A4146 STOKE HAMMOND AND LINSLADE WESTERN BYPASS ARCHAEOLOGICAL EXCAVATIONS 2005

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Archaeological investigations were carried out by Network Archaeology Ltd in 2005 on the route of the Stoke Hammond and Linslade Western Bypass. A large Iron Age occupation site, with some Roman remains, and a smaller middle to late Iron Age site towards the southern end of the bypass were excavated. The area of a moat-like earthwork shown on early Ordnance Survey maps near Chelmscote Manor Farm was investigated. This feature was shown to be of nineteenth century origin, but two small sites with concentrations of medieval pottery were discovered in the same area and excavated.

There were two concentrations of activity on the large Iron Age site, here called Site ABC, near the southern end of the bypass. The more southerly of these concentrations had the remains of six early to middle Iron Age roundhouse ring gullies. In the middle to late Iron Age, activity shifted north: the second concentration of features had the poorly preserved remains of up to five roundhouses. These were superseded by linear features, which defined a small rectilinear enclosure and possible drove-ways. A Roman phase of activity in the northern part of the site included a series of parallel cultivation trenches and a cremation burial in an urn with two accessory vessels. A further five cremation deposits were identified, including one at a smaller Iron Age site, Site F. These were undated, but their association with the ring gullies suggested that at least some of them were of Iron Age date.

A number of crucible fragments recovered from Site F provide evidence for non-ferrous Iron Age metal working.

An existing field boundary crossing Site ABC is believed to correspond to a boundary described in an Anglo-Saxon charter. Excavation revealed a ditch beneath this boundary. This ditch cut an Iron Age feature, but was otherwise undated.

An extensive programme of bulk soil-sampling and sieving was carried out, but the environmental evidence was inconclusive as the samples yielded only small quantities of charred plant remains.

INTRODUCTION

Proposals for the A4146 to bypass Leighton Buzzard to the west were first made in the 1970s and early 1980s but construction of the Stoke Hammond and Linslade Western Bypass did not start until 2005. This 11.8 km-long road (Fig. 1) links two other components of the local road network completed in the intervening period: the Leighton Buzzard Southern Bypass, constructed in 1991, which joins the A5 to the A418 east of Wing, and the A421 Stoke Hammond Northern Bypass, built in 2002 along the southern boundary of Milton Keynes.

The southern end of the new bypass lies on boulder clay deposits, which form the relatively high ground to the west of Linslade (Fig. 2). In its central part, the route is on lower ground closer to the River Ouzel and crosses the valleys of a number of small tributary streams. The underlying glacial

