight traces of grooving. Weight 354 g. Functional Category 4.

Iron nails

Nails or nail shank fragments (functional Category 11) were found scattered across the site in pits F1, F65, and F467, and ditches F2, F4, F5, F259, and F304. All were of Manning's Type 1b (1985, 134), with more or less round flat head, and complete examples ranged in length from 43 to 86 mm.

A single nail shank fragment came from cremation F62, and a single fragment from inhumation F238. The two nails recovered from inhumation F227 are both complete and comparatively large at 90 and 104 mm. Five came from inhumation F17, three of which were complete at lengths of 94, 97 and 47 mm. In most cases the nails used to construct coffins are of similar length, raising the possibility that, if most of these nails are from a coffin, the shortest is residual within the grave. Burials F28 and F231 contained large groups of coffin nails. Nine of at least sixteen nails from F28 are complete, at lengths ranging from 53 to 74 mm, with most centred on 66 mm, and six of at least seventeen from F231 are complete, ranging from 64 to 86 mm, with three centred on 79 mm.

Area 10

SF 121. Area 10, 234 F13 Sx 9. Fill of Middle/Late Iron Age ditch. Fragment of iron sheet with part of a dome-headed rivet for attachment. Maximum dimensions 33 by 22 mm. Functional Category 18.

Fig 36, 9. SF 40. Area 10, 24 F11, Sx 1. Fill of Middle/Late Iron Age ditch. Bun-shaped fired clay spindlewhorl, countersunk around the perforation on the narrower face. As spindlewhorls are conventionally illustrated with the area of maximum diameter downwards, which is likely to be the upper part (Woodland 1990), this countersunk area was probably the underside in use. Maximum diameter 40 mm, height 26 mm. Weight 47 g. The perforation tapers from 8 mm at the narrower face to 5.5 at the broader one. The fabric is hard-fired, with much fine grit. Functional Category 3.

SF -. Area 10, 26 F4 Sx 2. Fill of Late Iron Age/early Roman ditch. Small fragment of a loomweight; no edges survive. Weight 22 g. Functional Category 3.

Fig 36, 10. SF 30. Area 10, 10 F8, Sx 1. Fill of Iron Age-Roman ditch. Copper-alloy Rearhook brooch, complete apart from the edge of the catchplate, the characteristic rearward-facing hook, and the tip and the upper end of the pin. The pin and spring are detached and fragmentary; an iron axial bar ran through the spring. The foot is partly broken and bent almost at a right angle to the rest of the bow. The semi cylindrical side-wings were decorated with an outward-pointing grooved chevron on either side of the head. The bow has a central groove filled with two parallel raised wavy lines. Length 48 mm. Functional Category 1.

The grooved chevron decoration on the side wings is unusual but is probably related to the curvilinear motif seen on many Rearhooks (eg Brown 1986, fig 14, 63, 67, fig 15, 76, 77, 80, fig 16, 82, 87), Indeed, if only the upper grooves had been preserved on this example, they might have been taken as belonging to this motif.

Fig 36, 11. SF 117. Area 10, 224 F287, Sx 6. Fill of Iron Age-Roman ditch. Copper-alloy Aucissa brooch, complete apart from the catchplate and the tip of the pin, which is hinged on an iron axial bar fitted with copper-alloy end-knobs and is fixed in a wide open position, rising vertically from the head. The head is decorated with transverse bands of beading. The bow has two broad flutings flanked by marginal mouldings and separated by a central beaded moulding. It is separated from the small foot by a plain transverse panel. The foot has an applied toe-knob. Length 54 mm (without projecting pin). Functional Category 4.

Iron nails Three nail shank fragments came from the fill of F13, a Middle/Late Iron Age ditch. Functional Category 11.

The iron-working debris from Area 6

A piece of iron slag, weight 370 g, came from the fill (25) of ditch F2 and a fragment of furnace hearth bottom, weight 81 g, from the fill (290) of ditch F4. Both features date to the early Roman period. Though this amount of material is very small, it suggests that the inhabitants of this area were not necessarily dependent upon blacksmiths within the nearby town or its suburbs.

The structural clay

A total of 2.26 kg of fragments of structural clay was recovered: 590 g from Area 2, 1.57 kg from Area 6, and 100 g from Area 10. All the fragments are abraded and many have been reduced through burning, or possibly firing. At least three pieces (one from Area 6 and two from Area 10) may come from Iron Age/early Roman triangular loomweights rather than structures, though, given the size of the fragments and the degree of surface abrasion, it is possible that other pieces may also be from loomweights.

The individual area assemblages are listed in archive and shown here by weight and date in Table 2. On none of the areas were large concentrations noted. The largest amount from a single feature is 467 g from Area 6 F13, a pit of probable Late Iron Age date.

On Area 2 all but 40 g derived from Middle Iron Age contexts, making those pieces from Roman and later contexts likely to be residual and of Middle Iron Age origin. The four fragments from Roman contexts in Area 10 are also probably residual from the Iron Age, especially as at least two may be from loomweights.

The Area 6 material is spread more evenly between Late Iron Age, Late Iron Age/Roman, and Roman contexts, suggesting that though some of the material in the two later period groups may be Late Iron Age, a high proportion is also of Roman date. The

small quantity in Area 6 features dated to the Middle or Late Iron Age cannot be more closely dated with any degree of certainty, though it is perhaps most likely to be Late Iron Age.

Table 2: structural clay fragments by weight and date.

	Middle Iron Age	MIA/LIA	Late Iron Age	Late Iron Age/Roman	Roman	post-medieval, modern & unstratified
Area 2	550		-		12	28
Area 6	-	75	467	303	706	19
Area 10	-	65	-	-	35	-

Pre-Belgic pottery

by Dr Paul R Sealey (Colchester Museums)

Introduction and project objectives

The pottery described here is all prehistoric pottery earlier than Late Iron Age, and it is called 'pre-Belgic', a convenient if old-fashioned term. There are 1088 sherds weighing 6379g, with an average sherd weight of 5.9g. Most of the pottery is small and abraded sherds, often with little of the original surface surviving.

The pre-Belgic pottery was studied in the first instance to elucidate site chronology, although the relationship between the date of the pottery and the features from which it was excavated was less than straightforward for the trackways and field systems at the Garrison sites. A research agenda for the Iron Age in eastern England called for the publication of quantified pottery assemblages and remarked on the lack of such reports. It also encouraged scholarship to address problems of Iron Age chronology (Bryant 2000, 14-15). Both concerns have been echoed at a national level in an agenda for Iron Age research (Haselgrove *et al* 2001, 2-7). A second objective addressed the taphonomy of the pottery, ie how it came to find its way into the features excavated at the Garrison sites. Area 2 was a settlement site but the other two areas examined was made up of fields and trackways without any surviving evidence of permanent occupation. The contrast between the zones was explored from the perspective of the manuring model that has been invoked to account for the presence of pottery in ancient field systems.

In the Late Iron Age, Essex saw the introduction of wheel-thrown and grog-tempered pottery of 'Belgic' or Aylesford-Swarling type, and any Late Iron Age pottery from the Garrison is reported separately from the pre-Belgic wares. But there were two features where it made more sense to treat the two categories together. In both cases the 'Belgic' pottery was a minority element in a Middle Iron Age assemblage that marked the transition from the middle to the Late Iron Age, when both wares were in contemporary use. One was pit F13 in Area 6 and the other was the Area 2 enclosure ditch.

Methodology and quantification

The pottery was studied along lines laid down by the Prehistoric Ceramics Research Group, including modified use of the format recommended for the publication of prehistoric pottery reports. All the sherds were examined macroscopically and with the aid of a hand lens to establish the fabrics present. Examination of fabrics in a fresh fracture was avoided because of the tiny size of the sherds. Sherds from each bag were assigned to a fabric group, and then counted and weighed (to the nearest gramme). Sherd counts, sherd weights and average sherd weights were then established for each of the three areas examined at the Garrison. Calculations are correct to one decimal place.

Pottery archive

The primary units of excavated pottery kept by the Colchester Archaeological Trust are bag numbers, rather than context numbers (an individual context may be made up of several bag numbers). In the archive there is a set of individual record sheets for each bag of pottery, giving details of the sherd counts and weights for the fabric groups present, with details of decoration and any other significant features. This data was entered on a Microsoft Excel spreadsheet which gives details of fabric incidence by area and by features within areas. A copy on disk is present in the archive.

Fabric groupings

All the fabrics were fired in a reducing atmosphere to give pottery that is black, sometimes with darker or lighter brown and grey surface patches. Inclusions are described as temper whether or not there is reason to think they were deliberate additions to the clay by the potter. The only inclusions that might be described as temper in the technical sense are those which do not occur naturally: crushed burnt flint (which appears as angular white grains), chopped vegetable matter, and grog (crushed pottery). Even some of these might be accidental additions introduced by the conditions in which the potter worked (Woudhuysen 1998, 33).

The pottery was divided into fabric groups using a modified version of the scheme devised for Essex by Brown (1988, 263-4). Sand and flint inclusions were divided on the basis of size with a numeric code, as follows: 1, < 0.25mm; 2, < 1mm; and 3, < 2mm. Two more size categories were recognised with flint: 4, < 4mm; and 5, > 4mm. Inclusions were divided on the basis of their frequency into three categories designated A, B and C as follows: A, < 6 grains per cm^2; B, 6-10 grains per cm^2; and C, > 10 grains per cm^2. Combinations of numbers and letters indicate inclusion size and frequency. The fabrics listed below are the same as those used by the writer to describe the pottery from the adjacent sites of Stanway and Abbotstone, with the addition of a fabric GTW for grog-tempered fabrics. The individual fabrics of vessels in fabric GTW are described in the catalogue of illustrated sherds to give a clearer picture of the ware. To a greater or lesser degree, all the Garrison fabrics have inclusions of fine silver mica. Fabrics G and N were not present at the Garrison sites.

Fabric A	fine sand (1)
Fabric B	fine sand (1) with vegetable temper
Fabric C	sand (2A-2C)
Fabric D	sand (2A-2C) with vegetable temper
Fabric E	coarse sand (3A)
Fabric F	fine flint (1A-1B and 2A-2B)
Fabric G	fine flint and sand (flint 1A, with sand 1 and 2A)
Fabric GTW	an 'omnibus' fabric for those with grog
Fabric H	flint and sand (flint 2A-2B, with sand 1 and 2A-2C)
Fabric I	coarse flint (flint 3A-3C and 4A)
Fabric J	coarse flint and sand (flint 3A-3B, with sand 1, 2A-2C and 3A)
Fabric K	coarser flint and sand (flint 4A, with sand 1, and 2A-2B)
Fabric L	very coarse flint (5A)
Fabric M	very coarse flint and sand (flint 5A, with sand 1, 2A-2C and 3A)
Fabric N	chalk and sand

The Garrison pre-Belgic pottery assemblage is dominated by the sand-tempered fabrics A-E (which include fabrics tempered by sand-with-vegetable matter). In Areas 2 and 6, the proportion of these fabrics by weight is 92% and 77% respectively. But in Area 10, the position is reversed because there the sand-tempered fabrics A-E are only 24.8% by weight, with flint and flint-with-sand fabrics making up the remaining 75.2%. The implications for chronology are explored below. Details of the incidence of fabrics are given in Table 3.

Table 3: incidence of fabrics by area.

		Area 2	Area 6	Area 10	totals	percentages
Fabric A	sherd count	347	92	44	483	44.4
	sherd weight	1901	381	74	2356	36.9
Fabric B	sherd count	18	1	0	19	1.7
	sherd weight	295	18	0	313	4.9
Fabric C	sherd count	108	62	60	230	21.1
	sherd weight	773	514	173	1460	22.9
Fabric D	sherd count	4	10	0	14	1.3
	sherd weight	107	149	0	256	4.0
Fabric E	sherd count	19	13	12	44	4.0
	sherd weight	336	88	44	468	7.3
Fabric F	sherd count	1	23	80	104	9.6
	sherd weight	2	43	221	266	4.2
Fabric H	sherd count	5	11	51	67	6.2
	sherd weight	43	53	421	517	8.1
Fabric I	sherd count	0	16	23	39	3.6
	sherd weight	0	102	119	221	3.5
Fabric J	sherd count	11	12	20	43	4.0
	sherd weight	49	61	75	185	2.9
Fabric K	sherd count	4	6	2	12	1.1
	sherd weight	39	25	5	69	1.1
Fabric L	sherd count	0	0	5	5	0.5
	sherd weight	0	0	31	31	0.5
Fabric M	sherd count	0	0	2	2	0.2
	sherd weight	0	0	12	12	0.2
Fabric GTW	sherd count	16	10	0	26	2.4
	sherd weight	165	60	0	225	3.5

Local clay sources

The Garrison sites were all located on sands and gravels. The nearest sources of clays for pottery would have been the brickearth deposits at Maypole Green, some 1250m south-east of the Area 2 enclosure. In the valley of the Roman River, some 3km south of Area 2, there are outcrops of the London Clay. On the presumption that prehistoric pottery was made close to where it was used, these may have been the sources of the clay used in the Garrison pottery.

Distribution and contexts of the pre-Belgic pottery

Pre-Belgic pottery was distributed very unevenly across the Garrison sites. This is most evident in the sherd weights per square metre for each of the three areas investigated (Table 4). Pre-Belgic pottery was ten times more common in Area 2 than Area 10, and five times more common than in Area 6. The explanation lies in the features excavated. Area 2 was a ditched settlement site with round-house, but Areas 6 and 10 were agrarian landscapes of trackways and field boundaries with no evidence of occupation.

Understandably, more than half the pre-Belgic pottery came from Area 2. Indeed the most prolific single source of pre-Belgic pottery for all the Garrison sites was the Area 2 enclosure ditch, with 3164g. Only 518g came from the lower fill; all the rest came from the upper (recut) levels. It was surprising that no less than 61.6% by weight of the enclosure ditch pottery came from the west length, on the opposite side to the main entrance. More pottery came from the very few pits inside the enclosure, and from the round-house.

Table 4: distribution of pre-Belgic pottery by area.

	Area 2	Area 6	Area 10	totals
sherd count	533	256	299	1088
sherd weight (grammes)	3710	1494	1175	6379
average sherd weight	7	5.8	3.9	5.9
area excavated	5250m²	10175m²	14000m²	29425 m²
sherd weight per m²	0.70	0.14	0.08	0.21

In Areas 6 and 10, the ditches of the trackways and field boundaries produced the most pre-Belgic pottery (554g and 666g respectively). Most other features produced very few sherds. Exceptions included pit F276, a cremation in Area 10 with 385g of Darmsden-Linton pottery sherds which had been placed on edge, vertically. Another significant group was 330g from the Area 6 pit F13 which was transitional between the Middle and Late Iron Age.

Sherd dispersal and agricultural practice

Although there was no evidence for permanent occupation in Areas 6 and 10, both areas produced pre-Belgic pottery. The most plausible explanation for the presence of sherds in ancient field systems remains the supposition that they arrived as inadvertent inclusions in middens of organic material (food scraps, butchery waste, ash from fires, byre sweepings and the like) that had accumulated on settlements and subsequently been spread over fields as manure. Rhodes (1952, 13) was the first to suggest this, and his views have been widely endorsed (Taylor 1975, 30; Fowler 1981, 167, 202, 213-14; Fowler 2002, 138, 148, 156, 208-211, 311; Cunliffe 1995, 12). Manuring was of particular importance with arable fields because of the depletive effects of prolonged cultivation on the soil (White 1970, 124,126). It would have been of real benefit to the sandy soils found on the Garrison sites because it could have improved their cohesion and capacity to retain water (Spurr 1986, 126). The potential of pottery scatters derived from manure to assess land use in the Roman period was fully developed in the Maddle Farm (Berkshire) project (Gaffney & Tingle 1989, 209-225). Evidence from Danebury hill fort (Hampshire) and the upper Thames suggests that Iron Age round-houses were kept clear of rubbish (Hingley & Miles 1984, 63; Cunliffe 1995, 12). The quantities of pottery found on Iron Age sites are only a tiny fraction of what must have been used and discarded on them (Hill 1995, 129-31), and much of it may have ended up in the surrounding fields.

Manuring as an explanation for sherd scatters in ancient landscapes has been claimed for prehistoric and Roman Essex (Buckley & Hedges 1987a, 13; Williamson 1984, 228), but the model has never been tested with quantified data, and the Garrison sites provide just such an opportunity.

We have already seen that the average sherd weight per square metre at the Garrison sites falls away dramatically from that of Area 2 as one moves into the agrarian landscapes of Areas 6 and 10 (Table 5). The same trend has been reported within sites, because it would seem that rubbish was cleared away towards the edges of the occupied zone such that average sherd weights decline with distance from the core residential area (Bradley *et al* 1980, 249). Table 5 gives quantified details of sherds from selected features of Areas 2, 6 and 10, where the comparison is made between the main enclosure ditch of the Area 2 round-house and the trackway ditches and field boundaries of Areas 6 and 10. It demonstrates a clear fall in average sherd weight as one moves away from the Area 2 settlement. The Area 2 enclosure ditch was not only the largest single source of pre-Belgic pottery from the Garrison sites, but it also has the highest average sherd weight because the feature was immediately adjacent to an occupation site. It is interesting that the ditch of the Middle Iron Age enclosure 2 at the Stanway site (where settlement is also postulated) produced pottery with an average sherd weight of 6.7g, a figure not far removed from Area 2 at the Garrison (Sealey in prep). The much lower sherd weights from Areas 6 and 10 were caused by a long history of sherd movement and trampling in the soil before they were eroded into the trackway ditches and field boundaries. An interesting corollary is that the average sherd weights and sherd incidence per m² in Areas 6 and 10 are so much lower than in Area 2 that one can be confident that there were no prehistoric round-houses there that have been destroyed by ploughing since antiquity.

Table 5: pre-Belgic sherd data for selected features.

area and features	sherd count	sherd weight	average
Area 2 enclosure ditch	440	3164	7.2
Area 6 trackway ditches and field boundaries	86	437	5.1
Area 10 trackway ditches and field boundaries	243	666	2.7

Given that most of the pre-Belgic pottery from Areas 6 and 10 may have come from field manure, the pottery itself can shed light on when those fields were created, assuming of course that crops were manured from the start (Bowden *et al* 1993,111). The earliest pre-Belgic pottery should therefore give a *terminus post quem* for when the fields in Areas 6 and 10 were first farmed. In the following section, the implications of this are explored at greater length.

Absolute chronology of the pre-Belgic pottery

An important recent development in Iron Age studies has been the realisation that the period began earlier than hitherto thought, at *c* 800 BC. Pottery of the first half of the 1st millennium BC is divided into a plain ware tradition that emerged towards the end of the 2nd millennium BC and a decorated tradition (which developed from it) that began late in the 9th century and lasted for several centuries (Barrett 1980). Collectively these plain and decorated traditions were regarded as Late Bronze Age. But adjustment of the start date of the Iron Age back to *c* 800 BC means that decorated Late Bronze Age pottery was in fact current when iron was in regular use. The implications are unsettling (Cuddeford & Sealey 2000, 16) and mean that we should henceforth recognise decorated Late Bronze Age pottery as our earliest Iron Age pottery (Needham forthcoming). For the Garrison sites, this means that the pottery described as earliest Iron Age in Area 10 has until recently been thought of as Late Bronze Age: this needs to be kept in mind lest confusion should arise.

The absolute chronology of subsequent Iron Age pottery in Essex is reviewed by the writer elsewhere (Sealey in prep), where it is concluded that Darmsden-Linton pottery was current *c* 600-300 BC and that the Middle Iron Age pottery that replaced it lasted until at least *c* 50 BC. Late Iron Age pottery of Aylesford-Swarling or 'Belgic' type is first attested in graves from *c* 75 BC but does not displace Middle Iron Age pottery on settlement sites until *c* 50-25 BC.

Phasing of the pre-Belgic pottery area by area

Before each area is examined in turn, we need to look at one of the ways in which the pottery can be placed in a sequence. As one moves from the late Bronze Age into the earliest, Early and Middle Iron Age in Essex, there is a decline in the quantity of exclusively flint-tempered pottery and an increase in sand and flint-with-sand temper (Brown 1988, 269). Moreover, if Runnymede Bridge (Surrey) is typical, as flint temper receded in importance the flint grains tended to become smaller and sparser (Needham 1996, 111). The same shift from flint to sand is found in Cambridgeshire (Woudhuysen 1998, 36-7), Suffolk (Martin 1988, 34), and Norfolk (Gregory 1995, 90). Indeed, it is typical of much of southern Britain from the second quarter of the first millennium BC (Rigby 1988, 103). Although it would be unrealistic to expect a uniform progression through time away from flint to sand temper, the proportions of the different fabrics in different contexts can give a clue to their relative dates. It is important, as well, to remember that this is a broad trend, and nothing more. On two Iron Age sites from the Norwich Southern Bypass, the proportion of flint-tempered ware actually increased in the period and, on one of them, Harford Farm, flint-tempered sherds were nearly 90% of the Middle Iron Age total by weight (Percival 2000, 179).

So the relative proportions of flint and sand temper are of some help in arranging the pre-Belgic pottery from Garrison Areas 2, 6 and 10 in a sequence. The data needed for the comparisons is given in Tables 7-9. To make these comparisons easier, data has not been given for each individual fabric; instead they have been amalgamated to give the broad outlines of the picture. How fabrics were amalgamated is explained in Table 6. Fabrics A to E were put together because they are essentially sand-tempered. Fabrics B and D (sand + vegetable temper) are so rare that they do not distort the picture. Fabrics F, I and L are tempered only with flint. Fabrics G, H, J, K and M are grouped together because they are tempered by flint-with-sand. The final amalgamation was of fabrics tempered with flint and with flint-with-sand, fabrics F to M. Grog-tempered fabrics (GTW) have not been amalgamated.

Table 6: details of the amalgamated fabrics.

fabric amalgamations	fabric tempers
A-E	sand & sand with vegetable (rare)
F, I & L	flint
G, H, J, K & M	flint-with-sand
F-M	flint & flint-with-sand

In Area 2, the pre-Belgic pottery is dominated by sand-tempered fabrics, which constitute 92% by weight of the total. This at once suggests a late position in the sequence and that is confirmed by the stratigraphy of the ditch, where, in the uppermost levels, Middle Iron Age pottery is associated with Late Iron Age grog-tempered pottery. But the quantities of grog-tempered pottery from the enclosure ditch are trifling, only 4.6% by weight of the total. In other words, the topmost levels accumulated when grog-tempered pottery was making its first appearance. In absolute terms this means earlier rather than later in the period *c* 50-25 BC. We cannot, of course, say how much of the upper fill of the ditch had been destroyed by ploughing before excavation, but it seems reasonable to think that the silting of the ditch had reached an advanced stage by then. In landscape history terms, this is important because it gives a *terminus post quem* of *c* 50-25 BC for the trackway that sliced through the enclosure. What is more difficult to gauge is when the Area 2 enclosure ditch had been cut in the first place. Ditch fills of themselves cannot date when a ditch was cut, only when it ceased to be maintained and was allowed to fill with debris. But even in the lower fill, 88.6% of the pottery by weight is sand-tempered; the corresponding figure for the upper fill is 92.7%. It would seem that the ditch was allowed to silt up quickly, even allowing for recuts, at a time when the trend from flint to sand-temper had reached an advanced stage towards the end of the Middle Iron Age. If pressed, one might hazard a date of *c* 100 BC for the cutting of the ditch, but this should only be viewed as an informed guess.

Table 7: Area 2 – amalgamated fabric data for the pre-Belgic pottery.

amalgamated fabrics	totals	average sherd weight	percentages (count)	percentages (weight)
sand-tempered sherd count	496		93.1	
sand-tempered sherd weight	3412	6.9		92.0
flint-tempered sherd count	1		0.2	
flint-tempered sherd weight	2	2.0		0.1
flint-with-sand sherd count	20		3.8	
flint-with-sand sherd weight	131	6.6		3.5
flint & flint-with-sand sherd count	21		3.9	
flint & flint-with-sand sherd weight	133	6.3		3.6
grog-tempered sherd count	16		3.0	
grog-tempered sherd weight	165	10.3		4.4

We can be confident that the Area 6 pre-Belgic pottery is older than that from Area 2 because the proportion of sand-tempered pottery is lower, ie 77% compared to 92% by weight. A more significant statistic is the proportion of sand-tempered pottery from the trackway ditches and field boundaries: by weight, it is only 66.6%. This brings us to the question of what exactly is being dated. The trackway ditches and field boundaries in Area 6 are coaxial and this is a powerful hint that they were laid out at the same time. It is argued above that the pre-Belgic pottery reached Area 6 when arable fields were manured and that it subsequently eroded into the trackway ditches and field boundaries when they were no longer maintained. On this view, the earliest pottery in those features was contemporary with the first manuring of these fields. In other words, the earliest pottery from the trackway ditches and field boundaries dates the creation of this particular agrarian landscape. None of the pottery from the Area 6 trackway ditches and field boundaries is illustrated and it was generally devoid of diagnostic typological features. We have to rely heavily for dating evidence on the relative proportions of fabrics in a hand-made ceramic tradition. At 66.6% by weight, the proportion of sand-tempered pottery certainly indicates a date earlier than the Area 2 enclosure ditch. One needs to integrate this with the average sherd weight of 5.1g for the pre-Belgic pottery from the Area 6 trackway ditches and field

boundaries. This is lower – but not dramatically lower – than the average sherd weight of 7.2g for the Area 2 enclosure ditch. This suggests that the pre-Belgic pottery in the Area 6 trackway ditches and field boundaries did not have a protracted history of soil movement and trampling before incorporation in its excavated contexts. Translating this into a trustworthy absolute date is perilous. A date of *c* 150 BC could be proposed for the creation of the Area 6 Middle Iron Age landscape, but any date reached on the basis of such fragile evidence should be treated with more than the ordinary reservations.

Table 8: Area 6 – amalgamated fabric data for the pre-Belgic pottery.

amalgamated fabrics	totals	average sherd weight	percentages (count)	percentages (weight)
sand-tempered sherd count	178		69.5	
sand-tempered sherd weight	1150	6.5		77.0
flint-tempered sherd count	39		15.2	
flint-tempered sherd weight	145	3.7		9.7
flint-with-sand sherd count	29		11.3	
flint-with-sand sherd weight	139	4.8		9.3
flint & flint-with-sand sherd count	68		26.6	
flint & flint-with-sand sherd weight	284	4.2		19.0
grog-tempered sherd count	10		3.9	
grog-tempered sherd weight	60	6.0		4.0

The Area 10 pre-Belgic pottery is earlier still. The proportion of sand-tempered pottery is low, only 24.8% by weight; the assemblage (if we can call it that) is dominated by the flint or flint-with-sand fabrics that make up 75.2% of the total by weight. Of the 1175g of pre-Belgic pottery, 666g came from trackway ditches and field boundaries and another 385g came from the Early Iron Age Darmsden-Linton cremation pit F276. Despite the low average sherd weight of only 3.9g, enough sherds had typological features for one to recognise this as a group of material that includes some earliest Iron Age sherds (Fig 38, nos 1-3) of a kind that until recently were thought of as Late Bronze Age. This was followed by the Darmsden-Linton cremation pit group. The only sherd with a Middle Iron Age typology was a solitary rim with finger-nail impressions from a trackway ditch (Fig 38, no 8). Its fabric is a coarse flint temper that looks early in the sequence. The pre-Belgic pottery from Area 10 includes nothing else that is demonstrably Middle Iron Age. It is difficult to avoid the conclusion that the pre-Belgic pottery from Area 10 is a group of material that spans the centuries *c* 800-300 BC, with little or nothing that is later. Apart from the pottery in the Darmsden-Linton cremation pit (F276), it presumably reached the site with field manure. The very low average sherd weight suggest a long history of cultivation in which the pre-Belgic sherds became progressively abraded and smaller. None of the field boundaries of the period has survived. There seems to have been a major contraction in the area under cultivation after *c* 300 BC when the area was either abandoned or became woodland, whether managed or wild. A dearth of Middle Iron Age pottery from the Area 10 trackway ditches and field boundaries suggests that they were laid out at some stage after the end of the Middle Iron Age *c* 50-25 BC.

Table 9: Area 10 – amalgamated fabric data for the pre-Belgic pottery.

amalgamated fabrics	totals	average sherd weight	percentages (count)	percentages (weight)
sand-tempered sherd count	116		38.8	
sand-tempered sherd weight	291	2.5		24.8
flint-tempered sherd count	108		36.1	
flint-tempered sherd weight	371	3.4		31.6
flint-with-sand sherd count	75		25.1	
flint-with-sand sherd weight	513	6.8		43.7
flint & flint-with-sand sherd count	183		61.2	
flint & flint-with-sand sherd weight	884	4.8		75.2

Pre-Belgic pottery and landscape history

Here it is proposed to summarise what light the pre-Belgic pottery sheds on landscape history at the Garrison sites. Area 10 underwent a long period of cultivation of arable fields *c* 800-300 BC, from the earliest Iron Age, through the Early Iron Age Darmsden-Linton period and ending at the start of the Middle Iron Age. The Area 10 trackways were laid out at some stage after the end of the Middle Iron Age *c* 50-25 BC. In Area 6, residual manure-scatter sherds show that a farming system was in operation at a developed stage of the Middle Iron Age, *c* 150 BC, but the coaxial landscape of integrated field boundaries and trackways was probably a later feature (contemporary with the *oppidum*). The Area 2 Middle Iron Age enclosure ditch may have been cut *c* 100 BC but had substantially silted by the start of the Late Iron Age *c* 50-25 BC. The silting of the ditch gives a *terminus post quem* for the trackway ditch that passed through the centre of the enclosure on the same alignment.

Typology of the earliest Iron Age pottery

Three rims from Area 10 can be recognised as the earliest from the Garrison excavations (Fig 38, nos 1-3). All three belong to thin-walled vessels with a typology that cannot be accommodated within the (mainly) Middle Iron Age wares found elsewhere at the Garrison. The first two have more or less straight-sided walls that terminate in flat rims. On the first there is a slight bead feature, and the second is thickened at the end and protrudes outwards. The third rim is flat with a neck below that falls away in a gentle curve.

Rims like no 1 are paralleled in Essex among assemblages described as Late Bronze Age at North Shoebury (Brown 1995, 80, fig 63 no 48), Lofts Farm (Brown 1988, fig 14 no 30), and Mucking North Ring (Barrett & Bond 1988, fig 21 no 41, 32). A similar rim from an Early Iron Age context at North Shoebury (Brown 1995, fig 65 no 89) might represent rubbish survival. Rims nos 2 and 3 likewise find parallels among Late Bronze Age material from Mucking North Ring (Barrett & Bond 1988, 29, 32, fig 21 nos 33, 42-4). In the Late Bronze Age plain ware pottery at Runnymede Bridge, rims with flat tops emerge late in the sequence (Needham 1996, 113). All the Mucking North Ring pots cited belong to phase 6, the last phase on the site. Traditionally this has been described as a Late Bronze Age (decorated) phase, but is now recognised as earliest Iron Age.

Typology and decoration of the Early Iron Age Darmsden-Linton pottery

Pottery of Darmsden-Linton type was confined to Area 10. Most came from cremation pit F276, with a solitary residual rim from elsewhere. Pit F276 included the flared rim of a fine ware bowl, with a single horizontal groove at the lower edge. Another bowl has the carinated shoulder typical of the Darmsden-Linton style. A grooved body sherd from the cremation pit has the bright red outer surface often described as 'haematite-coated' (Fig 38, nos 4-7). Such red-finished surfaces were particularly common in Early Iron Age Wessex. Analysis shows that the effect could be achieved in a variety of ways, including the application of a slip rich in iron compounds. In other cases, the effect was created by using a ferruginous clay for the pot, burnishing the surface and ensuring that the exterior was fired in an oxidising atmosphere (Middleton 1987, 259-61; Middleton 1989). Mindful of the rarity of such pottery in Essex, it is worth noting that sherds from another 'haematite-coated' vessel were found north of Area 6 in the evaluation trenches that preceded the excavations described here (Colchester Museums 2002.8; CAT Report 203). The only other sherd with a Darmsden-Linton typology from the Garrison excavations is a coarse ware jar (Fig 38 no 7) with flat rim, thickened internally and externally from the fill of a trackway ditch.

Typology and decoration of the Middle Iron Age pottery

The most conspicuous single component of the Middle Iron Age pottery is a slack s-sided bowl or jar with a gentle profile that runs in a continuous and graceful curve from the rim downwards. Rims themselves are generally everted, and the neck is shallow and poorly developed (Fig 38 nos 10, 15, Fig 39 no 23, Fig 40 nos 26, 30). Sometimes these shallow necks meet the shoulder in a definite break in curve that can be sharp enough to suggest almost a carination (Figs 38 no 11 and 39 no 19). Very occasionally, a vessel has a more

pronounced shoulder with a deeper neck above (Fig 39 no 17). On one vessel, a short, more or less vertical rim rises from the shoulder without any neck at all (Fig 40 no 31).

The standard rim form is a plain and rounded feature (Figs 38.12, 38.15, 39.23, 40.31). Others have flat outer edges (Fig 38 no 10 and Fig 40 nos 27-28). On some rims, the section is thickened or swollen at the tip (Figs 38 no 9, 38 no 11, 40 no 26), occasionally with an outward protrusion (Figs 39.17, 40.30). Bases are consistently flat (Fig 38 nos 13-14, Fig 39 no 18, 39 no 21, 40 no 29). With three base sherds the wall above rises steeply, with a gentle concave profile or in a more or less straight line (Figs 38 no 14, 39 no 21, 40 no 29). Some of the base sherds belong to thin-walled and fragile vessels, in one case with a thicker base to lend the pot stability (Figs 40 no 29 & 38 no 13 respectively). The thickening of the base is also found on other vessels, sometimes linked with thicker body walls to give vessels with a particularly sturdy and robust build (Fig 39 nos 21, 25).

The Middle Iron Age pottery from the Garrison is a plain ware tradition, with minimal decoration. Only seven Middle Iron Age body sherds had any decoration at all. It consists of lightly scored impressions: sometimes a single horizontal groove, occasionally parallel (tramlines), and once in a lattice pattern. One vessel has two rows of pin-prick impressions set within two shallow horizontal grooves (Fig 38 no 12). Such decoration is rare in the Middle Iron Age, with local examples from Little Waltham (Drury 1978, 82, fig 52.301) and Howell's Farm near Heybridge (Brown 1998, 139, fig 101.5). Five of the 47 Middle Iron Age rim sherds were decorated, being 10.6%. Decoration is confined to the very tops of the rims and consists of finger-nail or finger-tip impressions, and straight incisions cut obliquely across the top of a (flat) rim (Figs 38.8, 39.16, 39.19). The incidence of rim decoration is close to that in the much larger and presumably, therefore, more representative sample of 500kg of Middle Iron Age pottery from Little Waltham, where 13% and 10% of the vessels had finger-tip or finger-nail decoration respectively (Drury 1978, 58).

Typology and decoration of the initial Aylesford-Swarling pottery

The large storage jar rim is distinctive (Fig 39 no 24) and a typical Late Iron Age form, although storage jars are occasionally found in Middle Iron Age contexts in Essex (Brown 1991, fig 11.15 from Asheldam Camp). Although it has a sandy fabric, the symmetry and regularity of finish of a rim from the Area 2 enclosure ditch suggests manufacture on the wheel (Fig 39 no 20). Not enough survives of a grog-tempered rim from the same ditch to establish if it was wheel-thrown or not, but the typology marks a departure from Middle Iron Age traditions: the inside of the rim is arched but the outer surface is almost straight, with a sharp break in curve where it joins the neck (Fig 39 no 22). The small group of pottery from pit F13 in Area 6 is transitional between the Middle and Late Iron Ages, with grog-tempered sherds in a minority. Rims nos 32 and 33 are in sand-tempered fabrics but have the regularity of finish that suggests production on the wheel. A corrugated grog-tempered body sherd from the same pit is more mainstream Aylesford-Swarling (Fig 40 no 34). An unillustrated body sherd from the same pit has the burnished lattice decoration typical of initial Aylesford-Swarling. Parallels include a vessel from a ditch at Kelvedon (Essex) dated *c* 50-25 BC (Rodwell 1988, figs 80.44, 80.107; Sealey 1996, 55 for the date) and a pot from another assemblage transitional between the Middle and Late Iron Age from Puddlehill in Bedfordshire (Matthews 1976, 149 no 95).

A hand-made rim in south Essex shell-tempered ware is a rare Late Iron Age import to the site (Fig 40 no 35). The vessel is a neckless jar with a plain rounded rim, emphatically thicker at the tip. It is possible the form is Cam 254 (Hawkes & Hull 1947, 267-8, pl 82). Similar rims in the same fabric are found on sites in the south of the county, at Ardale School (Hamilton 1988, fig 74 no 65) and Billericay (Rudling 1990, fig 8 nos 17-18 & 19).

List of illustrated pottery

All pottery is Middle Iron Age and hand-made, unless indicated otherwise.

Fig 38 no 1. Fabric F. Black core and brown surfaces. Area 10 F11 Sx 1. Earliest Iron Age
Fig 38 no 2. Fabric F. Black core and brown surfaces. Area 10 F287 Sx 4. Earliest Iron Age
Fig 38 no 3. Fabric F. Black core and surfaces. Area 10 F14 Sx 6. Earliest Iron Age
Fig 38 no 4. Fabric H. Black core with a dark brown outer surface, the inner is mottled brown to dark brown. Area 10 pit F276 (cremation pit). Early Iron Age Darmsden-Linton fine ware bowl

Fig 38 no 5. Fabric A. Black core and surfaces. Area 10 pit F276 (cremation pit). Early Iron Age Darmsden-Linton carinated fine ware bowl
Fig 38 no 6. Fabric H. Black core and brown inner surface, the outer has a red 'haematite-coated' finish. Area 10 pit F276 (cremation pit). Early Iron Age Darmsden-Linton
Fig 38 no 7. Fabric L. Black core and dark grey surfaces. Area 10 F3 Sx 6. Early Iron Age Darmsden-Linton coarse ware jar
Fig 38 no 8. Fabric 1. Brown core and surfaces, with finger-nail impressions on the top of the rim. Area 10 F1 Sx 6
Fig 38 no 9. Fabric C. Black core and surfaces. Area 2 F6 Sx 1 L9, lower fill of enclosure ditch
Fig 38 no 10. Fabric H. Black core and inner surface, the outer is brown. Area 2 F143 Sx 2 L71, lower fill of enclosure ditch
Fig 38 no 11. Fabric E. Dark grey core and brown inner surface, the outer is mottled brown to dark brown. Area 2 F6 Sx 1 L8, upper fill of the enclosure ditch
Fig 38 no 12. Fabric C. Black core and brown surfaces. Area 2 F6 Sx 1 L8, upper fill of the enclosure ditch
Fig 38 no 13. Fabric C. Black core and surfaces. Area 2 F52 Sx 3, L31, upper fill of the enclosure ditch
Fig 38 no 14. Fabric A. Grey core and mottled light grey to grey surfaces. Area 2 F55, upper fill of the enclosure ditch
Fig 38 no 15. Fabric A. Black core and surfaces. Area 2 F55, upper fill of the enclosure ditch
Fig 39 no 16. Fabric C. Black core and surfaces, with straight incisions cut obliquely across the top of the rim. Burnt residues on the exterior. Area 2 F55, upper fill of the enclosure ditch
Fig 39 no 17. Fabric B. Black core with mottled brown and black surfaces. Area 2 F81 Sx 3, upper fill of the enclosure ditch
Fig 39 no 18. Fabric E. Grey core with mottled grey and brown surfaces. Area 2 F136 Sx 2 L62, upper fill of the enclosure ditch
Fig 39 no 19. Fabric A. Black core and brown surfaces, with finger-nail impressions on the top of the rim. Area 2 F136/F143 Sx 1-Sx 2 L68, upper fill of the enclosure ditch
Fig 39 no 20. Fabric B. Black core and inner surface, the outer is dark brown. Wheel-thrown. Area 2 F81 Sx 2, upper fill of the enclosure ditch
Fig 39 no 21. Fabric A. Black core and dark brown surfaces. Area 2 F6 Sx 2 L11, upper fill of the enclosure ditch (associated with grog-tempered pottery)
Fig 39 no 22. Fabric GTW, here with rounded red and grey grog inclusions < 3mm with some finer black grog and fine sand. Grey core and brown surfaces. Area 2 F6 Sx 2 L11, upper fill of the enclosure ditch
Fig 39 no 23. Fabric C. Black core and surfaces. Area 2 F57 Sx 1 L42, upper fill of the enclosure ditch (associated with grog-tempered pottery)
Fig 39 no 24. Fabric GTW, here with abundant angular and rounded black grog and sparse angular and rounded red grog both < 2mm, and fine sand. Dark brown core and brown inner surface, the outer is red-brown. Area 2 F57 Sx 1 L42, upper fill of the enclosure ditch
Fig 39 no 25. Fabric E. Grey core and light brown inner surface, the outer is dark brown. Area 2 F136/F143 L27, upper fill of the enclosure ditch (associated with grog-tempered pottery)
Fig 40 no 26. Fabric A. Black core and inner surface, the outer is mottled brown and black. The inner and outer surfaces had been carefully wiped to give a polished and smooth finish that suggests a pot made with particular care as befits its position in F49 at the centre of the Area 2 round-house
Fig 40 no 27. Fabric A. Black core and grey surfaces. Area 2 F11 Sx 1
Fig 40 no 28. Fabric A. Black core and surfaces. Area 2 F39
Fig 40 no 29. Fabric D. Black core and surfaces. Area 6 F14
Fig 40 no 30. Fabric C. Black core and grey inner surface, the outer is brown. Area 6 F13 and F14 (joining sherds)
Fig 40 no 31. Fabric C. Black core and light brown inner surface, the outer is dark brown. Area 6 pit F13 (which included grog-tempered pottery in the fill)
Fig 40 no 32. Fabric A. Grey core with brown surfaces. Wheel-thrown. Area 6 pit F13 (which included grog-tempered pottery in the fill)
Fig 40 no 33. Fabric A. Light grey core and mottled light grey to light brown surfaces. Wheel-thrown. Area 6 pit F13 (which included grog-tempered pottery in the fill)
Fig 40 no 34. Fabric GTW, here with sparse angular black grog < 1mm with sand. Brown core and dark brown surfaces. Area 6 pit F13
Fig 40 no 35. South Essex shell-tempered ware. Black core and inner surface, the outer is brown. Area 6 F21. Late Iron Age

Dressel 1 amphora sherd

A Dressel 1 amphora sherd weighing 43g was recovered from the Area 6 field boundary F61 Sx 8 (not illustrated). Its fabric is CAM AM 2 (Tomber & Dore 1998, 89-90, 230 pl 66).

The sherd comes from the junction of neck and shoulder. With a wall thickness that ranges from 25.1 to 26.2mm, its robust build establishes it as Dressel 1 rather than the thinner-walled and lighter successor form Dressel 2-4. Dressel 1 was the major Italian wine amphora of the late Republic (Sealey 1985, 21-6; Tyers 1996, 89-90). Production came to an end by *c* 10 BC (Zevi 1966, 213; Loughton 2000, 254).

Excavations at the Sheepen site produced over 50 Dressel 1 amphoras, although they reached the site as re-used containers in the early 1st century AD (Sealey 1985, 10, 21-2, 101-8). There were six more in the Lexden tumulus (Williams 1986, 131) and two more from other findspots in the neighbourhood, quite possibly from graves as well (Hawkes & Hull 1947, 251; Peacock 1971, 183-4). A rim was found inside the Roman town walls in the AD 60/1 Boudican destruction horizon (Dunnett 1971, 73, fig 26 no 8). It is a reflection of the status of Iron Age Camulodunum that Colchester should be one of only a handful of sites in Britain that have produced the form in any quantity. But (apart from élite funerals) we know next to nothing about where this Italian wine was actually drunk at Camulodunum. The sherd from the Garrison takes us closer to a solution because it suggests that wine was consumed on the farms or farmsteads that managed the Area 6 landscape.

Late Iron Age and Roman pottery

by Stephen Benfield (CAT)

Introduction

This report covers the Late Iron Age grog-tempered and Roman pottery from the excavations of Areas 2, 6, and 10, apart from the grog-tempered pottery from the main enclosure ditch on Area 2 which has been incorporated in the sequence of pottery from this feature in the report on the prehistoric pottery by Paul Sealey. Roman pottery fabrics refer to those devised for *CAR* **10** with the addition of fabric GTW. Late Iron Age and Roman pottery forms refer to the Camulodunum form type series (Hawkes & Hull 1947 and Hull 1958), while Late Iron Age forms are also referred to as part of the Camulodunum type series as well where appropriate by form types assigned by Isobel Thompson (Thompson 1982).

Table 10: the Late Iron Age and Roman pottery fabrics.

Fabric abbreviation	Fabric
GTW	Late Iron Age grog-tempered wares
AJ	Dressel 20 amphora
AA	all amphora excluding Dressel 20
CZ	Colchester and other red colour-coat wares
DJ	coarse oxidised and related wares
GB	BB2 black-burnisherd ware, category 2
GBW	Glossy burnished ware
GQ	East Anglian stamp-decorated and similar London type wares
GX	other coarse wares, principally locally-produced grey wares
HZ	large storage jars and other vessels in heavily-tempered grey wares
HZ (GT)	large storage jars with grog temper
KX	black-burnished ware (BB2) in pale grey ware
TZ	Colchester mortaria and mortaria imported from the Continent
WA	silvery micaceous grey wares

The Late Iron Age and Roman pottery from Area 2

The quantity of Late Iron Age and Roman pottery from Area 2 was small (220 g). All the sherds were degraded or abraded to various degrees, which in part or whole is a product of the soil conditions so that the condition of sherds does not directly reflect residuality. The average sherd weight was just over 6 g. Almost all of the pottery (187 g) came from two ditches (F2 and F11). Late Iron Age pottery (other than from the main enclosure ditch of the Area 2 enclosure) was represented by a single sherd of GTW (6.2% of the assemblage by weight) from ditch F2. Of the Roman pottery, the only vessels which could be identified consisted of body sherds attributable to general forms or vessel types; these

were from a Dressel 20 amphora (Fabric AJ), a large storage jar (Fabric HZ), and probably a large flagon (Fabric DJ). The flagon sherds came from a pit (F43) and were the only pottery to come from a feature other than the two ditches mentioned above. Most of the pottery (117 g) consisted of sherds of Roman coarse reduced wares (Fabric GX). Of this, just over half by weight (75 g) was in fabrics which can or probably can be attributed to the early Roman period (*c* 1st-early 2nd century), though the remainder of the coarse reduced wares could only be dated as Roman. The small amount of Roman pottery which can be dated would fit within the early to mid Roman era, *c* AD 43-200/250. Overall the Roman pottery is possibly primarily of 1st- to 2nd-century date.

The Late Iron Age and Roman pottery from Area 6

There was just over 13 kg (13,123g) of Late Iron Age and Roman pottery from Area 6. All the sherds were degraded or abraded to various degrees, which in part or whole reflects the soil conditions so that the condition of sherds does not directly reflect residuality. The average sherd weight for all pottery was 10.1 g. The average sherd weight for Late Iron Age fabric GTW was 4.8 g (6.9 g including grog-tempered Fabric HZ) and 11.6 g for all other wares including all Fabric HZ.

Of the pottery total, 1,365 g (22% of sherds, approximately 10% by weight) was Late Iron Age grog-tempered ware (fabric GTW). This total includes four whole cremation pots from cremation burial F63 (974g, 228 sherds). If these are removed from the totals, then GTW from other features is 391 g, 56 sherds, or 3% by weight of the assemblage and 4.3% of all pottery sherds. Among the heavily-tempered sherds from large storage jars (Fabric HZ), seven sherds (685 g) contain grog-temper and may also be of Late Iron Age date (this is about 23% of the large storage jars by sherd count and about 25% by weight). However, grog-tempered Fabric HZ (HZ (GT)) is virtually absent from ditches which contain Late Iron Age GTW sherds, apart from the ditch F304, though it was present among the assemblages from two pits (F1 & F467) which also contained Roman pottery of 2nd- to 3rd-century date. Other pottery of pre-conquest date consists of a single sherd from a Dressel 1 (Roman late Republican) amphora from one of the ditches (F61) in Italian black sand fabric (see report on this above in pre-Belgic pottery report). No Gallo-Belgic wares were present. In total, approximately 16% by weight of the pottery assemblage could be of Late Iron Age date; excluding the burial F63 in Area 6, this drops to about 8.5% by weight, and Late Iron Age pottery should probably be seen as somewhere between about 3% and 8% by weight overall. The only features which contained only GTW, apart from the cremation burial F63, were a small number of pits (F3, F78, F79, F475) and a ditch (F307), though in each case this was just a single sherd. The majority of the Late Iron Age pottery came from ditches (F2, F4, F21, F6, F304, F34, F460), two pits (F1, F352), and a grave (F17), all of which also contained quantities of early-mid Roman pottery. Other than as single sherds from features which otherwise contained no other pottery, the highest recorded proportion of GTW in any single feature (excluding the burial F63) was from the pit F352 (65% by weight, 42% by sherd count, though the total amount of pottery from this feature was small at 17g) and the ditch F304 (13% by weight, 18% by sherd count). Otherwise, overall, the proportion of GTW from any single feature was usually less than between about 6% and 10% of pottery by weight or sherds, though this would be increased if most of the grog-tempered Fabric HZ large storage jars are of Late Iron Age date. Other than the burial group (F63), most of the GTW consisted of body sherds and only two forms could be recognised, ie Cam 218 and possibly Cam 229, both of which occur at the Sheepen site (Hawkes & Hull 1947).

The cremation F63 contained four vessels in fabric GTW (Fig 16, find nos 105, 106, 107 & 108). These amounted to 71% by weight of all GTW (974 g) and 80% of all recorded GTW sherds (228 sherds). They had been deposited as whole pots, though the rim of one vessel (find no 106) had been lost, presumably to later damage. All are quite fine, with neat bases, and appear to be entirely wheel-made. Three of the pots (nos 105-107) are quite similar to each other with a ripple bulge at or just above the girth, and two of these (nos 105, 107) are almost identical, suggesting that they were produced together. The fourth pot (no 106) has a small cordon at the shoulder. None of the pots are directly paralleled in the Camulodunum type series, though essentially the forms are a version of Cam 221 and squat versions of Cam 218 (Hawkes & Hull 1947). The lack of direct parallels in the

Camulodunum type series suggests that they may pre-date or be early in relation to the assemblage from the Sheepen site which dates from *c* 5 AD (Niblett 1985, 3).

The Roman pottery consists of approximately 12 kg (11,758 g), though this might reduce to just over 11 kg (11,073 g) if all the large storage jars with grog temper are of Late Iron Age date. Imports and fine wares (amphora, samian and local late colour-coat wares) make up approximately 3.5 kg (3686 g) or approximately 30% by weight of the assemblage. The majority of this (2650 g, just over 70% by weight) is sherds of imported Spanish amphora (Fabric AJ), probably all oil amphoras of form Dressel 20. Only two other amphoras were recognised, one a flat-based Gaulish form and the other an amphora in Spanish fabric possibly of form Haltern 70. Samian comprised some 36 g (less than 1% of the whole assemblage by weight), though with sherds from at least five plain vessels represented (forms Dr 18, Dr 27, Dr 31, Dr 33, Dr 36) and a degraded sherd possibly from a 1st-century decorated bowl (form Dr 29). The only colour-coat wares are local Colchester products (35 g) and like the samian comprise less than 1% of the whole assemblage by weight. Only one form, Cam 392 beaker (dated later 2nd-mid 3rd century), could be identified. In total all fine wares are less than 1% (0.6%) by weight of the total Roman assemblage.

The bulk of the Roman pottery consists essentially of local coarse wares. These comprise coarse reduced wares (Fabrics GX, HZ and WA); black-burnished ware category 2 (Fabric GA); black-burnished forms in grey ware (Fabric KX); oxidised wares (Fabric DJ); sherds from a local oxidised mortaria (Fabric TZ), though there are also sherds from a fine reduced ware bowl (in Fabric GQ). A number of early Roman (1st- to early 2nd-century) forms are represented, principally in local coarse reduced wares (Fabric GX): Cam 28 (plate), Cam 108 (beaker), Cam 218 (bowl), Cam 219 (bowl), Cam 221 (bowl), Cam 243-244/246 (reed-rim bowl), and Cam 266 (jar). Also common mid Roman (early 2nd- to mid-late 3rd-century) forms are well represented, principally in black-burnished ware category 2 (Fabric GB) and local grey ware versions of black-burnished ware (Fabric KX): Cam 37 (bowl), Cam 37A (bowl), Cam 40B (bowl/dish), and Cam 278 (jar). There are also grey ware jars of form Cam 268 and the bowl form Cam 299, both in Fabric GX.

Two Roman graves in Area 6 (F17 & F28) produced pottery grave goods. There were two pots from grave F17. Both were fragmented. One was a Cam 268 jar (dated mid 2nd to late 3rd-?early 4th century) in Fabric GX, of which most of the vessel was present though the base was missing. The other was a jar or bowl in Fabric GX represented only by the base and much of the lower body, and this can only be dated as Roman. The second grave (F28) contained a fragmented Cam 392 beaker (dated second half of the 2nd-mid 3rd century) in Fabric CZ, of which the greater part of the rim was missing.

There is also a small number Roman pots in Area 6 which stand out from the usual collections of sherds from features and represent the disposal of partial vessels. None are whole pots, but vary from most of a vessel to about one-third present. While some may represent disposal of broken pots, another possibility is that some could have been disturbed from burials. These pots are: a Cam 268 jar (Fabric GX), from pit F26; a Cam 108 beaker (Fabric GX) & Cam 268 jar (Fabric GX) from ditch F304; a Cam 108 (plain) beaker (Fabric GX) & Cam 219 bowl (fabrics GBW/GX) from pit F306; and a Cam 37A (Fabric GB) bowl, Cam 268 jar (Fabric GX) and a flagon (Fabric DJ) from pit F467.

Overall, there were no fabrics or forms present in the Area 6 assemblage which need date later than the mid-late 3rd century. Though the bowl form Cam 299 was produced into the 4th century (*CAR* **10**, 481), and the jar Cam 268 probably so (*CAR* **10**, 479), fabrics and forms which would date from the mid-late 3rd century or later are completely absent.

The Late Iron Age and Roman pottery from Area 10

Area 10 produced a little under 2 kg (1815 g) of Late Iron Age and Roman pottery. All the sherds were degraded or abraded to various degrees which in part or whole reflects the soil conditions so that the condition of sherds does not directly reflect residuality. Average sherd weight for all pottery was 14g. The average sherd weight for Late Iron Age GTW was 3.2 g (12.8 g for fabric GTW and grog-tempered Fabric HZ together) and 14.5 g for all other wares including all Fabric HZ.

Of the total assemblage, 16g (just under 1% of pottery by weight and just under 4% by sherd count) was Late Iron Age grog-tempered wares (fabric GTW). A proportion of the large storage jar sherds in grog-tempered fabric (Fabric HZ (GT)) weighing112g could also

be of Late Iron Age date, though this is difficult to assess. The one identified large storage jar form which includes grog temper in its fabric is of form Cam 273 which is post-conquest (Claudian – 2nd/3rd century; *CAR* **10**, pp 479-80). Also there is no Fabric HZ (GT) from any of the ditches containing GTW sherds, though Fabric HZ (GT) was present in ditch F3 where the remainder of the assemblage was all Roman. The Late Iron Age fabric GTW consisted of body sherds, and no forms could be identified. The sherds in fabric GTW came from just three features, all ditches (F11/F273, F13 & F14). All of these ditches also contained Roman pottery. The proportions of fabric GTW by weight varied from 1.6% for F14 and 3.5% for F13, to 66.7% for F11/F273 (though the high figure for F11/F273 is simply the product of the very small amount of pottery from that feature, being only two sherds weighing 6 g). Also it should be noted that the only pottery from the ditch F287 in Area 10 was three sherds from a grog-tempered large storage jar (Fabric HZ (GT)) which could be of Late Iron Age date.

The Roman pottery from Area 10 consists of approximately 2 kg (1799 g), though this might be reduced by about 100 g if all the large storage jars with grog temper are of Late Iron Age date (excluding the form Cam 273 jar from F3). Imports and fine wares (amphora and samian) make up 847 g or approximately 47% by weight of the assemblage. Most of this (727 g, or 86% by weight) is sherds of imported Spanish amphoras (Fabric AJ), probably all oil amphoras of form Dressel 20. The only fine ware present was samian, which comprised some 120 g (6.6% of the whole Roman assemblage by weight), though only one form was identifiable, ie the bowl Dr 31, one example of Central Gaulish origin (later 2nd century) and another possibly of east Gaulish manufacture (later 2nd century-?earlier 3rd century). The remainder of the Roman pottery consists of local coarse reduced wares (Fabrics GX, HZ and WA) oxidised wares (Fabric DJ) and black-burnished ware category 2 (Fabric GA). The vessel forms present were jars, large narrow-neck jars, large storage jars, and bead and plain rim dishes/bowls, with oxidised sherds probably from flagons. Identified Roman pottery forms were Cam 37A, Cam 40B, Cam 266, Cam 273 and Cam 280/281. Though the narrow-neck jar form Cam 280/281 was produced into the later or late Roman period (*CAR* **10**, p 480), there were no fabrics or forms present which need date later than the mid-late 3rd century, and fabrics and forms which would date from that period onwards are completely absent.

Discussion

Overall the pottery from all three areas is sufficiently similar to consider within a single broad discussion. The pottery from all three areas spans the Late Iron Age and early-mid Roman period, *c* later 1st century BC-1st century AD to mid 3rd century, and there are no fabrics or forms which would date only from after that period.

Late Iron Age pottery is a small but consistent part of assemblages from the Garrison excavation areas. The proportion of Late Iron Age pottery is greater for Area 6 at about 10% by weight compared with about 1% on Area 10. This is also reflected in the proportion of Late Iron Age wares within ditches which varied from between about 6% and 10% by weight on Area 6, and at about 2%-3% for Area 10. There are no clear assemblages which are entirely of pre-Roman/Late Iron Age date apart from a burial group from Area 6 (F63). Overall the majority of the Late Iron Age pottery (apart from single sherds from features) appears as a residual element in assemblages of Roman date or in ditches which also contain Roman pottery. Only four form types could be identified among the Late Iron Age pottery assemblages, three of which occur at the Sheepen site (dated from *c* 5 AD; Niblett 1985, 3), which, though a limited comparison, suggests that, in part at least, the assemblage is broadly contemporary with that from the Sheepen site. Also pottery described as 'Sheepen-type' was recovered from two ditches at the Kirkee McMunn Barracks site (Shimmin 1998).

Unusually, the four pots from the Late Iron Age burial F63 (Fig 16, nos 105-108) are not directly paralleled among the Sheepen site assemblages (Hawkes & Hull 1947; Niblett 1985), though they can be considered as a version of form Cam 221 and squat versions of Cam 218. Two of the rippled bowls (Fig 16, nos 105, 107) are so similar as to suggest that they are a pair, so that possibly these two, or all of the pots, were made for the burial. The lack of direct parallels at the Sheepen site makes dating difficult. However, bearing in mind that they could have been especially made for the burial, their unusual form compared with

the Sheepen material suggests that they should probably be dated to the late 1st century BC/early 1st century AD.

The Roman pottery assemblages, except for those from Area 6, are small. Despite this, it appears that generalisations can be made, reflecting similarities and differences between the site areas and between assemblages from the Roman town. Though only Area 6 and Area 10 have any significant quantity of Roman pottery, on all site areas the Roman material recovered reflects forms and wares of 1st- to mid 3rd-century date, so that all have in common an absence of diagnostic later Roman pottery. Also, with certain reservations, all the assemblages appear to be rather more utilitarian than pottery from the Roman fortress/*colonia* of the same period, in that the range of forms and fabrics is less varied. In the Garrison assemblages, the only fine wares present are samian and local colour-coat wares. From the Roman town, which has a wider range of fine ware products present, samian and local colour-coat wares account for 9.2% by weight of all pottery types (samian 7.7%, local colour-coat wares 1.5%: *CAR* **10**, 3-5). The only area with a significant proportion by weight of fine wares was Area 10, where samian was close to the town average at 6.6% by weight, though this consisted entirely of plain forms. For Area 6, fine wares amounted to less than 1% by weight; however, this represented at least six vessels and included a sherd from a 1st-century decorated bowl, so that the limited proportional weight of fine ware is possibly misleading. Also, although 1st-century coarse ware forms are present on both Area 6 and Area 10, there is an absence of pre-Flavian fine wares, though there are two 1st-century samian pieces from Area 6. This could reflect limited activity during the early phase of the Roman occupation, and the coarse ware forms cannot be refined by date closer than the 1st to early 2nd century; however, a Cam 28 dish from Area 6 should be pre-Flavian. The impression is that of continued activity from the Late Iron Age into the Roman period, but, like the Late Iron Age assemblage, there is little fine ware with material of the early Roman period, and most of the limited range of fine wares are of 2nd- to 3rd-century date. Imports are dominated by amphora sherds in Spanish fabric, with most, if not necessarily all, clearly from Dressel 20 oil amphoras, though sherds probably from a Haltern 70 amphora and also a Gaulish amphora came from Area 6.

Overall, the quantity and diversity of Roman pottery in Area 6, together with the deposition of significant parts of broken vessels, indicates that it is close to the site of a settlement, the focus of which was probably at the farmstead at the Kirkee McMunn Barracks site (Shimmin 1998). The pottery from that earlier exploration also ranges from the Late Iron Age through to the 3rd century (Shimmin 1998), which is consistent with the date range from activity suggested by the Area 6 and other assemblages here. Though the quantity of pottery from Area 10 is smaller and less diverse than that from Area 6, the quantity and range of the assemblage appears to imply that it is also close to a settlement focus spanning approximately the same periods as at Area 6. The limited pottery from Area 2 implies the same general date range for activity on the site, but the impression is of only limited deposition of pottery beyond the immediate fringe of a direct settlement site.

Area 2

Table 11: Area 2 – Late Iron Age and Roman pottery fabrics for all contexts.

Fabric	sherds	*% sherds*	wt (g)	*% wt*	EVE	forms
GTW	1	*3.6*	12	*6.2*	0.00	
AJ	1	*3.6*	22	*11.3*	0.00	amphora (?Dressel 20)
DJ	2	*7.2*	7	*3.6*	0.00	?flagon
GX	23	*82.0*	117	*60.3*	0.05	
HZ	1	*3.6*	36	*18.5*	0.00	large storage jar
totals	28	*100.0*	194	*99.9*	0.05	

Table 12: Area 2 – summary of pottery from features.

feature no	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st-3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
F2	ditch	GTW (12g) AJ (22g) GX (58g) HZ (36g)			Dressel 20		20	128	0.05	?residual Late Iron Age **early Roman** (?poss pre-Flavian)
F11	ditch	GX (59g)					10	59	0.00	**early Roman** ?pre-Flavian
F43	pit	DJ (7g)	large flagon				2	7	0.00	**early Roman**
totals							**32**	**194**	**0.05**	

Area 6

Table 13: Area 6 – percentage of fabrics GTW and GTW+HZ (GT) as a proportion of assemblages from ditches containing GTW.

ditch feature	all pot wt (g)	GTW wt (g)	*GTW % wt*	all pot no sherds	GTW no sherds	*GTW % sherds*	HZ (GT) wt (g)	HZ (GT) no sherds	*% wt GTW & HZ (GT)*	*% sherds GTW & HZ (GT)*
F2	458	19	**4.1**	52	3	**5.8**	0	0	*0*	*0*
F4	619	15	**2.4**	25	2	**8.0**	0	0	*0*	*0*
F17	543	7	**1.3**	72	1	**1.4**	0	0	*0*	*0*
F21	183	10	**5.5**	5	2	**40**	0	0	*0*	*0*
F61	2122	22	**1.0**	16	1	**6.3**	0	0	*0*	*0*
F259	237	8	**3.4**	22	1	**4.5**	0	0	*0*	*0*
F304	1395	183	**13.1**	135	24	**17.8**	195	3	***27.1***	***20***
F307	8	8	**100**	1	1	**100.0**	0	0	*0*	*0*
F460	169	2	**1.2**	33	4	**12.1**	0	0	*0*	*0*
F461	46	3	**6.5**	10	1	**33.3**	0	0	*0*	*0*

Table 14: Area 6 – Late Iron Age and Roman pottery fabrics for all contexts.

fabric	sherds	*% sherds*	wt (g)	*% wt*	EVE	forms
GTW	284	*22*	1365	*10.4*	4.12	Cam 218, Cam 220/221, ?Cam 229 (three other girth cordon bowls ?Cam 218 variant)
AA	15	*1.2*	965	*7.4*	0.00	Gaulish amphora, ?Haltern 70
AJ	34	*2.6*	2650	*20.2*	0.70	Dressel 20
BA	12	*1.0*	25	*<1*	0.21	Dr 18, Dr 27, Dr 31, Dr 33, Dr 36
BX	1	*<1*	11	*<1*	0.00	Dr 29
CZ	19	*1.5*	35	*<1*	0.35	Cam 392
DJ	106	*8.2*	477	*3.6*	0.02	Cam 154/155 (large ?2 handle flagon)
GB	15	*1.2*	363	*2.6*	1.34	Cam 37A, Cam 37, Cam 40B, Cam 278
GBW	2	*<1*	1	*<1*	0.00	
GQ	6	*<1*	55	*<1*	0.21	Cam 330
GX	731	*56.5*	4157	*31.6*	7.29	Cam 28, Cam 108, Cam 218, Cam 219, Cam 221, Cam 243-244/246, Cam 266, Cam 268, Cam 299
HZ (GT)	14	*1.1*	685	*5.2*	0.00	
HZ	46	*3.5*	2083	*15.9*	0.98	Cam 270B, Cam 271, Cam 273,
KX	6	*<1*	30	*<1*	0.05	Cam 37
TZ	2	*<1*	220	*1.7*	0.12	Cam 497
?TR/CZ	1	*<1*	1	*<1*	0.11	cup or beaker
totals	1294	*104.8*	13123	*105.6*	15.50	

Table 15: Area 6 – summary of pottery from features.

feature no	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st -3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
F1	pit (large)	GTW (58g) AA (59g) AJ (306g) BA (40g) CZ (4g) DJ (3g) GB (13g) GX (431) HZ (610g) HZ (GT) (11g) KX (30g) TZ (70g)	?Haltern 70 Cam 218 ?Cam 108 Cam 221	Dr 31 Cam 268 Cam 299 Cam 37	Dressel 20 Dr 27 Cam 273 mortaria		164	1635	2.51	(?residual Late Iron Age to Roman 1st-2nd) mid 2nd – mid-late 3rd century **early Roman to mid 2nd-earlier 3rd century**
F2	ditch (see F21 re-cut)	GTW (9g) GBW (11g) DJ (14g) GX (127g) HZ (277g)	Cam 28 Cam 219 ?Cam 108 Cam 221/266	Cam 401/406-407			52	458	0.68	(?residual Late Iron Age - early Roman 1st-early 2nd century) early 2nd/3rd century **early Roman to early 2nd-early 3rd century**
F3	pit	GTW (9g)					1	9	0.00	**Late Iron Age**
F4	ditch	GTW (15g) AJ (343g) BA (SG) (3g) DJ (46g) GB (10g) GX (26g) HZ (18g) TZ (150g)	Dr 18 Cam 108 large flagon	Cam 37 Cam 497	Cam 270B		25	619	0.59	(?residual Late Iron Age to Roman 1st-2nd) mid 2nd to mid-late 3rd century **early Roman to mid 2nd-earlier 3rd century**
F5	ditch	AA (167g)	bowl samian		?Dressel 20		48	531	0.12	Roman 1st-2nd/3rd

feature no	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st -3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
		BA(SG) (4g) DJ (23g) GX (80g) HZ (135g) HZ (GT) (122g)	(SG)							century **Roman 1st-early 2nd century**
F12	pit (shallow)	HZ (40g)					1	40	0.00	Roman 1st-2nd/3rd century
F17	burial	GTW (7g) GX (536g)		Cam 268			72	543	0.50	residual Late Iron Age **Roman mid 2nd-3rd century**
F21	ditch (recut of F2)	GTW (10g) AJ (173g)	(Late Iron Age ?Cam 229 or218)		Dressel 20		5	183	0.00	residual Late Iron Age **Roman 1st-2nd/early 3rd**
F26	pit ?burial/ displaced *(?natural)*	GX (473g)		Cam 268			50	473	0.05	**mid 2nd-3rd/early 4th century**
F28	grave	CZ (31g) GX (23g) HZ (2g)		Cam 392			34	56	0.35	**later 2nd-mid 3rd century**
F61	ditch	GTW (22g) AA (700g) AJ (1264g) GX (10g) HZ (55g)	Dressel 1 (Italian black sand fabric) Haltern 70 Gaulish amphora?		Dressel 20 Cam 270B		16	2122	0.40	?residual Late Iron Age Roman 1st-2nd/early 3rd century **?Late Iron Age-early Roman/1st+ century**
F63	burial	GTW (974g)	Cam 220/221 (3 other girth cordon bowls				228	974	4.00	(note, most of rim missing for Cam 220/221 bowl)

feature no	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st -3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
			of unidentified form poss Cam 218 variant)							**Late Iron Age**
F74	pit (large shallow)	HZ (6g)			Cam 271		1	6	0.00	**prob early Roman**
F76	ditch	HZ (1g)					1	1	0.00	**Roman 1st-2nd/3rd century**
F78	pit (shallow)	GTW (12g)					1	12	0.00	**Late Iron Age**
F79	pit	GTW (7g)					1	7	0.00	**Late Iron Age**
F123	mod	GX (4g)					1	4	0.00	**Roman**
F127	natural	GX (RGW) (3g)					1	3	0.00	**early Roman ?pre-Flavian**
F128	natural	GX (1g)					1	1	0.00	**Roman**
F207	pit	GX (15g)					1	15	0.00	**prob early Roman**
F210	pit	GX (2g)					1	2	0.00	**Roman**
F223	natural	GX (1g)					1	1	0.00	**Roman**
F225	pit ?natural	?GX (1g)					1	1	0.00	**prob Roman**
F227	grave	GX (7g)					2	7	0.00	**Roman**
F228	grave	GX (4g); HZ (30g)					3	34	0.00	**Roman poss earlier Roman**
F234	pit	BA(CG) (5g)		Dr 33 (CG)			1	5	0.00	**2nd century**
F238	grave	GB GX HZ		Cam 40B			12	51	0.04	**early 2nd-mid 3rd century**
F256	pit	GX (2g)	Cam 221 or 266				1	2	0.03	**Roman 1st-early 2nd century**
F259	ditch	GTW (8g); AA (17g); GX (90g);					22	237	0.10	residual Late Iron Age

feature no	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st -3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
		HZ (122g)								**poss early Roman ?1st century**
F260	ditch	AJ (1g); BA (11g); ?GB (1g); GX (6g)	?Dr.29 (SG)		Dressel 20		7	20	0.00	**Roman poss 1st century**
F264	gully/slot	BA (4g) DJ (1g) GX (486g) HZ (61g)	Cam 241/242	Dr.36 (CG)			101	552	0.05	1st-2nd **Roman 2nd century**
F304	ditch	GTW (183g); ?TR/CZ (1g) AJ (32g) BA (?EG) (1g) DJ (26g) ?GB (12g) GX (805g) HZ (174g) HZ (GT) (195g)	?large flagon Cam 218 Cam 108 Cam 260B Cam 243-244/246	Cam 268	Cam 278 Cam 154/155 Cam 271 Cam 273		135	1395	1.80	Late Iron Age-2nd/mid 3rd century **Late Iron Age/Roman 1st-2nd/?early 3rd century**
F306	pit	GQ (55g) GBW (257g) GX (50g)	Cam 218		Cam 330		75	438	1.43	**Roman 1st-?early 2nd century**
F307	ditch	GTW (8g)					1	8	0.00	**Late Iron Age**
F309	pit (large)	GX (9g)	Cam 266				2	9	0.11	**Roman ?1st century**
F352	pit	GTW (11g) GX (RGW) (1g) GX (5g)	Cam 218				7	17	0.00	?residual Late Iron Age **Roman ?pre-Flavian-1st century**
F449	post-hole	GX (6g)	Cam 218				1	6	0.00	**Roman 1st-early 2nd century**
F460	ditch	GTW (2g)	?Cam 218				33	169	0.00	?residual Late Iron

feature no	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st -3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
		DJ (58g) GX (RGW) (18g) GX (68g) HZ (23g)	?large flagon							Age **Roman ?1st century**
F461	ditch	GTW (3g) GB (12g) GX (31g)					10	46	0.00	residual Late Iron Age/Roman early 2nd to mid-late 3rd century **Roman prob early 2nd-earlier 3rd century**
F462	pit	GX (82g)		?Cam 268			33	82	0.08	**mid 2nd-3rd century**
F467	pit	AA (22g) AJ (531g) BA (?EG) (11g) DJ (303g) GB (291g) GX (387g) HZ (GT) (357g)		Dr 36 Cam 37A Cam 268	Dressel 20		125	1902	1.31	later 1st-early 2nd to 3rd **early 2nd-early 3rd century**
F475	pit/ditch (shallow)	GTW (1g)					1	1	0.00	**?Late Iron Age**
F477	post-hole(s)	GB (16g)		Cam 37A			1	16	0.09	**early 2nd-early 3rd century**
totals							**1,280**	**12,693**	**14.24**	

Table 16: Area 6 – summary of pottery from significant layers.

layer	layer type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st-3rd century	forms and forms in fabrics of mid 3rd+ century	s no	wt (g)	EVE	date
L5	metalled surface (seals F4)	GX (1g)					1	1	0.00	**Roman**
L7	gravelled surface (seals F2)	GTW (3g)					1	3	0.00	**Late Iron Age**
L11	?metalled surface (seals F304)	GTW (1g) GX (1g) HZ (1g) BA (?CG) (1g)					4	4	0.00	?Late Iron Age residual **Roman ?2nd-earlier 3rd century**
totals							**6**	**8**	**0.0**	

Area 10

Table 17: Area 10 – % of fabrics GTW and GTW+HZ (GT) as a proportion of assemblages from ditches containing fabric GTW.

ditch feature	all pot wt g	GTW wt g	*GTW % wt*	all pot no sherds	GTW no sherds	*GTW % sherds*	HZ (GT) wt (g)	HZ (GT) no sherds	*% wt GTW & HZ (GT)*	*% sherds GTW & HZ (GT)*
F11/F273	6	4	*66.7*	2	1	*50.0*	0	0	*0*	*0*
F13	202	7	*3.5*	16	1	*6.3*	0	0	*0*	*0*
F14	313	5	*1.6*	14	3	*21.4*	0	0	*0*	*0*

Table 18: Area 10 – Late Iron Age and Roman pottery fabrics for all contexts.

fabric	sherds	*% sherds*	wt (g)	*% wt*	EVE	forms
GTW	5	*3.9*	16	*0.9*	0.03	
AJ	10	*7.8*	727	*40*	0.00	amphoras ?Dressel 20
BA	7	*5.4*	120	*6.6*	0.42	Dr 31
DJ	5	*3.9*	79	*4.4*	0.05	
GB	1	*<1*	9	*<1*	0.05	Cam 37B
GX	84	*54.3*	581	*32*	1.95	Cam 266 Cam 280/281
HZ (GT)	5	*3.9*	112	*6.2*	0.05	Cam 273
HZ	1	*<1*	19	*1*	0.00	
WA	11	*8.5*	152	*8.3*	0.50	Cam 40A
totals	129	*100.5*	1815	*100.4*	3.05	

Table 19: Area 10 – summary of pottery from features.

feature	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st-3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
F1	ditch	BA (CG/EG) (38g) WA (130g)		Cam 40A Dr 31			13	168	0.60	**later 2nd-mid 3rd century**
F3	ditch	GX (?early Roman) (24 g) GX (455 g) HZ (GT) (49g)			Cam 273 Cam 280/281 (later 2nd-4th)		66	528	1.90	**later 2nd-3rd+ century**
F5	ditch	GX (?early Roman) (6 g); GX (2g); HZ (19g)					4	27	0.00	poss early Roman grey ware, HZ grog-tempered **Roman poss 1st century**
F8	ditch	?HZ (GT) (4g)					1	4	0.00	grog-tempered **Late Iron Age/ Roman ?early Roman**

feature	feature type	fabrics	forms 1st-early 2nd century	forms 2nd-3rd century	other forms 1st-3rd century	forms and forms in fabrics of mid 3rd+ century	sherd no	wt (g)	EVE	date
F10	ditch	DJ (78g)			?flagon		4	78	0.00	**Roman 1st-2nd/3rd century**
F11	ditch (see F273)	GTW (4g)					1	4	0.00	**Late Iron Age (?residual)**
F13	ditch	GTW (7g) AJ (81g) GX (RGW) (26g) GX (?E.Roman) (14 g) GX (74g)	Cam 266		Dressel 20		16	202	0.15	?residual Late Iron Age to 1st/2nd century **?early Roman Claudian/1st century**
F14	ditch (see F257)	GTW (5g) AJ (215g) BA (CG) (64g); GB (9g) GX (?E.Roman) (3 g) GX (2g) WA (15g)		Dr 31 Cam 37B	Dressel 20		14	313	1.42	?residual Late Iron Age-mid 3rd **Roman later 2nd-early-mid 3rd century**
F166	ditch	AJ (183g)			Dressel 20		1	183	0.00	**Roman 1st-early 3rd century**
F257	ditch (?re-cut of F14)	BA (?CG) (18g)		DR.31			1	18	0.10	**later 2nd-earlier 3rd century**
F273	ditch (early cut of ditch F11)	GX (?E.Roman) (2g)					1	2	0.00	**Roman/?early Roman**
F287	ditch	HZ (GT) (59g)					3	59	0.00	1st- to 2nd-/3rd-century grog-tempered **Late Iron Age/early Roman**
totals							**125**	**1,586**	**4.17**	

Ceramic building materials

by Ernest Black

Tile fragments from Areas 2, 6, and 10 are dealt with in this report. Many of the fragments were too small to identify and many were simply chips of tile. It should not be assumed that these are all of Roman date. In these cases, no measurements were attempted. Measurements are given in millimetres. T = thickness; exthf = external height of flange; wf = width of flange; msd = maximum surviving dimensions (approximate). Finds numbers given in brackets.

Area 2

L1 (1) (as marked on the bag; the label has L2): one fragment probably from base of *tegula*, broken at junction with flange; one brick fragment, T uncertain; 6 unidentifiable fragments.
L2 (1): peg-tile, T 10, possibly with small part of nail-hole present; peg-tile, T 11, possibly burnt; uncertain fragment, T approx 26; brick, msd approx 137 x 150, T approx 42-44, sanded on base, upper surface trimmed, no edges – there is a circular depression approx 12mm in diameter on the upper surface with black staining; one unidentifiable fragment.
F2 Sx 1 (11): one unidentifiable fragment.
F2 Sx 5 (39): two joining fragments and another, all unidentifiable.
F10 Sx 1 (7): corner of peg-tile with two holes (one complete; one partial), msd approx 112 x 132, T 10-11; small portion of cutaway from bottom left of *tegula* flange; one unidentifiable fragment.
F12 (9): 6 unidentifiable fragments.
F12 (16): one identifiable fragment, msd approx 58 x 40, T 26-27.
F12 (139): *tegula* flange, exthf approx 43, wf 25-30, T base approx 15, abraded.
F12 Sx 2 (21): brick, one edge, msd approx 115 x 110, T approx 33; three unidentifiable fragments.
F12 Sx 2 (27): uncertain fragment with slight groove in upper surface, fabric grey-cream; one unidentifiable fragment, heavily burnt.
F16 (15): one unidentifiable fragment.
F18 (28): msd approx 42 x 39, T approx 19-20, abraded.
F29 Sx 2 (48): one unidentifiable fragment, very abraded and burnt.
F46 Sx 1 (45): two unidentifiable fragments.
F97 (121): one fragment, T approx 14, possible slight curve.

Area 6

U/S (240): *tegula* base, one edge, msd approx 55 x 95, T 21.
U/S (325): peg-tile, T 10.
L1 (47): *tegula* base, msd approx 80 x 20, T approx 25; *imbrex*, one edge, msd approx 47 x 24, T approx 16; one unidentifiable fragment.
L4 (212): one unidentifiable fragment.
L5 (209): ?peg-tile, T approx 10.
L6 (234): two joining fragments, *tegula* base, msd approx 77 x 50, T 15; *tegula* base, one edge, msd approx 58 x 34, T 17-19, probably the same tile as the preceding.
L7 (219): three unidentifiable fragments.
L7 (320): two unidentifiable fragments.
L8 (333): brick, msd approx 60 x 60, T 42.
L11 (281): one unidentifiable fragment.
L11 Sx 3 (275): three unidentifiable fragments, not certainly tile.
L13 (322): brick, msd approx 38 x 48, T at least 30; one unidentifiable fragment.
F1 (1): brick, msd approx 55 x 55, T approx 42; brick, msd approx 45 x 25, T30; brick, msd approx 50 x 53, T approx 32; probable brick, msd approx 70 x 35, T approx 28, abraded; very abraded fragment of *tegula* flange from bottom left corner; cutaway from bottom left corner of *tegula* flange; 19 unidentifiable fragments.
F1 (7): *tegula* base broken at junction with flange, burnt, very damaged, T approx 17, msd approx 72 x 62; ?*imbrex*, T 14/15; 12 unidentifiable fragments.
F1 (372): two unidentifiable fragments.
F1 (445): brick, msd approx 48 x 40, T approx 35; brick, T approx 35; ?brick, T at least 28.
F1 (446): probable *tegula* base, one edge with two fingerprints adjoining, msd approx 50 x 70, T22; brick, msd approx 50 x 45, T (?incomplete) approx 32; fragment, T at least 38; fragment, T approx 27; three unidentifiable fragments.
F1 (447): probable *tegula* base, msd approx 74 x 62, T approx 16; one unidentifiable fragment.
F1 (459): brick, one edge, msd approx 45 x 50, T approx 35; one unidentifiable fragment.
F1 Sx 2 (216): peg-tile, one edge, msd approx 100 x 74, T approx 15; four unidentifiable fragments.
F1 Sx 3 (326): brick, msd approx 60 x 70, T 40; five unidentifiable fragments.
F1 Sx 3 (342): possible peg-tile, T approx 13/14; four unidentifiable fragments.
F1 Sx 3 (349): two unidentifiable fragments.
F1 Sx 3 (354): four unidentifiable fragments.
F1 Sx 3 (505): two unidentifiable fragments.
F2 (95): one unidentifiable fragment.

F2 Sx 5 (97): brick, msd approx 80 x 80, T at least 36: does not look Roman; three unidentifiable fragments.
F2 Sx 5 (103): fragment of *tegula* flange, wf 25; one unidentifiable fragment.
F2 Sx 7 (350): ?brick, msd approx 65 x 65, T at least 29.
F4 (49): *tegula* base, one edge, msd approx 50 x 39, T approx 23.
F4 Sx 2 (34): fragment, msd approx 20 x 21, T approx 18, grey staining on surfaces, resemblance to a *tessera* ?fortuitous.
F4 Sx 4 (49): brick, msd approx 52 x 44, T at least 32; brick, msd approx 67 x 37, T at least 30.
F4 Sx 6 (96): ?*tegula* flange, very abraded; six unidentifiable fragments.
F4 Sx 7 (144): brick, msd approx 80 x 90, T 40-42, burnt.
F4 Sx 7 (202): brick, msd approx 32 x 25, T 31.
F4 Sx 9 (306): possible *imbrex*, msd approx 45 x 35, T approx 15.
F4 Sx 9 (318): *tegula* base, msd approx 90 x 85, T 20-21.
?F4 Sx 11 (33): two unidentifiable fragments, one of which burnt.
F4 Sx 12 (285): portion of cutaway of *tegula* flange from bottom left corner, T base 22, burnt.
F4 Sx 13 (290): *tegula* flange and base, exthf approx 45, wf approx 25, T base approx 20; possible *tegula* base, msd approx 85 x 60, T approx 15-20.
F4 Sx 14 (294): *tegula* base, msd approx 45 x 65, T 20-21.
F5 (10): brick, msd approx 70 x 70, T at least 46.
F5 (227): *tegula* flange, exthf approx 38, wf approx 20, estimated T base approx 14/15; two unidentifiable fragments.
F5 Sx 1 (225): brick, msd approx 62 x 32, T (probably complete) 32; two unidentifiable fragments.
F5 Sx 3 (233): possible *imbrex*, msd approx 53 x 43, T approx 16, burnt; also possible *imbrex*, msd approx 65 x 45, T approx 14.
F5 Sx 4 (347): two joining fragments of brick, msd approx 73 x 47, T 30.
F5 Sx 4 (371): probable *tegula* base, msd approx 35 x 23, T approx 19.
F5 Sx 4 (377): *tegula* base with flange broken away, msd approx 55 x 70, T approx 19; uncertain fragment, T 13/14 (possible peg-tile).
F6 Sx 6 (172): brick, msd approx 85 x 73, T 31.
F17 (27): ?*tegula* base, msd approx 67 x 52, T 17, burnt.
F21 (30): brick, one edge, msd approx 65 x 60, T approx 32.
F28 (57): brick, msd approx 55 x 40, T approx 32; brick, msd approx 80 x 56, T 28.
F34 (73): one unidentifiable fragment.
F61 (169): brick, msd approx 100 x 55, T approx 35, ?burnt slightly.
F61 Sx 2 (99): brick, one edge, msd approx 125 x 63, T 31; brick, msd approx 105 x 65, T approx 42, possible traces of burning; two fragments, possibly from the preceding.
F61 Sx 4 (117): brick, msd approx 110 x 65, T 24-25; brick, very abraded, T at least 50; one unidentifiable fragment.
F61 Sx 8 (187): brick, msd approx 88 x 40, T 35-36, heavily burnt; brick, one edge with heavily impressed ?finger-mark, msd approx 110 x 80, T 34-36; brick, msd approx 100 x 100, T approx 29-30, traces of burning and three impressions on upper surface (too narrow for adult finger-marks); brick, one edge, msd approx 100 x 140, T 39, trace of burning; brick, one edge, msd approx 55 x 65, T 34; *tegula* base, broken at junction with flange where groove is present, msd approx 105 x 65, T 22; *tegula* flange, exthf approx 48, wf 25-30, est T base approx 20, burning; probable *imbrex* fragment, msd approx 80 x 53, T approx 15-19; five unidentifiable fragments, one of which burnt.
F88 (128): two unidentifiable fragments.
F99 L4 (137): two unidentifiable fragments.
F227 (181): one unidentifiable fragment.
F231 (186): one unidentifiable fragment, msd approx 63 x 50, T approx 21, burnt.
F236 (256): one unidentifiable fragment.
F258 (208): one unidentifiable fragment.
F259 Sx 2 (312): one unidentifiable fragment.
F259 Sx 2 (314): one unidentifiable fragment.
F259 Sx 2 (367): one unidentifiable fragment.
F259 Sx 5 (297): very heavy *tegula* flange, exthf approx 50, wf at junction with base approx 35, estimated T base approx 20.
F260 Sx 2 (239): one unidentifiable fragment.
F260 Sx 2 (246): three unidentifiable fragments.
F270 (235): brick, msd approx 54 x 47, T 33.
F304 (323): brick, msd approx 19 x 25, T approx 35.
F304 (327): brick, msd approx 14 x 12, T 25; very small, unidentifiable fragment, possibly from the preceding.
F304 Sx 1 (302): one unidentifiable fragment.
F304 Sx 3 (283): brick, one edge, msd approx 240 x 180, T 29-32, possible finger-mark on upper surface.
F304 Sx 5 (332): fragment approx 26 x 17, T approx 26, grey staining on surfaces, ?crude *tessera*; box-tile, corner of keyed face broken along junction with side, eight shallow tooth-marks of

comb approximately parallel to the junction, T of face 19 (Fig 37 no 12); one unidentifiable fragment of tile/daub.
F304 Sx 5 (338): ?brick, very abraded, msd approx 105 x 65, T at least 30.
F304 Sx 5 (365): brick, msd approx 45 x 34, T 33.
F304 Sx 6 (329): one unidentifiable fragment, msd approx 35 x 40, T at least 24, very abraded.
F306 (247): one unidentifiable fragment.
F352 (405): *imbrex* fragment, msd approx 22 x 29 (although very small a definite curve was present), T approx 13; five unidentifiable fragments.
F442 (292): brick, msd approx 35 x 23, T 36.
F460 (361): brick, msd approx 40 x 33, T approx 35.
F461 Sx 1 (296): brick, msd approx 45 x 18, T approx 33; one unidentifiable fragment.
F461 Sx 1 (356): one unidentifiable fragment.
F467 (384): peg-tile, one edge, msd approx 45 x 55, T 14; one unidentifiable fragment.
F467 (379): *tegula* flange, exthf 48, wf 30 at shoulder, T base approx 13-15.
F467 (492): one unidentifiable fragment.
F480 (484): brick, one edge, msd approx 129 x 95, T approx 30-35.
F554 (449): two unidentifiable fragments.
F478 (390): two unidentifiable fragments.
One unidentifiable fragment came from Sx 7 (148) and 148 (without any prefix) was repeated, presumably as the layer/feature number.

Area 10
L4 (88): two unidentifiable fragments.
L4 (109): two unidentifiable fragments.
L5 (87): four unidentifiable fragments.
L5 (164): ten unidentifiable fragments of tile
F1 Sx 3 (35): *tegula* flange, exthf 48, wf 29-33, T base approx 24.
F1 Sx 9 (155): unidentifiable fragment(s).
F1 Sx 16 (232): one unidentifiable fragment, burnt.
F3 Sx 9 (146): unidentifiable fragment(s).
F3 Sx 16 (214): ?brick or *tegula* base, msd approx 143 x 77, T approx 24-30, cavity on upper surface.
F4 Sx 2 (26): unidentifiable fragment(s).
F10 Sx 2 (110): one unidentifiable fragment.
F11 Sx 1 (22): one unidentifiable fragment.
F13 (213): four unidentifiable fragments.
F13 Sx 2 (43): two unidentifiable fragments.
F13 Sx 3 (67): three unidentifiable fragments, one of which burnt.
F14 Sx 3 (127): corner of brick, msd approx 125 x 130, T approx 35-38.
F14 Sx 6 (137): brick, msd approx 82 x 70, T approx 30.
F16 Sx 1 (63): peg-tile, msd approx 65 x 54, T approx 11.
F57 (89): one unidentifiable fragment of ? tile with lots of crushed flint and other inclusions.
F80 (25): unidentifiable fragment(s).
F103 (80): peg-tile, msd approx 43 x 29, T 10.
F257 (73): brick, one edge and possible corner, msd approx 145 x 129, T approx 34-36.
F273 Sx 1 (158): unidentifiable fragment(s).
F287 Sx 4 (209): brick, msd approx 45 x 40, T 33.
F318 (236): *tegula* base, msd approx 110 x 85, T 17-18, part of possible finger impression on upper surface; unidentifiable fragment, msd approx 57 x 45, T 21, burnt grey.
?F254 (86): three unidentifiable fragments of ?tile.

Discussion
Most of the fragments of tile produced from all three areas were unidentifiable; in many cases, this was because the fragments consisted of mere chips or scraps of tile. Identifiable fragments were also small, with only 17 fragments from all three areas having a dimension greater than 100 mm. The number of identifiable fragments from each area was: Area 2, 5 fragments (three brick, two *tegula*); Area 6, 77 fragments (44 brick, 25 *tegula*, seven *imbrex*, one box-tile); Area 10, 7 fragments (five brick, two *tegula*). It seems likely that Area 6 was closer to the source of the tiles than Area 2 or Area 10. The nearest known potential source for the tiles is the possible bath-house at the Kirkee McMunn Barracks farmstead and this in fact lies nearer to Area 6 than to the other two Areas. The box-tile fragment from Area 6 may support this, though it is too small to provide a match with the material from the bath-house. Of the brick fragments, 41 had a thickness of 36 mm or less, eight fell between 36 and 44 mm, and only two had a thickness greater than 44 mm.

Prehistoric flints

by Hazel Martingell

Introduction

Due to the relatively small number of artefacts recovered and the apparent continuity of the Iron Age landscape in the area discussed here, it was decided that the best analysis would result from combining the material from the three Areas.

Discussion

The 76 pieces of worked flint from Areas 2, 6 and 10 were of significant interest. Thirty-seven percent were diagnostic of the two types of late prehistoric and, in particular, Iron Age lithic technology:

- Some of the flakes were of the 'salami' type. That means that, first, a suitable block of flint was selected, from which flakes were struck in sequence, one from behind the other. This usually leaves the cortex (the outer skin of the flint nodule) around the edge of the flake, apart from the sharp edge or retouched area. There is no core preparation with this technique (finds nos 34, 75, 120).
- Alternatively, a block of flint with one flat surface is chosen and used as the core. From this core, thick butted tapering flakes are struck from the flat surface (ie the platform). There is minimal core preparation with this technique, but sometimes the flake platform edge shows some preparation (find no 78).

Most of the remaining pieces could be waste from these processes. Only 9% of the remaining flints cannot be associated with the Iron Age. One was a gunflint, which was probably made within the last 200 years. The other six are blades which are most likely to be early Neolithic in date.

Conclusion

It is interesting that the flint artefacts appear to reflect the Iron Age occupation of the landscape. The six blades could suggest minimal agricultural use in the early Neolithic, or possibly they were retrieved and re-used in the Iron Age.

These three areas were included in the Colchester Garrison evaluations in 2002, but no flint artefacts were recovered from these locations at that stage. Within the context of the whole site or groups of sites, these worked flints reflect the previously observed pattern of an early Neolithic presence and some middle Neolithic activity, then a really positive Iron Age occupation (for further details of Iron Age flint technology, see Humphrey & Young 2003; Young & Humphrey 1999; Martingell 1990; Martingell 2003).

Table 20: Area 2 flints.

* = sketch in archive

Context	Find no	Description
F6 Sx 1, L25	23	2 flakes, secondary, wide platforms, IA? 1 chipping, tertiary, patinated/slightly burnt (1 waste block, small, burnt in 'Burnt Flint/stone bag')
F6 Sx 1, L8	25	1 chipping, tertiary
F6 Sx 2, L11	52	8 flakes, secondary, waste, irregular, late prehistoric? 2 waste blocks
F6 Sx 2, L11	55	1 flake, secondary, late prehistoric?
F6 Sx 2, L32, ditch recut F59	60	1 flake, primary, small platform 1 waste block
F6 Sx 2, L32, ditch recut F59	62	1 natural plough-broken piece
F57 Sx 1, L42 upper fill	65	1 flake, tertiary, axe trimming
F6 Sx 2 lower fill	70	1 chipping, tertiary
F81 Sx 3	91	1 flake, secondary, small, trimming, good
F6 Sx 3, L24	104	1 micro denticulate on a blade, tertiary, worn *****
F6 Sx 3, L25	118	1 chipping, trimming flake, tertiary
F6 Sx 3, L22	144	1 flake, secondary, wide thick platform
F6 Sx 3, L23	150	1 flake, trimming, secondary
F6 Sx 3, L24	159	1 chipping, tertiary

Table 21: Area 6 flints.
* = sketch in archive

Context	Find no	Description
L1 machining	2	1 gunflint, large variety *****
F4 Sx 5, upper fill	84	1 flake, tertiary, waste
F63 upper fill	127	1 flake, secondary, waste
F76 fill	136	1 blade, tertiary, punch struck, good, 50mm long
F90 Sx 7	155	1 blade, tertiary, punch struck, good, butt part 45mm long, slight patination, worn
F90 Sx 1	159	1 blade, secondary, good, butt part 30mm long
F264 Sx 1	220	1 flake, secondary, cortex platform, late prehistoric
F5 Sx 1	226	1 flakes, tertiary, light brown stained, retouched along distal edge? later prehistoric *****
F260 Sx 2	245	1 core, single platform, on pebble
F5 Sx 5	352	1 flake, secondary, platform widest part, late prehistoric

Table 22: Area 10 flints.
* = sketch in archive

Context	Find no	Description
F10 Sx 1	2	1 flake, secondary, waste, IA? (same type as Area 2 find no 23)
F1 Sx 1	7	1 bifacial fragment, tertiary
F3 Sx 2	15	1 flake, tertiary, platform widest part, squat, IA?
F1 Sx 2	16	1 flake, tertiary, trimming, waste
F11 Sx 1	23	1 flake fragment, tertiary
F3 Sx 2	30	1 retouched flake, cortex platform *****
F5 Sx 2	32	1 flake, butt part, tertiary
F5 Sx 2	52	1 flake, small, secondary, cortex platform
F123 fill	57	1 bifacial fragment (part of hand axe?
F9 Sx 1	61	1 flake, small, tertiary, waste
above F166	70	1 flake, tertiary, thinning
L4	82	1 core, small, much plough-damaged
F10 Sx 1	111	1 flake, broken, tertiary, with fossil inclusion
F1 Sx 6	116	1 natural fragment
F3 Sx 7	122	1 chipping, tertiary, core/tool preparation
F14 Sx 5	125	1 flake, small, secondary, cortex platform
F14 Sx 6	132	1 flake-blade, tertiary
F14 Sx 6	137	(1 core fragment? burnt, in Burnt flint/stone bag)
F14 Sx 6	138	1 flake, tertiary, waste
F14 Sx 7	141	1 core, wide long platform, flakes removed plunge, with resulting obtuse angled platform. IA
F272 fill	153	1 blade-flake, tertiary, good
F1 Sx 9	156	1 flake, irregular, tertiary
F273 Sx 1	159	1 flake, secondary, cortex platform
F273 Sx 1	160	1 flake, secondary, waste
F273 Sx 1	161	1 waste block
U/S	166	1 core fragment, small
F276 fill	180	1 flaked block, waste
F276 fill	181	1 core fragment, flake, tertiary, rough
F276 fill	182	1 flake, trimming, tertiary
F1 surface	194	1 flakes, secondary, waste
F1 surface	195	1 scraper on secondary flake *****
F1 Sx 11	196	(1 flake, burnt, in Burnt flint/stone bag)
F3 Sx 15	203	1 flake-blade, tertiary
F287 Sx 4	210	1 flake, tertiary, small, waste
F3 Sx 13	211	(1 core? burnt, in Burnt flint/stone bag)
F1	212	1 blade, butt part, tertiary
F307 fill	218	1 flake, tertiary, waste
F1 Sx 15	227	1 flake, secondary, cortex platform
F287 Sx 6	229	1 flake, secondary, platform widest part
F287 Sx 6	230	1 flake, thinning, tertiary

Faunal remains

by Julie Curl (Norfolk Archaeological Unit)

Summary of assessment report

A total of 1.034kg of faunal remains, consisting of over 90 fragments, was recovered from Areas 2, 6 and 10 during excavations at the Colchester Garrison. Remains of equid, cattle and sheep/goat were identified, although most of the bone was in very poor condition.

Overall, the bone in this assemblage was in very poor condition, with no complete elements present. Bone was recovered from features including Iron Age pits and Roman ditch fills to modern trench fills, and some animal bone was found with human cremated remains.

Due to the poor condition of the bone, the assessment recommended no further work on this assemblage. See assessment report for full details (CAT Report 270).

Cremated human bone

by Sue Anderson (Suffolk County Council Archaeology Service)

(Note by HB: the assessment report recommended no further work on the assemblage, therefore the following report is a shortened version of that in the assessment report (CAT Report 270).

Introduction

Groups of bone from one definite and two possible cremation deposits were submitted for assessment. Identifiable pieces were separated into areas of the skeleton (skull, axial, upper and lower limbs, unidentified), counted and weighed.

Area 6 F63 (bags 102, 109, 116, 122, 125, 142)

This was the most complete of the three cremation burials, and was buried with four Roman pots. A total of 446 fragments weighing 78g was collected from six contexts, as shown in Table 23. There is no reason to suggest that more than one individual is present, but this could not be entirely ruled out either.

Table 23: cremated bone quantities from F63.

Context	Skull		Upper limb		Lower limb		Unidentified	
	No	Wt (g)	No	Wt	No	Wt (g)	No	Wt (g)
102							49	3
109	7	1	13	18	9	9	228	35
116							51	4
122							8	1
125	3	<1					66	5
142							12	1
Totals	**10**	**2**	**13**	**18**	**9**	**9**	**414**	**49**

Two fragments from bag 109 (F63) identified as 'skull' were pieces of mandible, including a fragment with an intact tooth socket. Most of the unidentified fragments were appendicular, and no axial fragments were identified. The maximum dimension of a skull fragment was 13mm and the maximum long-bone fragment size was 46mm. The majority of pieces were very small and white in colour, suggesting that they were well cremated. The individual was an adult, but there were no diagnostic criteria to assess either age or sex. No pathological changes were seen.

Area 10 F276 (bags 175, 177, 178, 185, 187, 188)

This feature was identified as a possible disturbed Iron Age cremation burial. The six contexts all produced less than 1g of bone, and a total of 13 unidentified fragments. The pieces from bag 177, 185 and 188 appeared to be limb bones, and a small fragment from 187 may be part of the facet of a cervical vertebra. If so, this was a mature adult. Sex was not identifiable.

Area 10 F296 (bag 208)
This feature may also be a disturbed Iron Age cremation. Only seven small fragments of burnt bone were recovered (<1g), of which one was a tooth fragment (upper mesial incisor or canine?) and the rest were unidentified. Age and sex were not determined. A few fragments of unburnt animal bone were also present.

Charred macrofossils and other environmental material
by Val Fryer
Preliminary note
by H Brooks
A shortened version of the environmental assessment report by Val Fryer is given here, followed by a full report on the extra work recommended.

Summary of the assessment report
Area 2
The round-house and associated features
Three samples were taken from sections across the round-house gully. With the exception of charcoal fragments, plant macrofossils are extremely rare, with most probably being derived from domestic detritus. As befits the apparent high status of the structure, it would appear most likely that it was kept scrupulously clean, with most refuse probably being disposed of well away from the inhabited area. Samples 95 and 96 are from a possible disturbed cremation (F49), which was placed centrally in a shallow pit under the floor of the round-house. The recovered assemblages are essentially the same as the material from the gully and it may be that they too are derived domestic detritus rather than cremation material. No burnt bone fragments were noted during sorting.

The enclosure ditches
Sixteen samples were taken from the enclosure ditches; seven from the eastern side, two from the southern side, two from the western ditch and five from the south-western corner. During excavation, it was postulated that the eastern ditch, which was approached from the north-east by a trackway and possible bridge, formed a grand façade to the enclosure as it was well maintained and kept relatively free of rubbish. This theory is supported by the plant macrofossil assemblages, as very little in the way of detritus is present. However, all but one of the samples contain twig fragments, thorns, elderberry seeds and fruit stone fragments, and it would appear most likely that this material is derived from a hedge which may have surrounded the enclosure as well as the ditch and probable bank. Although not common, evidence for hedges has been seen at other contemporary sites, for example Alcester, Warwickshire (Greig 1992; Greig 1994). The mineralised concretions noted in samples 100, 107 and 117 may indicate that the ditch occasionally held standing water.

The assemblages from the southern ditch are similar to the above, with an extremely low density of detritus and possible evidence for a hedge. Small fragments of burnt bone are also present in both samples. Although the assemblages are small, the material from the western ditch does appear to be different. Cereal remains are slightly more abundant and, with the possible exception of a hazelnut shell fragment and a piece of burnt twig, hedge remains are absent. Similar assemblages are also present in the samples from the south-western corner, and it would appear that this side of the enclosure, hidden by the round-house, was significantly less impressive. Indeed, during excavation it was noted that the western ditch was less substantial and contained more evidence for the disposal of refuse in the form of a higher density of pot sherds. Mineralised soil concretions are again present in the south-west corner and west ditch, possibly indicating the presence of standing water.

The other features
Samples were taken from the western ditch of a post-enclosure trackway and from three pits. None of the assemblages contain sufficient material for conclusive interpretation, although pit F62 may have held standing water.

Area 6

The trackway ditches

Nine samples were taken from sections across the ditches flanking the main trackway and southern trackway in Area 6. With one exception (sample 41), only a minimum of plant material is present, and it appears most likely that much of this is derived from wind-blown detritus of unknown origin. Sample 41, from the western side of the junction of the main trackway and southern trackway (F338), contains a very low density of charred refuse including cereals and chaff. The sample was taken from an area adjacent to a possible gate and fence, which may have been more of a focus for activity than the ordinary trackway ditches.

The field ditches and gullies

Sample 21 from ditch F61 contains two cereal grains. Otherwise, plant macrofossils are extremely scarce and, as with the trackway ditches, are probably largely derived from wind-blown detritus of unknown origin.

The grave fills and cremations

Samples were taken from a Late Iron Age cremation at the centre of the main trackway (F63) and from Roman inhumations to the north of the main trackway in Field 2 (F17 and F28) and in the western part of Field 4 (F227). Single cereals/seeds were recovered from samples 12 (F28), 22, 23, 24, 25 (all F63), and 38 (F227), but it is not possible to ascertain whether these are associated with the burials or whether they are accidental inclusions. Small (approx 1mm) fragments of burnt bone are present in all samples from cremation F63.

The pits, post-holes and hearth

A total of 23 samples was taken from an extensive series of pits, etc recorded within Area 6. Cereals are present in only two (from hearth F222 (sample 47) and pit F467 (sample 51)), single seeds are recorded from pits F14 (sample 2) and F230 (sample 37), and hazelnut shell fragments are noted in samples 10 (F14), 16 (F48), 36 (F229), 37 (F230) and 47 (F222). None of these assemblages contains a sufficient density of macrofossils to enable conclusive interpretation, and it appears most likely that, as with the above ditches, the material is largely derived from scattered/wind-blown refuse.

Area 10

The trackway ditches

The assemblages closely parallel the material recovered from the trackway ditches in Area 6. Cereals, seeds and nut-shell fragments are present in seven of the eleven samples, but at an insufficient density for accurate interpretation.

The 4-post structures and other post-holes

Three 4-post structures were recorded during excavation, and samples were taken from the two most northerly examples, Structures 1 and 2. Nothing is recorded from Structure 1 except a single possible vetch cotyledon and charcoal fragments. However, all four post-holes of Structure 2 contained seed assemblages, with a wide variety of weed taxa (both field weeds and grassland herbs) noted in sample 64 (F57). The exact function of these 4-post structures, which are often seen at Iron Age sites in southern and eastern England, is not fully understood at present. Possible interpretations include granaries and ritual platforms associated with burial, but it appears unlikely that the current assemblages are derived from either of these practices. However, it is perhaps of note that the material within sample 64 is closely paralleled by macrofossils recovered from Late Bronze Age/Early Iron Age cremation F276 approximately 12 m to the north of Structure 2 (see below). A further three post-holes were sampled, but apart from one cereal grain, only charcoal fragments are recorded from the fills.

The other features

As mentioned above, the assemblage from cremation F276 contains cereals, grassland herbs (including onion couch (*Arrhenatherum* sp.) tuber and numerous bedstraw-type seeds) and common fragments of hazelnut shell. Whilst the latter may have been placed on the pyre as an offering to the deceased, the remainder may either be present as kindling/fuel used during the cremation, or material burnt *in situ* under the pyre. The low density of material recovered from the remaining contexts sampled in Area 10 precludes the accurate interpretation of the assemblages.

Conclusions

In summary, with few exceptions, the assemblages from all three excavated areas are small (<0.1 litres), containing very few macrofossils apart from charcoal. Only rarely is sufficient material present to enable tentative interpretation of the features recorded during excavation. As is to be expected, much of the material recovered from Area 2 is probably derived from domestic detritus, although the round-house itself appears to have been kept very clean. Rubbish was probably dumped in the nearby western enclosure ditch. The enclosure may have been hedged on at least two sides, and the ditches possibly held standing water, although possibly only during the wettest seasons. The trackway ditches in Areas 6 and 10 appear to contain little other than wind-blown detritus, although a small quantity of refuse may have been deposited close to a gateway to the main trackway in Area 6. A post-hole within 4-post Structure 2 in Area 10 produced an assemblage similar to that from a nearby cremation, although at present it is difficult to link the two features and this similarity may simply be due to a shared source of material, namely the local flora.

Of the samples studied, only two (samples 64 and 133) contain quantifiably viable assemblages (ie 100+ specimens). These samples will be analysed further (report below).

Charred plant macrofossils and other remains
(Report on recommended extra work)

by Val Fryer

Synthesis of the evidence

Samples for the assessment of the plant macrofossil assemblages were taken from the Area 2 enclosure and round-house, and from trackway ditches and associated features within Areas 6 and 10. This appraisal of the material suggested that the enclosure and round-house area were kept relatively clean, with refuse being deposited away from the inhabited area in the western enclosure ditch. In contrast, the eastern approach to the enclosure was well maintained with a probable grand façade in the form of a hedged bank, ditch and bridged causeway to the north-east. Few plant macrofossils were present in any of the remaining features examined, although a small quantity of refuse may have been deposited close to a gateway to the main trackway in Area 6.

Introduction

Of the original 106 plant macrofossil assemblages assessed from the excavation, the following two were selected for analysis:

- sample 64 – 4-post Structure 2 (Area 10); Iron Age
- sample 133 – cremation F276 (Area 10); possibly Late Bronze Age/Iron Age

Although neither assemblage was large, it was hoped that analysis would:

- indicate a possible function for Structure 2
- possibly give indications of the local flora by a study of the plant materials preserved within the cremation deposit.

The samples were processed by manual water flotation/washover, collecting the flots in a 500-micron mesh sieve. The dried flots were sorted under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Table 24. Identifications were made by comparison with modern reference specimens, and nomenclature within the table follows Stace (1997). Abbreviations used in the table are explained at the end of the text section.

Sample composition

Plant macrofossils

Cereal grains/chaff, seeds of common weeds and grassland plants, and tree/shrub macrofossils were present at a low to moderate density in both samples. Preservation was largely good although some seeds were fragmented, and the cereal grains were puffed and distorted, probably due to high temperatures during combustion.

Cereals

Grains and chaff were only recorded at a very low density from sample 133 from the cremation deposit. Barley (*Hordeum* sp.) grains were present along with double-keeled spelt wheat (*Triticum spelta*) glume bases. Other cereal remains were very rare, and none were closely identifiable due to poor preservation.

Wild flora
Grassland plant macrofossils were moderately abundant in both samples. Taxa noted included brome (*Bromus* sp.), bedstraw (*Galium* sp.), ribwort plantain (*Plantago lanceolata*), indeterminate grasses (Poaceae) and vetch/vetchling (*Vicia/Lathyrus* sp.). Onion couch- (*Arrhenatherum* sp.) type tuber fragments were noted in sample 133. Segetal weed seeds including fat hen (*Chenopodium album*), black bindweed (*Fallopia convolvulus*), goosegrass (*Galium aparine*) and sheep's sorrel (*Rumex acetosella*) were also recorded. Tree/shrub macrofossils included fragments of a sloe/damson- (*Prunus* sp.) type fruit stone and pieces of hazel (*Corylus avellana*) nutshell, the latter being especially common in the cremation deposit.

With the exception of charcoal fragments, which were abundant in both samples, other plant macrofossils were rare including only indeterminate seeds, tuber fragments and pieces of charred root or stem.

Other materials
The fragments of black porous 'cokey' material and black tarry material are probable residues of the combustion of organic remains at very high temperatures, those in sample 133 possibly being related to the cremation processes. A very small number of burnt bone fragments were also noted in sample 133. Small pieces of coal were present in both samples, although these are probably modern in origin and relate to the functioning of the Garrison.

Discussion
Although the assemblage from sample 64 is small and somewhat limited in composition, it is of interest because of the context from which it was taken. Four-post structures occur on a large number of Iron Age sites, but their intended function is still far from certain. Some appear to have been used as granaries, for example at Stafford (Moffett 1987), Aston Mill Farm, Worcestershire (Ede & de Rouffignac 1990), St Osyth, Essex (Fryer in prep), and Hauxton Road, Cambridge (Fryer 2002)), but others, like the current example, contain no evidence of cereals whatsoever and must, therefore, have served a different function. Although it has been postulated that some 4-post structures may have been erected as excarnation platforms, the predominance of grassland plant macrofossils and weed seeds within the Garrison assemblage may indicate that it served as a raised platform for the storage of hay or other bedding/fodder materials.

Grassland plants and weed seeds are also common in the assemblage from cremation F276, although here the material is almost certainly present either as kindling/fuel used during the cremation, or material burnt *in situ* under the pyre. The cereals and hazelnut shell fragments may be derived from material placed within the pyre as an offering to the deceased, although cereal chaff may also have been used as a component of the fuel/kindling.

Conclusions
In summary, although the assemblages are very similar in composition, there appears to be no functional or chronological link between the contexts from which they were taken. Any similarity is almost certainly the result of a shared source of material, namely the local flora. Grasses and grassland herbs appear to have been either accidentally or deliberately incorporated into a Late Bronze Age/Early Iron Age cremation deposit, whilst during the Iron Age, similar material was also gathered and stored for later use, possibly as fodder or bedding.

Table 24: charred macrofossils and other environmental material.

Key to table:
x = 1-10 specimens
xx = 10-100 specimens
xxx = 100+ specimens
fg = fragment
coty = cotyledon
b = burnt
tf = testa fragment
cf = cotyledon fragment

Sample no	**64**	**133**
Context no	**90**	**176**
Feature	**57**	**276**
Cereals		
Cereal indet. (grain)		2
(detached embryo)		2
Hordeum sp. (grains)		4
Triticum spelta L. (glume base)		5
Herbs		
Arrhenatherum sp. (tuber fragments)		2
Bromus sp.	5fg	
Caryophyllaceae indet.	1	
Chenopodium album L.	13	8+2cf
Chenopodiaceae indet.	6	28
Fallopia convulvulus (L.). A. Love	5+4tf	2
Galium sp.	5	326+10fg
G. apaine L.	2+1fg	6+10fg
Hyoscamus niger L.	2cf	2cf
Lamiaceae indet.	1	
Persicaria maculosa/lapathifolia	1	2
Plantago lanceolata L.	4	
Small Poaceae indet.	4	
Large Poaceae indet.	1	
Polygonum aviculare L.	1	
Polygonaceae indet.	1	4
Ranunculus acris/repens/bulbosus	1	
Raphanus raphanistrum L. (siliqua fragment)	1	
Reseda sp.	1cf	
Rumex acetosella L.	3	
Solanum sp.		2cf
Solanaceae indet.	1	2
Spergula arvensis L.	1cf	
Stellaria sp.	1	2
Vicia/Lathyrus sp.	1+2coty	8coty
Tree/shrub macrofossils		
Coryllus avellana L.	3fg	156fg
Prunus sp. Type (fruit stone fragment)		4
Other plant macrofossils		
Charcoal <2mm	xxx	xxx
Charcoal >2mm	x	xx
Charred root/rhizome/stem	x	
Indet.seeds	11	8
Indet. tuber fragment		2
Other materials		
Black porous 'cokey' material	x	xx
Black tarry material		x
Bone		xb
Small coal fragments	x	x
Sample volume (litres)	**5**	**60**
Volume of flot (litres)	**<0.1**	**0.4**
% sorted	**100%**	**100%**

Geochemical analysis of soils

by Dr P Clogg (Archaeo-Analytic, University of Durham) [38]

Introduction

A total of 104 soil samples from excavations at Colchester Garrison were submitted for phosphorus analysis to aid the interpretation of the site. Two groups of 37 samples (group numbers 77 and 79) were taken from an eroded area, approximately 20 m across and thought to have been a stock pen/shed associated with a Roman farmstead. Group 77 samples were from the lower fill of the area whilst group 79 samples were from the deposit immediately below this. In addition 30 'control' samples (group number 78) were taken from an area to the north.

Analytical technique

Analysis was undertaken using energy dispersive X-ray fluorescence (EDXRF) on the <2 mm fraction. The samples were dried at 50 degrees C, ground to a fine powder and pelletised at a pressure of 15 tonnes. The total phosphorus concentration was measured using a Links System XR300 EDXRF spectrometer employing a Rhodium anode X-ray tube running at 10 kV. The system was calibrated with a suit of 10 multi element soil standards. As the EDXRF system can undertake simultaneous analysis, the concentrations of the elements magnesium, aluminium, silicon, potassium, calcium, titanium, manganese, and iron were also determined for 23 samples in order to provide additional information on the character of the soils.

Results

The results of the phosphorus analysis are shown in Table 25 grouped by group number. The results of the full analysis undertaken on the 23 samples are shown in Table 26. Analysis of the phosphorus results was undertaken by plotting the mean and standard deviation for each group. Analysis of variance (ANOVA) was used to establish whether statistically there was any significant difference between the groups. If this was the case, then further analysis based on Tukey's HSD (honest significant difference) was undertaken to establish which of the differences is significant. This approach is similar to that taken by Sanchez *et al* (1996) in their study of phosphate analysis on the site of Polideportivo in Martos, southern Spain. Colour-coded distribution plots for phosphorus were also produced as a means of visually interpreting the data.

Generally the multi-element results show the soils to have a high sand content with little chemical variation across the site, suggesting a low level of disturbance across the deposit.

Phosphorus

A plot of the mean and standard deviation of the phosphorus levels for each group (Chart 1) shows that there appears to be a significant difference between group 77 samples and the control group 78 sample, and also between group 79 samples and group 78 samples. Group 77 samples show a particularly elevated phosphorus levels with a mean of 0.139%. The results of ANOVA and Tukey's HSD confirmed that there was a significant difference between all three sample groups (Table 27). Viewing the colour coded distribution plots (Charts 2-3) also confirms the high levels of phosphorus within the samples area with the main concentration being towards the north east of the area. The generally higher levels of phosphorus within the group 79 samples as compared to the control group (78) is undoubtedly due to the combination of contamination and leaching from the upper group 77 deposits. This is confirmed by the similarity in the distribution patterns between the group 77 and 79 samples (Charts 2-3).

Summary of results

- High phosphorus levels were detected throughout the samples from group 77 indicating anthropomorphic activity in the area. The main concentration of the activity is around the north-east part of the area.
- With the exception of phosphorus, the elemental composition of the samples show little variation which suggests the deposits have remained relatively undisturbed which would be consistent with stock corralling.

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Overall the evidence is consistent with the sample area having been used in the past for some form of stock corralling.

Table 25: results of the phosphorus analysis.
Figures are in weight percent; det. = detected but less than 2 x relative error; n.d. = not detected.

Group 77		Group 78		Group 79	
Sample	% phosphorus	Sample	% phosphorus	Sample	% phosphorus
393	0.1085	406	0.0999	512	0.0970
394	0.0947	407	0.0856	513	0.1065
395	0.1230	408	0.0871	514	0.0746
396	0.1398	409	0.0894	515	0.0883
397	0.1563	410	0.0845	516	0.1015
398	0.1197	411	0.0811	517	0.1107
399	0.1339	412	0.0729	518	0.1286
400	0.1108	413	0.0873	519	0.0923
451	0.1153	414	0.0961	520	0.0902
452	0.1229	415	0.0733	521	0.0988
453	0.1406	416	0.0714	522	0.1112
454	0.1564	417	0.0781	523	0.1200
455	0.1841	418	0.0963	524	0.1515
456	0.1650	419	0.0792	525	0.1299
457	0.1272	420	0.0974	526	0.1069
458	0.1255	421	0.0918	527	0.0967
460	0.1086	422	0.0973	528	0.0815
461	0.1571	423	0.0719	529	0.1218
462	0.1565	424	0.0920	530	0.1220
463	0.1400	486	0.0983	531	0.1055
464	0.1297	487	0.0978	532	0.1078
465	0.1215	488	0.0766	533	0.0957
466	0.1430	489	0.0917	534	0.1092
467	0.1427	490	0.0988	536	0.1416
468	0.1669	491	0.0735	537	0.1247
469	0.1512	494	0.0850	538	0.1202
470	0.1447	495	0.0957	539	0.1108
471	0.1359	496	0.0704	540	0.1081
472	0.1418	497	0.0729	541	0.1226
473	0.1496	499	0.0819	542	0.1204
474	0.1492			543	0.1153
475	0.1387			544	0.1204
476	0.1462			545	0.1123
477	0.1464			546	0.1084
478	0.1322			547	0.1134
479	0.1495			548	0.1408
480	0.1674			535	0.1110

Table 26: results of the multi-elements analysis.
Figures are in weight percent; det. = detected but less than 2 x relative error; n.d. = not detected.

Sample	Si	Al	Mg	Ca	Na	K	Ti	Mn	P	Fe	Sr	TOTAL
394	34.2622	3.3231	n.d.	0.5613	n.d.	1.5727	0.4603	0.1480	0.0947	2.7596	n.d.	43.1818
398	33.4737	3.2567	n.d.	0.4938	det.	1.2328	0.3630	0.1297	0.1197	2.6984	n.d.	41.7680
406	33.9713	2.4529	n.d.	0.3463	det.	0.7803	0.3159	0.1108	0.0999	3.2315	det.	41.3089
407	35.4526	1.9340	n.d.	0.3294	det.	0.6791	0.2814	0.0733	0.0856	2.3075	det.	41.1809
408	32.5236	2.8570	det.	0.3336	det.	1.0434	0.3166	0.1011	0.0871	1.8114	det.	39.0738
409	29.0335	7.5417	n.d.	0.5256	n.d.	1.1209	0.4348	0.1628	0.0894	5.8532	det.	44.7620
410	30.1863	6.1875	n.d.	0.4551	n.d.	1.0167	0.3371	0.1102	0.1044	5.2887	det.	43.6860
453	34.9823	2.5550	n.d.	0.4528	n.d.	1.0960	0.3583	0.1340	0.1406	2.7775	n.d.	42.4965
455	34.8082	2.5783	det.	0.3704	n.d.	0.9185	0.2860	0.1158	0.1841	2.3395	det.	41.6007
456	33.4138	2.2967	det.	0.3891	det.	0.7149	0.2728	0.0905	0.1650	2.4329	n.d.	39.6694
460	35.8185	1.2843	n.d.	0.3270	n.d.	0.6121	0.2618	0.1288	0.1086	2.2743	det.	40.8154
465	34.6370	1.6969	n.d.	0.3169	n.d.	0.4142	0.2717	0.0929	0.1215	2.6849	n.d.	40.2360
467	33.7071	3.6993	n.d.	0.5873	det.	1.4327	0.4074	0.1505	0.1427	3.5713	det.	43.6984
468	33.9402	3.3422	n.d.	0.4458	det.	1.0003	0.3145	0.1048	0.1669	3.3172	det.	42.6318
470	34.3342	2.5480	det.	0.4305	det.	0.9506	0.3876	0.1321	0.1447	3.5129	det.	42.4407
475	32.9897	3.4281	det.	0.4579	det.	0.9472	0.2898	0.1169	0.1387	3.7682	n.d.	42.1365
476	33.7402	3.7381	n.d.	0.4898	n.d.	1.3220	0.3820	0.1261	0.1462	3.7196	det.	43.6640
478	34.9031	3.2027	n.d.	0.3318	det.	0.9886	0.3047	0.1017	0.1322	2.9531	n.d.	42.9179
480	32.7762	3.7883	n.d.	0.4198	n.d.	1.1499	0.3207	0.1233	0.1674	4.6119	det.	43.3575
536	35.6181	1.3562	det.	0.3096	det.	0.0744	0.1942	0.0799	0.0882	2.9353	det.	40.656
539	36.9685	0.9763	det.	0.3209	det.	0	0.1781	0.0545	0.1045	1.8294	det.	40.4323
543	35.8493	1.3345	n.d.	0.2446	n.d.	0	0.1697	0.0497	0.1242	2.7669	det.	40.539
545	34.8404	1.8311	det.	0.3139	det.	0	0.1676	0.0796	0.1328	3.6148	det.	40.9802

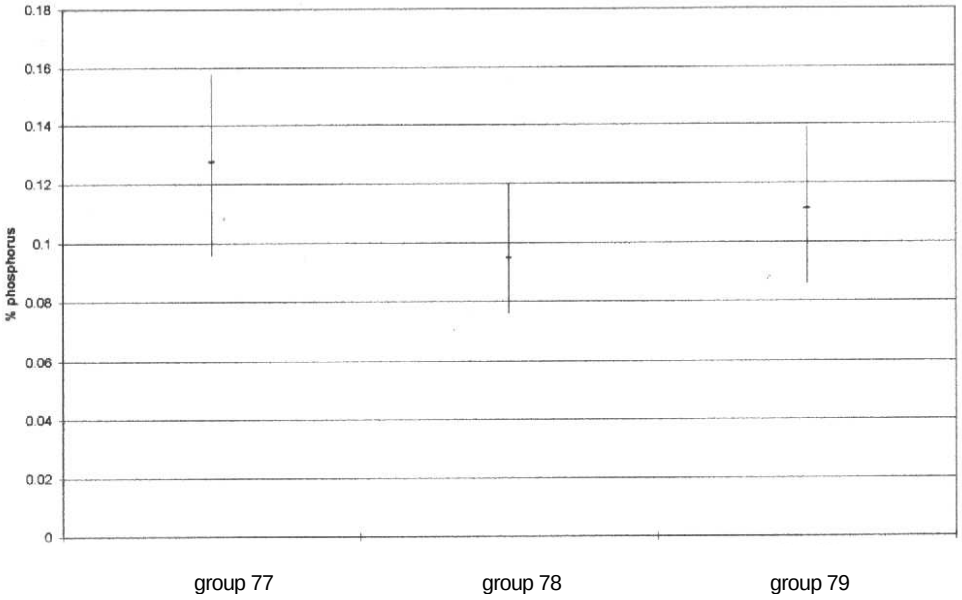

Chart 1: plot of mean and standard deviation for phosphorus.

Table 27: results of ANOVA and Tukey's HSD tests show that there is a significant difference between the sample groups.

ANOVA						
Source of variation	*SS*	df	MS	*F*	P-value	Fcrit
Between groups	*0.047155*	2	*0.023577*	*93.58876*	*1.012E-23*	*3.08637*
Within groups	*0.025445*	*101*	*0.000252*			
Total	*0.072599*	*103*				

Tukey's HSD				
	df	*ssq*	*Msq*	*F*
Between groups	*2*	*0.0472*	*0.0236*	*93.5889*
Within groups	*101*	*0.0254*	*0.0003*	
Total	*103*	*0.0726*		
p=0.0000 (< 0.000005)				
Least Significant Difference (Tukey) at 0<0. 05=0.0076				
Least Significant Difference (Tukey) at 0<0.01=0.0101				

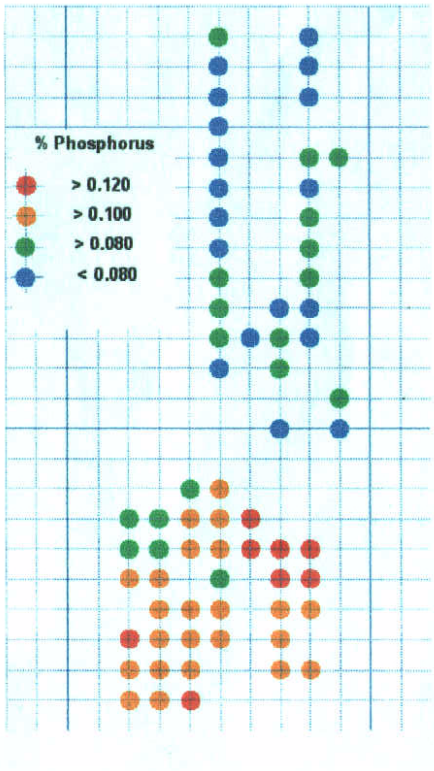

Chart 2: phosphorus distribution plot for groups 77 and 78.

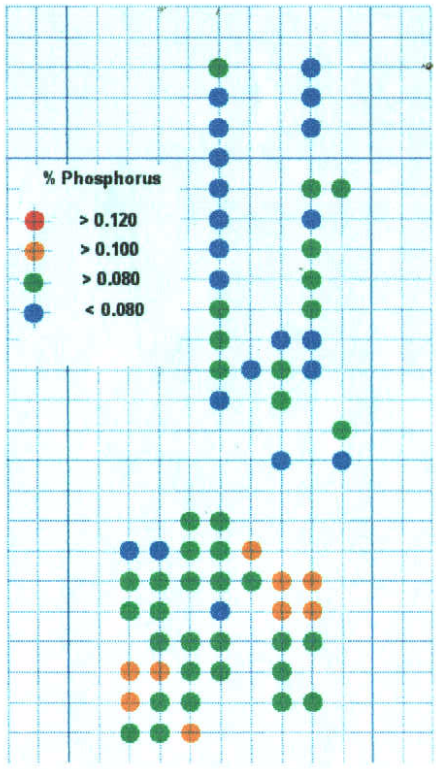

Chart 3: phosphorus distribution plot for groups 79 and 78.

Charcoal identification

by Anne-Marie Bojko (Colchester Museums)

The following samples were received. Comments on identifications are given in Table 28 below.

Table 28: charcoal identifications.

Area	Context	Bag no	Sample no	Identifiable ?	Comments
Area 2	F6 Sx 1, L41	67	110	probably not	Thin layer of organic material within a concreted crust. Looks more like bone than wood, and small fragments of bone are present within the soil sample.
Area 2	F143, L65	191	-	yes	Small fragment 10mm x 10mm x 5mm. *Corylus* (hazel).
Area 2	F51, Sx 2, L15	96	-	probably not	Small fragments of knotwood. Largest fragment 17mm x 15mm x 6mm. Because the grain of the wood was so distorted, a positive identification was impossible. The wood appears to be ring porous.
Area 2	F6 Sx 1, L21	42	94	possibly	Sample was quite degraded, but appears to be *Quercus* sp (oak)
Area 2	F6 Sx 1, L8	32	93	yes	Four well-preserved small fragments of twig wood. The largest fragment measures 32mm x 29mm x 25mm. Three fragments were *Acer* sp (maple), one was *Quercus* sp (oak)
Area 6	F13	91	-	possibly	Very distorted fragments of knotwood. Some appear to be ring porous and may be *Quercus* sp (oak), but positive identification proved to be impossible.

Area 6	F227	200	45	possibly	Very small fragments, so difficult to identify with certainty, but appear to be *Quercus* sp (oak).
Area 6	F231	182	-	yes	Well-preserved fragment of branch wood. 20mm x 23mm x 15mm. *Betula* sp (birch)
Area 6	F34	66	29	yes	Two fragments, the largest being 62mm x 45mm x 35mm; the wood is in quite poor condition, compressed, with large void, but is still identified as *Quercus* sp (oak).
Area 6	F34	67	30	yes	Strips with rectangular cross section. Largest fragment 88mm x 28mm x 11mm. All are *Quercus* sp (oak).
Area 10	F13 Sx 1	37	-	probably not	Sample too small to identify with certainty.
Area 10	F296	202	-	possibly	Very small fragments. Very small sample of knotwood, 10mm x 8mm x 2mm; ring porous wood, probably *Quercus* sp (oak).
Area 10	F5	144	-	yes	Twigs of *Quercus* sp (oak).

Radiocarbon-dating
(Note by HB: the first two sections here are on the dating of two samples from context L7, which is the middle fill of the Middle Iron Age Area 2 enclosure ditch F6. The third is the dating of the Area 10 Late Bronze Age/Early Iron Age(?) cremation F276.)

L7
Beta - 192635 2140 +/- 60 BP -24.3 o/oo 2150 +/- 60 BP
SAMPLE : 03/210/2 **196**
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid

2 SIGMA CALIBRATION : Cal BC 380 to 40 (Cal BP 2330 to 1990)

1 Sigma calibrated results: (68% probability)
Cal BC 350 to 300 (Cal BP 2300 to 2250) and
Cal BC 220 to 100 (Cal BP 2170 to 2050)

F2
Beta - 192636 2110 +/- 40 BP -24.5 o/oo 2120 +/- 40 BP
SAMPLE : 03/210/2 **197**
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 350 to 310 (Cal BP 2300 to 2260) AND Cal BC 210 to 40 (Cal BP 2160 to 1990)

1 Sigma calibrated result: (68% probability)
Cal BC 190 to 80 (Cal BP 2140 to 2030)

F276
Beta-196585
Conventional radiocarbon age: 2470±40 BP

2 Sigma calibrated result: (95% probability)
Cal BC 780 to 410 (Cal BP 2730 to 2360)

1 Sigma calibrated results: (68% probability)
Cal BC 770 to 500 (Cal BP 2720 to 2450) and
Cal BC 460 to 430 (Cal BP 2410 to 2380)

Discussion

The research agenda

Before discussing the results from each of the Garrison excavation areas, it will be useful to briefly state current research priorities. There are three strands: first, the published Eastern Counties Agenda; and second, the Essex agenda. These first two are given as tables below, and the extent to which the Garrison results impinge on these agenda points can be seen in the right column of the tables. The third strand is the Written Schemes of Investigation under which the work described here has been carried out.

The Eastern Counties agenda (Bryant 2000)

The *Research agenda and strategy* for the Eastern Counties specifies a number of research aims for prehistory. These can be summarised as[39]:

Neolithic/Bronze Age

Agenda item	Relevant Colchester Garrison data
The development of farming and the integration of monuments, fields and settlements	**Possible well/waterhole from evaluation – isolated landscape features**

Iron Age

Agenda item	Relevant Colchester Garrison data
Chronology	**stratified Middle Iron Age pottery from Area 2 enclosure; overview of Early Iron Age-Middle Iron Age pottery from project; C14 dates on deposits with Middle Iron Age pottery, and on a Late Bronze Age/Early Iron Age cremation.**
Development of agrarian economy	**Creation of field patterns (Areas 6 and 10)**
Settlement chronology and dynamics	**Area 2 enclosure**
Economic and social change over the Bronze Age/Iron Age transition	**Late Bronze Age/Early Iron Age placed deposits and early field systems**
social organisation and settlement form in Early Iron Age and Middle Iron Age	**Settlement type – Area 2 enclosure**

Roman

Agenda item	Relevant Colchester Garrison data
Roman military archaeology	**n/a**
Towns	**n/a**
Food consumption and production	**Analysis of Roman fields**
Agricultural production	**Analysis of Roman fields**
Landscapes	**Good detail of development of Roman farming landscape out of original Iron Age landscape**
Rural settlements	Area 6 is marginal to the site of a Roman farmstead, and has finds and burials spilling out from it
Coastal	**n/a**

The Essex agenda (Bedwin 1996)

In the proceedings of the Writtle conference of 1993, the following priorities for future work were identified.

Late Bronze Age

Agenda item	Relevant Colchester Garrison data
Excavation of open settlements	**-**
Sampling of cropmark enclosures on brickearths	**-**

[39] only those periods of relevance to this project are mentioned here

Early Iron Age

Agenda item	Relevant Colchester Garrison data
Location of settlement sites	**Manuring evidence suggesting adjacent settlement**
Archaeology of Early Iron Age	**Early Iron Age field boundaries and placed deposits**
Red hills	**-**
Rectangular houses	**-**

The Written Schemes of Investigation

The 'written schemes of investigation' (WSIs) for the three areas described here (RPS/CAT 2003a; RPS/CAT 2003b; RPS/CAT 2003c) stressed a number of the key project aims and primary objectives.

Of particular importance for **Area 2** was Aim 3; '*what was the nature of the Middle Iron Age settlement within the area of the later* oppidum*, and are there any indications of landscape division and settlement which might allude to the origins of the* oppidum*?*'. The primary objective for Area 2 was to investigate a substantial N-S-orientated ditch which had been identified and dated to the Middle Iron Age during the 2002 evaluation (CAT Report 197). Area 2 was positioned over the Iron Age ditch specifically to facilitate this investigation.

The primary objective for **Area 6** was to investigate an apparent coaxial layout of interconnecting trackways shown by aerial photographs as cropmarks and to a lesser degree by geophysical survey in 2002. Trial-trenching in 2002 (CAT Report 203) confirmed the existence of the ditches and provided limited evidence for a Late Iron Age or Roman date for the landscape. Area 6 was a former arable field (north of Earlswood Way and south-east of Kirkee McMunn Barracks).

The primary objective for **Area 10** was to investigate the main eastern trackway which was identified by aerial photography as cropmarks (and to a lesser degree by geophysical survey) in 2002.

The full list of Project Aims is as follows:

Overarching Research Aim: To characterise the nature of landscape utilisation and change from the Neolithic (or earlier) to the Romano-British period.

Project Aim 1. What was the nature of small-scale agricultural Neolithic and Early-Middle Bronze Age activities within the site, and in particular can areas of ritual activity and/or settlement areas be identified?

Project Aim 2. What was the nature of later Bronze Age/Early Iron Age activities and in particular is there evidence of the emergence of more permanent settlements and field systems within the proposal site?

Project Aim 3. What was the nature of the Middle Iron Age settlement within the area of the later *oppidum*, and are there indications of landscape division and settlement which might allude to the origins of the communities responsible for the later construction of the *oppidum*?

Project Aim 4. To elucidate the nature of spatial organisation within the *oppidum*, establish how this relates to general agricultural settlement expansion at this time and establish what inferences can be made from the distribution of coins.

Project Aim 5. To clarify the form/function and duration of the trackways with respect to the *oppidum* and to establish with which elements of the social landscape they connected.

Project Aim 6. To place Berechurch Dyke within a detailed chronology of the layout of other internal *oppidum* features such as the curvilinear trackways and the coaxial trackway/field systems.

Project Aim 7. To establish whether there are any surviving remains of the rectilinear enclosure at the Musket Club site (CAT Report 311) or associated external features within the proposal site footprint, and to characterise the function of the enclosure within the *oppidum* complex.

Project Aim 8. To clarify the date, form and function of the coaxial field system, to establish the nature of its development within the *oppidum* and/or the Roman town's hinterland and to establish the evidence for association with the probable farmstead at the Kirkee McMunn Barracks site.

Project Aim 9. What was the nature of Saxon and medieval landscape within the development site and what was the relationship of the landscape to Saxon and medieval Colchester?

Project Aim 10. To record and contextualise any modern military features within the new garrison site for which there are insufficient current records.

Of these, Aims 6 and 7 are not relevant to this report and with Aim 10 will be covered by the final report on the new garrison Stage 3 watching brief.

Area 2 discussion

Land use before the Middle Iron Age

Occasional struck flints across the area suggest sporadic visits during the Neolithic period, and then perhaps again in the Early Iron Age, but there is no evidence of permanent settlement at this time.

The Middle Iron Age enclosure in a regional context

The earliest and major feature in Area 2 is the enclosure and its internal round-house. This follows a tradition (dating from the Late Bronze Age in Essex) for placement of a large round-house within a sub-square ditched enclosure (eg Lofts Farm adjacent to the Blackwater estuary (Brown 1988)). The single circular structure can be paralleled by excavated and similarly dated (Middle Iron Age-Late Iron Age) sub-rectangular enclosures in Essex at Mucking (two enclosures), the CIS site at Stansted Airport (Havis & Brooks 2004, 23-4), Slough House Farm near Maldon (Wallis & Waughman 1998, 18, 19, 28), Ardleigh near Colchester, and Gun Hill in Thurrock (Buckley & Hedges 1987b, 76).

A number of other cropmark enclosures in Essex also appear to have contained single circular buildings. One of the sub-square Iron Age enclosures (the Middle Iron Age enclosure 2) at the Stanway site may have been domestic in function, although there were no surviving remains of the associated round-house (except for crescent of pits which may mark the position of a structure in the south-western corner of the site). A further local Middle Iron Age enclosure with a round-house has been excavated recently at the Abbotstone site just to the west of the later *oppidum* (Brooks 2002; CAT Report 312 in prep).

Status, use and duration of use

It appears likely that the Area 2 settlement was of moderately high status, because of the labour expended on its wide and deep ditches and the large size of the round-house. There was also a clear interest in creating at least the illusion of status, via a more impressive ditch (and bank with possible hedge) on the eastern side where visitors approached the enclosure. The lack of macrobotanical debris in the enclosure ditches may indicate that the site was kept clean, as would befit a high-status site.

The main point of interest about the enclosure is that its original construction in the Middle Iron Age appears to have pre-dated the *oppidum* (the earliest phases of the dykes were in place by *c* 25 BC, or possibly slightly earlier; *CAR* **11**, 175).

It is argued below that Area 10 was begun to be enclosed in the Early Iron Age. If so, then the land occupied by the modern Garrison may be envisaged as a mixture of enclosed and unenclosed areas, with a range of settlement types including the Area 2 enclosure.

Foundation, use and abandonment

The foundation of the settlement can probably be placed at *c* 250-100 BC. The gradual silting up of the ditch, and a consolidation phase (where gravels were dumped down over ditch fills

c 200-100/75 BC), show continuity of use into the later Middle Iron Age. A significant deposit had been placed in the centre of the round-house. Since the pottery styles in the placed deposit are matched by those in the lower ditch fills and at the consolidation phase, it is not clear whether this deposit is contemporary with the original building of the round-house or with the later consolidation phase. The second (post-consolidation) phase of activity came to an end when a trackway was cut across the infilled ditch. The date of this is not clear-cut; the pottery in the upper fill of the enclosure ditch dates to *c* 50-25 BC, but there is also (intrusive) Roman tile in the top of the ditch. The view taken here is that the single fragment of Roman tile was intrusive into the Late Iron Age fill[40].

It is not known why the settlement was abandoned, or precisely when. The absence of any significant Roman material in this area implies a lack of Roman activity on the site, and the gradual pre-Roman silting up of the ditch. The cutting of the trackway across the enclosure may have been a deliberate act by 'new management' to underline that the enclosure and its uses were now defunct. Alternatively there may have been a period of time between the disuse of the enclosure and the digging of the trackway (which was cut through the enclosure simply by coincidence).

In either case it is unlikely to be coincidental that the Late Iron Age/early Roman trackway (and therefore field system), follows the same alignment as the earlier enclosure. The inference is that when the trackway was laid out, the enclosure was still visible, in at least some skeletal way (ie its banks were yet to be levelled). There is a logic in assuming that the layout of this trackway (and implied field system) across the earlier landscape was either associated with the establishment of the *oppidum* of Camulodunum or with a later reorganisation, perhaps associated with the reign of Cunobelin or one of his sons.

Area 6 discussion

Neolithic land use

Prehistoric flints widely and thinly spread across the area suggest intermittent visits by Neolithic people, with a very slight bias towards the western side of the area. However, there is no sign of permanent occupation at this time.

The placed deposits, and evidence of the first occupation?

The first activity is represented by two features containing Early Iron Age/Middle Iron Age sherds. These are interpreted as being placed deposits (on the basis of the relatively large quantities of sherds in the fills). The fact that they do not appear to be placed against any observable boundary or other fixed object may simply be due to the loss of such features through heavy plough erosion of the site, or simply that ditches were not used to define plots in this area.

There are two other indices of activity in this period. First, a group of probably Middle Iron Age sherds found mainly in residual contexts in later ditches or in contemporary tree-throw holes. These may be either the result of manure scatter from an adjacent site, or else the only remaining evidence of contemporary site activity which has not survived as cut features. Second, a gully containing parts of Middle Iron Age/Late Iron Age loomweights. This may mark the spot where weaving took place (whether in a structure or simply behind a wind-break), although a function as a 'stock funnel' associated with the droveway (with which it appeared to connect) seems more likely. If the weights provide a link with Middle Iron Age-Late Iron Age weaving, then a sheep-farming element to the economy is suggested, possibly in an open landscape (since there is no evidence of field boundaries on this site at this time).

Poor survival of environmental material means there is virtually no evidence on which to reconstruct the local prehistoric environment and its vegetation. The gully contained no pottery or macrobotanical remains at all, only a few flecks of charcoal.

Late Iron Age burial, and the earliest *oppidum* landscape

There is sufficient Late Iron Age pottery in the earliest cuts of the Area 6 ditches to support a Late Iron Age date for the layout of the field system in this part of the Garrison. In that sense, it appears to be contemporary with the initial date of the trackway and fields in Area 2. In its original layout, a trackway opened out into a larger, open area to the north. This may have been a trackway emerging from an arable (or mixed arable/pastoral) area to the south, and

[40] and it is assumed that some overall control of the fields of the *oppidum* and later hinterland of the Roman town would favour more co-ordinated development, rather than piecemeal growth

leading out to an area of pasture to the north. A method of controlling stock through this point is suggested by a contemporary fence and possible gate.

A Late Iron Age burial was made on the north side of the new field ditch. It would seem logical to suggest that this burial was deliberately placed next to the newly-constructed ditch. If so, it may be an 'initial deposit' marking out a new boundary. A complication for the suggestion of a Late Iron Age origin for the Area 6 landscape is that the Late Iron Age ditches previously identified at the Kirkee McMunn Barracks site are not on the same alignment. Either there was a kink in the alignment of the Late Iron Age landscape, or there are two phases of Late Iron Age landscape (perhaps reflecting the instigation of the *oppidum* in the last few decades BC or later political changes), or the Area 6 landscape is in fact a relic from the beginning of the Roman colony period (*c* AD 50). The archaeological data is not sufficiently closely datable to resolve this critical problem. However, it is worth noting that there are no other alignments of ditches matching those of the Kirkee McMunn Barracks site within Area 6. Therefore, it remains perhaps most likely on the balance of evidence that the Area 6 landscape was laid out as fields in the *oppidum* period.

The dating evidence for the coaxial landscape relative to the Roman farmstead

The excavation has provided firm evidence for the dating of the later phase of the coaxial landscape to the early-mid Roman period (following the possible earlier Late Iron Age ditch system which it largely cut away). The landscape underwent changes, in size of fields and direction of trackways, throughout the 1st-3rd centuries. These changes were no doubt driven entirely by the agricultural needs of the farmstead at the Kirkee McMunn Barracks site[41]. The ditches, and, critically, the disuse fill of the hypocaust pit, at the farmstead site (Shimmin 1998) demonstrate that they were both contemporary with the Area 6 landscape and that the hypocaust and therefore probably also the farmstead itself were abandoned during the 3rd century.

The Roman inhumation burials aligned with the field boundaries and trackways in Fields 2 and 4 are another sign of use of the landscape by the occupants of the Kirkee McMunn Barracks farmstead throughout the 1st-3rd centuries, and suggest an affinity with the land, as might be expected with agricultural communities. The shared alignments of ditches at the contemporary Kirkee McMunn Barracks Roman farmstead clearly indicate that they were elements of a coherent planned landscape which included or was based on the farm.

The use of the rural landscape for stock and arable management

The excavation has also provided subtle insights into the manner in which stock was controlled within the field system, including a possible 'stock funnel', gateway structure, the droveways and a possible stock-holding, feeding and/or milking area[42]. These are landscape elements which have often been ignored in the past in favour of a settlement-specific approach to archaeology. The importance of stock control is implicit in the trackways and other related features, but the relative proportions of pastoral and arable farming here are not known[43].

Environmental results were also disappointing, beyond the general point that a few single cereal grains suggest some arable element to the economy. Sheep farming is demonstrated by the presence of loomweights, whilst the trackway-defined landscape itself is typical of a pastoral regime. It seems clear that the trackways defining the eastern, southern and western sides of Field 2 were primarily used as droveways for the movement of stock throughout the field system and to pastures and markets beyond (including and probably predominantly the town itself). The pastures may have included the more distant nutrient-rich grasses of the Roman River and/or River Colne floodplains which flank the gravel plateau utilised by the *oppidum*. The recent discovery of Britain's first confirmed Roman circus at the northern extent of the Abbey Field, within the linked Urban Village project, now also presents the possibility that the surrounding countryside also provided horses for the circus races. Thus the Kirkee McMunn Barracks farmstead or other nearby farms may have had stud facilities (amongst other uses). The trackway system could have facilitated access to the town and its circus. The

[41] it seems difficult to isolate here any landscape features which might relate to a transfer of land from native to Roman army veteran at the date of the foundation of the colony in AD 49, or after the Boudican revolt of AD 60/1 – the countryside seems immune to these political events. This is not to deny that ownership may have changed hands, but how to identify that in the archaeological record?

[42] phosphate sampling confirmed this feature as a location where stock had been collected for such activities

[43] pollen samples taken from the ditches were not productive in this study

use of the landscape following the late 2nd-early 3rd century is less certain, since there are no ditches dating to that period. One possibility is that the area later reverted to woodland, although less archaeologically visible farming landscapes are possible (see below).

Farm out-building
A cluster of post- and stake holes in the south-western part of the area (associated with a possible stock-holding area) may at first sight be interpreted as the remains of a structure, but the view taken here is that the post-holes represent fences or pens. Contemporary finds are all of the Roman period.

Roman burials
Seven inhumation burials were laid out within the farmed landscape in the Roman period; two in Field 2 and five in Field 4, all in the 2nd or 3rd century. It is clear that that the burials in both locations are aligned with regard to boundary features (ditches and hedges) rather than to a ritual orientation (for example east/west for Christian graves).

Two of the five Field 4 graves were particularly large and deep (and therefore presumably adult burials), while the other three were shallower (with the smaller two presumably for children). No bone material had survived, but sufficient iron nails and (in one case) a charred rectangular plank suggest coffin burial. The species of the wood fragments has been identified as oak. There were no grave goods, and they were datable only by occasional sherds of Roman pottery in the grave fills. These individuals were likely to have been residents of the Kirkee McMunn Barracks farmstead.

Subsequent land use – post-Roman
There is no direct evidence in the form of ditches or environmental evidence for the later use of the land in post-Roman times. However, it may be that drainage ditches were not required in the late Roman and post-Roman periods due to the well-drained nature of the terrace gravel plateau. In addition, the banks provided by the digging of the ditches would probably have supported hedges that continued in use in later times as a perfectly adequate boundary. Indirect evidence for this may come from the medieval or post-medieval ditches of Area 2 which are on the same general alignment as the Late Iron Age to early Roman trackway in that area.

Area 10 discussion
Land use in the Neolithic
Scatters of flints suggest intermittent visits during the Neolithic period, but there is no sign of settlement at that time. However, there is a distinct clustering of flints on the western edge of the area, suggesting a focus for prehistoric activity there.

The emerging landscape – Early Iron Age 'ghost' field boundaries, burials, and 4-post structures
Three elements of the landscape come into focus in the Early Iron Age. The first is burial ritual, the second is the identification of 4-post structures, and the third is the possible emergence of Early Iron Age field boundaries. One of the two Early Iron Age cremation burials had a rich suite of environmental evidence including possible pyre debris, hazelnut shells, and cereal grains all indicating nearby arable activity. The burials are important in themselves (in showing that the landscape was 'owned' and controlled), but their location next to later field boundaries suggests the possibility that the boundaries date originally to the Early Iron Age. An origin in the Late Iron Age is suggested for some of the boundaries in Areas 2 and 6, but there is no reason why some elements of the pre-*oppidum* landscape should not have been enclosed at an earlier date. Indeed, this suggestion may be confirmed by Paul Sealey's pottery analysis which concludes that Area 10, unlike Areas 2 and 6, was manured in the Early Iron Age. Sealey also notes that a paucity of Middle Iron Age pottery in Area 10, relative to Areas 2 and 6 (where arable may by then have been located), implies that this area returned to woodland. Alternatively, it could have been used as pasture in the Middle Iron Age in which case manuring evidence would be absent. It is our contention that Area 10 was simply further away from settlement foci in the Middle Iron Age than it had been earlier. Or, in other words, the Early Iron Age farm responsible for the manuring had failed or moved

location by the Middle Iron Age. It is difficult to explain the location of the Early Iron Age cremations next to later field boundaries if the area had been allowed to revert to woodland.

Another element in this landscape of burials and field boundaries is a group of pits and post-holes which define a number of potentially contemporary structures. The most convincing patterns seen in these post-hole groups are three 4-post structures[44]. These 4-post structures may be connected with a burial rite, possibly as excarnation platforms (platforms for the exposure of the dead). As such they may have been placed close to a contemporary occupation site (off-site), and have formed a specialised burial area which was marginal to the main site. However, an interpretation as agricultural stores is also likely. There is a spread of contemporary pottery over this area, derived either from manure scatter or else simply spreading out from the adjacent settlement as domestic refuse.

A third 4-post structure has been identified to the south of the main site. There is very little other associated material around this structure. Again, an interpretation of it as a platform for exposing the dead is an attractive one, but there is no reason why it should not have been a structure associated with grain storage, as an isolated agricultural building.

Late Iron Age landscape form relative to the *oppidum*

The suggestion of an Early Iron Age origin for the Area 10 field boundaries would appear to differ from Area 2 and Area 6 where the earliest field boundaries are interpreted as being probably Late Iron Age. In Area 10, the earlier enclosed landscape was adapted and extended in the Late Iron Age. Some of these adaptations may coincide with the original layout and use of the *oppidum*, but there is no strong case for radical change in this period. The results complement those of Areas 2 and 6 to provide a detailed sequence of landscape development from the pre-*oppidum* period, during the time of the *oppidum*, and well into the Roman period.

The dating evidence for the duration/sequence of Roman landscape development

The dating of the later phases of the coaxial landscape to the early-mid Roman period is supported by metalwork and ceramic evidence, as well as by the complex, multi-phase recutting of the ditches. The junctions of the trackways appear to have been important locations within the agricultural landscape. It is suggested that Tracks 1-3 worked as a planned system in their early use, since although clearly recut in a complex fashion, the trackways once curved to meet one another as a unitary drainage system. Stock would have been driven from the south, north-west and north-east to the 'box junction' point which presumably was used for stock-sorting before the animals were released into the adjacent fields or continued to be driven along another droveway. The emphasis on the point at the head of the three trackways is emphasised by its heavy wear, which required metalling in the early Roman period.

Track 4 (the main eastern trackway) seems to belong to the later phase of the field system, where some considerable replanning is evident. This involved a realignment of the fields of Area 10, and the slight shift in the direction of the main eastern trackway (Track 4). A point which needs stating is that Track 4 headed ultimately towards the Roman town, via a probable connection with a Roman version of Mersea Road leading to the town's Roman south-east gate). The trackway would thus have fed into the more formal, metalled road system, and would have provided a route for transporting farm produce to the Roman town. This could have taken two forms: the herding of livestock up to the town markets, or the transport of grain and other foodstuffs by cart along the same route.

The use of the rural landscape for stock/arable management

The use of multiple droveway tracks across the landscape suggests a heavy emphasis on livestock farming. As in Area 6, important information regarding the means of managing the controlled movement of livestock has been identified. However, Area 10 has revealed far greater detail on the chronological development of this landscape from at least the Early Iron Age up until the late 2nd/early 3rd century AD.

There is clear evidence, in particular the metalling for the maintenance of the trackways into the 2nd century AD, that by this time they were heavily worn and prone to poor drainage, making their use difficult. On the basis of the limited dating evidence, it appears that this arrangement of Tracks 1-3 was replaced by the main eastern trackway (Track 4) at least in its

[44] other structural patterns can be seen here (round-houses?), but these were considered to be less convincing

latest form in the late 2nd/3rd century. As with Area 6, there are no features which are certainly later than the 3rd century. This may suggest landscape reorganisation in the later Roman period, although elements of the trackway system may have gone out of use beyond the period of observable evidence provided by silted ditches (see Area 6 above).

Subsequent landscape use – post-Roman
There is no archaeological evidence for post-Roman land use in Area 10 other than the construction of the WW2 tank-trap. However, the same factors of archaeological invisibility of later landscapes applied to Area 6 above, also apply for Area 10.

Combined discussion of Areas 2, 6 and 10 and the evaluation information with reference to the Project Aims
There are several key questions relating to the wider landscape which require further attention. These include the key questions of why and when the coaxial landscape form was initially laid out and, related to this, who owned it. Was it the result of the instigation of the *oppidum* of Camulodunum, a reorganisation potentially associated with Late Iron Age political changes, or most intriguingly was it in fact a carving-up of the landscape in the earliest Roman period for colonists? Finally, does the fact that we found no ditches of late Roman or later date mean that the landscape was depopulated or abandoned in the 3rd century?

Overarching research aim

To characterise the nature of landscape utilisation and change from the Neolithic (or earlier) to the Romano-British period.

Within this broad aim, the following headings are discussed:

Agricultural clearances – Neolithic period onwards
It was hoped that the pollen sampling would shed useful light on the extent of tree clearance, especially in the Neolithic period. However, no earlier prehistoric (Neolithic to earlier Bronze Age period) features were found during Stage 2, and thus no pollen data is available for these periods. Soil columns were extracted from a number of Late Iron Age to early Roman ditches in Areas 2, 6 and 10, but the results have been disappointing. Some pollen was identified in the Middle Iron Age Area 2 enclosure ditch, and also in both ditches of the main trackway within Area 6. These small samples have shed some light on contemporary (ie Middle Iron Age or Roman) vegetation, but the results do not have a broader significance.

Bronze Age planned and 'owned' landscapes
No site features of this period were recorded. Even the flintwork is more characteristic of the Neolithic and Iron Age than of the Bronze Age. It appears that this part of Colchester was not enclosed into fields or owned at this period, although it is probable that Late Bronze Age ceramics found during the evaluation stage within the adjacent Urban Village proposal site may relate to the settlement evidence which is virtually absent from the new garrison site.

The pre-*oppidum* phase – the Early and Middle Iron Age
It is in this period that the first signs of activity become clear. Two cremation burials in Area 10 may show that the land was being claimed in a ritual act associating ancestral remains with a landscape which may have been cleared at this time (if it had not already been cleared). There is no clear sign of field ditches or trackways at this period. Instead, a structure (possibly connected with weaving) occupied an apparently unenclosed (pastoral?) landscape in Area 6, and a high-status enclosure with round-house was constructed in Area 2, presumably as the home farm or estate centre of the surrounding agricultural landscape. Environmental samples from the cremations show cereal grains and grassland weeds, a reflection of the emergence of a mixed farming economy.

Creation of the *oppidum*
The creation of the *oppidum* is probably evident in the creation of the earlier trackways and fields seen in all three excavation areas. Ceramic evidence from the ditch fills makes it

reasonably likely that the ditches were cut in the Late Iron Age or early Roman period, which makes them contemporary with the creation of the *oppidum* (ie the first of the defensive dykes, and the origin of settlement at Gosbecks).

The effect of the establishment of the Roman town on the agricultural hinterland
This is among the least tangible of the project aims, since the Roman town is some way to the north. There is no doubt that the farmers and settlers working the land in Areas 2, 6 and 10 would have sold or exchanged their produce with the townspeople. Whether the townspeople were among the landowners is impossible to say, but it is a reasonable possibility. In terms of the possibility that the trackways observed in Areas 2, 6 and 10 were laid out immediately following the conquest, the evidence is ambiguous. Whilst most of the ditches contained early Roman pottery, which could be consistent with such an initiation, they also contained quantities of Late Iron Age pottery potentially derived from earlier phases of the ditches. The Area 10 ditch recuts (of earlier undated ditches), which contained mid 1st-century AD brooches, suggests that the earlier ditches may have been cut in the Late Iron Age (see further discussion below).

Forest clearance, managed woodland
Forest clearance, the relative levels of arable and pasture, and the seasonal use of the wider landscape for wildwood resources, is a topic which should have been illuminated by the pollen analysis and the phosphate sampling. In the absence of any positive data from these sources, all that can be said is that the environmental data from the Area 10 cremation showed grassland herbs and cereal grains, so it is clear that there must have been both grassy areas and arable close to Area 10 in the Early Iron Age. Also, the central part of Area 6 seems to have been in open country, which was presumably pasture in the Middle Iron Age or Late Iron Age.

Palaeo-environmental studies and an 'agrarian sociology'
This aspect of the landscape and the link between the roles of livestock husbandry, the use of cereals and of raw materials are considered to depend to a large extent on pollen sampling (to establish vegetational history). These methodologies have been disappointing. However, the trackway system is a good indication of the importance of livestock to the landscape's occupants. The use of stock is also demonstrated by the wear to the trackways, particularly at junctions and by the hollow way at the entrance to the Middle Iron Age enclosure, whilst gateway structures, fences, the stock funnel in Area 6 and the heavily eroded depression, possibly within a barn or corral also in Area 6, provide further indications of their presence.

Non-settlement-related landscape components
This category of features might include trackways, quarries, salt-working sites, temporary camps, waterhole/well sites and shrines. At the Garrison site, the trackways fall into this category. Trackways were found crossing all three of the excavation areas. The function of the trackways was to move stock between various parts of the farmed landscape at appropriate times (for instance, to bring stock through cultivated zones so that they could be folded on fields to manure the ground and break up the ground with their hooves to assist with the fertility and cultivation of the same field at the appropriate time in the agricultural cycle. The presence of trackways does have some implications; there is no need to construct trackways if one wishes to keep a flock of sheep on open pasture where they can roam freely. The three 4-post structures and the pit/post-hole group in Area 10 seem to be relatively isolated and could represent shrine sites away from settlement foci.

Symbolic interpretations of the landscape suggested by burial sites
The cremation burials in Area 10 were made at the beginning of the period of land division and were used symbolically to lay claim to territory. Similarly, a cremation on the north edge of the potentially later main trackway in Area 6 seems to mark the new field boundary in the same way.

PROJECT AIM 1

What was the nature of small-scale agricultural Neolithic and Early-Middle Bronze Age activities within the site, and in particular can ritual and/or settlement areas be identified?

Background to Project Aim 1

The current state of understanding of settlement of the period suggests shifting agricultural practices with short-term or even seasonal settlement cycles. Wild plants and cereals may have been of equal importance, although the main economic resource appears to have been domesticated stock. The most common expressions of Neolithic activity are flint artefact scatters within modern ploughsoils, in most cases suggesting that shallow features or Neolithic land surfaces have been ploughed out. The extensive fieldwalking programme at the Colchester Garrison PFI site produced no such scatters, although this may in part relate to a lack of local raw material and consequently local flint-working. The next most common category of Neolithic site are scatters of small pits, usually on high ground and often implying seasonal use of the location. Numerous isolated pits and groups of pits are commonly encountered in plateau locations in southern Britain and Essex (Brown & Murphy 1997, 12; Healy 1992; Brown 1988), similar to the location of a probable Neolithic feature within Area M. The project provided no evidence for Neolithic ritual landscape features such as cursus monuments (Hedges & Buckley 1981) or long barrows which are rarely found in East Anglia (Ashbee 1970). The large pit uncovered at the evaluation stage (feature MF105) within the northern area of Area M is indicative of limited Neolithic settlement activity on the higher elevations overlooking the adjoining river valleys. Interestingly, the pit is much larger than those normally found at Neolithic occupation sites. The unusual size is more typical of a waterhole or well, which would be unusual for the period.

A lack of alluvial sediments and of peat in particular at the new garrison site, combined with the low-grade inorganic nature of the single probable Neolithic deposit which has been identified, has unfortunately precluded detailed environmental study. Such studies can characterise the scale of Neolithic forest clearance and therefore the intensity and nature of local human activity. The paucity of residual flintwork of the late Neolithic and Early Bronze Age and a lack of such dated features from both the evaluation and excavations may demonstrate very low levels of activity at the new garrison site at these times and perhaps forested conditions. There are no firm indications of Middle Bronze Age settlement areas within the new garrison area. It is possible that this area was peripheral to settlement at this time. It is interesting to note that settlement of this date is implied elsewhere in the vicinity, such as at the Sheepen site, by Deverel-Rimbury cremations (P Crummy pers comm). Perhaps the new garrison site was still largely forested prior to the later Bronze Age.

PROJECT AIM 2

What was the nature of later Bronze Age/Early Iron Age activities, and, in particular, is there evidence of the emergence of more permanent settlements and field systems within the proposal site?

Background to Project Aim 2

The project has not provided firm evidence for agricultural intensification during the Middle Bronze Age period, but there are slight indications that, by the Late Bronze Age/Early Iron Age, settlements and fields had been established. The evidence for these activities was mainly derived from areas within the proposed Urban Village area, including pottery finds within Cavalry Barracks, the southern area of Roman Barracks (Area S), and a pit to the north of Roman Barracks (within Area Q). However, a ring gully and pit of the period within the southern area of the new garrison site (Area R) may suggest a further settlement site. This area is not subject to intrusive development. Further pits containing pottery of the period were identified within the eastern portion of Area M and the western extent of Area P. Such features within localised areas of the new garrison site suggest the presence of a minor Late Bronze Age/Early Iron Age unenclosed settlement attached to small-scale field systems. These archaeological remains are further evidence for the widespread and diverse forms of Late Bronze Age/Early Iron Age settlement known throughout south Essex (Brown & Murphy 1997, 18), particularly on gravel terraces.

The laying-out of extensive, long-lived field systems and settlements implies the concept of land ownership and is a characteristic of the later Bronze Age in southern and eastern England. Settlements of this period are regionally much more extensively known than those of the preceding Early-Middle Bronze Age (Brown 1996) and will provide the basis for comparisons with evidence from the new garrison site. These include striking circular ditched enclosures such as Mucking North Ring/South Ring and Springfield Lyons and other ditched

enclosures such as at Lofts Farm (Brown 1988), all potentially of relatively high status. More commonly found unenclosed sites comprise wide scatters of pits and post-holes such as at Moor Hall, Harlow (Robertson 1975) and North Shoebury (Wymer & Brown 1995). These usually occur on the lighter terrace gravels and brickearths but have now also been identified on the heavy clays such as the Boulder Clay of western Essex (eg Stansted), probably indicating high levels of competition for the more easily worked soils by this time. Further evidence for agricultural intensification at this time is derived from environmental studies and is particularly suggestive of the primary importance of pastoralism (Murphy 1996). Brown (1996, 33), with regard to priorities for future work in the period in Essex, notes that fieldwork in the county has concentrated on enclosed sites, and that the study of location and extensive controlled excavation of open settlements is required. Whilst the Late Bronze Age/Early Iron Age remains at the new garrison site appear to be very fragmentary, they may contribute to this priority.

Recent work by Yates (1999) on the Late Bronze Age/Early Iron Age evidence for the Thames Valley was mainly based on the results of extensive evaluations. Yates was able to suggest that zones of intensive field systems were associated with concentrations of votive metalwork in the adjacent River Thames. Associated major settlements potentially acted as redistribution centres involved in trade. These settlement areas were commonly abandoned in the Early Iron Age, potentially due to climatic deterioration, a situation mirrored at many other locations in southern and eastern England. It is interesting to note that the extensive evaluation at Colchester Garrison has produced relatively poor survival of Late Bronze Age/Early Iron Age field systems/settlement. It may be argued, based on this evidence, that this area was peripheral to the type of territory that Yates has suggested for the Thames region. It is possible that a major Late Bronze Age settlement site at Sheepen (*CAR* **11**, 131-6) was the dominant settlement in the region.

The latter end of the period under discussion coincides with the earliest site evidence from the excavations. The cremation burial F276 from the northern edge of Area 10 is considered to be an Early Iron Age feature. The Early Iron Age is the earliest period for which there is firm site evidence. The placing of the burial (assuming it is not simply the disposal of a body) may indicate a use of family (ie ancestors') burials to mark or lay claim to a piece of ground, in the hope that ancestral spirits might protect the land from misfortune, and define it as the property of one group. There is another Early Iron Age burial from Area 10 (F296), which is currently undated. The chronological subdivision between the Late Bronze/Early Iron Age and the Middle Iron Age sites at the Garrison is based on very limited artefact assemblages and should be regarded at tentative.

PROJECT AIM 3

What was the nature of the Middle Iron Age settlement within the area of the later oppidum, *and are there indications of landscape division and settlement which might allude to the origins of the communities responsible for the later construction of the* oppidum*?*

Background to Project Aim 3

Relatively few Middle Iron Age features were found during the course of the extensive trial-trenching exercise or in the subsequent excavations. Those features were generally representative of small-scale landscape divisions and consequently contained relatively low-grade inorganic fills. The exception was the relatively substantial enclosure ditch. The new location of a settlement at Area 2 might suggest modest landscape reorganisation. The site implies the presence of moderate to high-status Middle Iron Age settlements which pre-date the construction of the *oppidum*. The site complements existing knowledge of late prehistoric settlement forms, distribution and agricultural practices, but also give some insight into the relatively sparse occupation of the pre-*oppidum* landscape.

Middle Iron Age field systems are rarely studied in detail in Essex, a factor highlighted by a lack of focus upon landscape features of the period in the *The archaeology of Essex – proceedings of the Writtle Conference* (Sealey 1996, in Bedwin 1996) and *Research and archaeology: a framework for the Eastern Counties* (Glazebrook 1997). The scope of the new garrison site excavations were intended to specifically address the issues of landscape form and change and were designed to complement recent wide area excavations at Stansted and Heathrow airports. At these sites, the landscape-scale approach has produced invaluable data regarding the development of the landscape from the Neolithic to the present day.

However, no clear evidence for Middle Iron Age field boundaries has been forthcoming here, although manuring evidence, particularly in Area 6, suggests that the area was subject to arable exploitation.

Sealey (in Bedwin 1996, 50) notes that at least 175 round-houses are known from Essex (110 of which were found in at Mucking), and, although not all are of Middle Iron Age date, there appears to have been a substantial population growth at this time. The majority of settlements of the period are likely to have been no more than hamlet-sized, as at Wendens Ambo in Essex (Hodder 1982, 4-10, 24-9, 64; Halstead 1982, 61-2; Halstead *et al* 1978; Halstead *et al* 1982), Asheldham Camp (Bedwin 1991) and the defended site at the Airport Catering Site (ACS) at Stansted (Brooks 1987, 45-6; Brooks 1989a; Brooks 1989b, 6-7; Brooks 1993, 47-50; Brooks & Bedwin 1989, 8-11; Brooks & Wall 1994, 22, fig 5.5). Larger 'village-sized' settlements have also been found such as period II Little Waltham (Drury 1978). The ACS Stansted site was occupied from *c* 75 BC to *c* 25 BC, the period immediately prior to and during the construction of the *oppidum*.

The sand-tempered pottery from the Area 2 enclosure and manuring spreads in Area 6 are typical of Middle Iron Age material in Essex (Drury 1978). At present, the pottery suggests a date around a century prior to the construction of the dykes of Camulodunum. The Area 2 enclosure ditch was relatively deep and as such its lower levels have been protected. It was, however, unfortunately, not possible to extract sufficient pollen from the samples for landscape reconstruction purposes.

At present, it is hard to place the start of Camulodunum much before *c* 25 BC, although the recent excavations of the Stanway and Abbotstone sites have produced some grounds for pushing this date back into the first half of the 1st century BC. The study of the earliest material within the Garrison site is of especial value in relation to the question of whether or not there had been a major regional focus in the Colchester area before the emergence of Camulodunum. There was certainly a major settlement in the Late Bronze Age at the Sheepen site (*CAR* **11**, 131-6), and there are many records of Deverel-Rimbury cremations in the area, suggesting significant Middle Bronze Age activity. But the gaps in the record are longer than the periods of major occupation, the Middle Iron Age being an important case in point. Of course, we should not expect continuity of settlement from the Neolithic onwards, but it may prove to be the case that the geographical location of Colchester is such that it always suited major settlement.

PROJECT AIMS 4 and 5

To elucidate the nature of spatial organisation within the oppidum*, establish how this relates to general agricultural settlement expansion at this time, and establish what inferences can be made from the distribution of coins.*

To clarify the form/function and duration of the trackways with respect to the oppidum *and to establish with which elements of the social landscape they connected.*

Background to Project aims 4 and 5

These two aims overlap and are considered together here. During the two centuries before the Claudian conquest, there were dramatic changes in south-eastern Britain, with the comparatively rapid enhancement of strong trading links with the adjacent Continent probably associated with the Romanisation of Gaul. The period saw the abandonment of hill forts and the establishment of lowland *oppida*, and the rise of so-called Belgic influence including the use of cremation rites and coinage, the introduction of the potter's wheel and the acquisition of exotic goods derived from the Mediterranean. The nature of the transition from the Late Iron Age period to the early Roman period has been allocated a high priority in recent years, indeed 'Briton into Roman *c* 300 BC-AD 200' was a major theme of *Exploring our past* (English Heritage 1991, 36). More recently, a series of priorities have been forwarded for the period in *Understanding the British Iron Age* (Haselgrove *et al* 2001, 28-31). These include the following general points:

- More precise chronologies are required to understand the rate, scale and cause of economic and social changes during the later Iron Age.
- The increased abundance of material on many later Iron Age sites needs quantification and explanation.
- The cause and consequences of settlement expansion in different parts of Britain after *c* 300 BC requires further research.

- Contemporary changes in the organisation, intensity and scale of agricultural and craft production require detailed local investigation and inter-regional comparison.
- New models need to be developed to explain the archaeological changes in southern and eastern England during the last two centuries of the period.

South-eastern Britain has been regarded as a core zone of major transition in the period from *c* 150 BC, including the emergence of *oppida* in the 1st century BC, as at Colchester. Territorial *oppida* are large sprawling riverine sites with extensive dyke defences over many hectares and are perceived to have been chieftains' strongholds with diverse functions, including the manufacturing and redistribution of goods (Cunliffe 1995). The scale of such defences (Camulodunum occupied some 31 square km) implies centralisation or coercive leadership. It has been suggested (eg Cunliffe 1995) that *oppida* were developed in direct response to Caesar's incursions of 55-54 BC as 'economic ports of trade'. It is of interest, with regard to the prominence of the *oppidum* of Camulodunum, that Caesar had established alliances with the Trinovantes. Cunliffe has suggested that these links could explain the re-orientation of trade from southern to eastern Britain around this time as the pro-Roman tribes of Britain were given a virtual monopoly of trade from Roman Gaul.

Haselgrove *et al* (2001, 30) note that the roles of territorial *oppidum* are still poorly understood. For example, how they related to the general trend of settlement expansion in the later Iron Age, what role they played in changes in the distribution, imagery and form of coinage, and how they related to the development of 'kingdoms' in the south-east.

Such questions have been hampered by a general lack of detailed archaeological investigation within *oppida*, although the Colchester *oppidum* offers some exceptions to this general rule with important work undertaken at the Sheepen and Gosbecks sites prior to the new garrison fieldwork. Excavations at the Sheepen site have produced evidence of trade with Gaul and metal-working evidence including the probable location of a mint, while, at Gosbecks, a probable religious complex has been identified. Gosbecks is likely to have been a particularly important focal centre. A further site at Lexden has produced a very wealthy burial indicative of the tribal aristocracy. The remains identified at the Garrison site offer comparative data from an area of the *oppidum* utilised for agricultural production. The results clearly show that this area was neither intensely occupied nor was a centre of trade or industry.

Coinage at Colchester reflects the significant change of political leadership as the Trinovantes were subjugated by the Catuvellauni before about AD 5-10. The vast majority of Iron Age coins are recovered by metal-detectorists from poorly-provenanced locations. The present investigation offered a rare opportunity to extract Late Iron Age coins from archaeological features within the *oppidum*. However, no Iron Age coins were recovered from the Stage 1 evaluation of the new garrison, despite intensive and extensive metal-detecting as a requirement of both the archaeological and munitions surveys or from the Stage 2 excavations. This negative evidence contributes to the understanding of zones of activity within the *oppidum* and reinforces the current agricultural interpretation of this area of the *oppidum*. The lack of Iron Age coins, particularly from Area 6, which was probably adjacent to Late Iron Age occupation, may therefore favour its interpretation as a relatively modest-status farm.

An aim of the project was to determine the extent to which the trackways within the garrison site belonged to one system and also to determine its period of evolution and use. These are particularly important issues, because the trackways within the Garrison site are almost certainly a small part of a much bigger network of trackways covering the whole of the *oppidum* and probably extending beyond its limits. The trackways at Gosbecks represent a focal point for this system, probably the main one since they converge there on a single large enclosure (the so-called 'farmstead enclosure'). Dating evidence for the trackways at Gosbecks is slim because of limited excavations, but work in 1995-6 (CAT Report 127, pp 46-8) did not provide evidence for use before the late Augustan period. The date of the field systems associated with the trackways also requires clarification.

Discussion

The spatial organisation of this area of the interior of the *oppidum* has been partially defined by the excavation of crucial components of the landscape, which demonstrate that the original layout of trackways and fields probably dates to the time when the *oppidum* was formed (*c* 25 BC). These trackways and field boundaries relate to the movement and control of stock, and

the partitioning of the landscape into discrete parcels of land which in turn probably relate to a variety of agricultural practices. The trackways are to be seen primarily as a means of moving animals within the farmscape and also to the richer river floodplain summer pastures beyond, but of course they also conveyed people from A to B. If the trackways were in use in the Late Iron Age, they are likely to have provided a route system between the principal settlement at Gosbecks and its outliers.

The excavations thus provided evidence for an organic pattern of double-ditched trackways within the excavation areas. The term 'organic' is used since the postulated Late Iron Age ditches of Area 2 are on a separate alignment to those of Area 6 and 10, whilst the early field pattern in Area 10 is at slight variance in terms of alignment with that of Area 6. However, only in Area 10 was there evidence for a more complex series of land divisions, although, even here, all of the phases could have been contemporary with the field-systems of Areas 2 and 6 at one time or another. It would be surprising if elements of the postulated Late Iron Age landscape in the three areas were not contemporary with the Catuvellaunian expansion and the reign of Cunobelin and his sons. However, it is just possible that the trackways came into use as a consequence of Roman rule at Colchester. This evidence is explored below; however, the evidence of very early Roman brooches in recut ditches suggests the strong likelihood of a Late Iron Age origin for at least some of the landscape features.

Landscapes

The Garrison project has provided evidence for two discernible landscape forms (Fig 42). The earlier form is termed here ‘landscape form 1’ and is represented by field ditches in several areas of the site and by two apparently associated Iron Age enclosures. The site of the Area 2 enclosure (described above) is 1.4km to the north-east of the ‘Musket Club enclosure’ and 700m to the north-east of the Kirkee McMunn Barracks (CAT Report 311). Although the Area 2 enclosure (dated to the Middle Iron Age) is ENE/WSW- and NNW/SSE-aligned and the Musket Club site enclosure (of less secure Middle Iron Age or Late Iron Age date) is E/W- and N/S-aligned, it is argued here that this slight variation simply reflects a gradual change in general landscape alignment from the southern area to the central eastern area of the new garrison area. Thus both enclosures and their coaxial landscape settings, are considered to represent elements of the same earlier landscape. Landscape form 1 is broadly coaxial but not rigidly gridded as far as can be discerned from the aerial photographs. Indeed, it may have developed in an organic or piecemeal fashion, reflecting local conditions and gradual forest clearance. ‘Landscape form 2’ is more rigidly laid out on NW/SE and NE/SW alignments in the area surrounding the Kirkee McMunn Barracks site, including excavation Area 6.

Landscape forms 1 and 2

The southernmost expression of an earlier E/W- and N/S-aligned landscape form 1 field pattern has been defined by aerial photographs in Area R (Fig 42). These probable field ditches were targeted by the 2002 trial-trenching of Area R. Ditches found during the evaluation apparently corresponded to the aerial photograph-defined linears and produced a few sherds of Iron Age pottery (probably Middle Iron Age, according to Paul Sealey). The field pattern was sliced through obliquely by the main eastern trackway (Track 4) which is now known to be early Roman in date, from the Area 10 excavation. Therefore, although the Iron Age dating evidence from the E/W- and N/S-aligned landscape is slight, its dating is consistent with the main eastern trackway, in existence in the Roman period, slicing through it. The trackway/droveway running NE/SW to the immediate east of the Kirkee McMunn Barracks Roman farmstead is here termed the 'main western trackway' for convenience (Fig 42). Both the main eastern and main western trackways are attributed to landscape form 2 (see below).

An Iron Age date for an earlier E/W- and N/S-aligned landscape in the central and southern areas of the Garrison is also implied by the Musket Club site enclosure (Fig 42). The site had been previously identified as a square cropmark enclosure, with an intriguing central feature possibly representing a burial chamber pit. By analogy with the Late Iron Age mortuary enclosures at the Stanway site, the Musket Club site enclosure probably also dates to the Late Iron Age period (P Crummy, pers comm). Excavation of part of the northern (E/W-orientated) enclosure ditch and adjacent interior in February 2005 has provided scraps of pottery of Iron Age date but no Roman material, implying an Iron Age date. The investigation of the Musket Club site has been reported on separately (CAT Report 311), but, at the

present time, there is no evidence to suggest that this was a settlement rather than a ritual enclosure or that it was Roman rather than IA in date. The enclosure appears to be associated with a cropmark-defined N/S-aligned trackway and parallel field boundary to the east, and a right-angled E/W-orientated boundary connecting the N/S elements. All these elements are probably attributable to landscape form 1. The remainder of the cropmark-defined linears in this area to the south of excavation Area 6 are now a built-over area, but are certainly attributable to a continuation of the NW/SE- and NE/SW-aligned landscape form 2 southwards from the Kirkee McMunn Barracks farmstead and Area 6. Indeed, the main western trackway clearly extends its line south-west of the segment defined to the east and north-east of the Kirkee McMunn Barracks site, for a further 300m to the south-west to a connection with a right-angled trackway/droveway running parallel (NW/SE) to (south of) the main trackway excavated within Area 6. This wide double-ditched southern trackway forms the southernmost observable element of this cropmark group. There are two apparent enclosures associated with the main western trackway to the north-east of the Musket Club site. Both are certainly elements of landscape form 2 and could represent stock-holding areas or possibly further settlement sites. A cropmark group connecting to the south side of the wide southern trackway comprises a large ?field with a sub-area within containing detailed small divisions, possibly for horticultural use.

The third area with two separate overlapping landscape alignments was partly defined by the watching brief conducted in the south-east area of the Kirkee McMunn Barracks site (Shimmin 1998) and more extensively by the present new garrison Stage 1 and Stage 2 archaeological investigations. Here the buried archaeological landscape (again mainly defined by cropmarks) is dominated by landscape form 2 with its rigid NW/SE- and NE/SW-aligned trackways and single ditches. However, although less conspicuous here, elements of landscape form 1 can be identified. During the watching brief in Kirkee McMunn Barracks, two nearly E/W- (ENE/WSW-) aligned ditches were located. Although these are ceramically dated to the post-conquest period, they do contain earlier sherds. This suggests an earlier (Iron Age) origin, and possible final filling or recutting in the early Roman period (Fig 42). Similarly three undated NNW/SSE-aligned ditches, located via the evaluation-trenching approximately 200m to the east of the Kirkee McMunn Barracks site, may be coaxial elements of this Iron Age landscape (landscape form 1). During the watching brief at Kirkee McMunn Barracks, elements of later enclosure ditches were also defined, containing Roman pottery and tile and forming the farmyard of the known Roman farmstead (defined by its hypocaust pit). These later ditches were in accordance with the landscape form 2 ditches of Area 6 and the surrounding contemporary landscape defined by cropmarks and sampled in 2002 by evaluation (CAT Report 203). As noted above, this landscape may have a Late Iron Age origin but went out of use in the Roman period. The 15m-wide main western trackway was dated to the Roman period (in its final use) via several 2002 evaluation trenches across its line and it appears to have been a relatively major routeway of landscape form 2 (see further discussion below).

In Area 10, the landscape reorganisation (landscape form 2) is represented by imposition of the main eastern trackway (Track 4) and a rearrangement of the connections of trackways leading to it. As described in this report, the trackway sliced through earlier ditched field and trackway elements. The earlier (Iron Age) suggested form is shown by Figure 31. The southern and western ditches of Field 2 on the figure are E/W- and N/S-aligned in common with landscape form 1 ditches (described above) to the west and south-west. However, ditches defining the northern boundary of Field 2 and Track 2 are NE/SW-aligned respectively, and neither is in keeping with the general alignments of landscape forms 1 or 2 to the west and south-west. Area 10 thus appears to mark a connection between two slightly divergent landscape orientations of the same date.

This point is further clarified by excavation Area 2, where the Middle Iron Age enclosure, with its ENE/WSW- and NNW/SSE-aligned sides and its ENE-aligned hollow way running from its eastern side, demonstrates the early orientation. Also conforming to the alignment is the later trackway which cut through the defunct enclosure on a NNW/SSE alignment. Elements of this trackway can be followed (as a single ditch) for a further approximate 500m in a SSE direction through Area Q and approximately 200m further in a NNW direction through Area YPR. Although the trackway ditch contains early-mid Roman pottery, it does not diverge from the landscape form 1 represented by the Iron Age enclosure. Thus, in the central-eastern area of the new garrison site, there is continuity of landscape alignment from the Middle Iron Age to the Roman period. When changes were happening close to the Kirkee

McMunn Barracks farmstead, this area seems to have been unaffected, other than by intensification of occupation, perhaps.

Clearly the key element which confuses simple explanations of patterns of landscape change at the new garrison central area is that landscape form 1 (comprising broadly E/W- and N/S-aligned ditches around the Kirkee McMunn Barracks site and to the south and east of the Kirkee McMunn Barracks site) is rotated slightly, through around 25 degrees, as one progresses north-east of the farmstead site. Nevertheless, this landscape form or alignment, which had originated at least by the Middle Iron Age, appears to have survived differentially into the Roman period, with elements of its alignments continuing to be used in Area 10 whilst in Area 2 and its surrounds there were apparently no major changes. Why, then, are there overlapping field systems in areas close to the farmstead at the Kirkee McMunn Barracks site? The final interpretation must be that there was a local realignment of the Iron Age landscape, represented by landscape form 2, based on a presumably new farmstead at the Kirkee McMunn Barracks site. It is possible that this occurred in the latest Iron Age, thus just before or within the reign of Cunobelin or his heir, since, as noted above, a cremation of *c* 5 AD was apparently placed next to a ditch of landscape form 2 in Area 6. Alternatively, the Late Iron Age burial could be coincidental and landscape form 2 could be purely Roman, and represent a change following the Claudian invasion.

PROJECT AIM 8

To clarify the date, form and function of the coaxial field system, to establish the nature of its development within the oppidum *and/or the Roman town's hinterland, and to establish the evidence for association with the probable farmstead at the Kirkee McMunn Barracks site.*

Introduction

The excavations have good potential to address this aim. The coaxial field system has been shown to be of Late Iron Age or earliest Roman creation, possibly contemporary with the creation of the *oppidum*, or certainly with its subsequent use. The farmstead at the Kirkee McMunn Barracks site may also have had pre-Roman origins, but was clearly part of the *oppidum* field layout and its later (Roman) developments.

Background

The Roman conquest of Britain by Claudius inevitably had a significant effect on the settlement pattern of Britain, and it is unlikely to be coincidental that a large number of Late Iron Age sites were abandoned at around this time. This need not always have been as a result of land confiscation or conflict, as relocation of sites may equally have been stimulated by a need to move to suitable locations to take advantage of the new Roman roads/market centres. Despite this apparent disruption, in many cases there appears to have been continuity of occupation at sites from before to well after the invasion. It is clear from historical sources that some land was indeed confiscated from the Iron Age inhabitants of Camulodunum and its surrounding farmlands, for re-allocation to citizens of Rome. The following questions may be contributed to by the proposal site, and responses are provided.

What was the immediate and longer-term effect of the establishment of the Roman fortress and subsequently of the *colonia* on the infrastructure of the Iron Age *oppidum*?

Woodland clearance here on a large scale is also conceivable. A study of the fortress at Inchtuthil (P Crummy pers comm; Shirley 2000) has emphasised the very large quantities of timber and wood of various sorts needed to construct fortresses such as the one built at Colchester in the AD 40s. The subsequent building of the Roman town at Colchester would also have placed similar great pressure on the woodlands in north-east Essex, and again when it was rebuilt following the Boudican fire of AD 60/1. It would thus not be surprising to find a marked reduction in woodland within the *oppidum c* AD 43-70. What evidence is there for woodland clearance at the new garrison site during this period? A large number of tree-throw holes at the sites could represent Late Iron Age and Roman clearance, but these cannot be closely dated and could equally belong to earlier and/or later periods.

What effect did the establishment of the legionary fortress of Legio XX have on lands within the *oppidum*, and is there any evidence to support the notion that the

agricultural land within the proposal site was used to supply the military garrison with produce?

Legio XX withdrew from Colchester to campaign to the west in AD 48, following which the colony town (Colonia Victricensis) was established. In response to the devastating effect on the early colony during the Boudican revolt of AD 60/1, 43 hectares were walled during the period AD 65-80. One of the causes of revolt was the confiscation of native lands, and it is probable that some colonists resided in farmsteads outside the walled town. A single probable farmstead is currently known from the proposal site (located at Kirkee McMunn Barracks). Although the backfilling of the hypocaust appears at present to date to the 2nd and 3rd centuries, there is evidence for an earlier foundation to the farmstead site given the evaluation and excavation findings of Roman tile from early Roman ditches adjacent to the site.

Was there continuity of occupation of settlements within the proposal site from the Late Iron Age to the early Roman period? Who owned the Roman farmstead at the Kirkee McMunn Barracks site, and is there evidence for land confiscation or centuriation for colonists?

Roman colony towns such as Colchester had jurisdiction over surrounding farmlands as their *territorium.* Such lands provided the new colonists with their own farmland. Philip Crummy (1997, 54) notes that '…*the creation of the colony at Camulodunum involved the settlement of the surrounding countryside on a large scale. Indeed urban and rural settlement would have been so intertwined that it would be wrong to underestimate the scale and importance of land acquisition in the colonisation process. Sometimes the land for the* territorium *was bought but this was not necessary when the foundation was on conquered land. At Camulodunum, the royal estates of the Catuvellaunian land-holdings would have been available for distribution amongst the veteran soldiers...*'

Normally, following the siting of a colony town, a commission was instigated to (amongst other responsibilities) set out the boundaries of the town's *territorium* and allocate land within it to the settlers (Crummy 1997, 54). Normally the land areas would be divided up anew on a gridded system known as centuriation. Ivan Margary (1965, 205) stated that '...*it was customary in Roman times to establish state land settlement areas, often for time-expired soldiers or other settlers, which were laid out as a series of rectangles or squares…*'

Margary acknowledged that there was no clear evidence for centuriation at Colchester but implied that centuriation had been applied elsewhere in Britain (Margary 1940). He argued that a remarkable gridded landscape at Ripe in East Sussex was '*ager publicus*' (state land) in the Roman period since its co-axial lanes and field boundaries appeared to him to have been centuriated. His claims were based on the application of '*actus*' (120 Roman feet/ 35.39m) multiples. 20 x 20 *actus* (*centuria*) squares (708 x 708m) were the normal large units within such centuriated areas. The *centuria* comprised 200 *jugera* (1 x 2 *actus* rectangles), which was the area it was considered could be ploughed by one man and his team of oxen in a day. It should be noted that there was a distinction between square and rectangular forms of centuriation, with squares usually allocated to soldiers following conquests and which were tax-free, with rectangles usually representing state-owned land leased to tenants. Margary (1965, 206) argued that the complex pattern of minor roads or '*limites*' at Ripe represents an experiment on a small scale for the latter, representing an unspecified colony. Hence he believed that the precedent had been set for such wholly Roman intrusions into the pre-existing landscape of southern Britain. Dilke, in his book *The Roman land surveyors* (Dilke 1971), also confirmed the lack of clear evidence of centuriation in the Colchester area. He was also less convinced than Margary about the Ripe landscape, and therefore the precedent for centuriation in Britain, stating that '...*it does not look very much like any of the centuriated patterns found in Italy or North Africa, and may not deserve the name. It does, however, look very much like a land assignation made in multiples of* actus *by someone with at least a vague notion of Roman surveying*...' (Dilke 1971, 195). Dilke (1971, 178) further stated that the lack of a known colony weakened the case at Ripe, the colonies in Britain being at Colchester, Lincoln, Gloucester and York where he would expect to find true centuriation. During fieldwork more recently conducted by this author (RM) at Ripe, several Roman farmstead sites (including a Roman villa) were located, to add to the previously known site. These sites correspond to crossroads locations within the existing Ripe road grid and, therefore, suggest that the 2000-acre plus area of landscape was indeed in use during the period concerned (Masefield 1993). Thus the idea of using standard Roman *actus* measures for the laying out of certain villa estates by private landlords, without necessarily implying land

confiscation, cannot be ruled out (Masefield 1993, 54-5). It was stated that '...*the field-system does not seem to represent a Roman colony – but rather an adoption and adaptation of Roman surveying techniques for a privately owned estate...*' (Masefield 1993, 57).

The problems associated with the notion of detecting elusive signs of centuriation at Colchester are summed up by Philip Crummy (1997, 55): '...*There has been a great deal of archaeological research in and around the Roman town (because of redevelopment pressures), but there has been little opportunity for much work in the surrounding countryside. Consequently there is very little hard evidence about the scale and nature of land colonisation around the town, and indeed there is a question of whether the land was centuriated at all. Tacitus tells us that that the process of land acquisition in Colchester was not all it should have been. "The settlers drove the Trinobantes from their homes and land, and called them prisoners and slaves. The troops encouraged the settlers' outrages, since their own way of behaving was the same and they looked forward to similar licence for themselves"...*'

Such displacement must have gone on in the areas close to the town, although the territory would have extended for miles beyond it. The point is that it would only be possible to identify such areas on the basis of the presence of centuriation. Therefore, the question of whether there is any evidence for centuriation representing Roman land confiscation at the new garrison site must be addressed. The large-scale landscape investigation of the new garrison has offered the ideal opportunity to establish whether this (now securely dated) Roman landscape has any of the attributes of centuriation and therefore whether land confiscation is demonstrable here.

For the purpose of this discussion, a 20 x 20 *actus* block was superimposed on a plan of the landscape. This arbitrary block was placed to create a 'best fit' with the Roman landscape. Interestingly there is a fairly good fit, on three sides, with the square. Its western side is defined by the main western trackway to the immediate west of and associated with the Kirkee McMunn Barracks farmstead, its eastern side by a straight section of the main eastern trackway excavated within Area 10 (which appears to connect to the Roman town via the line of Mersea Road to the Roman town's south-east gate), and its southern side by the main trackway identified within Area 6. The distance between the eastern and western sides, at their connection with the southern side, is 715m, which is remarkably similar to the standard 708m (or 705-710m as quoted by Margary in Margary 1940) sides of 20 x 20 *actus* centuriated blocks. However, there is a serious problem, as, unlike the lane and field grid at Ripe, the regularity does not appear to hold good when examined in detail, particularly in the northern area of the square. Firstly, the NW/SE-orientated main trackway in Area 6 is slightly bowed northwards of its required line within Area G to the east of Area 6. Secondly, both of the trackways defining the eastern and western sides of the square curve slightly into the interior of the square as they progress northwards, and therefore the grid is not strictly square as would be expected of centuriation. Thirdly, there is no alignment of ditches or trackways for the northern side; to the contrary, the early Roman trackway within Area 2 (crossed by the northern side of the projected square) follows a NW/SE-orientation at clear variance with the southern side of the grid.

In addition, the detail of Area 6 and its surrounding landscape, defined by trial-trenching and aerial photography, provides smaller-scale problems with the application of *actus* measures, although there is some interesting ambiguity. In Area 6, Field 1 was 55m in width from east to west (1.55 *actus*) by 65m north to south (1.84 *actus*); thus there is no correspondence with the *actus* scale. Even when the full width of the trackways flanking the western and northern sides of the field are included in the calculation, there is no firm correspondence, although the north-south length is very close to 2 *actus* (63m E/W = 1.78 *actus*, 70m N/S = 1.98 *actus*). Similarly, the distance between the trackway used for the western edge of the notional 20 x 20 *actus* square, and the next parallel trackway to the east which separated Field 2 from Fields 4 and 5 in Area 6, is ambiguous. If the internal length of Field 2 is measured, between the main western trackway (at its connection point with the southern trackway) and the ditch F61 forming the field's eastern edge, it is 138m (3.90 *actus*). The measurement from the outside ditch of the main western trackway to the outside ditch of the trackway between Fields 2 and 5 (ditch F70) is 150m (4.24 *actus*). A much closer correspondence can be achieved, however, by measuring the distance from the centre of the main western trackway to the centre of the trackway between Fields 2 and 5 (143m = 4.04 *actus*).

Also within Area 6, it is of interest that the distance between Field 4's northern and southern boundaries is approximately one *actus* (approx 35m) at the western end of the field.

However, once again, there is a problem with consistency, as the ditches concerned do not remain strictly parallel as the field continues east. It should be noted that we do not know the length of Field 4, although, if the landscape was centuriated, a field of this width might be expected to have been a '*jugerum*'. A *jugerum* was a plot of land which was one *actus* in width (35.39m) and two *actus* in length (70.78m).

It is interesting to note the dimensions between the partly defined Roman ditches at the Kirkee McMunn Barracks site, close to and flanking the site of the farmstead hypocuast. For example, there is just over an *actus* width (38m-40m) between the two parallel (NW/SE-orientated) ditches to the north-west of the farmstead site. Although we do not have the precise location of the northern side of this plot, aerial photographs suggest that there was a trackway running west of and linked at right angles to the trackway on the western side of the notional 20 x 20 *actus* block. If so, the length of the plot would have been approximately 70m, to connect this alignment from the recorded southern ditch of the plot (very similar to a *jugerum* equalling 70.78m). The ditch-defined compound to the immediate east, within which the farmstead itself is situated (defined on its east side by the trackway on the west side of the notional 20 x 20 *actus* block), also measures 70m in length, SW to NE, and appears to be 60m wide, SE to NW. This would be 1.98 *actus* in length (close in size to a *jugerum*), but only 1.70 *actus* in width, which is anomalous with the *actus* scale.

In summary, although there are some apparent correspondences with the centuriation measures, critically there are probably too many non-reconcilable discrepancies. The superimposed grid is simply not adhered to with sufficient precision to suggest that it had been laid out using a Roman *groma* surveying instrument (used to lay out centuriation, roads and town street grids). Roman surveyors would not have been this imprecise. The meandering of certain lanes at Ripe was explained by Margary (1940) as the warpings of time from the Roman period to the present day. However, the irregularities of the buried Roman landscape at the new garrison cannot be explained away so conveniently, since these ditches had silted before or during the 3rd century AD. In addition, there are problems of chronology. The main eastern trackway within Area 10 was apparently purely Roman in origin but it cut through an earlier landscape which included mid-late 1st-century elements. Therefore this route appears to date to slightly later than the earliest Roman period (the mid 1st century), when one would expect land confiscation to have been undertaken. Similarly, the suggestion has been made in this report that elements of the Area 6 landscape were in fact of latest Iron Age date (above, p 14).

Having said this, the existence of two late Iron Age ditches (containing Sheepen-style pottery) at the Kirkee McMunn Barracks site presents a potential problem to the Late Iron Age origin of the probably recut Roman landscape of Area 6 and the Kirkee McMunn Barracks site. The Late Iron Age ditches at Kirkee McMunn Barracks were orientated almost east-west rather than NE/SW and NW/SE, the alignment of the later landscape defined in the excavation area. This prompts the question as to whether the Area 6 NE/SW- and NW/SE-orientated landscape represents a very late Late Iron Age landscape, or, despite the Late Iron Age cremation next to one of its ditches, actually dates in origin to the earliest Roman period. The pottery dating is insufficiently close to resolve the problem. This is because the 'Belgic-style' pottery found 'residually' within the Area 6 ditches was still in use in the earliest Roman period and, in any case, could have derived from adjacent ploughsoil associated with earlier settlement prior to accumulating in the ditches. Because of this, the landscape at Area 6 can be less confidently attributed in origin to the Late Iron Age than the earlier ditches of Area 10 (which were recut by ditches containing very early Roman brooches). If the ditches of Area 6 were of earliest Roman date, it might explain why, within Area 10, only the main eastern trackway (the eastern side of the notional 20 x 20 *actus* square) is strictly coaxial with the Area 6 ditches. One could argue that this leaves open the possibility that the landscape around the Kikee McMunn Barracks site was confiscated by the Roman authorities prior to the Boudican revolt of AD 60/1 and a new grid was laid out for use by colonists.

An obvious problem with this interpretation is that the non-conforming ditches (to the notional 20 x 20 *actus* square) of both Area 2 and Area 10 contained early Roman pottery and brooches and therefore would have formed elements of the landscape at precisely the time (mid 1st century) that the land confiscation would have taken place. Therefore, although these non-conforming ditches are almost certainly contemporary with the earliest Roman use of the Area 6 ditches, they are slightly differently aligned and thus show that use of strict field grids was less important than would be expected of centuriation. This, of course, does not mean that elements of a Late Iron Age roughly coaxial landscape could not have been confiscated

and allocated to colonists. These field systems could then have been adapted to suit the needs of the colonists, as shown by the development of the field systems of Areas 6 and 10, to be used in much the same way as centuriated land. Therefore the imposition of centuriation may not have been required where well-structured landscapes offered an adequate pre-existing starting point for the colonists. Areas close to the Kirkee McMunn Barracks farmstead were apparently laid out in a rigid manner, possibly in some accordance with Roman measurements, with more marginal land to the settlement being perhaps less structured and relying on pre-existing, non-modified Late Iron Age lanes and fields.

The idea of centuriation can therefore be discounted, but is the area a rather sloppy example of 'land-grab' following some of its principles? When all is said and done, the archaeological evidence for land confiscation versus continuing farming by the pre-Roman inhabitants is impossibly slight. On the one hand, there are possible associations with Roman land measurements. Indeed the earliest Roman military brooch (AD 40-60) from a field ditch in Area 10 could have been dropped or deliberately deposited by a veteran now working colonised land (although this could have been traded and left by a Briton). On the other hand, the Roman grid is too inconsistent to represent true centuriation and could instead represent another example (possibly like Ripe) where an estate was laid out by someone with a vague notion of Roman land-surveying, but here adapting elements of the native landscape. In addition, does the existence of a possible late Iron Age settlement at the Kirkee McMunn Barracks site, prior to the Roman farmstead, not suggest that the existing landlords continued to farm after the invasion? The response to this question could be to ask, alternatively, whether a colonist simply set up his farm close to the previous, now displaced owners (it should be noted that the nature and exact location of the Late Iron Age farm is unknown, its existence being assumed by the presence of Late Iron Age ditches containing Sheepen-type pottery of *c* AD 5). The absence of centuriation may be consistent with colonists simply taking over existing farms and their landscapes. This would explain the degree of anger cited by Tacitus as a contributing factor to the Boudican revolt of AD 60/1 (Crummy 1997, 55). However, Crummy (*ibid*, 55) has also noted that in other areas of the *oppidum*, there is some evidence for tolerant treatment of some of the native inhabitants. For example, at Gosbecks, the high-status farm continued in use through much of the Roman period and was apparently not confiscated for Roman villa-style settlement. The use of Romanised architecture at the Kirkee McMunn Barracks farmstead, however, makes this site rather more difficult to interpret. Archaeology can only provide so much information, and this issue must unfortunately remain unresolved by the present work.

Does the lack of field/trackway ditch use, and apparent abandonment of farms following the 3rd century AD, imply that the landscape reverted to woodland, and, if so, why did this abandonment and lack of farm management occur?

It is perhaps instructive to consider the wider political and historical picture when considering the apparent abandonment of farmsteads around Colchester during the 3rd century AD, ie at the Kirkee McMunn Barracks site (and its associated landscape), the Abbotstone site (CAT Report 312 in prep), the Stanway site (Crummy *et al* in prep), and Area E of the Urban Village project (CAT Report 274). To begin with, there was a series of Roman civil wars, which must have led to instability in the towns and surrounding countryside areas. The formation of the Gallic Empire in AD 259/60 led to at least one major revolt in Britain in AD 277/9. This was quashed by the governor of Britain using German ‘barbarian’ troops (Burgundians and Vandals) who had been stationed in Britain shortly beforehand (Crummy 1997, 113). The infamous Carausius fled to Britain in AD 286-87 and established himself as emperor here. He was defeated by Constantius at Boulogne in AD 293 but escaped, only to be assassinated by Allectus in AD 296. Allectus then succumbed to a re-invasion of Romans under Constantius, bringing Britain back within the Roman Empire. The late 3rd century also brought with it the serious threat of raiding by seafaring Saxons, Franks and Irish. This raiding appears to have been especially aggressive between AD 268 and 283, and particularly so along the eastern and southern coasts (Crummy 1997, 114). Colchester and its surrounding farmlands were naturally a prime target to looters. The seriousness of the threat is amply demonstrated by the construction of the ‘Saxon shore' forts which included forts at Walton (near Felixstowe) and Bradwell (Othona) which date to around AD 270 and were built to defend the region. The mouths of the Rivers Colne and Blackwater (and therefore Colchester itself) were guarded by the fort at Bradwell. Philip Crummy has noted that, during the late 3rd century, and therefore probably directly associated with at least some of these events, a number of archaeological

indicators of anxiety have been recorded at Colchester (*op cit*, 114-15). These include the deposition of a number of coin hoards in the area, the widening of the town ditch *c* AD 275, and the closing of the major western entrance to the town at the Balkerne Gate by cutting the town ditch across it, in *c* AD 300. The latter modification appears to have been due to the non-defensibility of the Balkerne Gate's structure. Philip Crummy regards these events as being bound up with the decline of the suburbs around the town at around this time when, for example, the suburbs at Balkerne Lane and Middleborough were abandoned. The suggestion is therefore that those living in the suburbs had moved inside the town walls for safety.

It is this context of uncertainty which probably also led to the abandonment of the surrounding farms listed above. Although the dating of the last use the Roman ditches at the new garrison site is only approximate, there are sufficient 3rd-century pot sherds to show use into the 3rd century, but no 4th-century pottery finds at all. Therefore, it is clear that the ditches ceased to be maintained before the 4th century. Similar evidence of abandonment is found at the farmstead at the Kirkee McMunn Barracks site (Shimmin 1998), the probable farmstead recorded during the Urban Village evaluations (demolition layer and compound ditch finds: CAT Report 274), the recently-excavated farmstead at the Abbotstone site (CAT Report 312 in prep), and the farmstead at the Stanway site (Crummy *et al* in prep). These recently investigated sites, taken collectively, can now be used to demonstrate widespread depopulation of the landscape around Colchester in the 3rd century. The land around the town may still have been farmed, however, even if the maintenance was poor, but those living around the town probably moved into the town for greater safety.

The linking of Roman town and country

Figure 42 shows a possible interpretation of the continuation northwards of the main eastern trackway (Track 4) towards the Roman town via the line of the modern Mersea Road, which is presumably Roman in origin and leads to the site of the town's Roman south-east gate. It also shows a possible extension of the main western trackway from the farmstead site at Kirkee McMunn Barracks to a possible link with a recently-discovered wide trackway identified during recent excavations for Taylor Woodrow for the Urban Village at Area J1 (the former Cavalry Barracks) close to the town. The juxtaposition of the two conjectural routes is of interest here, since they appear to respect one another in terms of alignment and have corresponding links to the western and south-eastern gates of the Roman town.

The main western trackway appears to originate (or is traceable to) the south-west of the Roman farmstead at the Kirkee McMunn Barracks site in the area of the Musket Club site enclosure (Fig 42). The 15m-width of the trackway to the north-east of the Kirkee McMunn Barracks site suggests that this was a major trackway. It is considerably wider than the main eastern trackway encountered within Area 10 (although this route widens to the south-west) and the main trackway within Area 6. This author (RM) is of the opinion that a 20m-width route curving southwards within Area J1 (Urban Village) primarily functioned as a trackway linking the Roman road network to the north-west of Area J1, and, given its southwards projection, it potentially connected further to the south with the similarly wide main western trackway. Even if the two routes are not one and the same (as is suggested on Figs 1 and 42), it seems inevitable that these contemporary Roman trackways (the large Area J1 ditches also date from the 1st-2nd century) linked up with one another by some means. Indeed, a major function of the main western trackway must have been to receive/deliver stock to the town and/or beyond. Although the precise route of the Area J1 trackway southwards is conjectural, including its suggested link with the main western trackway, evaluation-defined ditch segments in the area between may have been associated with the route. To begin with, it is highly likely that an undated ditch running NNE/SSW in the northern area of Area C (within evaluation trench C11) marks one side of a north-eastern continuation of the trackway (Figs 4 and 42). The evidence from Area YPR to the north is perhaps significant, since it is in this area that the route may have been re-orientated northwards. An undated ditch in trench YPR 5 may represent this kink north.

In favour of the two routes being one and the same is the finding that the very large paired ditches in the north-west area of Area J1 significantly decreased in size as they headed south and away from the town hinterland (with its cemeteries and circus) and into the countryside. Thus the smaller size of the ditches of the main western trackway can be explained by the corresponding degrees of effort applied to their cutting in areas within the cemeteries/close to the circus, and areas in the open countryside. On figure 2.32 of *CAR* **11** ('the development of the road system; early Roman': p 57), the plan shows Roman Road 1 to London connecting,

at a junction 0.6km to the south-west of the Roman town, with a short stretch heading north-west towards the Sheepen site, with Roman Road 5 to Gosbecks and with Roman Road 4 to Balkerne Gate. It is evident from figure 6.1 of the same publication (showing all relevant sites and cropmarks around Colchester) that if the wide metalled trackway in Area J1 is projected for 500m to the north-west it would, in theory, have connected at or close to this junction of roads. This makes some sense since the wide trackway was presumably used as a major droveway through the central-eastern area of Camulodunum, requiring a link to the main road network.

If we now compare the known curvilinear alignment of the main eastern trackway – itself dating to the early-mid Roman period, with the main western trackway's conjectural link to Area J1 – we can infer that the two routes were equidistantly spaced 600-700m apart, running from the central/south-eastern area of the new garrison to within 500m of the Roman town. This parallel curvilinear arrangement of major country lanes is an attractive one, especially when viewed in the context of the similarly orientated Roman road to Gosbecks from the Balkerne Gate and, indeed, the dyke system defining the western area of Camulodunum. Together these linear features provide a basic framework for the *oppidum* area. The new garrison site trackways would have provided a routeway infrastructure to service agricultural requirements and commerce between the farms and the town. Indeed, the two zones must be seen as inextricably linked elements of the local economy.

PROJECT AIM 9

What was the nature of Saxon and medieval landscape within the development site, and what was the relationship of the landscape to Saxon and medieval Colchester?

A single ditch (F12) in Area 2 is dated to the post-Roman period due to its stratigraphical relationship with the Roman period ditch F11. Its continuation F10 contained a single sherd dated to the medieval or the post-medieval period. This shows that one area of the new garrison site was subdivided by ditched fields in the medieval or post-medieval period. Insufficient data was collected by the excavation to warrant a detailed discussion.

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Abbreviations and references

Abbreviations

BA Bronze Age
CBC Colchester Borough Council
CM Colchester Museums
EIA Early Iron Age
Fe iron
LIA Late Iron Age
MIA Middle Iron Age
residual found in a later context (eg a Roman coin in a Victorian pit)
RRCSAL Report of the Research Committee of the Society of Antiquaries
U/S unstratified

References

Ashbee, P, 1970 *The earthen long barrow in Britain*, CUP

Barrett, J C, 1980 'The pottery of the later Bronze Age in lowland England', *Proc Prehist Soc*, **46**, 297-319

Barrett, J C, & Bond, D, 1988 'The pottery', in *Excavation at the North Ring, Mucking, Essex: a Late Bronze Age enclosure*, by D Bond, East Anglian Archaeology, **43**, 25-37

Bedwin, O R, 1991 'Asheldham Camp – an early Iron Age hill fort: the 1985 excavations', *Essex Archaeology and History*, **22**, 13-37

Bedwin, O R (ed), 1996 *The archaeology of Essex: proceedings of the Writtle Conference*, Essex County Council Planning Department, Chelmsford

Bowden, M, Ford, S, & Mees, G, 1993 'The date of the ancient fields on the Berkshire downs', *Berkshire Archaeol J*, **74** for 1991-93, 109-133

Bradley, R J, Lobbs, S, Richards, J, & Robinson, M, 1980 'Two late Bronze Age settlements on the Kennet gravels: excavations at Aldermaston Wharf and Knight's Farm, Burghfield, Berkshire', *Proc Prehist Soc*, **46**, 217-95

Brooks, H, 1987 'The Stansted project: a report on the first year's work', *Essex Journal*, **22**, 43-6

Brooks, H, 1989a 'The Stansted temple'*, Current Archaeology*, **10**, 322-5

Brooks, H, 1989b 'The Stansted project: a report on the second and third years' work', *Essex Journal*, **24**, 6-10

Brooks, H, 1993 'Fieldwalking and excavation at Stansted Airport', in *Flatlands and wetlands: current themes in East Anglian archaeology*, ed by J P Gardiner, East Anglian Archaeology, **50**, 40-57

Brooks, H, 2002 'A British farm under the Romans', 4-6, in *The Colchester archaeologist*, **15**

Brooks, H, & Bedwin, O R, 1989 *Archaeology at the airport: the Stansted archaeological project 1985-89*, Essex County Council Planning Department, Chelmsford

Brooks, H, & Wall, W, 1994 'The Stansted project: bashing the boulder clay in north-west Essex', in *Looking at the land: archaeological landscapes in Eastern England: recent work and future directions*, ed by M Parker-Pearson and R T Schadla-Hall, 20-23

Brown, N R, 1988 'A late Bronze Age enclosure at Lofts Farm, Essex', *Proc Prehist Soc*, **54**, 249-302

Brown, N R, 1991 'Prehistoric pottery', in 'Asheldam Camp – an early Iron Age hill fort: the 1985 excavations', by O R Bedwin, *Essex Archaeology and History*, **22**, 27-8

Brown, N R, 1995 'Later Bronze Age and early to middle Iron Age pottery', in *North Shoebury: settlement and economy in south-east Essex 1500 BC-AD 1500*, by J J Wymer and N R Brown, East Anglian Archaeology, **75**, 77-88

Brown, N R, 1996 'The archaeology of Essex *c* 1500-500 BC', 26-37, in Bedwin 1996

Brown, N R, 1998 'Prehistoric pottery', in *Archaeology and the landscape in the Lower Blackwater Valley*, by S P Wallis and M Waughman, East Anglian Archaeology, **82**, 132-41

Brown, N R, 1999 *The archaeology of Ardleigh, Essex: excavations 1955-1980*, East Anglian Archaeology, **90**

Brown, N R, & Murphy, P, 1997 'Neolithic and Bronze Age', 12-22, in *Research and archaeology: a framework for the Eastern Counties, 1. resource assessment*, ed by J Glazebrook, East Anglian Archaeology, Occasional Paper, **3**

Brown, R A, 1986 'The Iron Age and Romano-British settlement at Woodcock Hall, Saham Toney, Norfolk', *Britannia*, **17**, 1-58

Bryant, S R, 2000 'The Iron Age', in *Research and archaeology: a framework for the Eastern Counties, 2. Research agenda and strategy*, ed by N R Brown & J Glazebrook, East Anglian Archaeology, Occasional Paper, **8**, 14-18

Buckley, D G, & Hedges, J D, 1987a *The Bronze Age and Saxon settlements at Springfield Lyons, Essex: an interim report*, Essex County Council Occasional Paper, **5**

Buckley, D G, & Hedges, J D, 1987b *Excavation on a cropmark enclosure complex at Woodham Walter, Essex, 1976*, East Anglian Archaeology, **33**

CAR **2** *Colchester Archaeological Report* **2**: *The Roman small finds from excavations in Colchester 1971-9*, by N Crummy, 1983 reprinted 1995

CAR **10** *Colchester Archaeological Report* **10**: *Roman pottery from excavations in Colchester 1971-86*, by Robin P Symonds and Sue Wade, ed by P Bidwell and A Croom, 1999

CAR **11** *Colchester Archaeological Report* **11**: *Camulodunum* **2**, by C F C Hawkes and P Crummy, 1995

CAT Report 97 An archaeological desk-based assessment of the Colchester Garrison PFI site, unpublished CAT archive report, by Kate Orr, 2000

CAT Report 127 (draft) Excavations of Late Iron Age and Roman features and a Roman road north of Gosbecks Archaeological Park, Colchester, 1995-96, by Stephen Benfield

CAT Report 184 An archaeological evaluation by fieldwalking and geophysical survey at Colchester Garrison PFI site, Colchester, Essex, unpublished CAT archive report, by H Brooks, 2002

CAT Report 197 An archaeological evaluation by trial-trenching on Area C at Colchester Garrison PFI site, Colchester, Essex, unpublished CAT archive report, by H Brooks, 2002

CAT Report 203 An archaeological evaluation by trial-trenching on Areas E and F at Colchester Garrison PFI site, Colchester, Essex, unpublished CAT archive report, by H Brooks, 2002

CAT Report 205 An archaeological evaluation by trial-trenching on Area KR at Colchester Garrison PFI site, Colchester, Essex, unpublished CAT archive report, by H Brooks, 2002

CAT Report 206 An archaeological evaluation by trial-trenching in Areas A, B, D, GJ, H, J, N, V and YP of the Colchester Garrison PFI site, June-July 2002, unpublished CAT archive report, by H Brooks, 2002

CAT Report 207 An archaeological evaluation by trial-trenching on Areas DR, G, M, P, Q, R, RO, S, and T at the Colchester Garrison PFI site, Colchester, Essex: May-September 2002, unpublished CAT archive report, by H Brooks, 2002

CAT Report 214 An archaeological watching brief and recording at Brightlingsea Quarry, Moverons Lane, Brightlingsea, Essex: March-April 2002, unpublished CAT archive report, by H Brooks, 2002

CAT Report 270 Colchester Garrison PFI project: Stage 2 archaeological excavation assessment report, unpublished CAT archive report, by H Brooks, 2003

CAT Report 274 An archaeological evaluation by trial-trenching on Area E at the Garrison Urban Village, unpublished CAT archive report, by Ben Holloway, 2004

CAT Report 311 An archaeological excavation and watching brief at the Musket Club, Homefield Road, Colchester, Essex, December 2004-February 2005, unpublished CAT archive report, by H Brooks, 2005

CAT Report 312 (in prep) Excavations at Abbotstone field, Bell House Pit, Tarmac Colchester Quarry, Warren Lane, Stanway, Colchester, Essex, 1999-2001, by Laura Pooley and Stephen Benfield

CBC 2002 *Guidelines on the standards and practice for archaeological fieldwork in the Borough of Colchester*

Crummy, N, & Eckardt, H, 2004 'Regional identities and technologies of the self: nail-cleaners in Roman Britain', *Archaeol J*, **160** (2003), 44-69

Crummy, P, 1997 (reprinted with minor revisions 2001) *City of Victory – the story of Colchester – Britain's first Roman town*, Colchester Archaeological Trust

Crummy, P, *et al*, in preparation *Excavations at Bellhouse Pit, Stanway, Colchester, Essex 1987-96*

Cuddeford, M J, & Sealey, P R, 2000 'A late Bronze Age hoard from High Easter', *Essex Archaeology and History*, **31**, 1-17

Cunliffe, B W, 1984 'Iron Age Wessex: continuity and change', 12-45 in Cunliffe & Miles 1984

Cunliffe, B W, 1995 *Danebury: an Iron Age hillfort in Hampshire. Vol 6. A hillfort community in perspective*, CBA, Research Report, **102**

Cunliffe, B W, & Miles, D, 1984 *Aspects of the Iron Age in central and southern Britain*, University of Oxford Committee for Archaeology, Monograph, **2**

Dilke, O A W, 1971 *The Roman land surveyors. An introduction to the agrimensores*, Latimer Trend & Co Ltd

DoE 1990 *Archaeology and planning* (planning policy guidance note 16)

Drury, P J, 1978 *Excavations at Little Waltham, 1970-71*, Chelmsford Excavation Committee Report **1**, CBA, Research Report, **26**

Dunnett, B R K, 1971 'Excavations in Colchester, 1964-68', *Trans Essex Archaeol Soc*, **3**, 1-106

Ede, J, & de Rouffignac, C, 1990 'Carbonised seeds', in 'Aston Mill Farm, Kemerton: excavation of a ring-ditch, Middle Iron Age enclosure and a Grubenhaus', by J Dinn and J Evans, *Transactions of the Worcestershire Archaeological Society* (3rd series), **12**, 5-66

Elsdon, S M, 1975 *Stamped Iron Age pottery*, BAR, British series, **10**

English Heritage, 1988 *Coaxial field systems* (by F Raymond)

English Heritage, 1991 *Exploring our past*

Fowler, P J, 1981 'Later prehistory', in *The agrarian history of England and Wales. Vol 1.1. Prehistory*, ed by S Piggott, 63-298

Fowler, P J, 2002 *Farming in the first millennium AD: British agriculture between Julius Caesar and William the Conqueror*

Fryer, V, 2002 'Plant macrofossils and other remains from the Plant Breeding International site, Hauxton Road, Cambridge', assessment report for the Cambridgeshire Archaeological Field Unit

Fryer, V, in preparation 'Charred plant macrofossils and other remains from three Middle Iron Age granaries at Lodge Farm, St Osyth, Essex', East Anglian Archaeology

Gaffney, V, & Tingle, M, 1989 *The Maddle Farm project*, BAR, British Series, **200**

Glazebrook, J, 1997 Research and archaeology: a framework for the eastern Counties 1. Resource assessment, East Anglian Archaeology, Occasional Paper, **3**

Gregory, A K, 1995 'The Iron Age pottery', in *The Anglo-Saxon cemetery at Spong Hill, North Elmham, Part VII: the Iron Age, Roman and Early Saxon settlement*, by R Rickett, East Anglian Archaeology, **73**, 90-94

Gregory, T, 1991 *Excavations in Thetford, 1980-82, Fison Way*, East Anglian Archaeology, **53**

Greig, J, 1992 *An Iron Age hedgerow flora from Alcester, Warwickshire*, Ancient Monuments Laboratory Report, 11/92

Greig, J, 1994 'A possible hedgerow flora of Iron Age date from Alcester, Warwickshire', *Circaea*, **11**, 7-16

Halstead, P, 1982 'The economy', 61-3, in Hodder 1982

Halstead, P, Hodder, I, & Jones, G, 1978 'Behavioural archaeology and refuse patterns: a case study', *Norwegian Archaeological Review*, **11**, 118-31

Halstead, P, Hodder, I, & Jones, G, 1982 'Within-site patterning: Iron Age', 55-8, in Hodder 1982

Hamilton, S D, 1988 'Fabric analysis of selected first millennium BC pottery types. Earlier first millennium BC pottery from Rectory Road and Baker Street', in *Archaeology and environment in south Essex: rescue archaeology along the Grays By-Pass 1979/80*, by A J Wilkinson, East Anglian Archaeology, **42**, 75-80

Haselgrove, C C, Armit, I, Champion, T C, Creighton, J D, Gwilt, A, Hill, J D, Hunter, F, & Woodward, A B, 2001 *Understanding the British Iron Age: an agenda for action*

Havis, R, & Brooks, H, 2004 *Excavations at Stansted Airport*, East Anglian Archaeology, **107**

Hawkes, C F C, & Hull, M R, 1947 *Camulodunum, first report on the excavations at Colchester 1930-39*, Report of the Research Committee of the Society of Antiquaries of London, **XIV**

Healy, F, 1992 'Fenland research priorities: Neolithic and Bronze Age – a shopping list', *Fenland Research*, **7**, 3-5

Hedges, J D, & Buckley, D G, 1981 *Springfield* cursus *and the* cursus *problem*, Essex County Council Planning Department Occasional Paper

Hill, J D, 1995 *Ritual and rubbish in the Iron Age of Wessex: a study on the formation of a specific archaeological record*, BAR, British Series, **242**

Hingley, R C, & Miles, D, 1984 'Aspects of Iron Age settlement in the upper Thames valley', in *Aspects of the Iron Age in central southern Britain*, ed by B W Cunliffe & D Miles, University of Oxford Committee for Archaeology Monograph, **2**, 52-71

Hodder, I A, 1982 *Wendens Ambo, the excavation of an Iron Age and Romano-British settlement,* The archaeology of the M11, **2**

Hull, M R, 1958 *Roman Colchester*, RRCSAL, **20**

Hull, M R, & Hawkes, C F C, 1987 *Corpus of ancient brooches in Britain: pre-Roman bow brooches*, BAR, British Series, **168**

Humphrey, J, & Young, R, 2003 'Flint use in later Bronze Age and Iron Age England? Some criteria for future research', 79-87 in Maloney & Shott 2003

IFA 1999 *Standard and guidance for archaeological field evaluation*

Loughton, M E, 2000 'La morphologie des amphores républicaines en Auvergne', in *Société Française d'Étude de la Céramique Antique en Gaule: Actes du Congrès de Libourne*, ed by L Rivet, 243-56

Mackreth, D M, 1991 'The brooches', in *Excavations in Thetford, 1980-82, Fison Way 1*, by T Gregory, East Anglian Archaeology, **53**, 120-29

Mackreth, D M, 2001 *Monument 97, Orton Longueville, Cambridgeshire: a late pre-Roman Iron Age and early Roman farmstead*, East Anglian Archaeology, **97**

Major, H, 1998a 'Objects of copper-alloy', in Wallis & Waughman 1998, 122

Major, H, 1998b 'Objects of iron', in Wallis & Waughman 1998, 122-3

Major, H, 1998c 'Objects of stone', in Wallis & Waughman 1998, 126-7

Major, H, 1999a 'Finds not associated with burials', in Brown 1999, 70-71

Major, H, 1999b 'Querns', in Brown 1999, 74-5

Major, H, 2004 'The dating of Puddingstone querns', *Lucerna*, Roman Finds Group Newsletter, **27**, 2-4

Maloney, N, & Shott, M J, 2003 *Lithic analysis at the Millennium*, Institute of Archaeology

Manning, W H, 1985 *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum* (London)

Margary, I, 1940 *Roman centuriation at Ripe, East Sussex*, Arch Coll, **81**, 31-41

Margary, I, 1965 *Roman ways in the Weald*, Phoenix House

Martin, E A, 1988 *Burgh: Iron Age and Roman enclosure*, East Anglian Archaeology, **40**

Martingell, H E, 1990 'The East Anglian Peculiar? The "squat" flake', *Lithics*, **11**, 40-43

Martingell, H E, 2003 'Later prehistoric and historic use of flint', 91-7, in Maloney & Shott 2003

Masefield, R, 1993 *The Romano-British settlement of Ripe in East Sussex*, unpublished MA dissertation, Institute of Archaeology, London

Masefield, R, forthcoming Report on the A41 Aston Clinton Bypass, Buckinghamshire

Matthews, C L, 1976 *Occupation sites on a Chiltern Ridge. Part I: Neolithic, Bronze Age and Early Iron Age*, BAR, British Series, **29**

Middleton, A P, 1987 'Technological investigation of the coatings on some "haematite-coated" pottery from southern England', *Archaeometry*, **29**, 250-61

Middleton, A P, 1989 'The scientific examination of some "red-finished" ("haematite-coated") Iron Age pottery', in *Verulamium: the King Harry Lane site*, by I M Stead & V A Rigby, English Heritage Archaeological Report, **12**, 264

Moffett, L, 1987 'The macro-botanical evidence from Late Saxon and early medieval Stafford', English Heritage Ancient Monuments Laboratory Report, **169/87**

Murphy, P, 1996 'Environmental archaeology in Essex', 168-80 in Bedwin 1996

Needham, S P, 1996 'The late Bronze Age pottery: style, fabric and finish', in *Refuse and disposal at Area 16 East, Runnymede*, by S P Needham & A Spence, Runnymede Bridge Research Excavations, **2**, 106-160

Needham, S P, forthcoming 800 BC, the great divide

Niblett, R, 1985 *Sheepen, a Late Iron Age and Roman industrial site at Camulodunum*, CBA Research Report, **57**

Olivier, A, 1996 *Frameworks for our past*, English Heritage

Peacock, D P S, 1971 'Roman amphorae in pre-Roman Britain', in *The Iron Age and Its hill-forts: papers presented to Sir Mortimer Wheeler*, ed by D Hill & M Jesson, 161-88

Percival, S, 2000 'Pottery', in *Norwich Southern Bypass, Part I: excavations at Bixley, Caistor St Edmund, Trowse, Cringleford and Little Melton*, by T M Ashwin & S Bates, East Anglian Archaeology, **91**, 108-114 & 170-179

Pryor, Francis, 1991 *The English Heritage book of Flag Fen: prehistoric Fenland centre*, English Heritage/Batsford

Rhodes, M, 1980 'Leather footwear', in *Excavations at Billingsgate buildings 'Triangle', Lower Thames Street, 1974*, by D M Jones, London and Middlesex Archaeol Soc, special paper 4 (London), 99-128

Rhodes, P P, 1952 'The Celtic field-systems on the Berkshire downs', *Oxoniensia*, **15** for 1950, 1-28

Rigby, V A, 1988 'The late prehistoric, Roman and later wares', in *Excavations at Grimes Graves, Norfolk, 1972-1976. Fascicule **2**. The Neolithic, Bronze Age and later pottery*, by I H Longworth, A B Ellison & V A Rigby, 100-110

Robertson, I G, 1975 'The archaeology of the M11 motorway in Essex', *Essex Journal*, **10**, 68-91

Rodwell, K A, 1988 *The prehistoric and Roman settlement at Kelvedon, Essex*, Chelmsford Archaeological Trust Report no **6** & CBA Research Report no **63**

RPS 2002a '15. Cultural heritage', 15-1 to 15-57, in *MoD Colchester Garrison PFI: composite environmental statement* (Atkins 2002)

RPS 2002b *Colchester Garrison PFI archaeological project strategy proposal*, 29 April 2002 revised 27 June 2002

RPS 2003 *Research design for archaeological excavations and watching brief at the new garrison, Colchester*

RPS/CAT 2002 *Colchester Garrison redevelopment: method statement and risk assessments for archaeological survey, geophysical survey, and evaluation trenching*

RPS/CAT 2003a *Written Scheme of Investigation (WSI) for an archaeological excavation at the new garrison, Colchester Garrison PFI. Area 2 – excavation*

RPS/CAT 2003b *Written Scheme of Investigation (WSI) for an archaeological excavation at the new garrison, Colchester Garrison PFI. Area 6 – excavation*

RPS/CAT 2003c *Written Scheme of Investigation (WSI) for an archaeological excavation at the new garrison, Colchester Garrison PFI. Area 10 – excavation*

Rudling, D R, 1990 'Late Iron Age and Roman Billericay: excavations 1987', *Essex Archaeol Hist*, **21**, 19-47

Sanchez, A, Canabate, M L, & Lizcano, R, 1996 'Phosphorus analysis at archaeological sites: an optimisation of the method and interpretation of the results', *Archaeometry*, **38**, 151-64

Sealey, P R, 1985 *Amphoras from the 1970 excavations at Colchester Sheepen*, BAR, British Series, **142**

Sealey, P R, 1996 'The Iron Age of Essex'. In *The archaeology of Essex: proceedings of the Writtle Conference*, ed by O R Bedwin, 46-68

Sealey, P R, in preparation 'Report on the early and middle Iron Age pottery' (in preparation) *Excavations at Bellhouse Pit, Stanway, Colchester 1987-96* by Crummy *et al*

Shimmin, D, 1998 'A Late Iron Age and Roman occupation site at Kirkee & McMunn Barracks, Colchester', *Essex Archaeology and History*, **29**, 260-69

Shirley, E A N, 2000 *Construction of the legionary fortress at Inchtuthil*

Spurr, M S, 1986 *Arable cultivation in Roman Italy* c *200 BC*-c *AD 100*, Journal of Roman Studies Monograph, **3**

Stace, C, 1997 *New flora of the British Isles*. Second edition, Cambridge University Press

Stead, I M, & Rigby, V, 1986 *Baldock: the excavation of a Roman and pre-Roman settlement, 1968-72*, Britannia Monograph **7**

Taylor, C C, 1975 *Fields in the English landscape*

Thompson, I, 1982 *Grog-tempered 'Belgic' pottery of south-eastern England*, BAR, British series, **108**

Tomber, R S, & Dore, J N, 1998 *The National Roman Fabric Reference Collection*, MoLAS, Monograph, **2**

Tyers, P A, 1996 *Roman pottery in Britain*

Wallis, S, & Waughman, M, 1998 *Archaeology and the landscape in the Lower Blackwater Valley*, East Anglian Archaeology, **82**

Wardle, A, 1990 'The artefacts other than coins, pottery, and glass vessels', in *Excavation of the Iron Age, Roman and medieval settlement at Gorhambury, St Albans*, by D S Neal, A Wardle & J Hunn, 113-69, English Heritage Report, **14**, 113-69

White, K D, 1970 *Roman farming*

Williams, D F, 1986 'The amphorae', in *The Lexden tumulus* by J A A Foster, BAR, British Series, **156**, 124-32
Williamson, T M, 1984 'The Roman countryside: settlement and agriculture in NW Essex', *Britannia*, **15**, 225-30
Woodland, M, 1990 'Spindlewhorls', in *Object and economy in medieval Winchester*, by M Biddle, Winchester Studies, **7ii** (Oxford), 216-25
Woudhuysen, M, 1998 'Pottery', in 'Prehistoric and Roman remains at Edix Hill, Barrington, Cambridgeshire', by T Malim, *Proc Cambridge Antiq Soc*, **86** for 1997, 33-8 & 50-53
Wymer, J, & Brown, N, 1995 *Excavations at North Shoebury: settlement and economy in south-east Essex 1500 BC to AD 1500*, East Anglian Archaeology, **75**
Yates, D T, 1999 'Bronze Age field systems in the Thames Valley', *Oxford Journal of Archaeology*, **18** (2), 157-70
Young, R, & Humphrey, J, 1999 'Flint use in England after the Bronze Age: time for a re-evaluation?', *Proceedings of the Prehistoric Society*, **65**, 231-42
Zevi, F, 1966 'Appunti sulle anfore romane', *Archeologia Classica*, **18**, 208-247

Archive deposition

The finds and digital and paper archive are presently stored by CAT at 12 Lexden Road, Colchester, Essex, CO3 3NF, but will be permanently deposited with Colchester Museums under accession code 2003.210.

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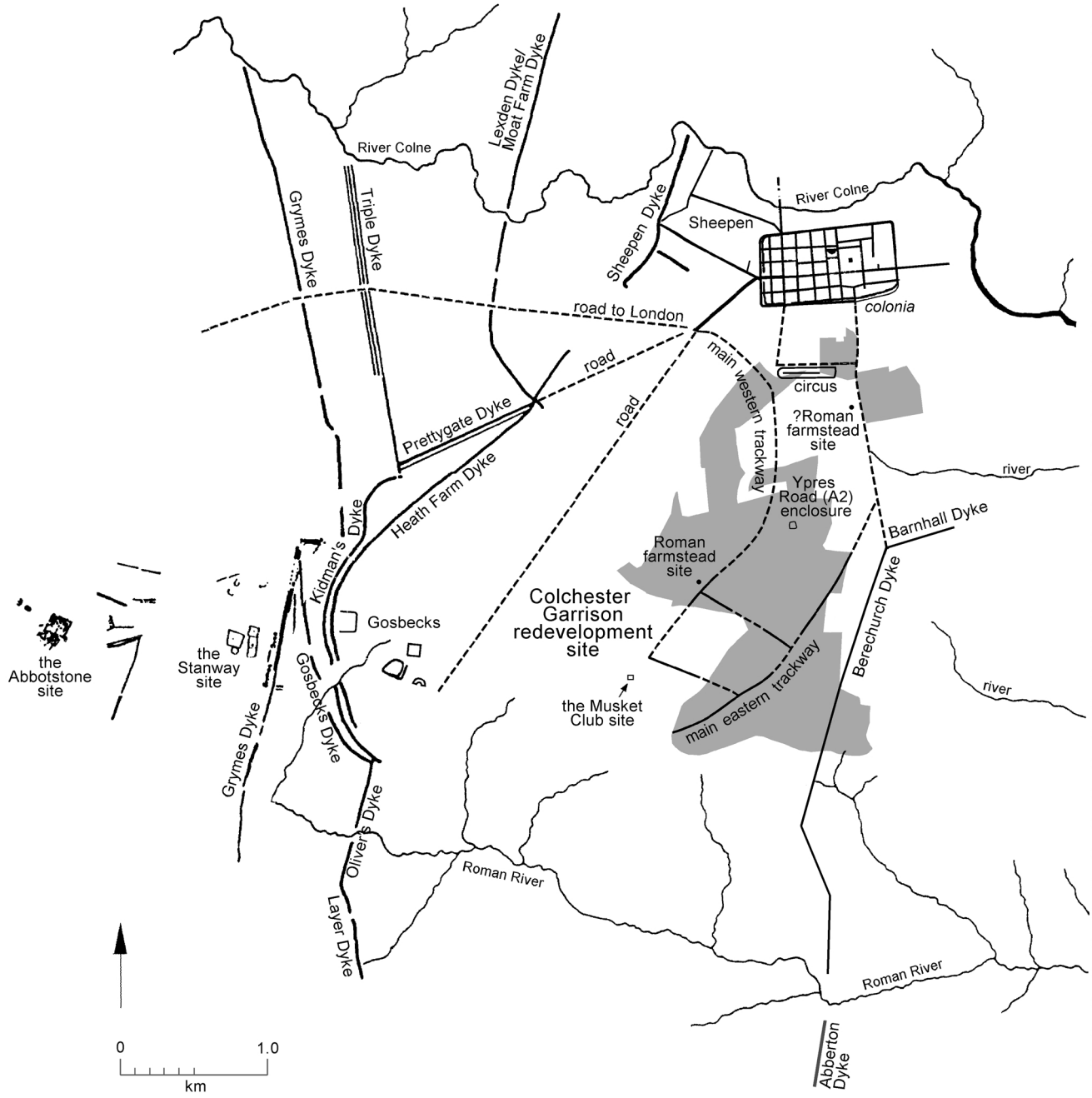


Fig 1 Colchester Garrison redevelopment area in the context of the *oppidum* of Camulodunum, and the Roman and modern towns.

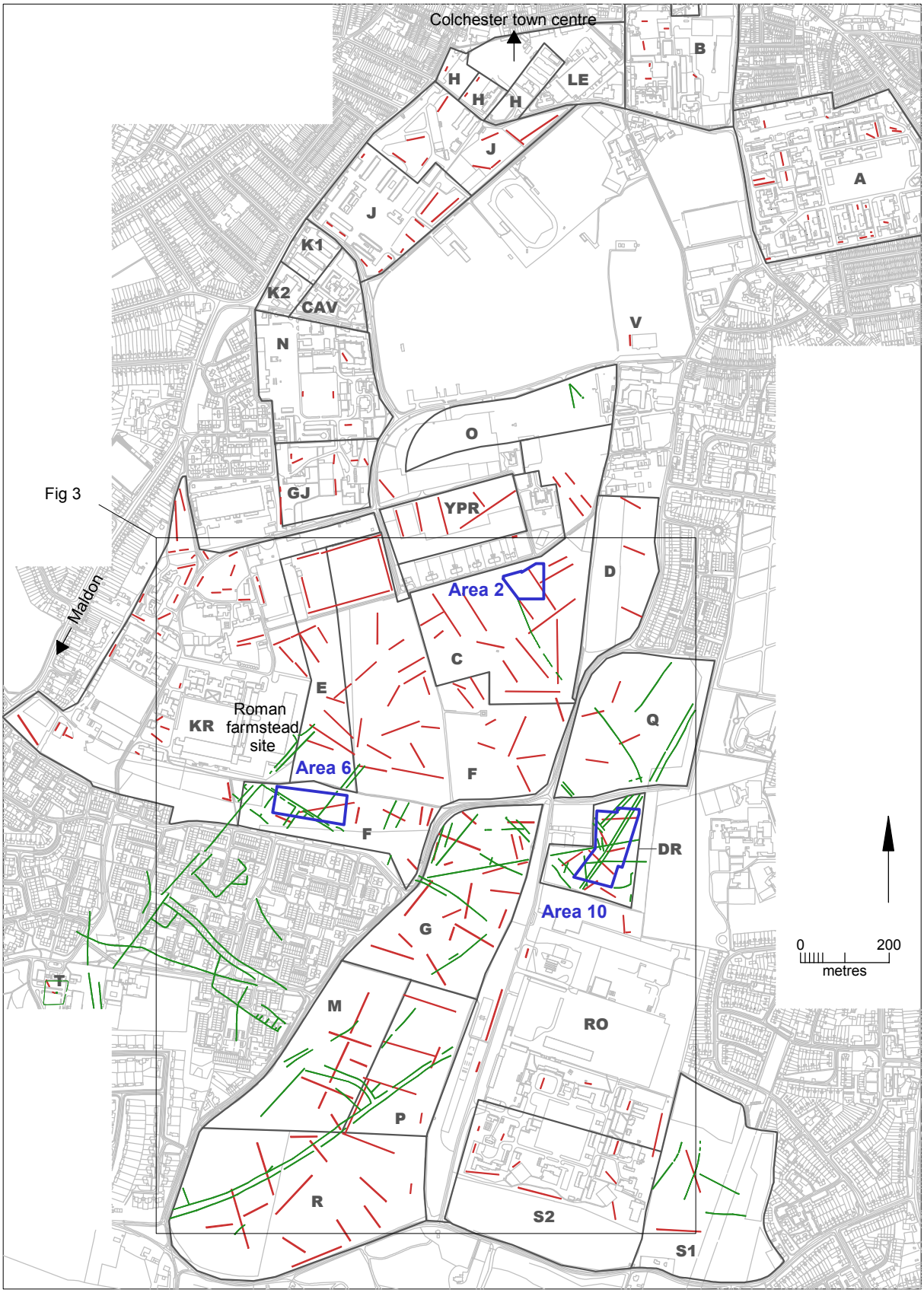
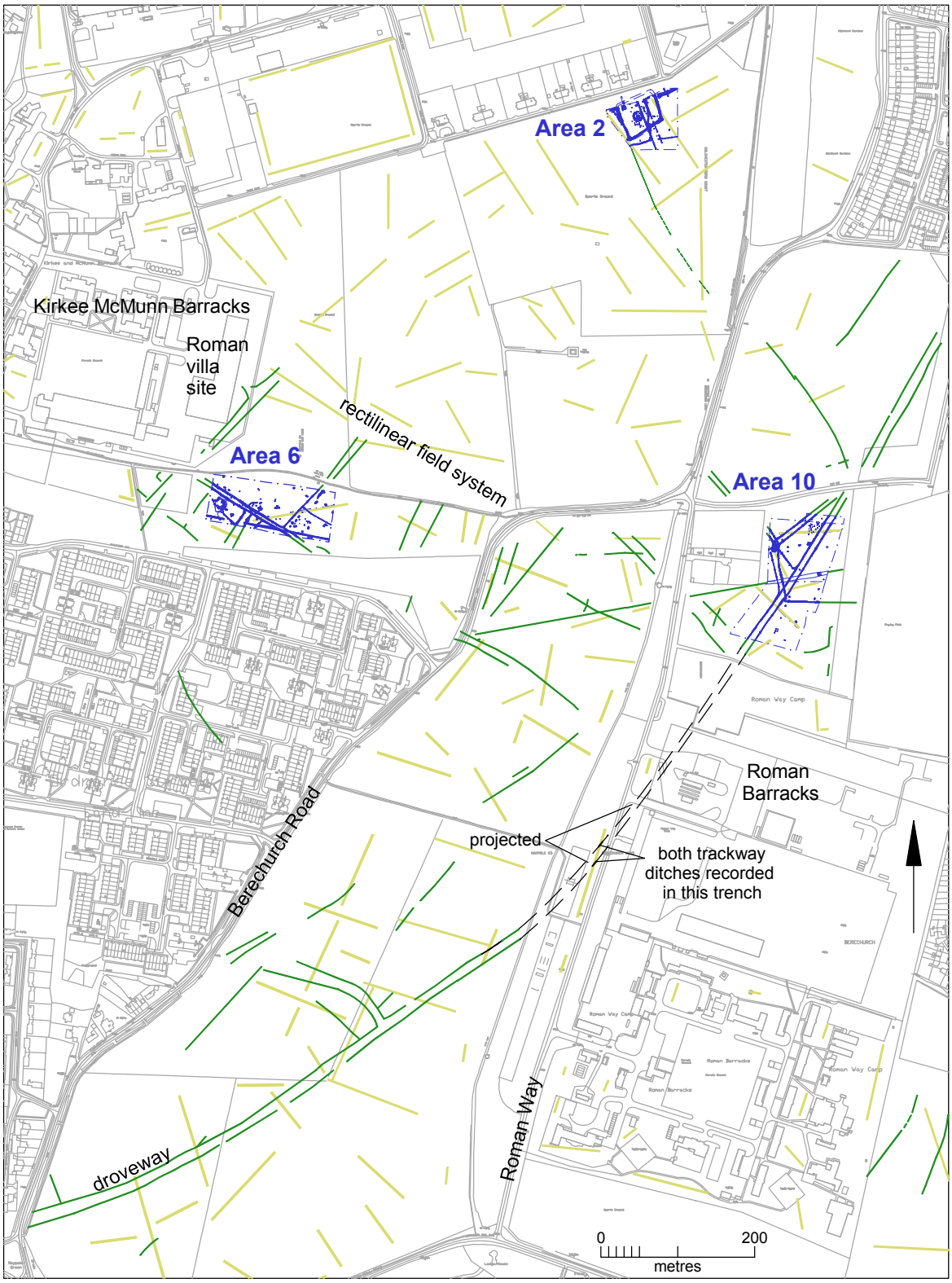


Fig 2 Colchester Garrison: showing evaluation trenches; excavation Areas 2, 6 and 10; Colchester Garrison redevelopment areas; Iron Age and Roman cropmarks.



cropmark evaluation trench excavation

Fig 3 Location of excavation Areas 2, 6 and 10 with the principal cropmarks of the LIA/Roman landscape, and the Colchester Garrison redevelopment areas.

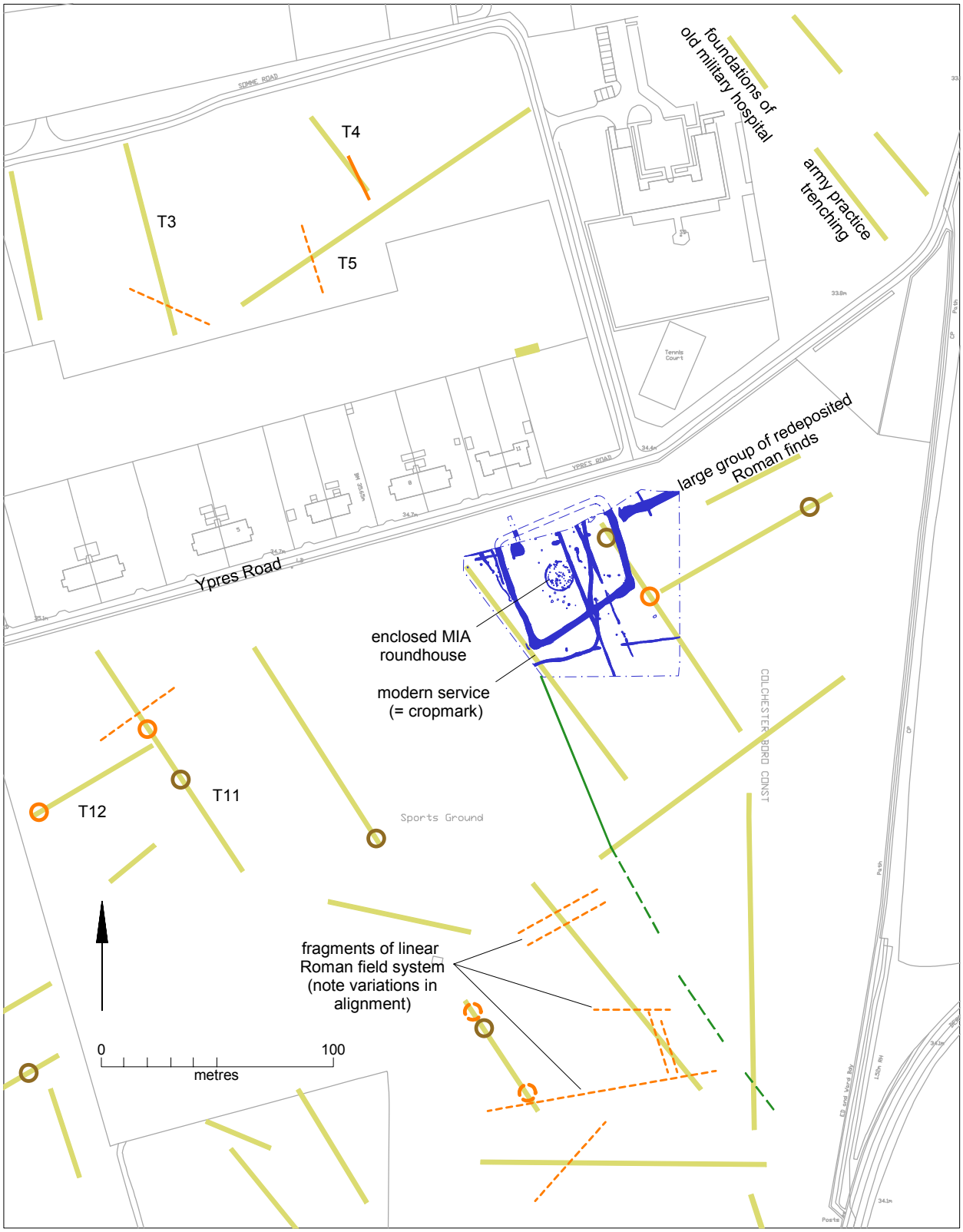


Fig 4 Area 2 excavation in context of local cropmarks and 2002 trial trenching finds.

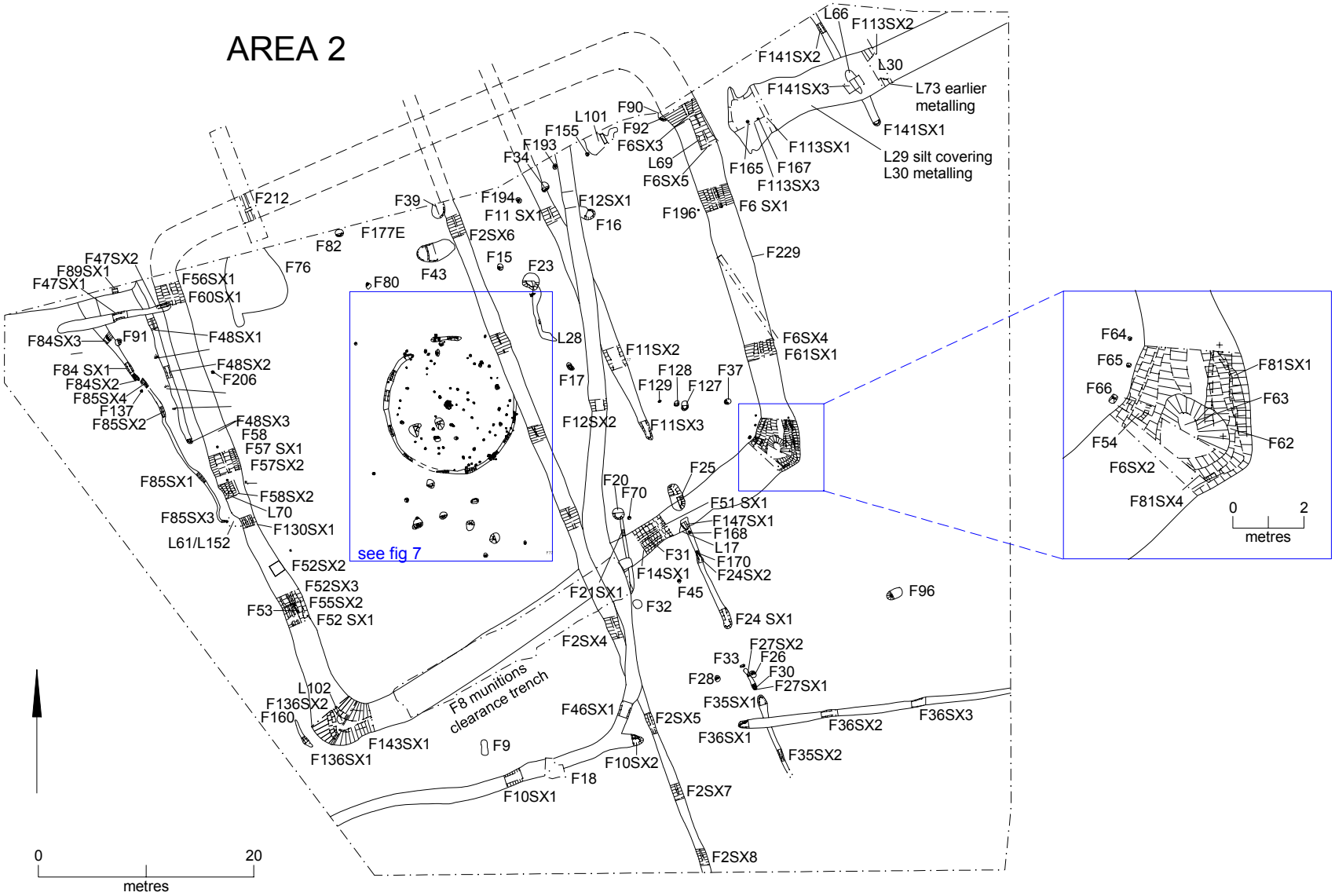


Fig 5 Area 2 plan, with detail of sump/watering hole (inset).

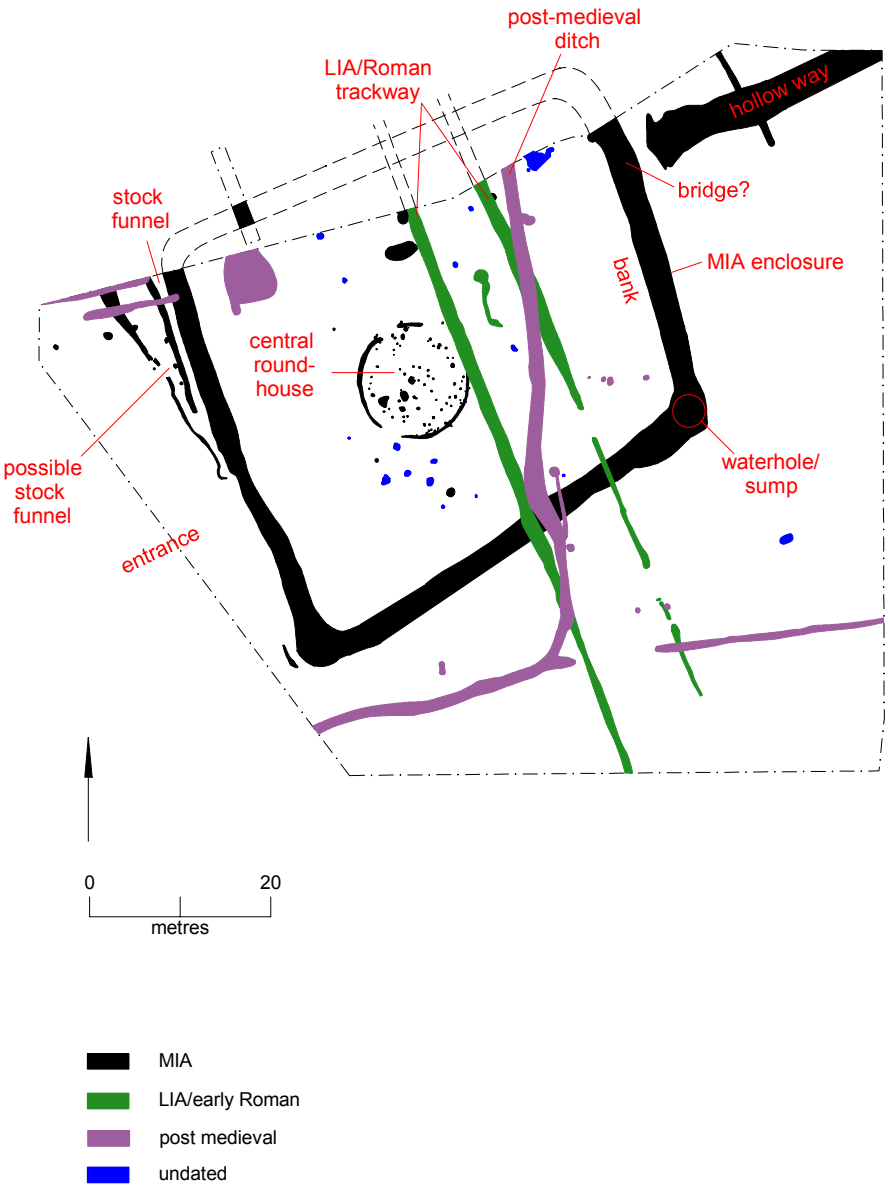


Fig 6 Area 2 phase plan and interpretation.

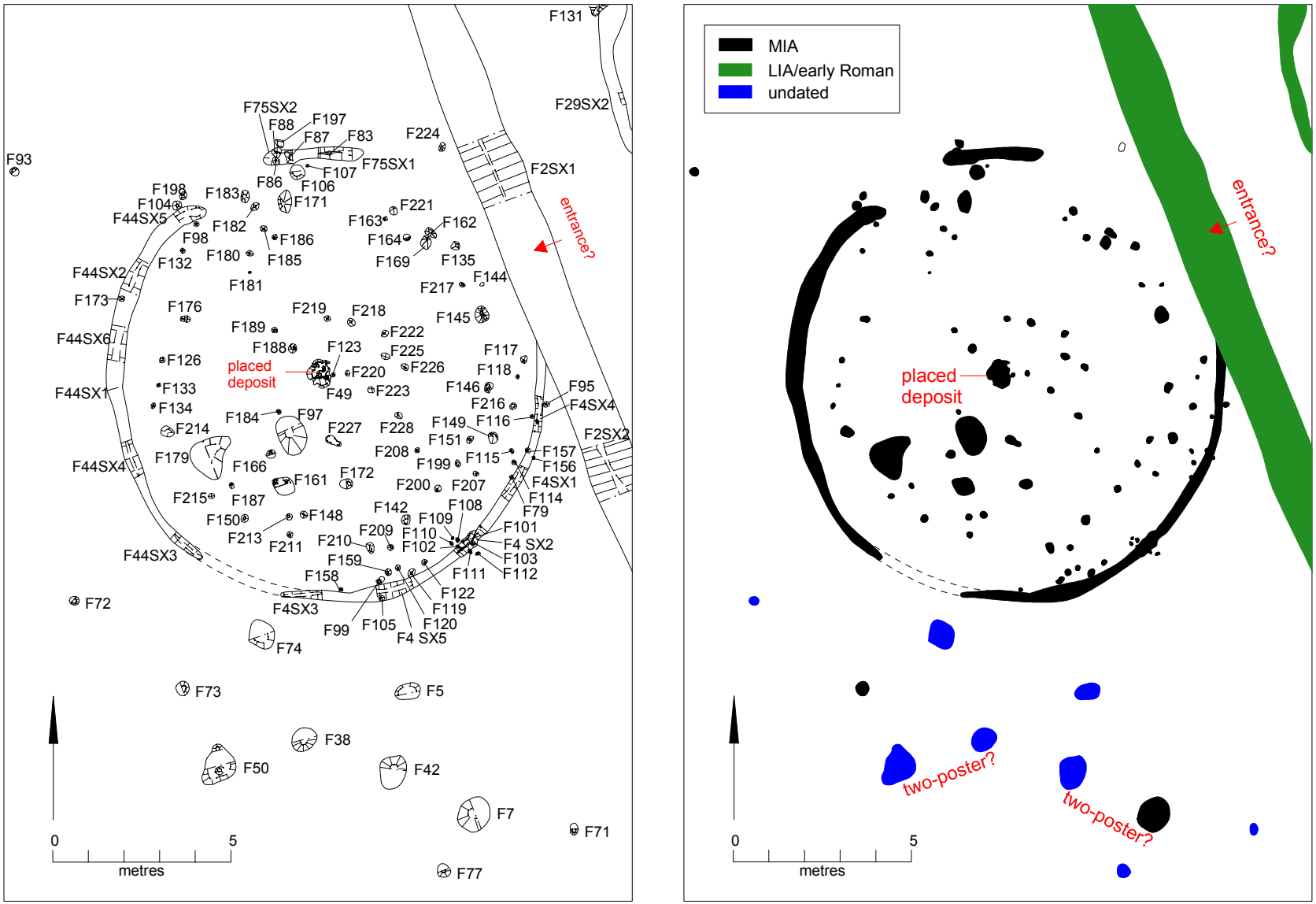


Fig 7 Detail of roundhouse.

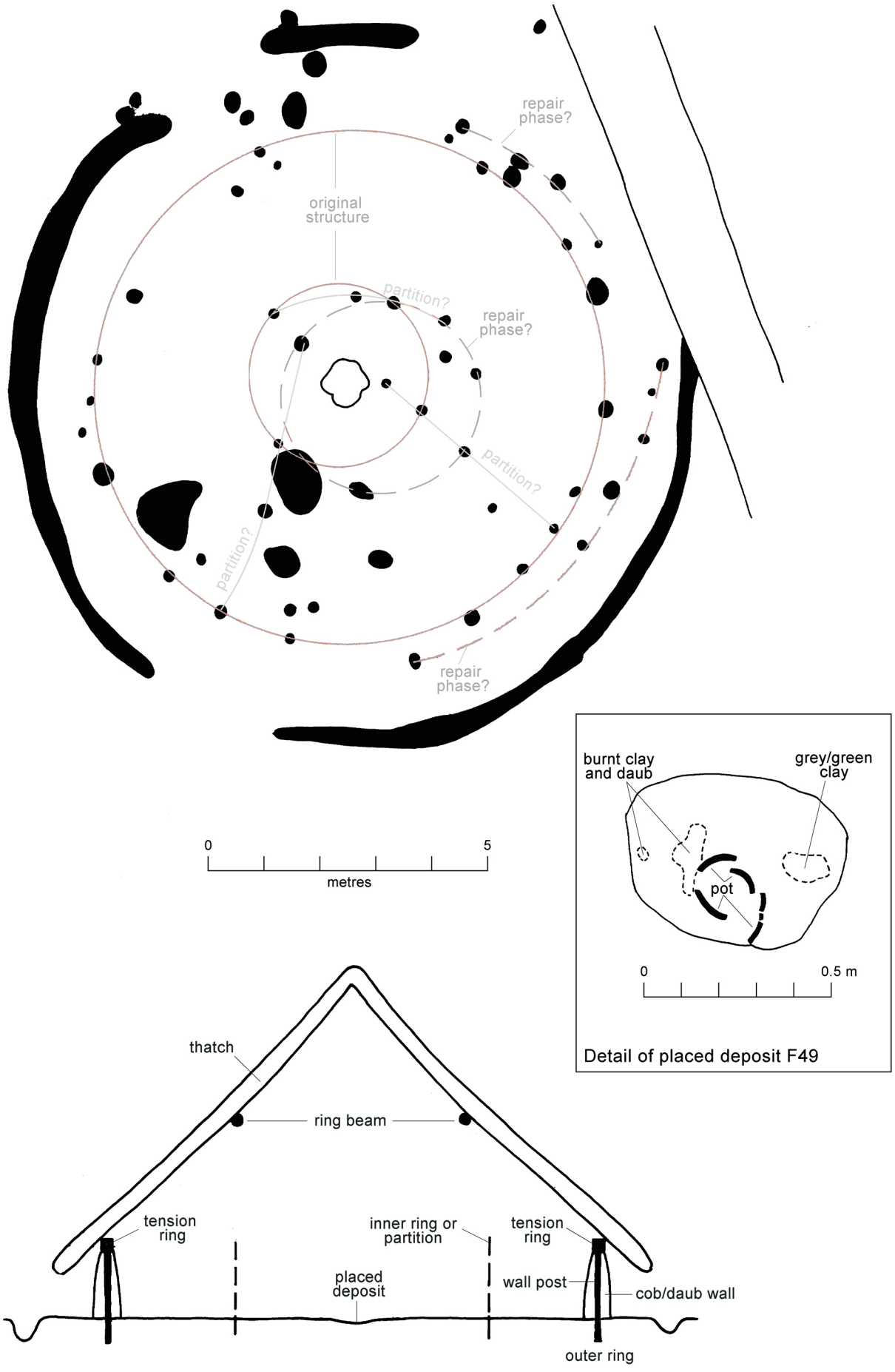


Fig 8 Ground-plan and reconstruction of round-house, with detail of placed deposit F49 (inset).

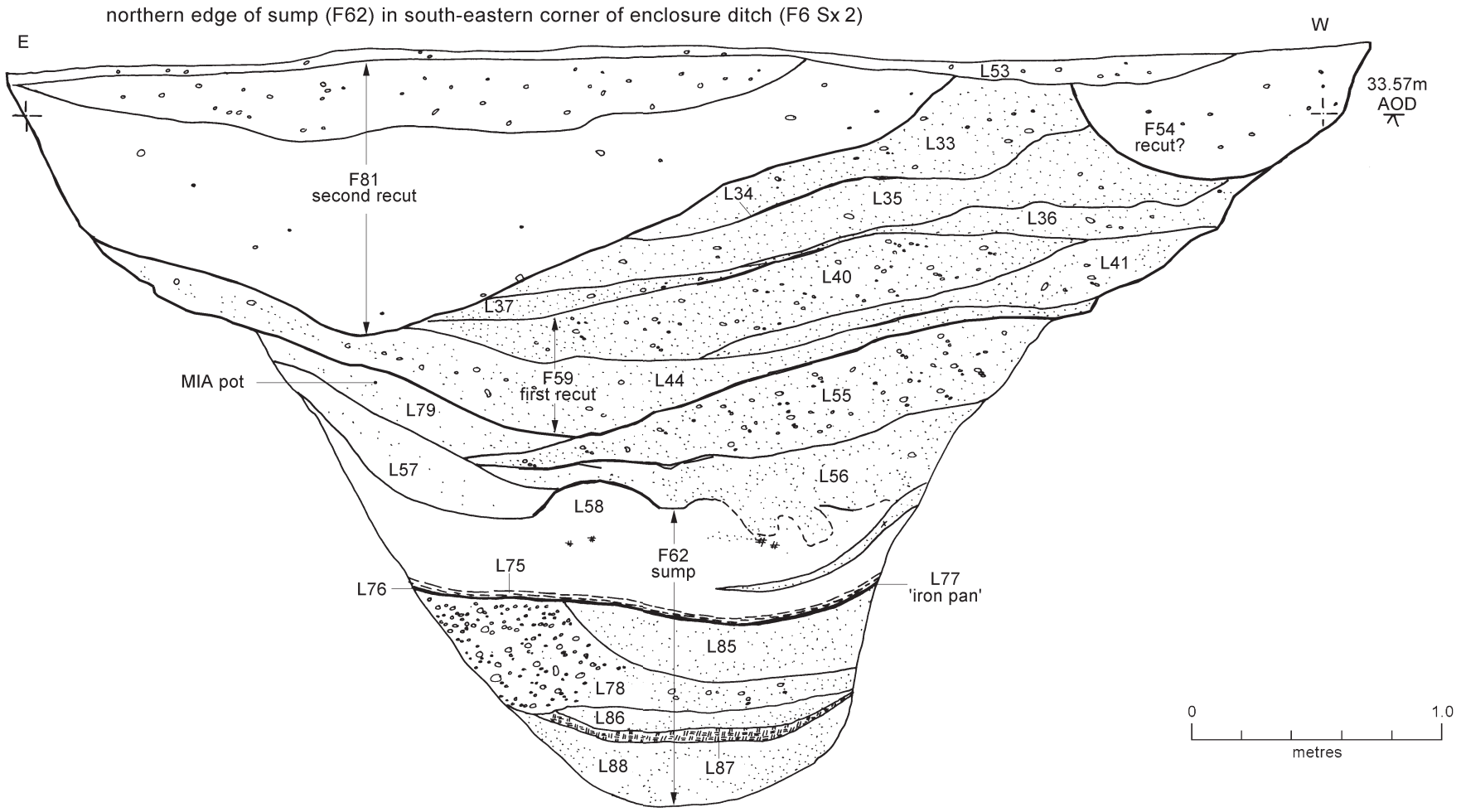


Fig 9 Area 2 sections: sheet 1.

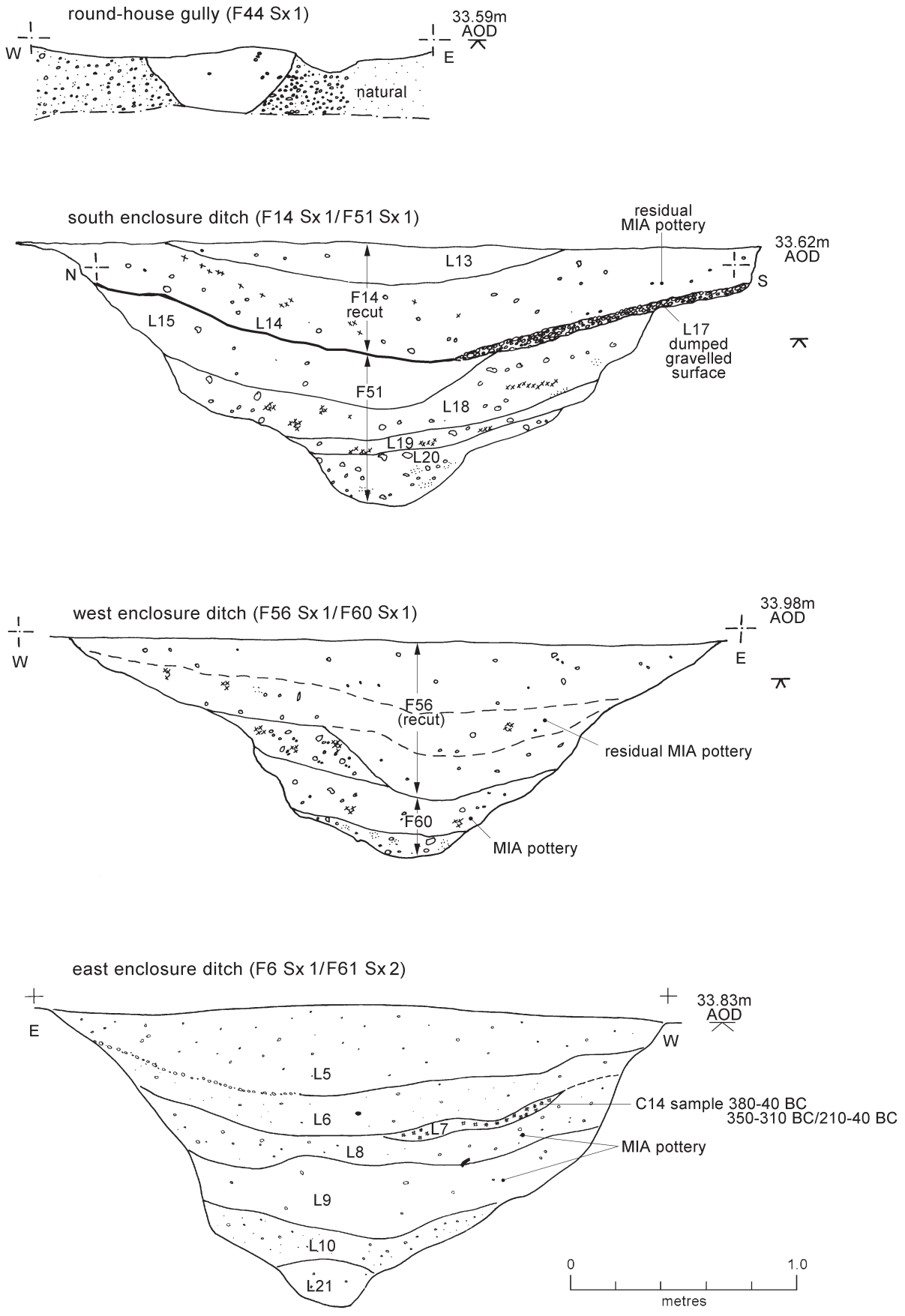


Fig 10 Area 2 sections: sheet 2.

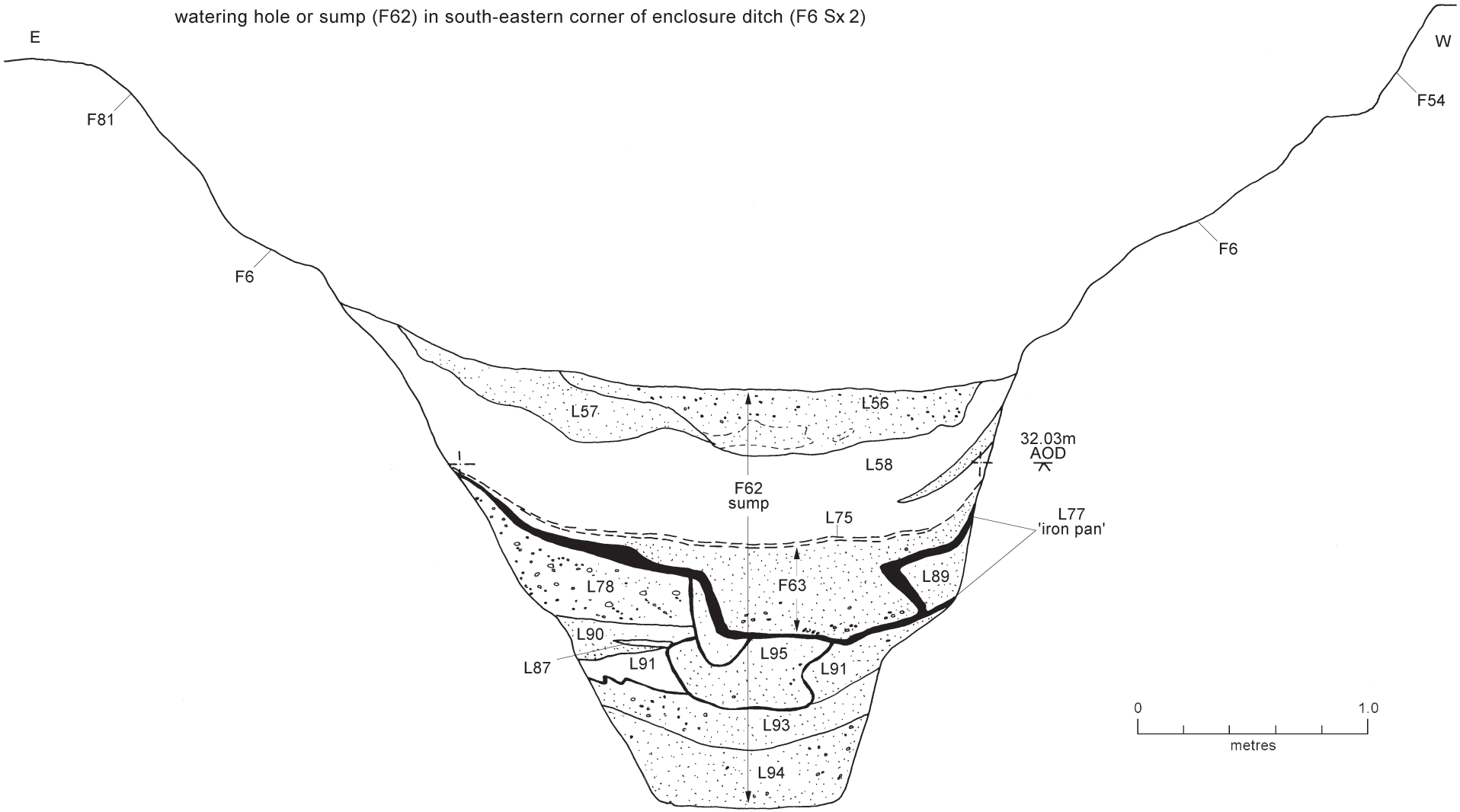


Fig 11 Area 2 sections: sheet 3.

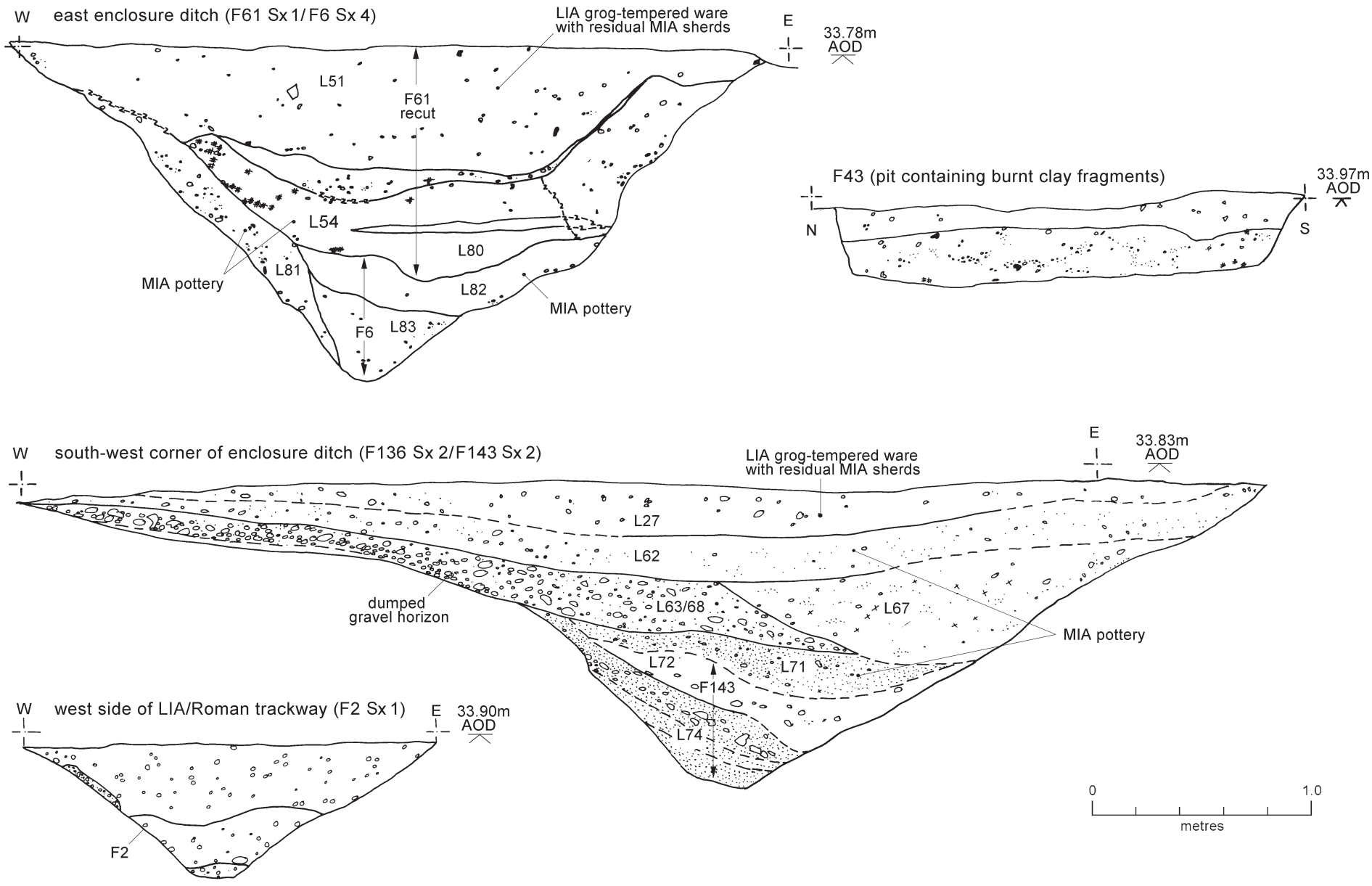


Fig 12 Area 2 sections: sheet 4.

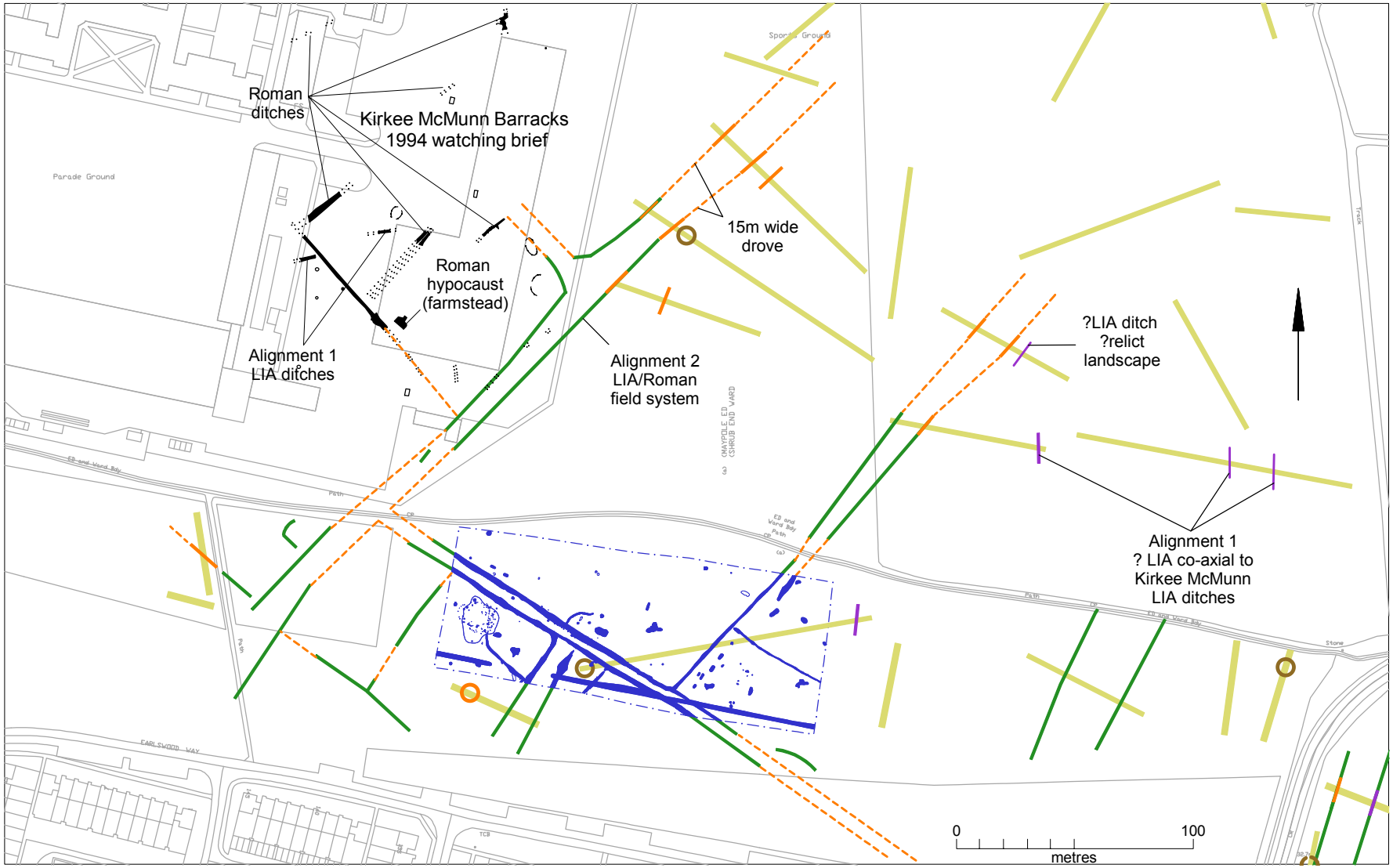


Fig 13 Area 6 excavation in context of local cropmarks and 2002 trial trenching finds.

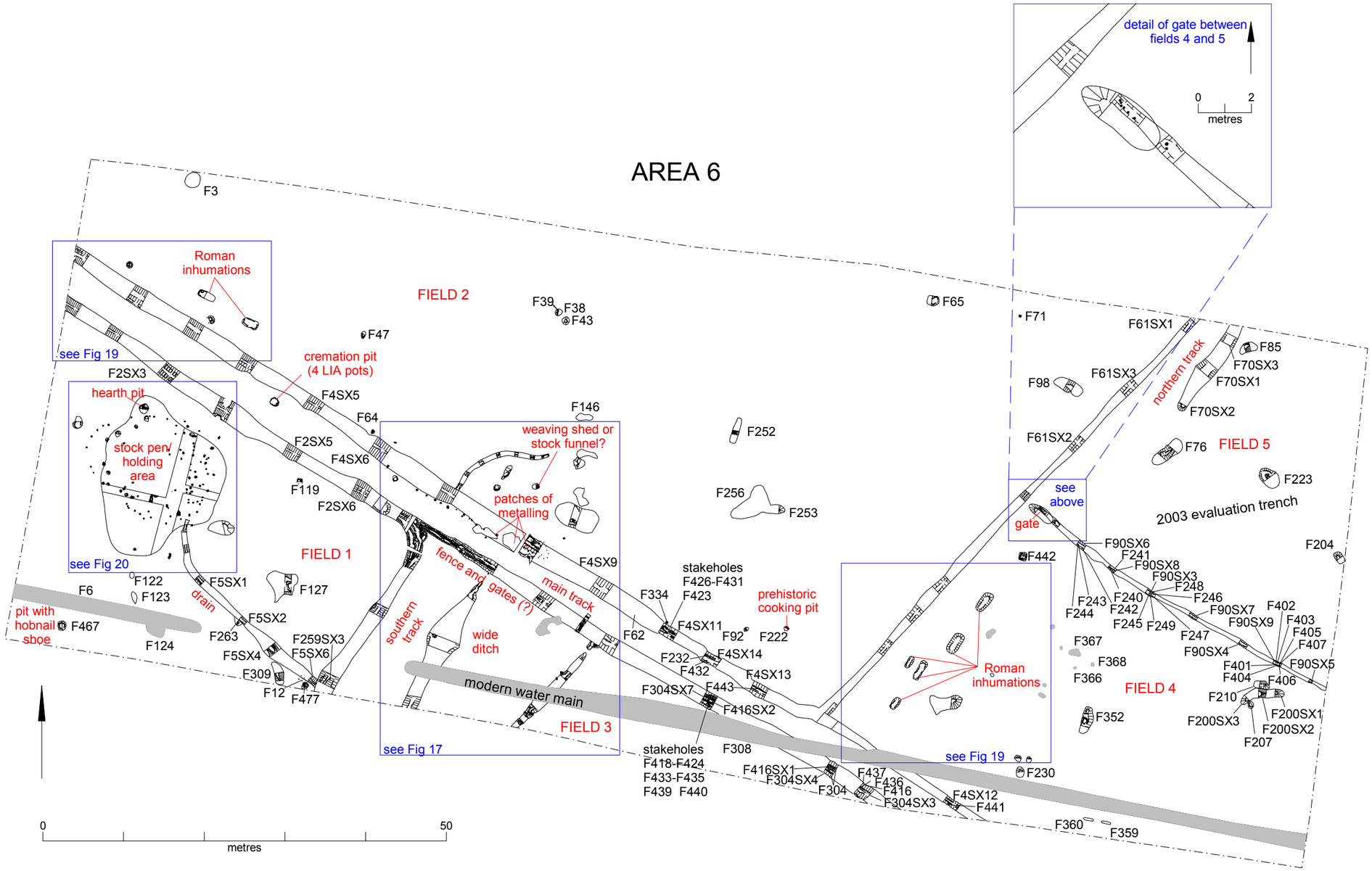


Fig 14 Area 6 plan.

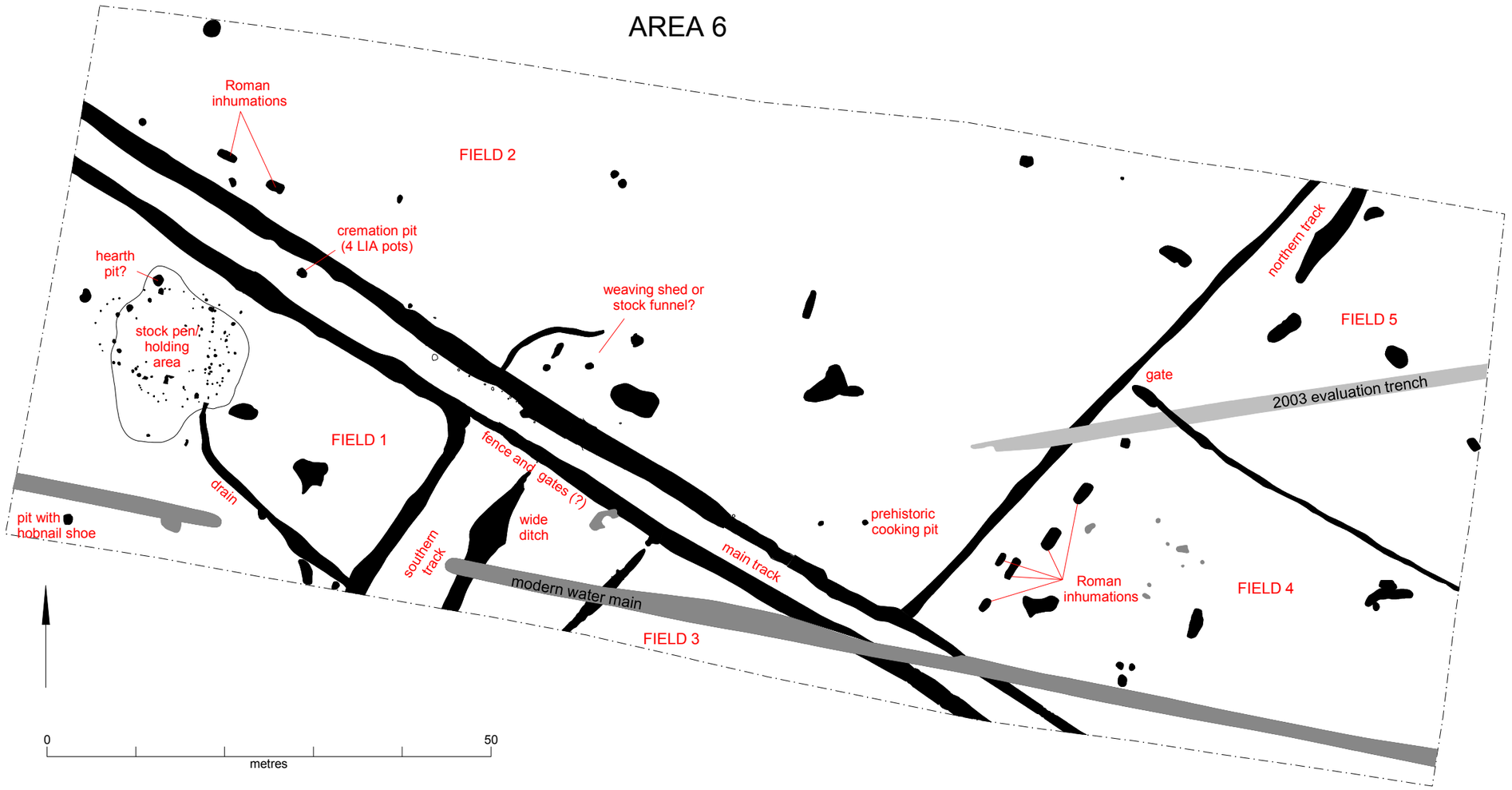


Fig 15 Area 6 interpretation.

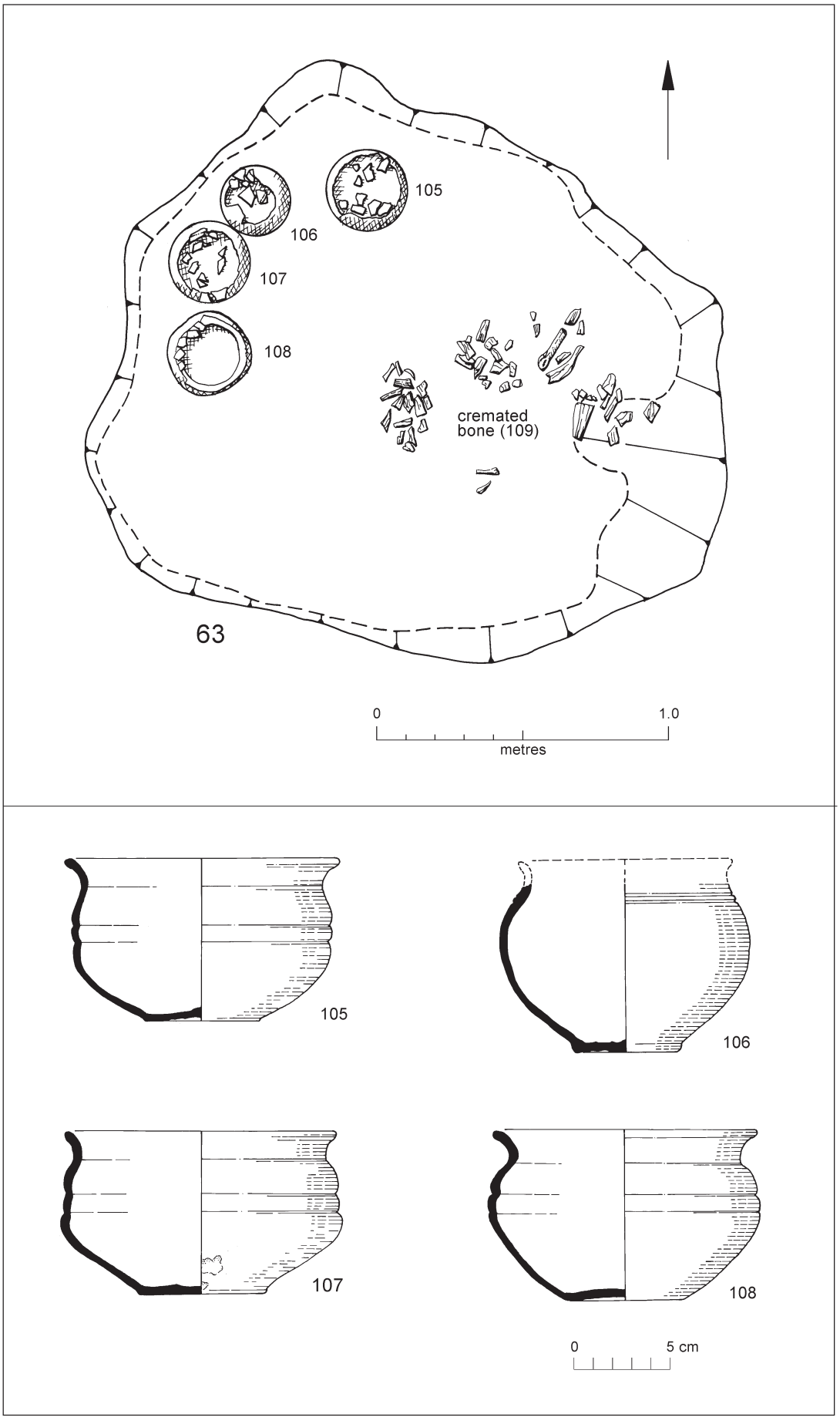


Fig 16 Area 6
Above: plan of burial F63, with position of pots 105-108 and cremated bone 109.
Below: detail of pots.

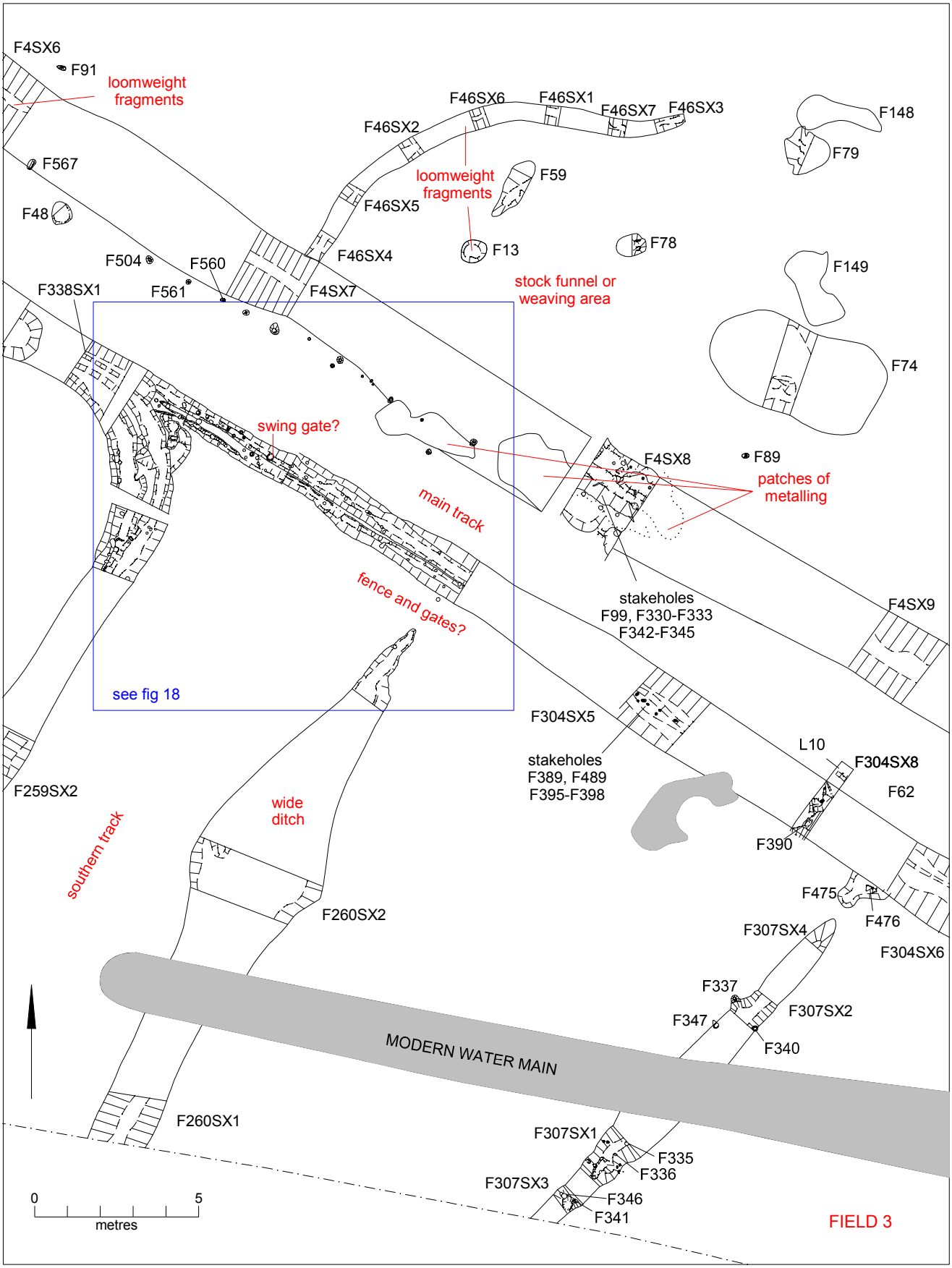


Fig 17 Area 6: junction between southern and main tracks.

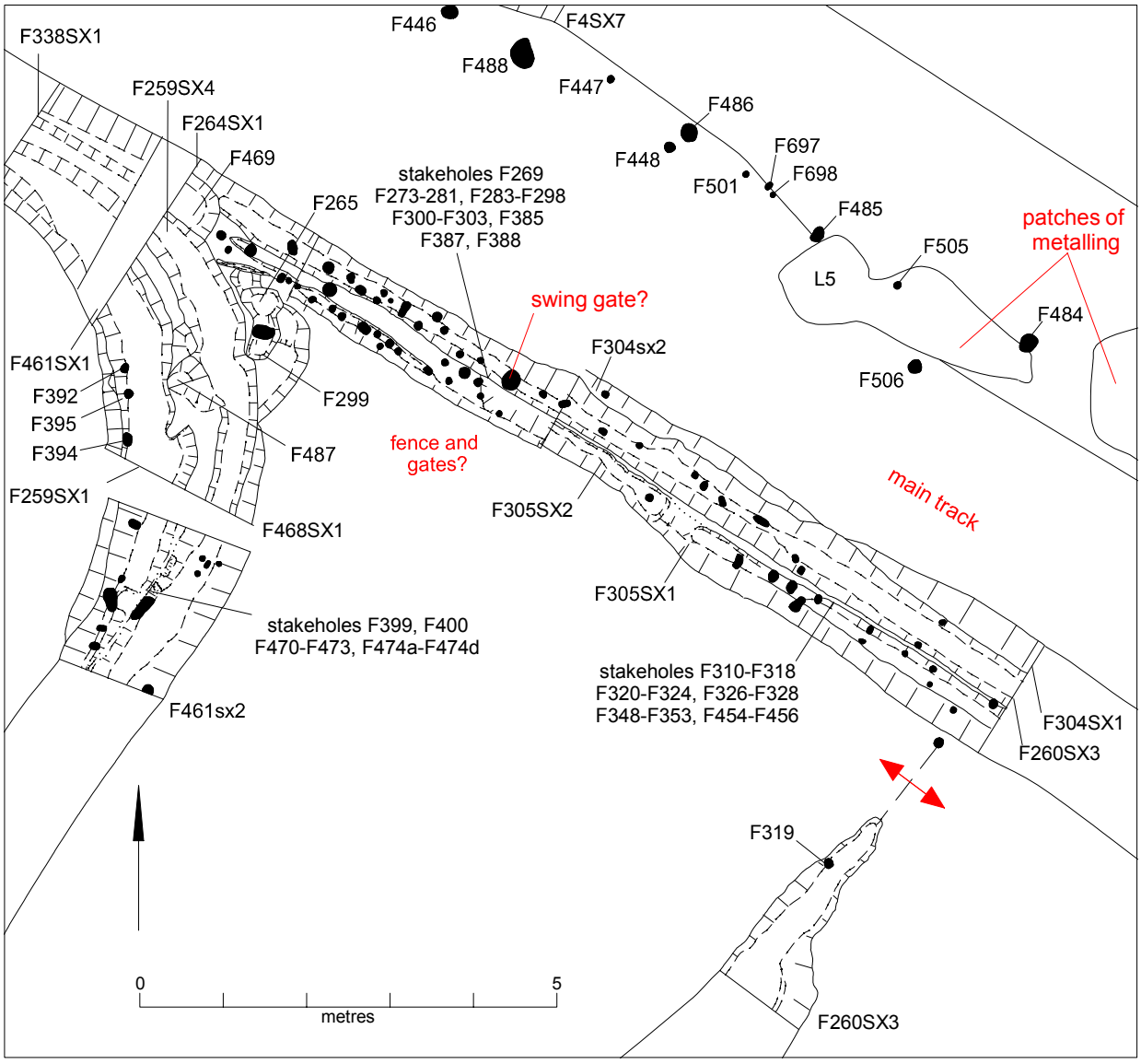


Fig 18 Area 6: detail of swing gate structure.

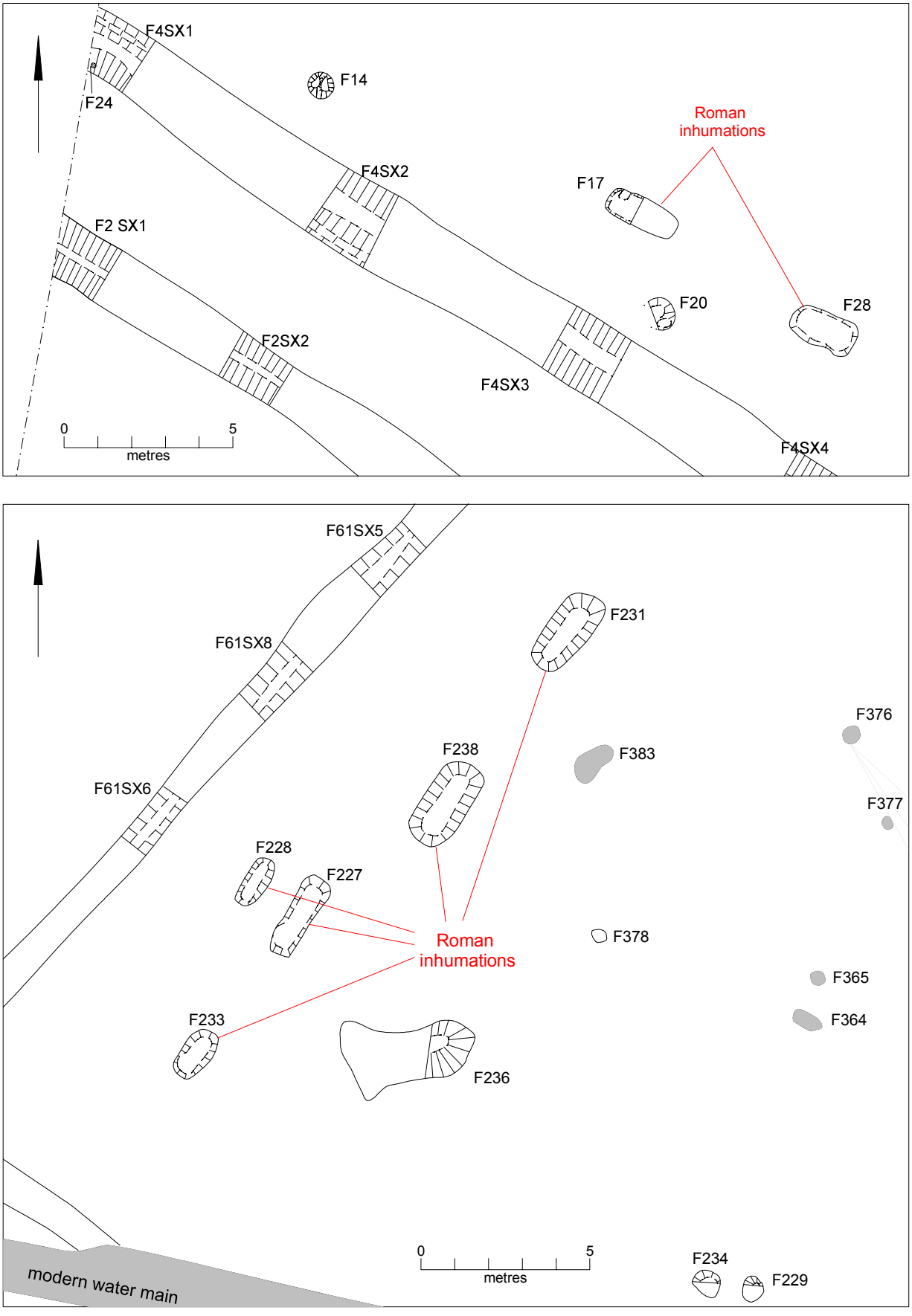


Fig 19 Area 6: detail of Roman inhumation burials.

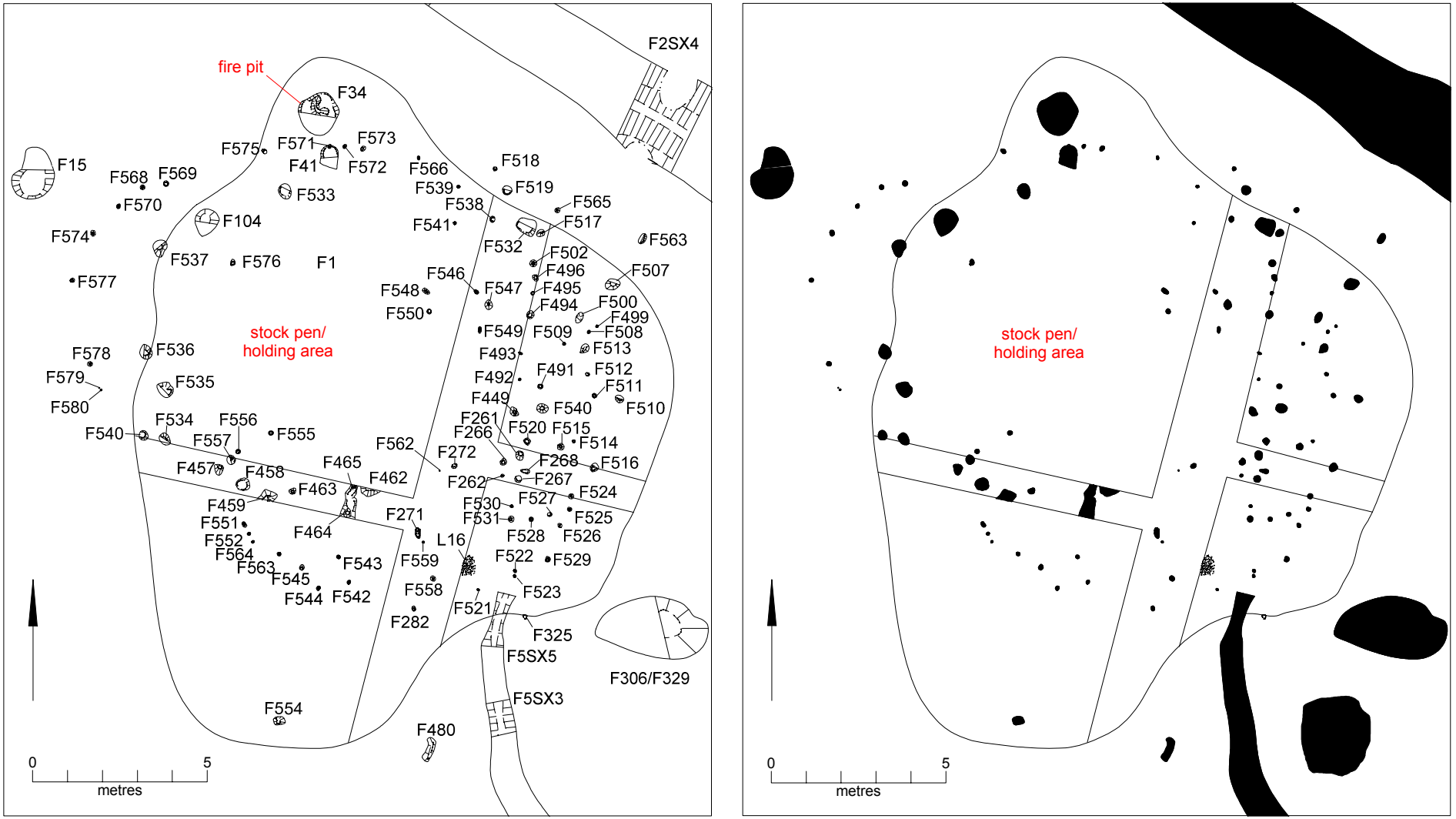
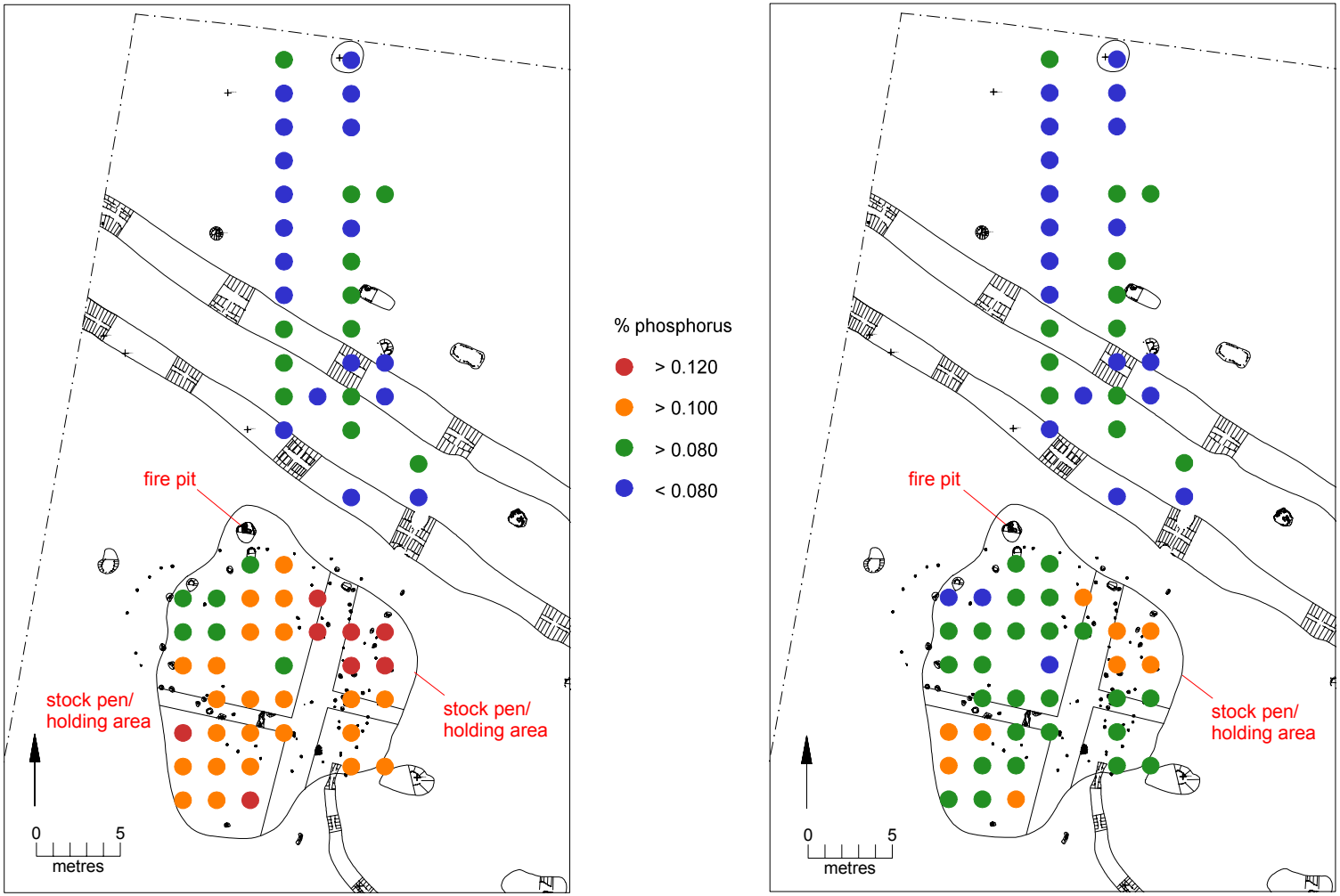


Fig 20 Area 6: detail of stock holding area.



Phosphorus distribution plot for groups 77 and 78.

Phosphorus distribution plot for groups 79 and 78.

Fig 21 Area 6: phosphate sampling.

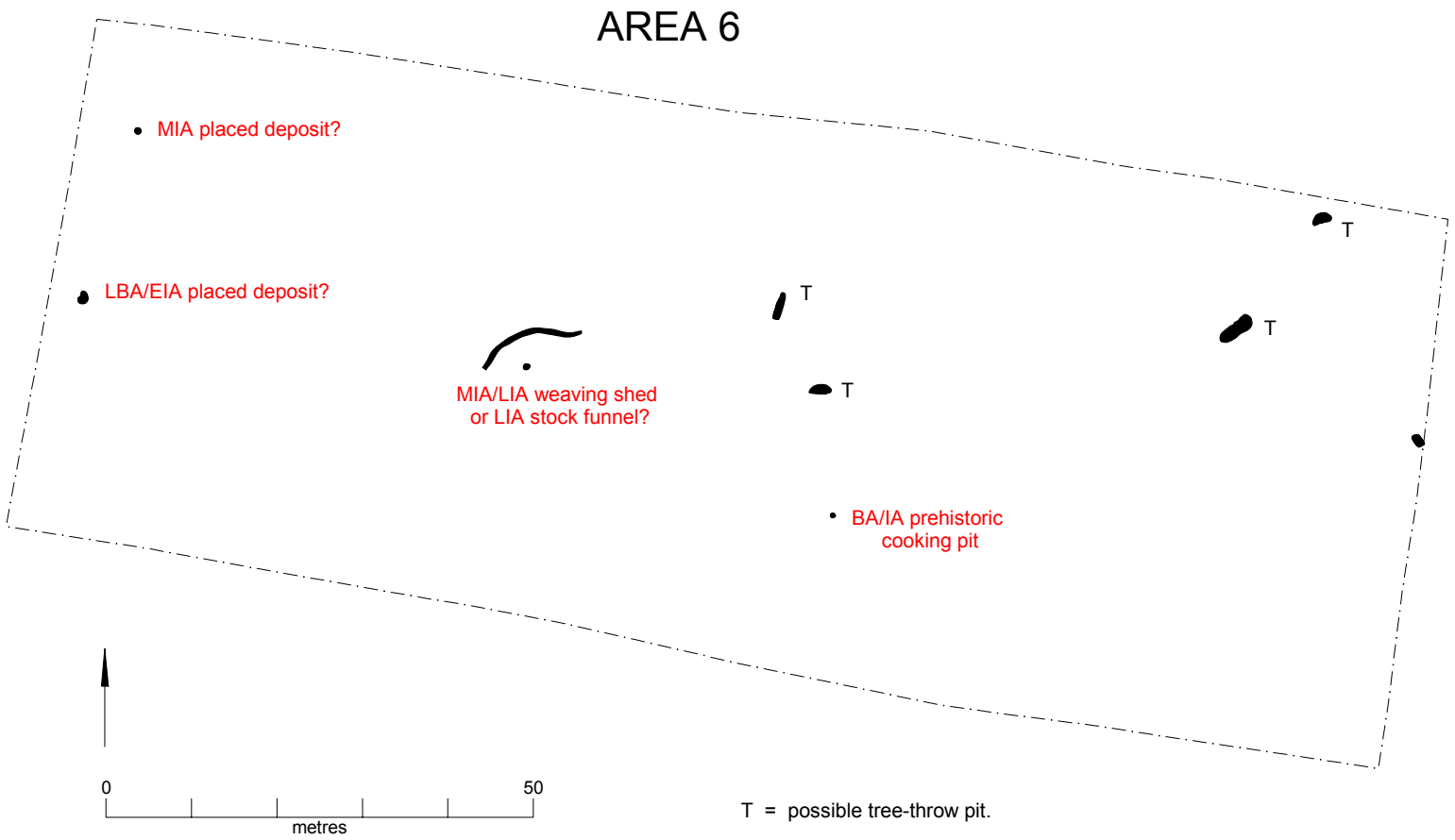


Fig 22 Area 6: pre-LIA activity (site periods ?1, 2, 3/4).

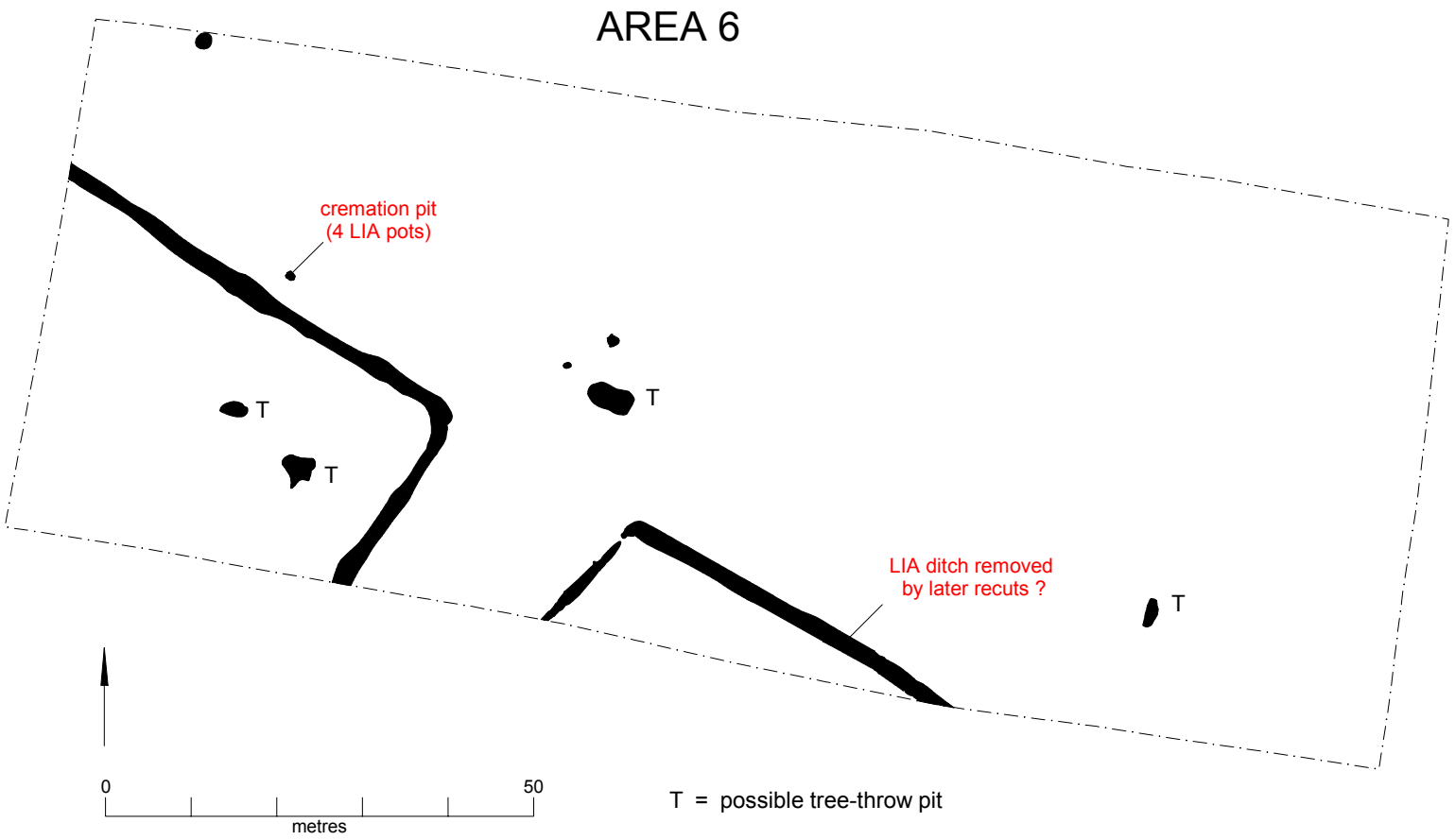


Fig 23 Area 6 Period 4: possible LIA landscape.

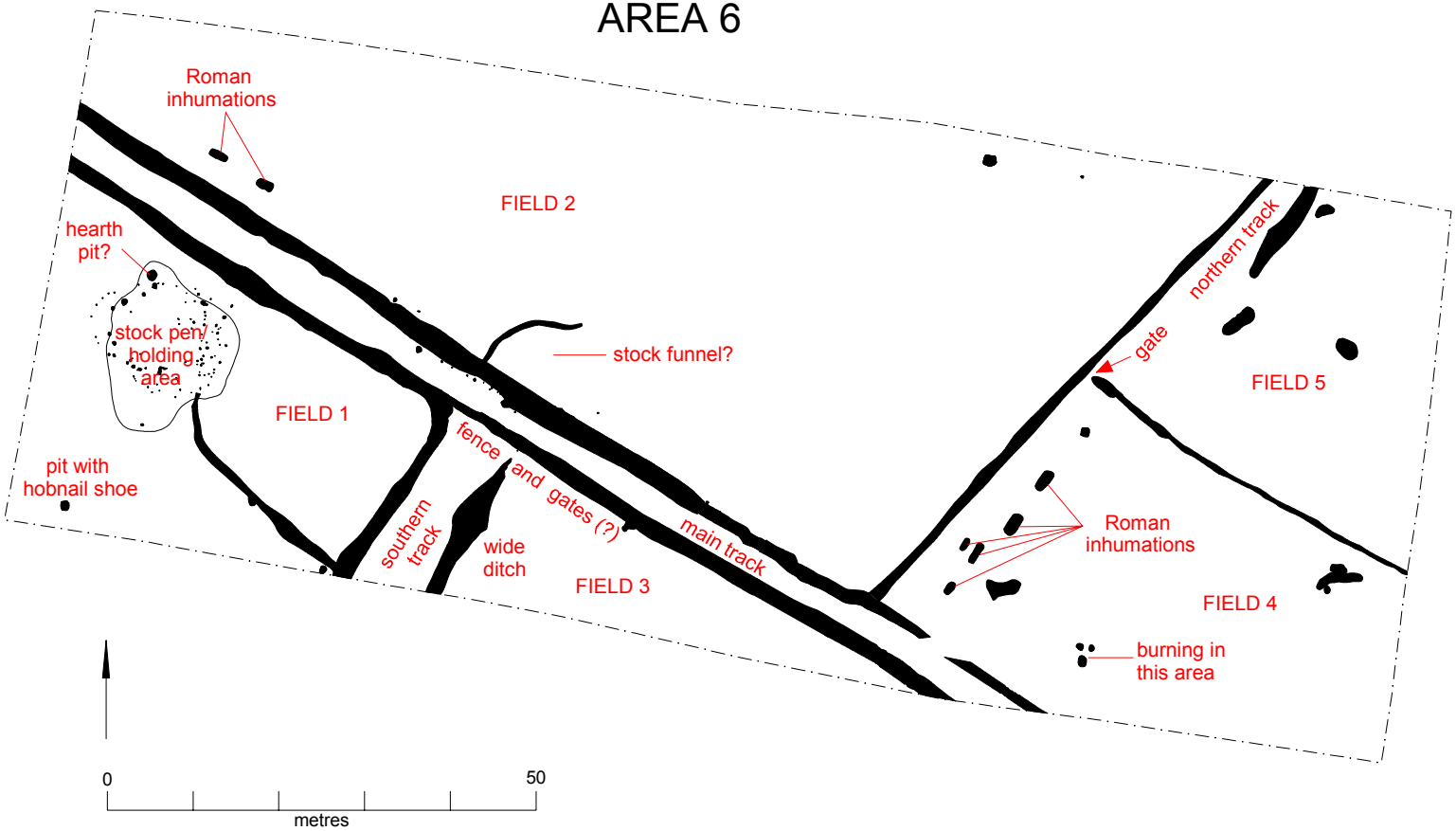


Fig 24 Area 6 Period 5: early-mid Roman.

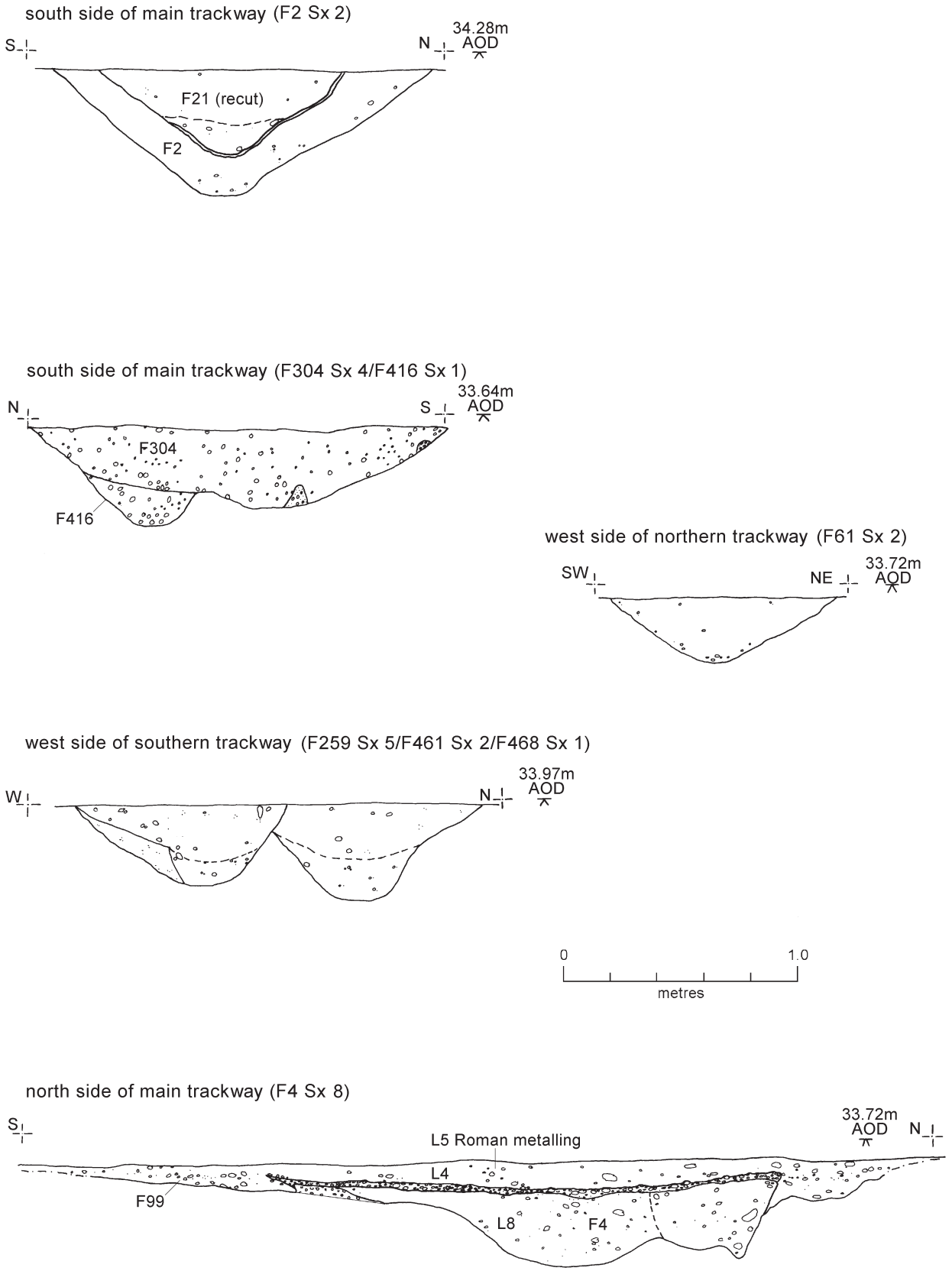


Fig 25 Area 6 sections.

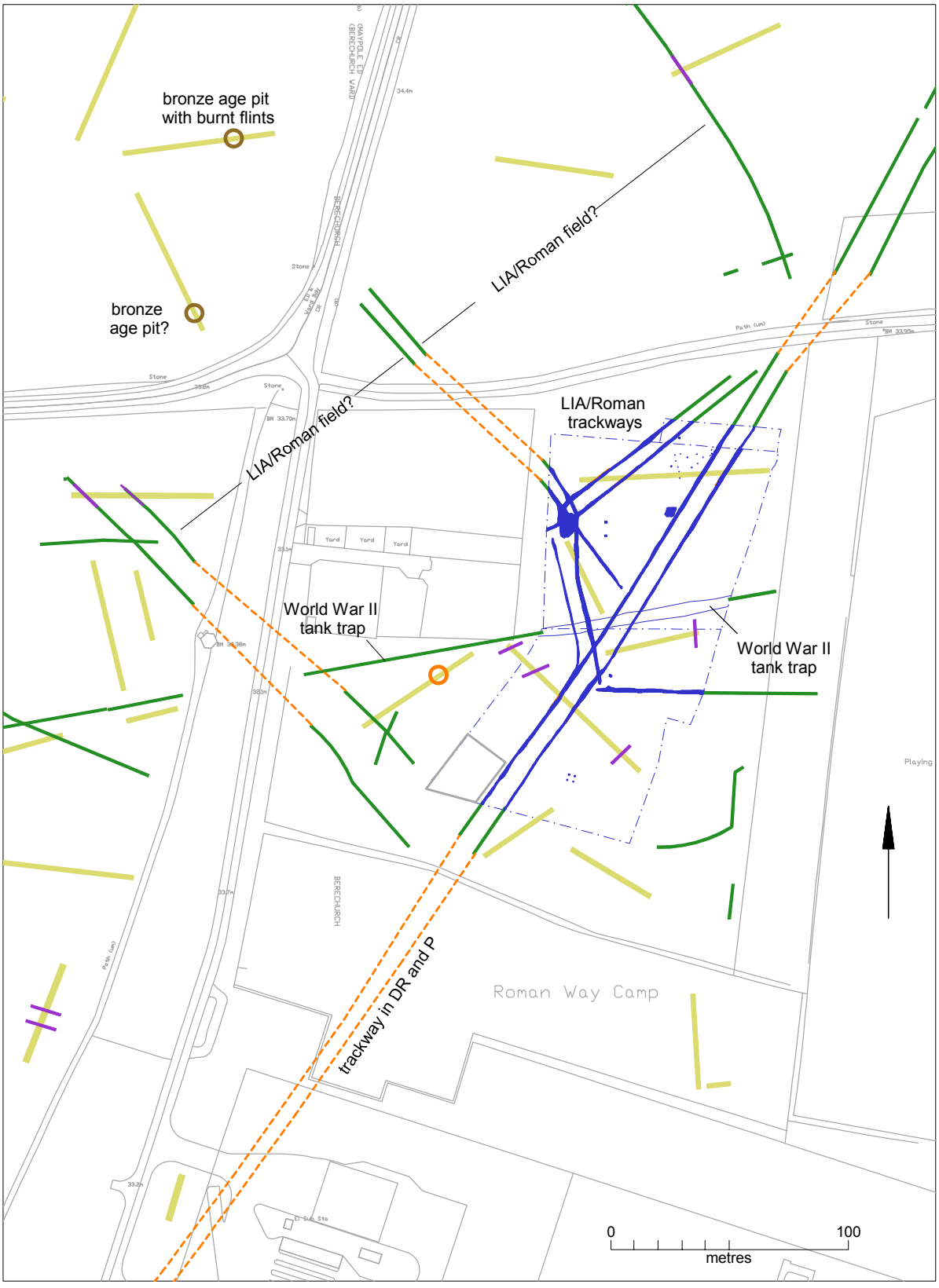


Fig 26 Area 10 excavation in context of local cropmarks and 2002 trial trenching finds.

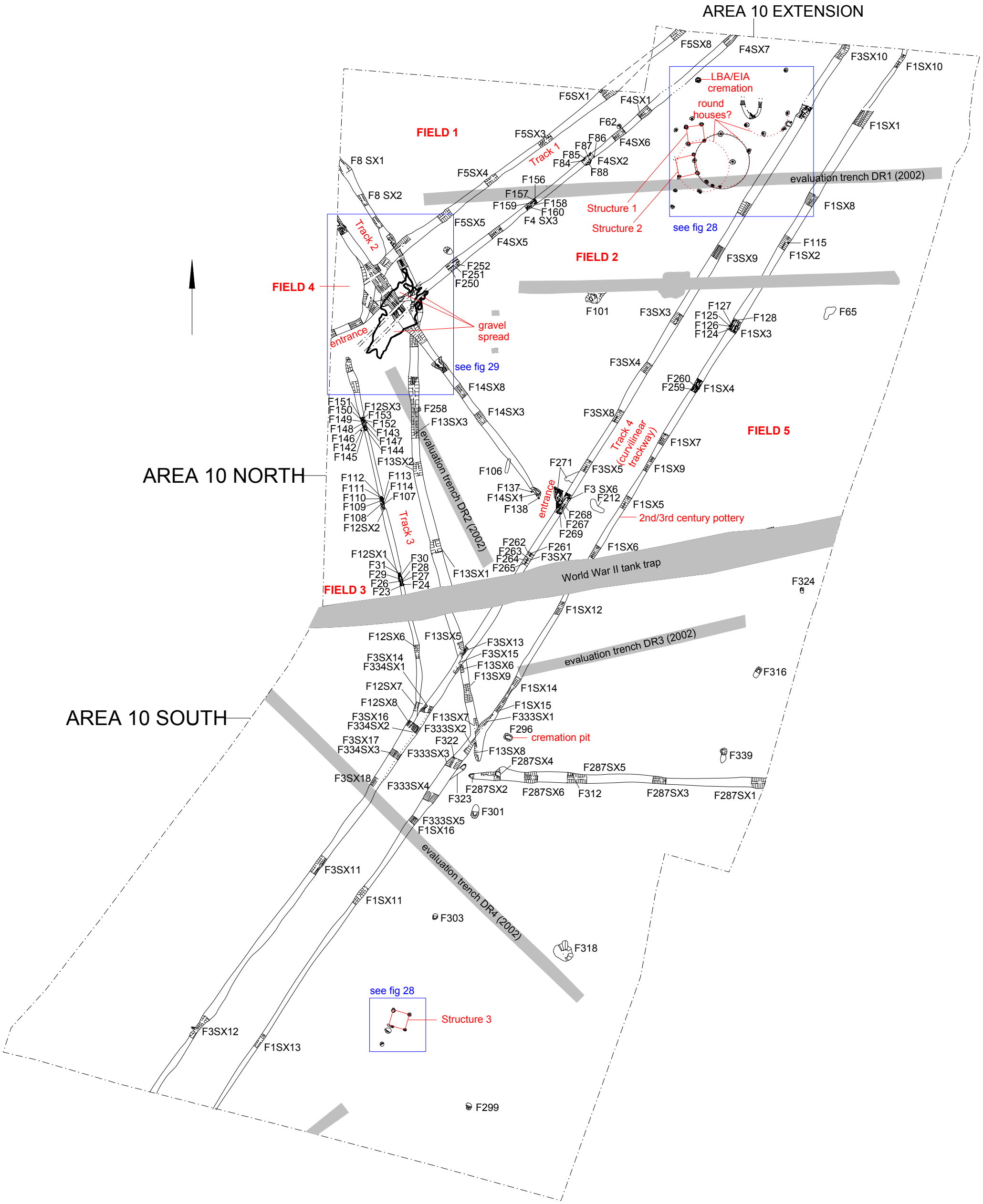


Fig 27 Plan of Area 10, showing locations of Fig 28 and Fig 29.

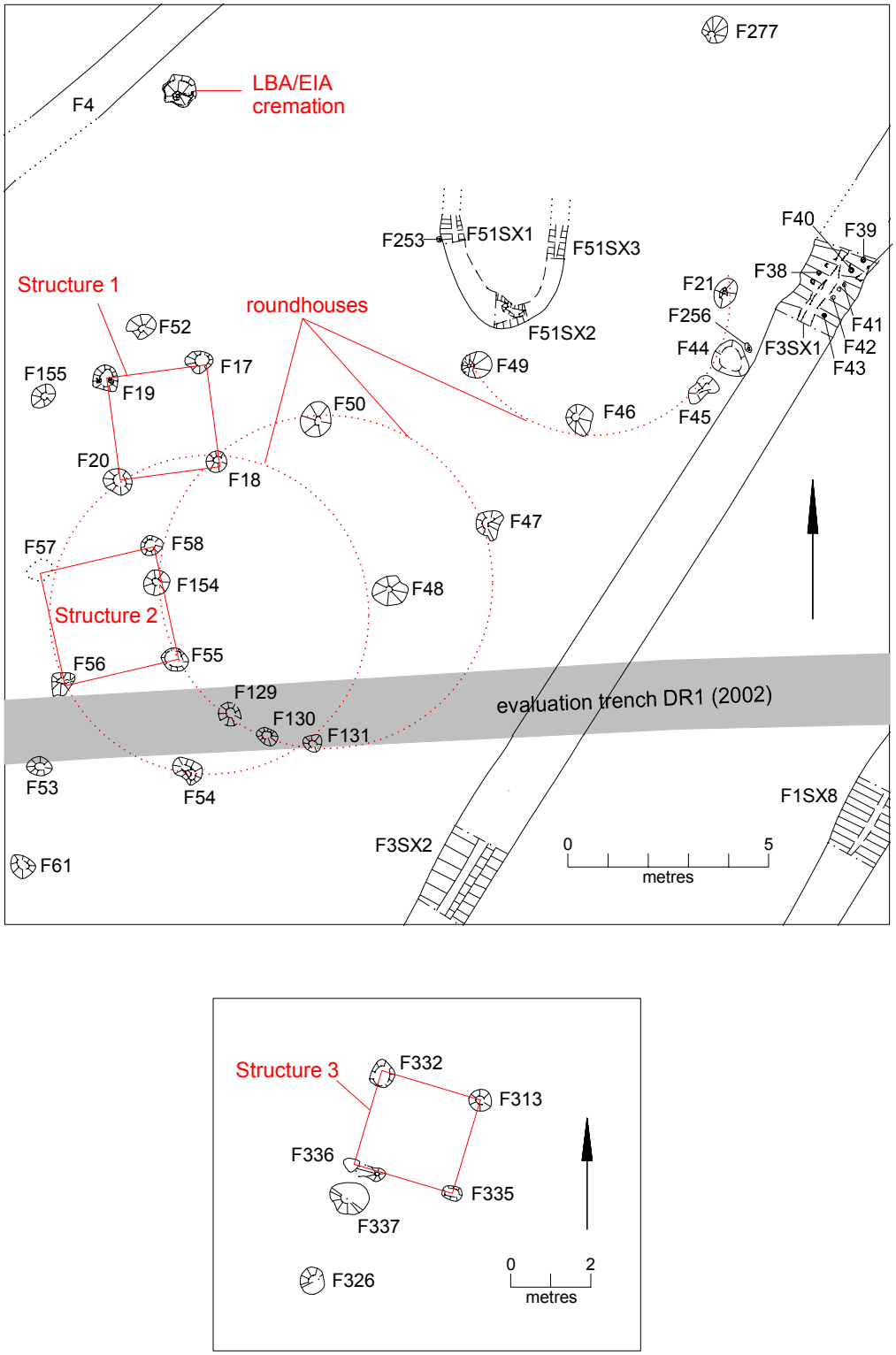


Fig 28 Area 10 structures.

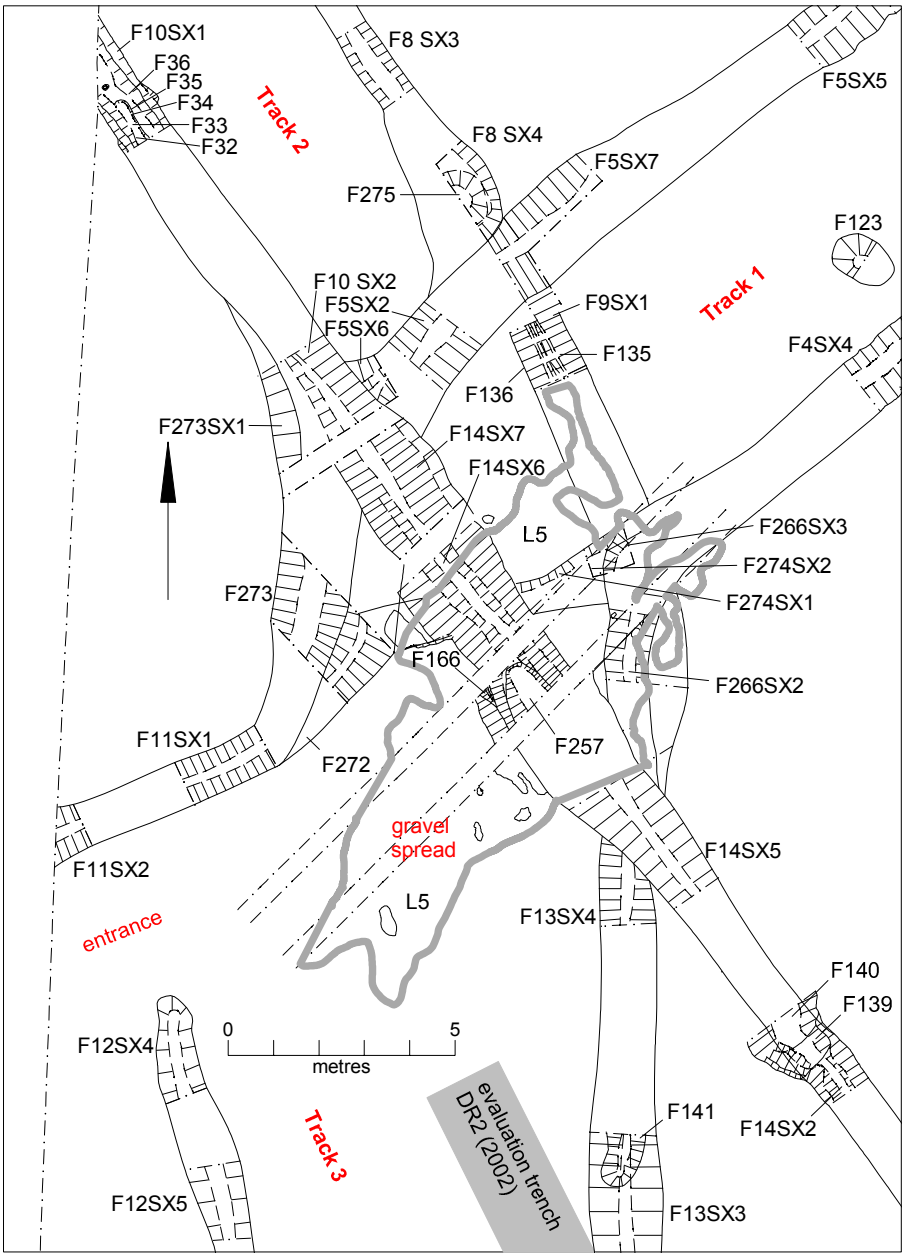


Fig 29 Area 10: junction of tracks 1-3.

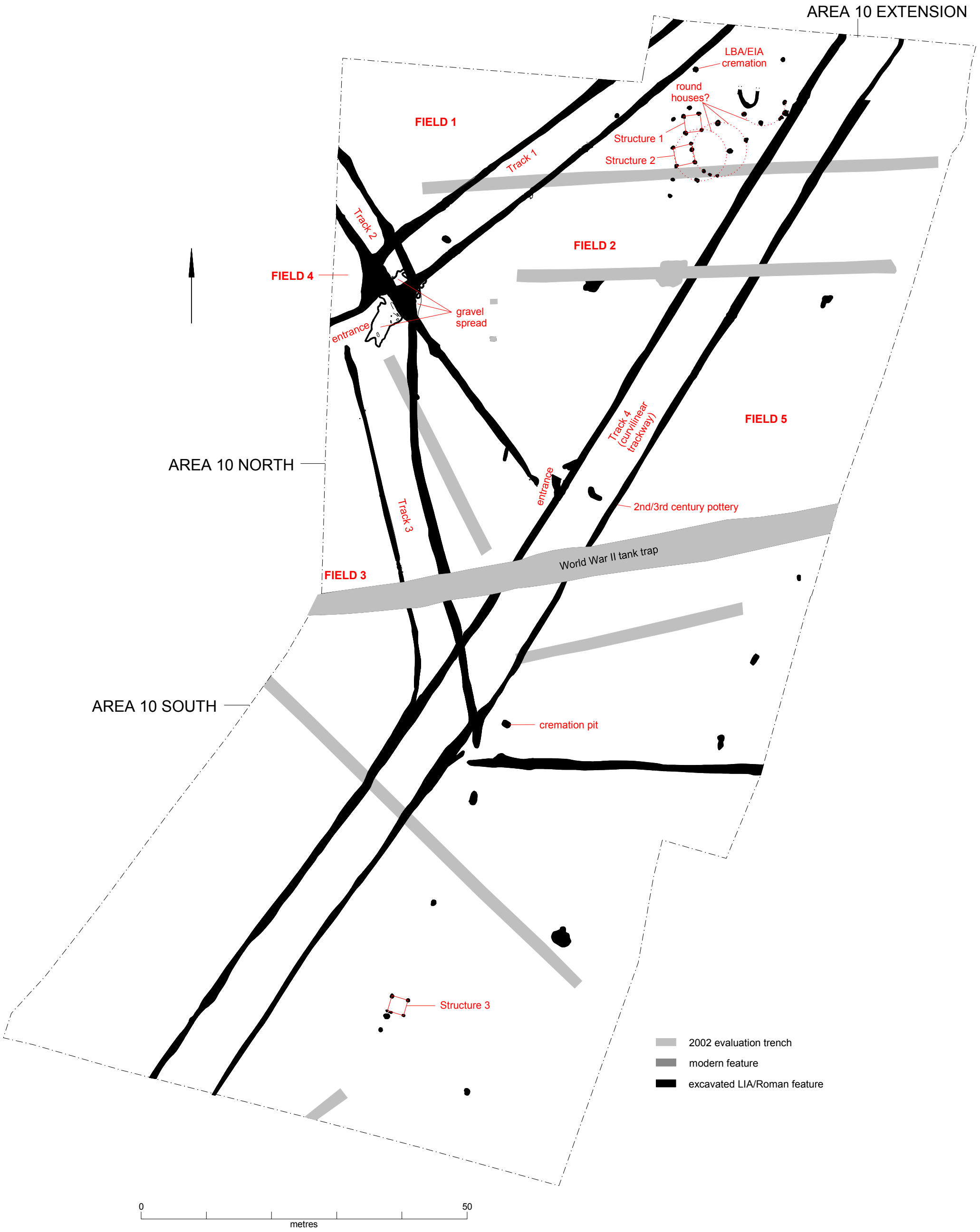


Fig 30 Area 10 interpretation.

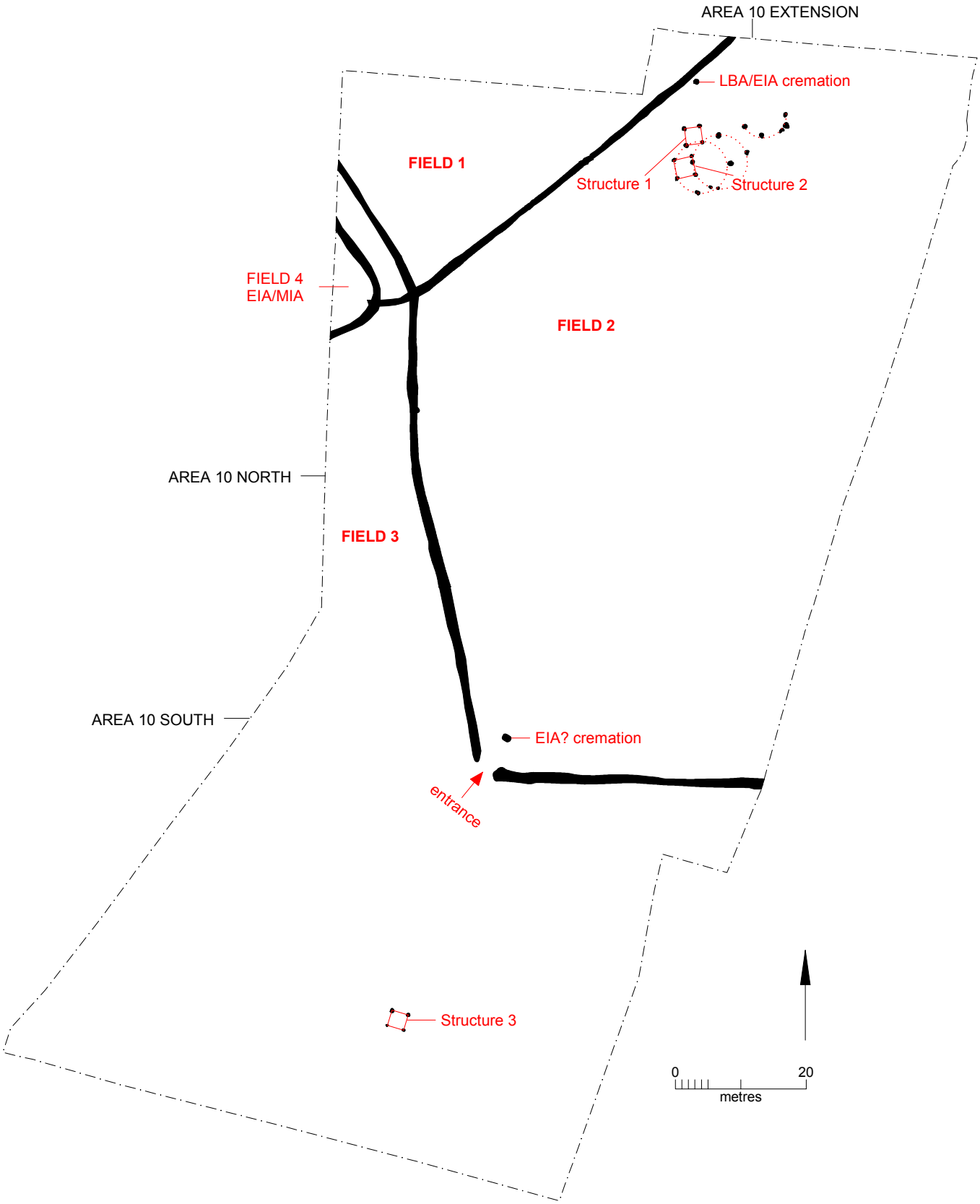


Fig 31 Area 10
Period 2: (EIA) cremations, four-posters and speculative use of early field boundaries.
Period 3, 4: (MIA to early 1st century AD) initial use of field ditches?

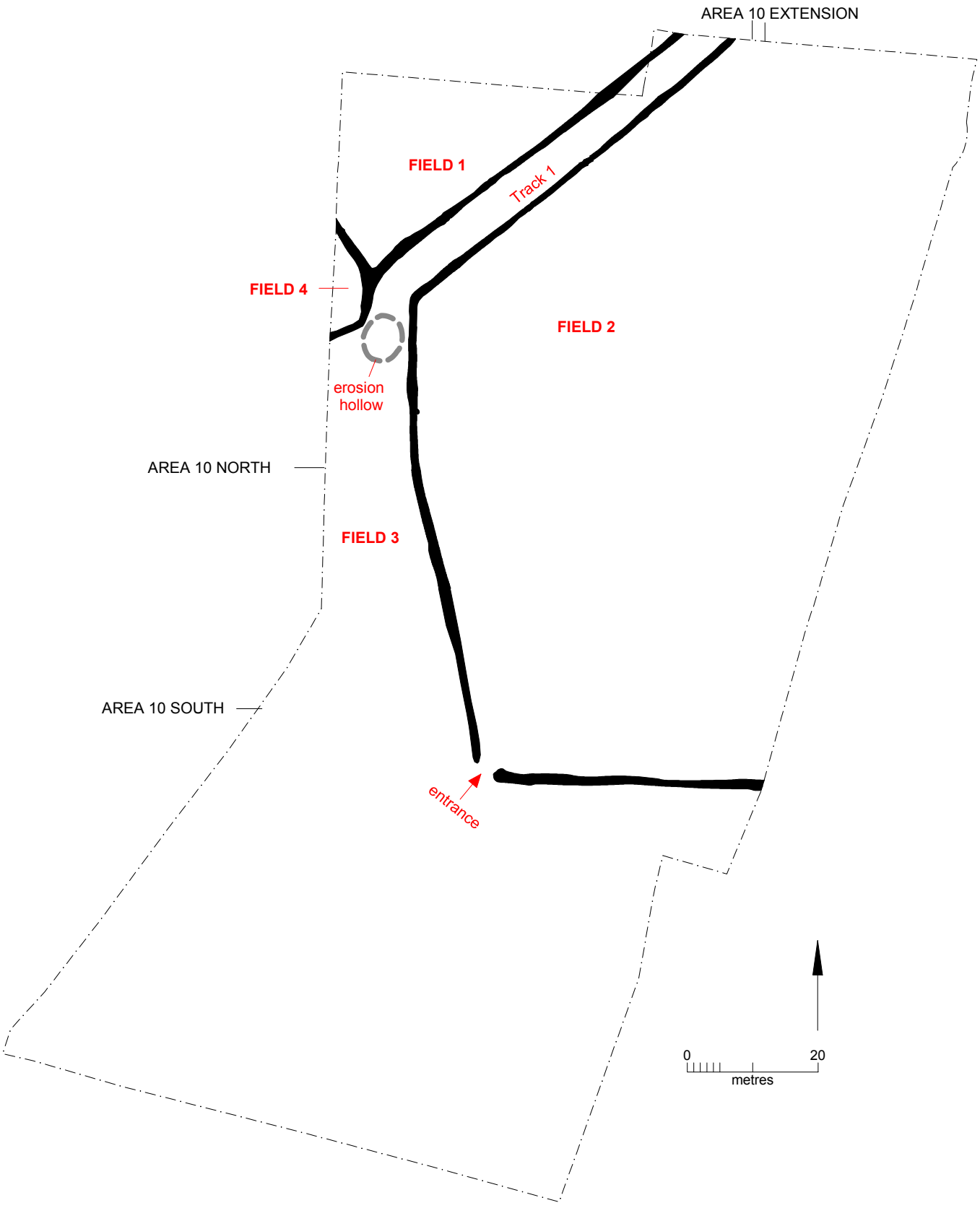


Fig 32 Area 10 Period 5a: mid-late first century AD.

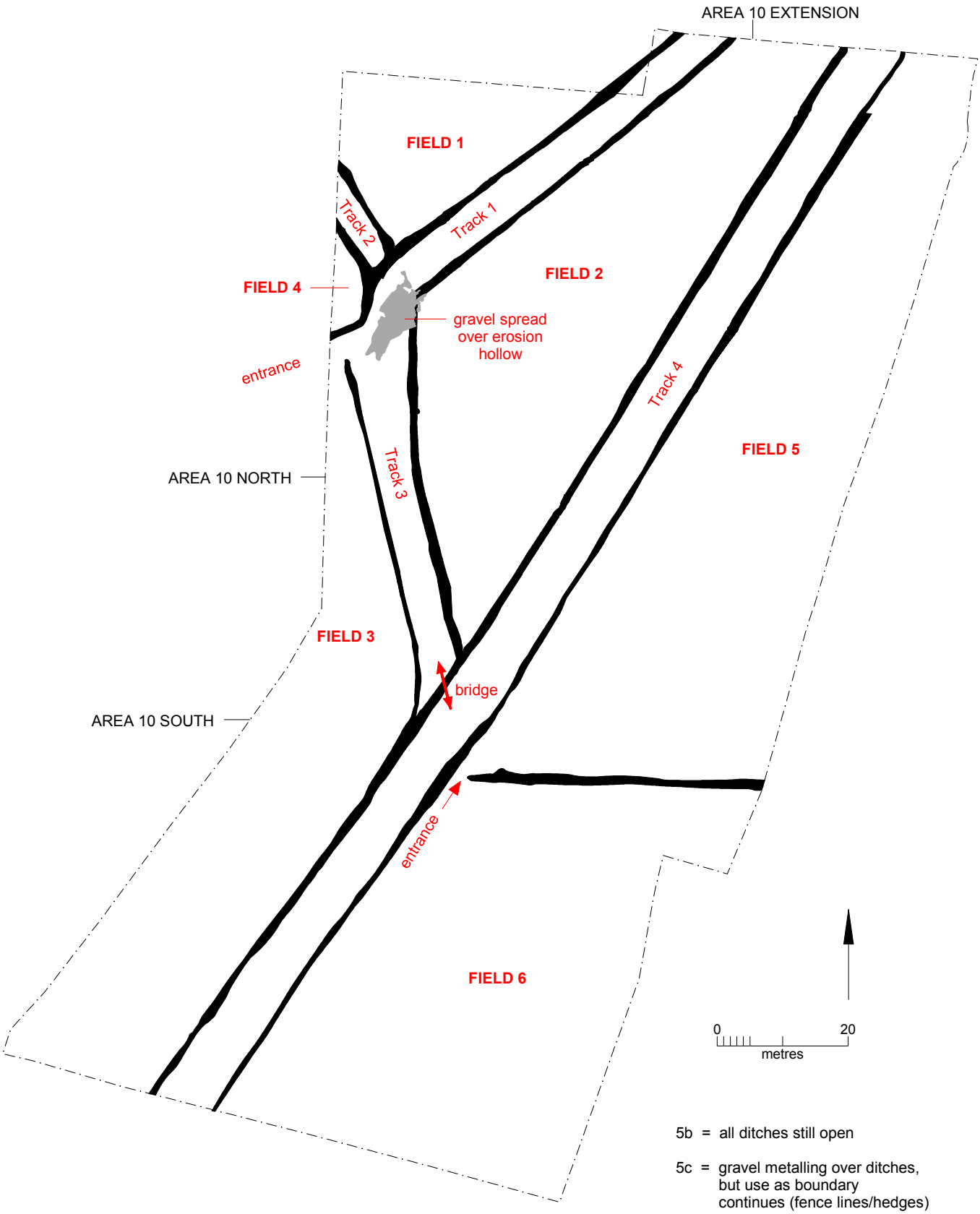


Fig 33 Area 10 Period 5b/5c: later first/early second century AD.

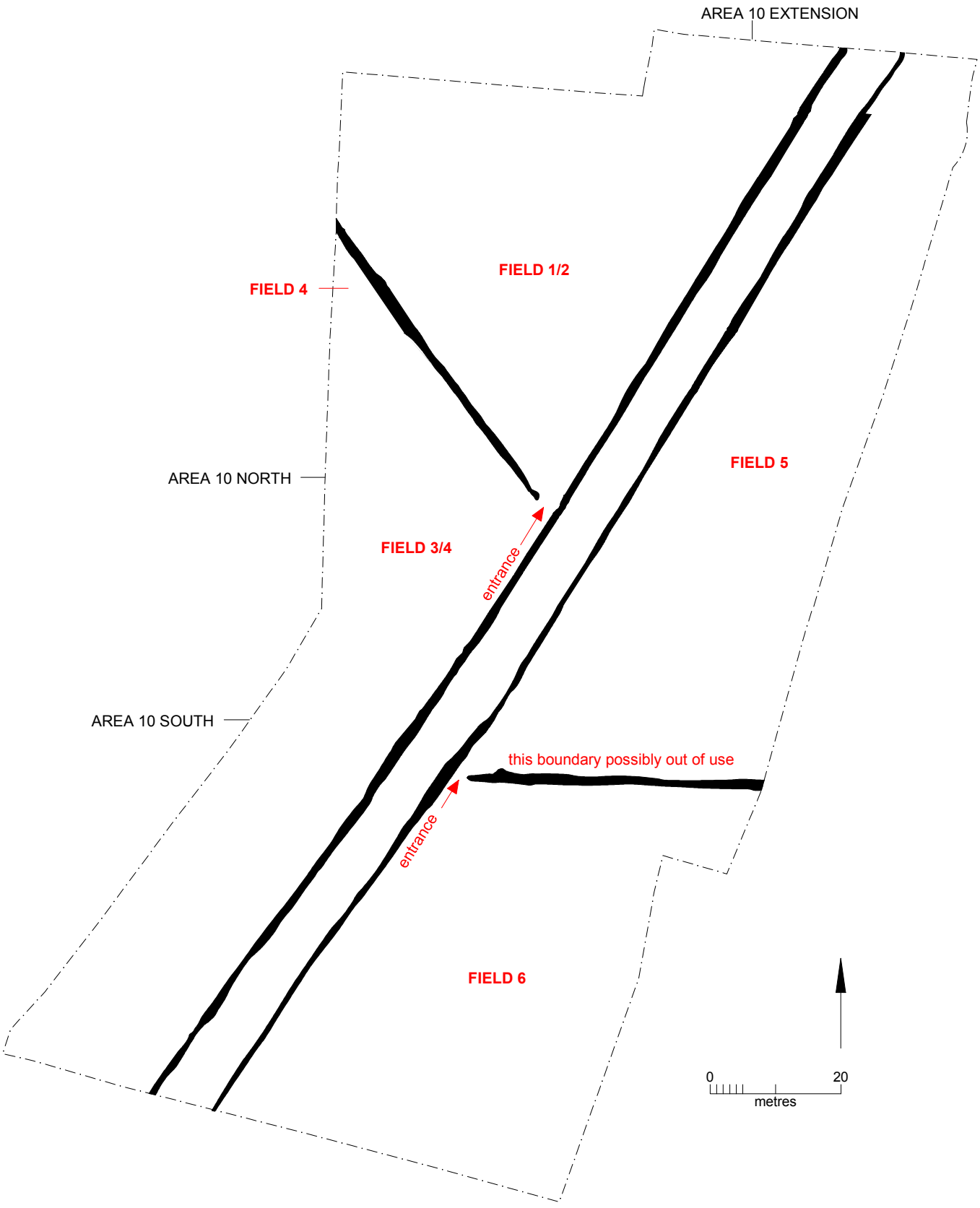


Fig 34 Area 10 Period 5d: early-late second-third century AD. (Abandonment of ditches in 3rd century).

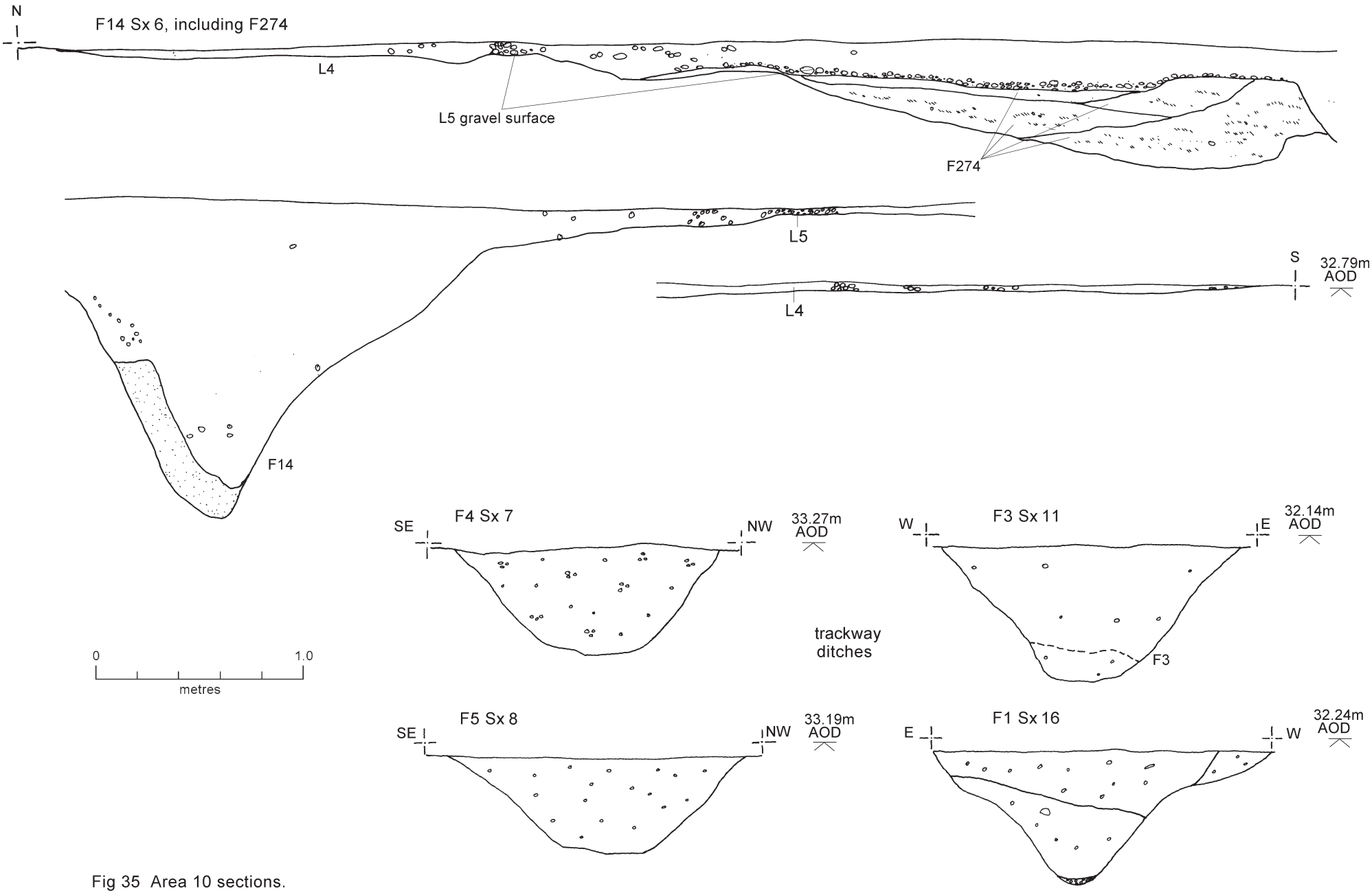


Fig 35 Area 10 sections.

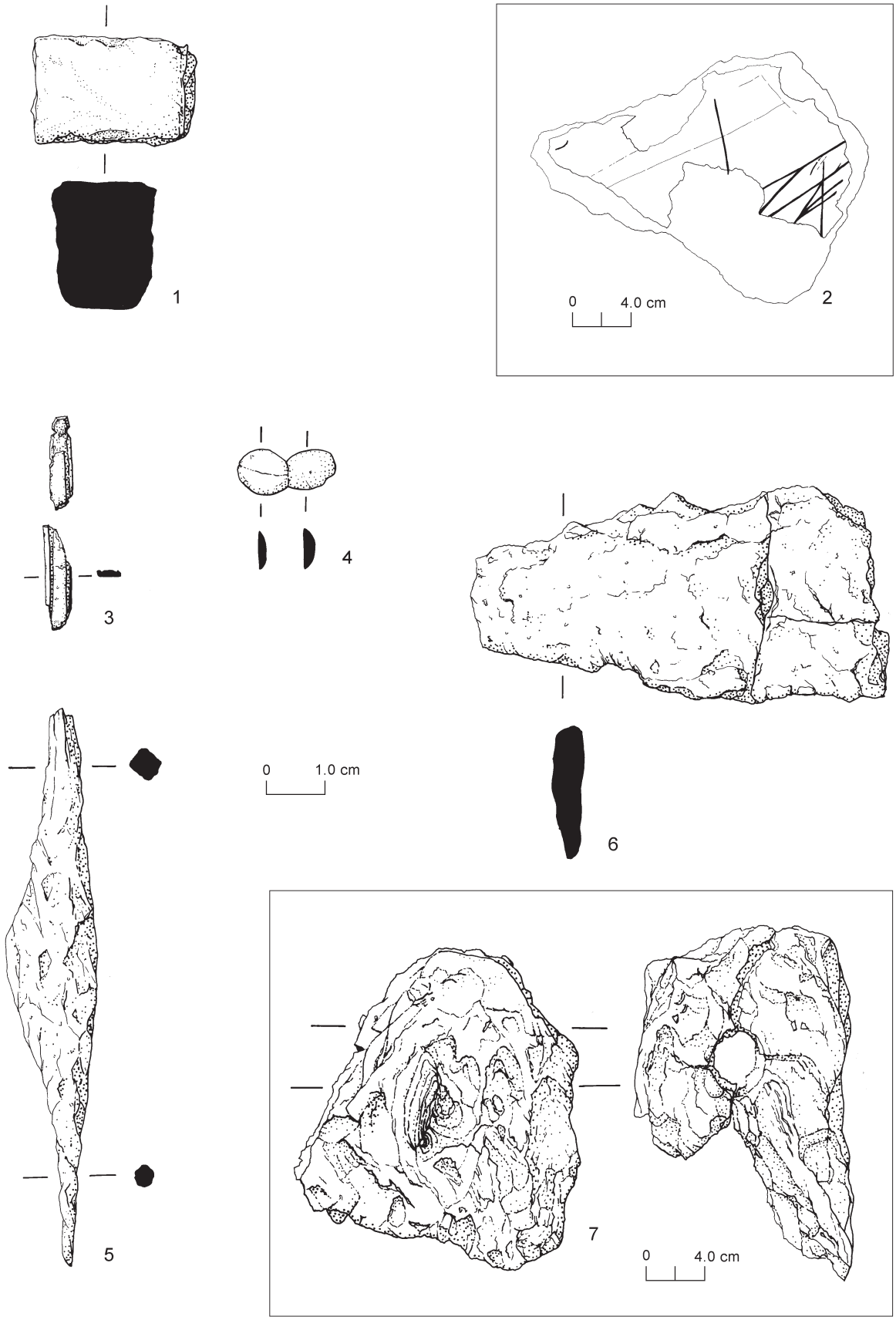


Fig 36 Stone, ceramic, copper-alloy, and iron small finds.

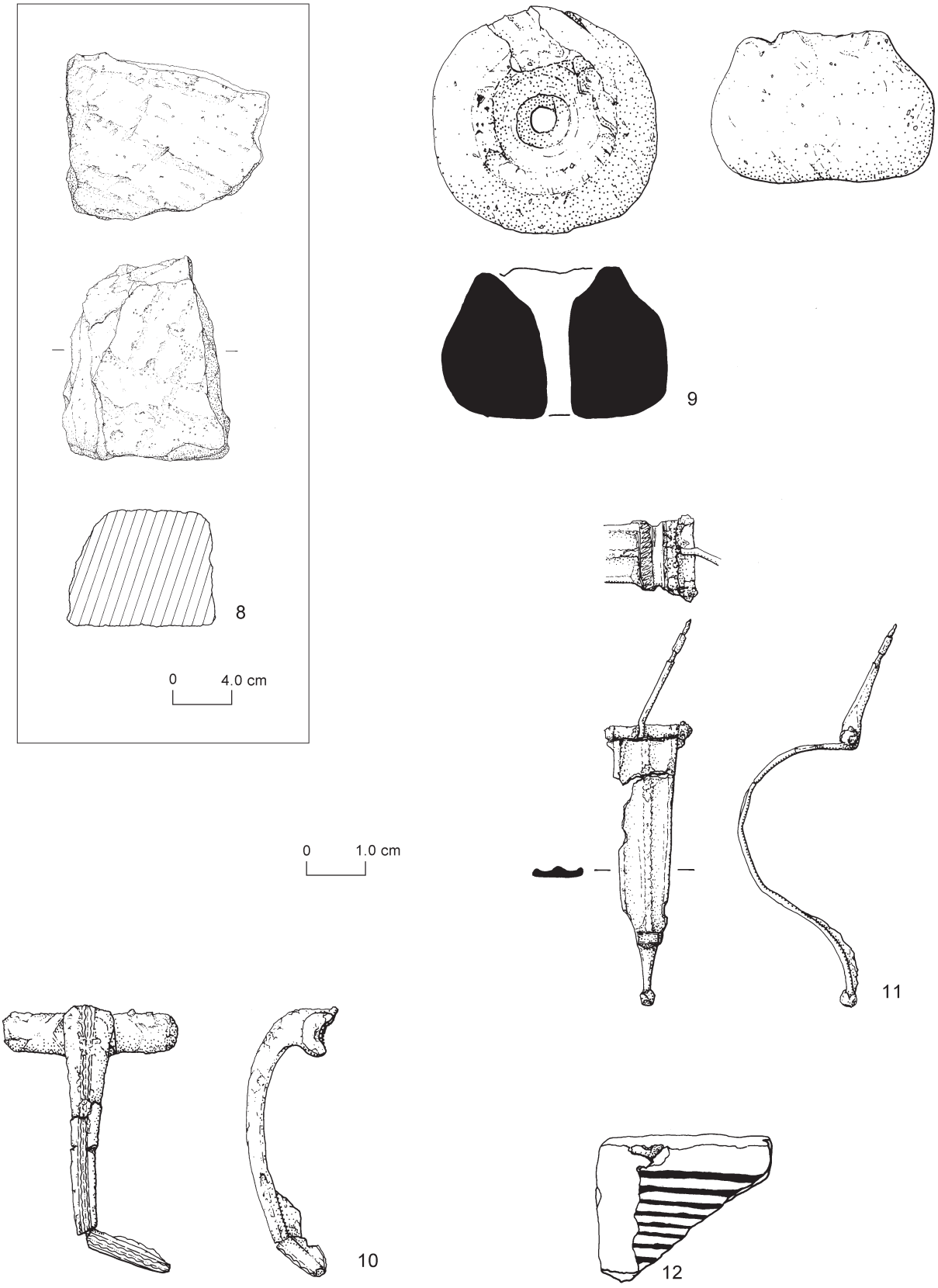


Fig 37 Stone, ceramic and copper-alloy small finds.

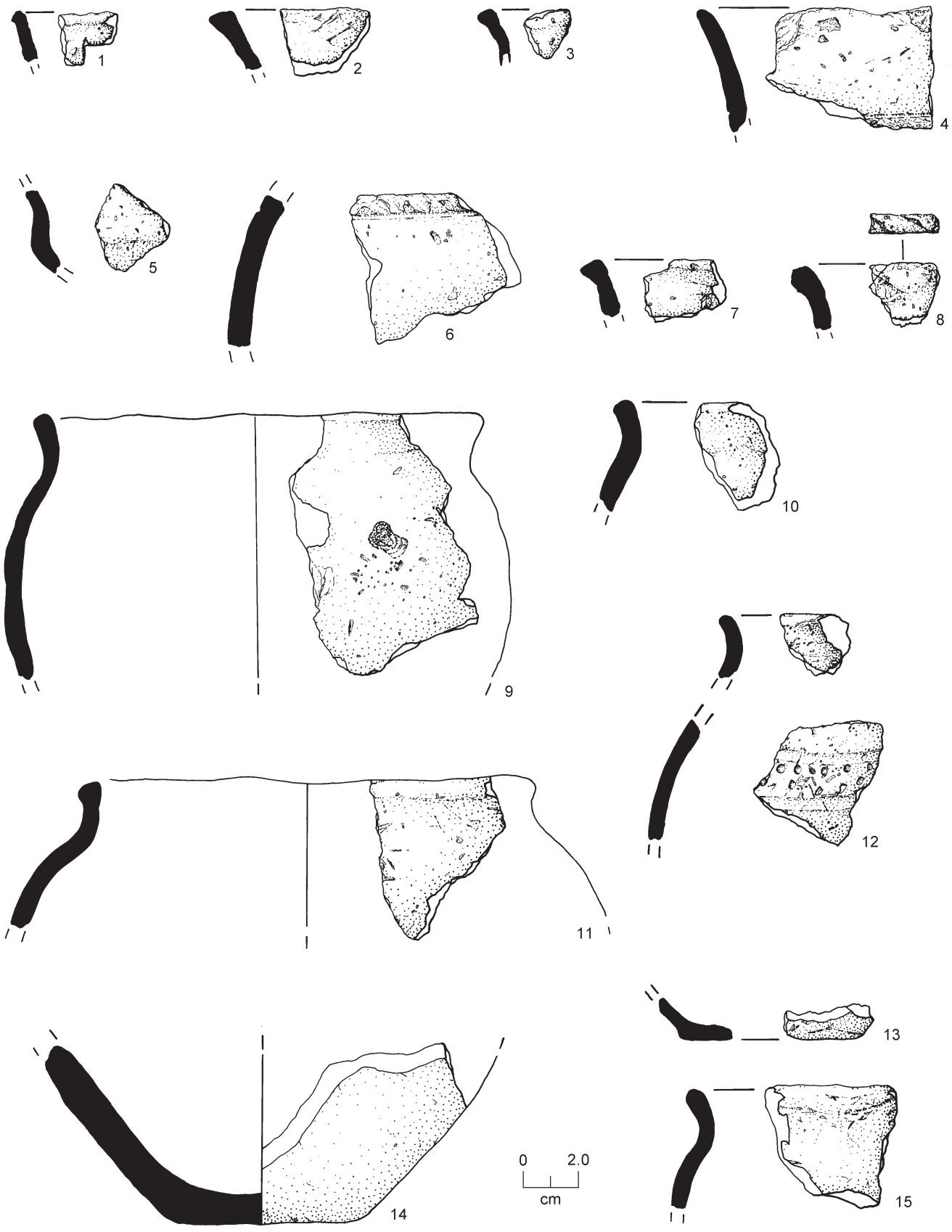


Fig 38 Pre-Belgic pottery: nos 1-15.

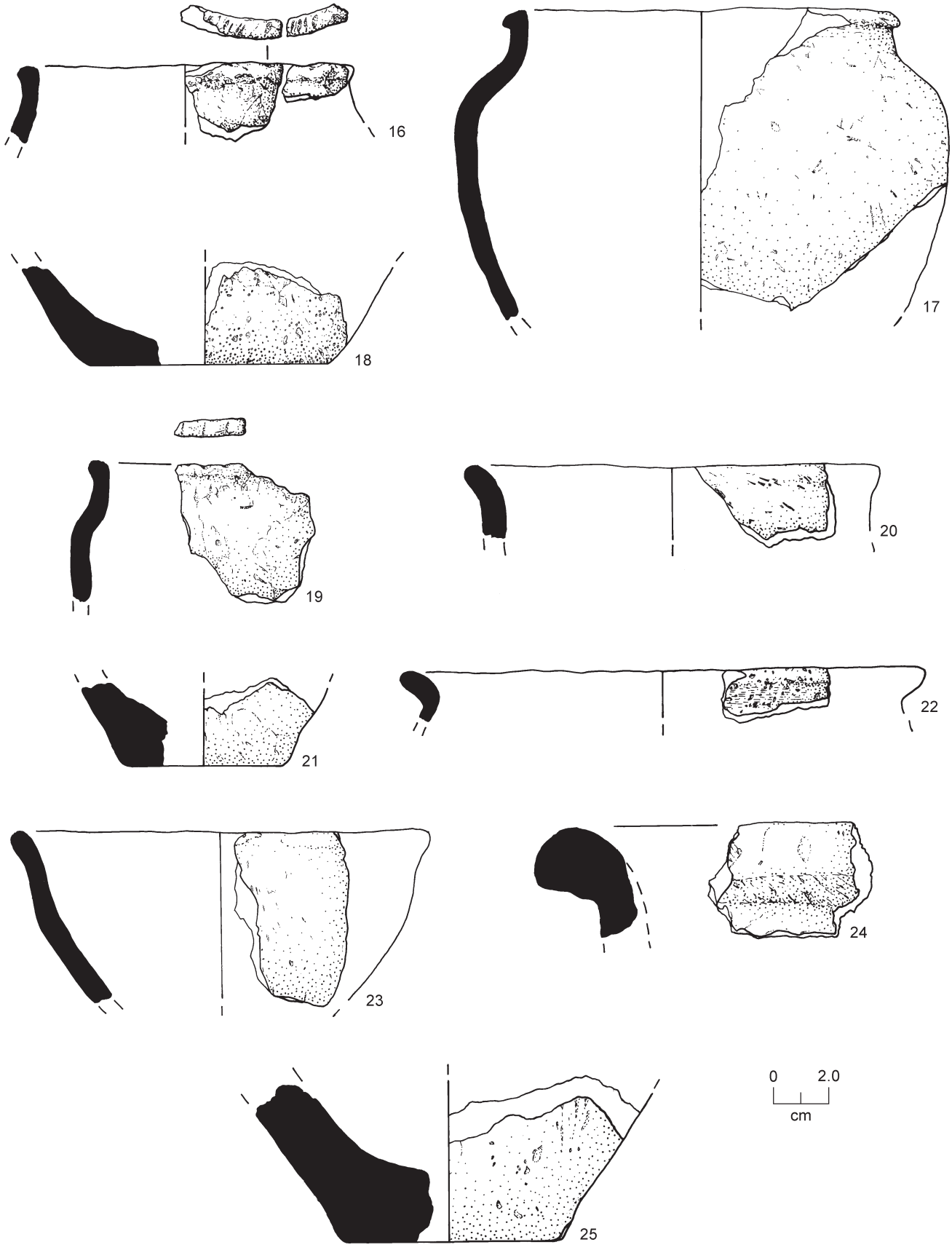


Fig 39 Pre-Belgic pottery: nos 16-25.

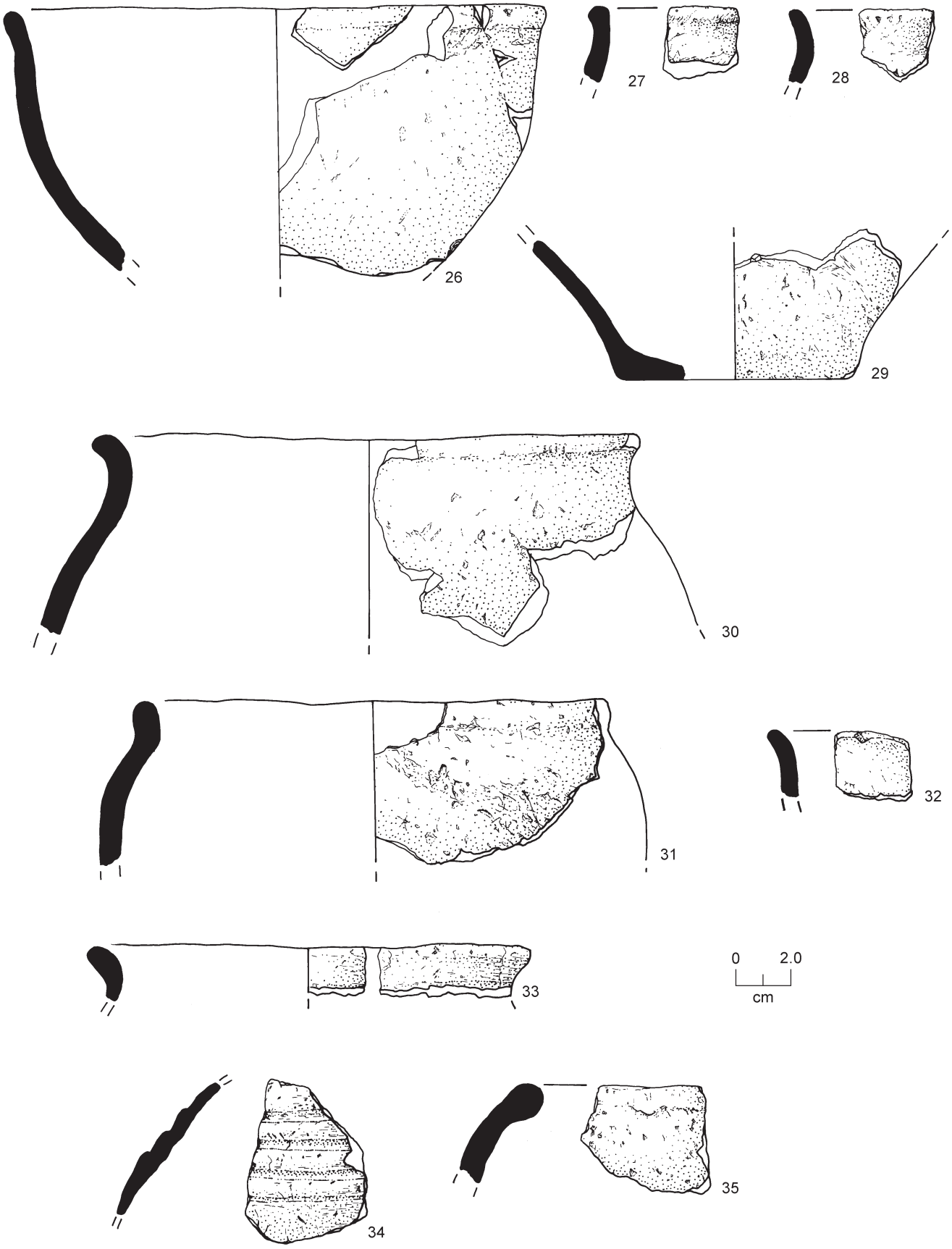


Fig 40 Pre-Belgic pottery: nos 26-35.

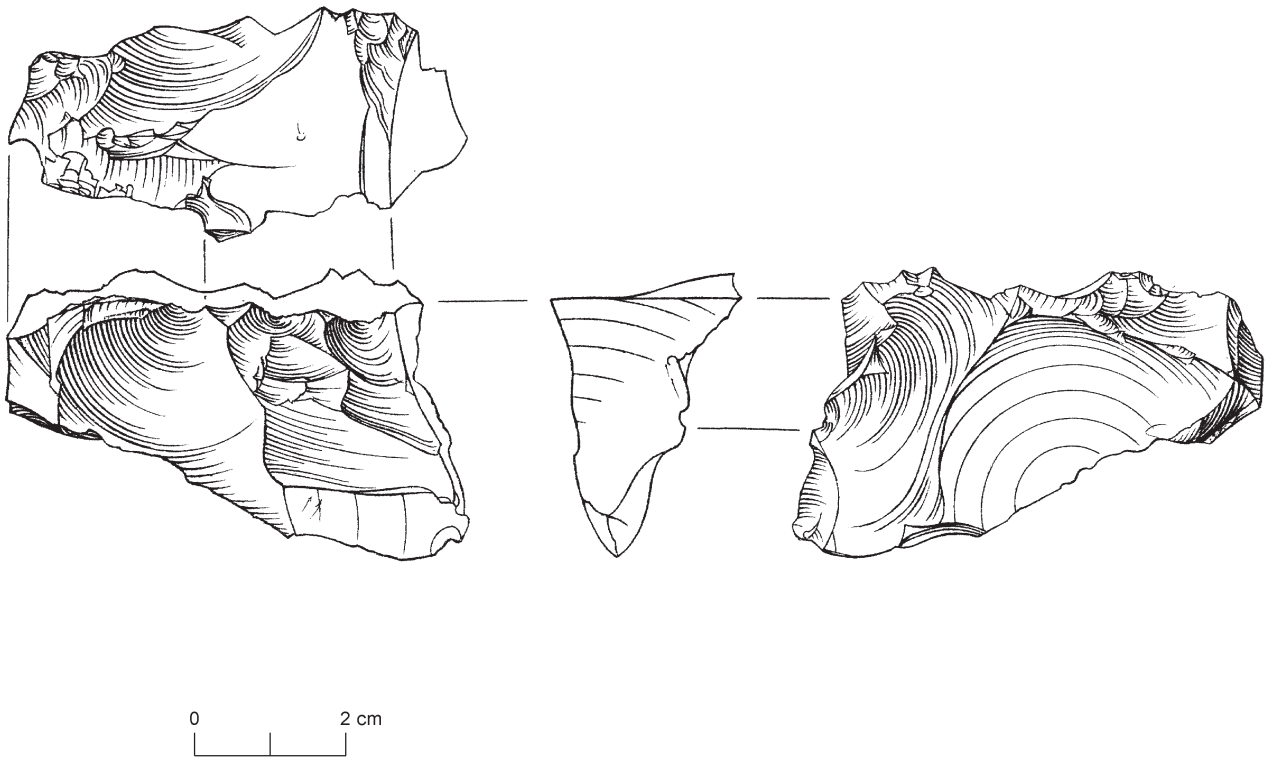
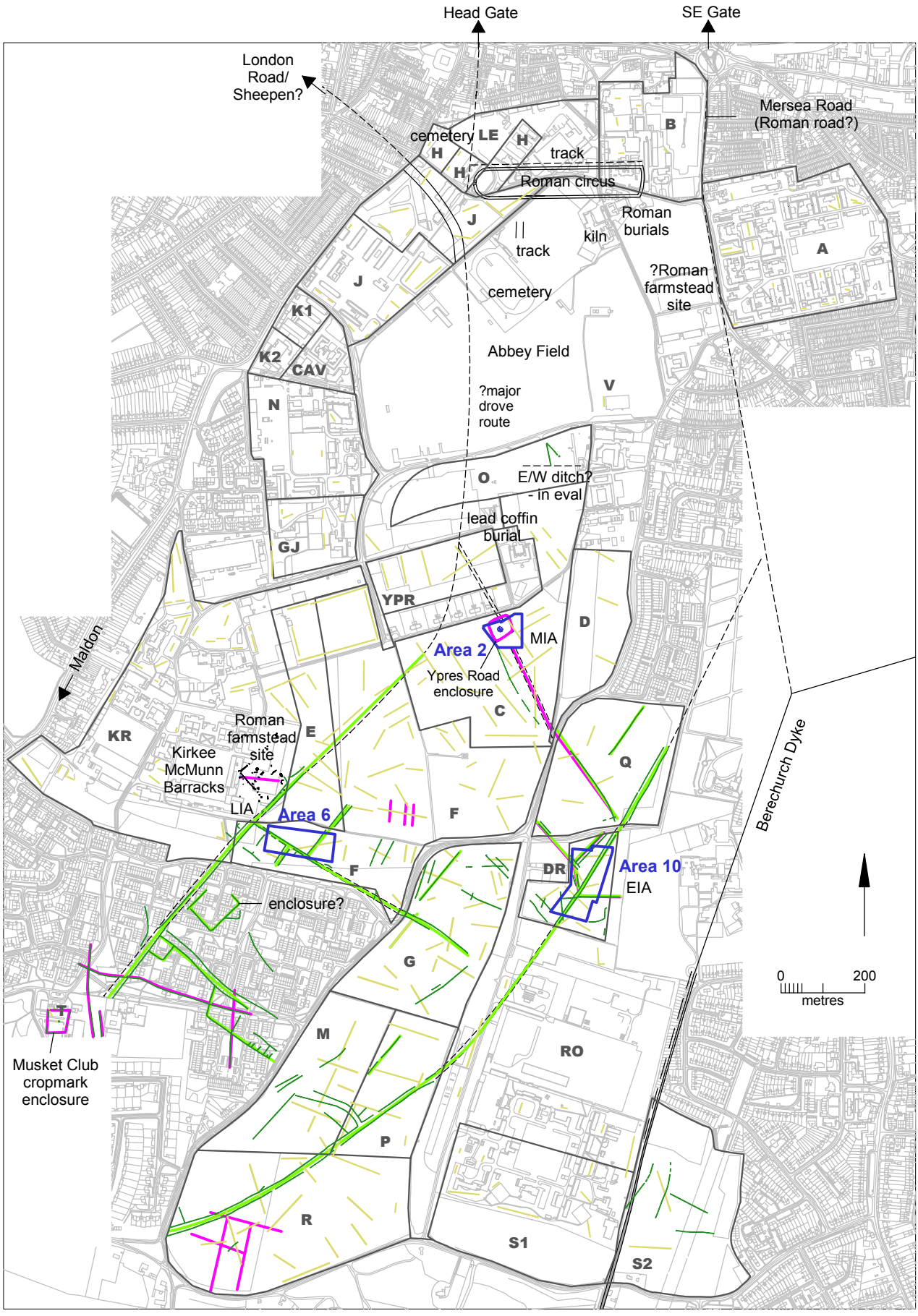


Fig 41 Prehistoric flint.



evaluation trench
cropmark/geophysical anomaly
landscape form 1
landscape form 2
excavation
projected alignments (conjectural)

Fig 42 Colchester Garrison showing location of Areas 2, 6 and 10, showing LIA/Roman landscape context.

Essex Historic Environment Record/
Essex Archaeology and History

Summary sheet

<table>
<tr><td colspan="2">Site address: Areas 2, 6 and 10 of the Colchester Garrison PFI project, Colchester, Essex</td></tr>
<tr><td>Parish: Colchester</td><td>District: Colchester</td></tr>
<tr><td>NGR: Area 2 - TL 9943 2342
Area 6 - TL 9896 2294
Area 10 - TL 9953 2286</td><td>Site code:
Museum accession code 2003.210</td></tr>
<tr><td>Type of work: Excavation</td><td>Site director/group:
Colchester Archaeological Trust</td></tr>
<tr><td>Date of work:
August-November 2003</td><td>Size of area investigated:
3 area excavations (Areas 2, 6, 10) totalling 29,425 sq m</td></tr>
<tr><td>Location of finds/curating museum:
Colchester Museums</td><td>Funding source:
Developer</td></tr>
<tr><td>Further seasons anticipated? No</td><td>Related EHER nos:</td></tr>
<tr><td colspan="2">Final report: CAT Report 292 and summary in EAH</td></tr>
<tr><td colspan="2">Periods represented: prehistoric, Roman, medieval, post-medieval</td></tr>
<tr><td colspan="2">Summary of fieldwork results:
In Area 2, there was a Middle Iron Age enclosure with an internal round-house, at the centre of which was a pottery vessel (a placed deposit). A hollow way track led to the enclosure from the east. The enclosure was put out of use before a ditched droveway was constructed through it by the early Roman period. Area 6 was dominated by trackways and field boundaries associated with the oppidum field layout. Fringe activities from the adjacent Kirkee McMunn Barracks Roman farmstead (including burials) spilled out into this area. Area 10 contained Iron Age cremation burials and structures, and Late Iron Age/Roman trackways and field boundaries.</td></tr>
<tr><td colspan="2">Previous summaries/reports: None</td></tr>
<tr><td>Author of summary:
Howard Brooks</td><td>Date of summary:
July 2005</td></tr>
</table>