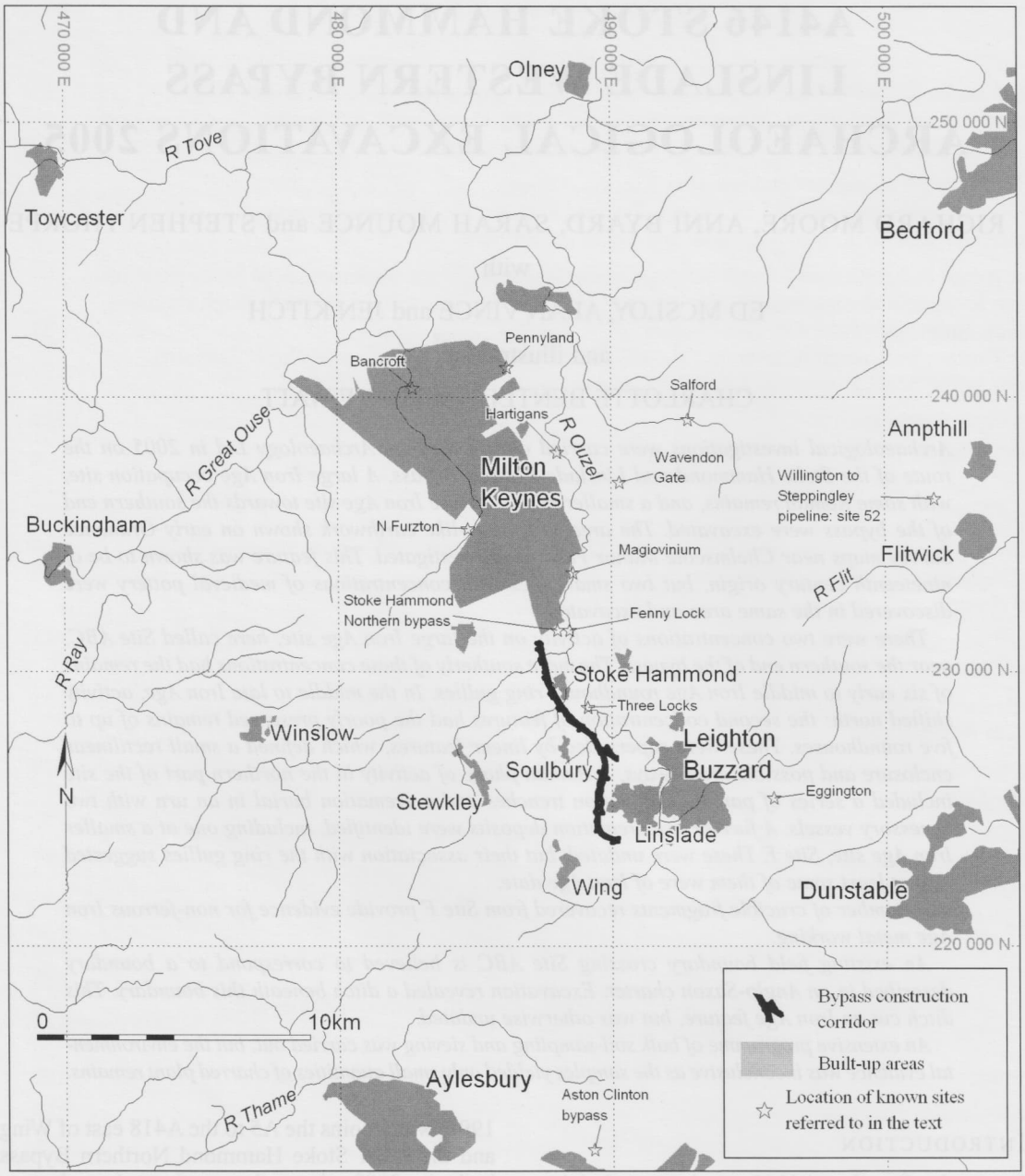


FIGURE 1 Location of the A4146 Stoke Hammond and Linslade western bypass.

gravels and Jurassic clays are exposed on the sides of these valleys and glacial head has accumulated in their bases. In the northern third of the route, where the bypass runs alongside the main-line railway, it is once again largely on boulder clay, although much of this area is made ground, disturbed by quarrying and by construction of the railway.

During the long passage through the planning process, non-intrusive archaeological investigations were carried out on the road corridor: desk-based assessments (BCMAS, 1994; BCC, 1995), field-walking (BCMAS, 1995) and geophysical surveys (Bartlett and Clark, 1994, 1995). The geophysical surveys consisted of magnetic susceptibility readings and magnetometer scanning along the whole of the proposed route, followed by measured magnetometer surveys of areas identified as having raised susceptibility levels or magnetic anomalies. Four areas were then evaluated by trial trenching (BCMAS, 1996a, 1996b); these were identified as Sites A, B, C and D.

Site A straddled the boundary between Linslade and Soulbury parishes, believed to correspond to a boundary described in an Anglo-Saxon charter of AD 966. The geophysical survey identified magnetic anomalies suggesting the presence of linear features and pits on either side of this boundary and evaluation trenching found ditches, gullies, pits and postholes with pottery dated to the late first century BC to the early first century AD (BCMAS, 1996b).

At Site B, to the south, the geophysical survey detected several magnetic anomalies including one of curvilinear shape, thought to indicate a small ring gully. The presence of this feature was corroborated by the evaluation trenching, and Iron Age pottery was recovered from its fill.

A scatter of flints was found during fieldwalking to the south of Site B near the southern end of the bypass route. The geophysical survey detected a pattern of linear anomalies in this area, which was designated Site C. Linear features, thought to be agricultural furrows, were identified by the evaluation trenching along with irregular pits or tree-throw holes.

The fourth evaluation site, Site D, was south-west of Chelmscote Manor Farm. The deserted medieval settlement of Chelmscote is believed to have been centred on this farm (Bucks SMR 1089). Within the area that was included in the bypass construction corridor, two ponds are shown on an 1827 map of tithe lands, and Ordnance Survey maps of the 1880s show a moat-like earthwork (Bucks SMR 0552). Other earthworks are visible on air photographs from the 1940s. The proposed route at the time of the evaluations in 1996 was west of the route as eventually constructed, and no features were recorded in any of the trenches.

The results of these studies in the mid-1990s were summarised when revised planning applications were submitted in 2002 (NAL, 2002a, 2002b). Iron Age and Roman remains had been shown to be present near the southern end of the bypass route, although their nature and extent were not clear, and the presence of medieval remains in the vicinity of Chelmscote Manor Farm was suspected, but had not been proved. Subsequent modifications to the planned route of the road scheme meant that construction work would impact directly on the area of the moat-like feature.

Work undertaken

Archaeological excavations were carried out by Network Archaeology Ltd between April and October 2005. Topsoil was removed from the southern end of the construction corridor for a distance of nearly 1km in a controlled machine strip. This area encompassed Sites A, B and C identified in the earlier stages of work. Full excavation of Sites A and B was then carried out. In the rest of the stripped area, which became Area C, mapping of archaeological features was undertaken, followed by targeted excavation.

Thirteen evaluation trenches were excavated in the area of Chelmscote Manor Farm. Four of these were positioned to intersect the arms of the moat-like feature (NAL, 2005). Once the moat was located, the area around it was stripped of topsoil and hand-dug sections excavated through it. The other nine trenches were positioned at intervals along the construction corridor to locate any evidence of medieval activity associated with the deserted settlement of Chelmscote. Only one of these, Trench 5, exposed significant archaeological remains: medieval and post-medieval linear features and layers. An extended area around this trench was opened and excavated. These two excavation areas to the south-west of Chelmscote were designated Site D moat and Site D Trench 5 area.

A further area of medieval features was identified to the west of Chelmscote and north of Site D during the watching brief. These features were not visible in the stripped surface, and were only seen when construction in this area was relatively far advanced with only a small area of undisturbed ground remaining. This was excavated as Site E. The watching brief also identified an area of late

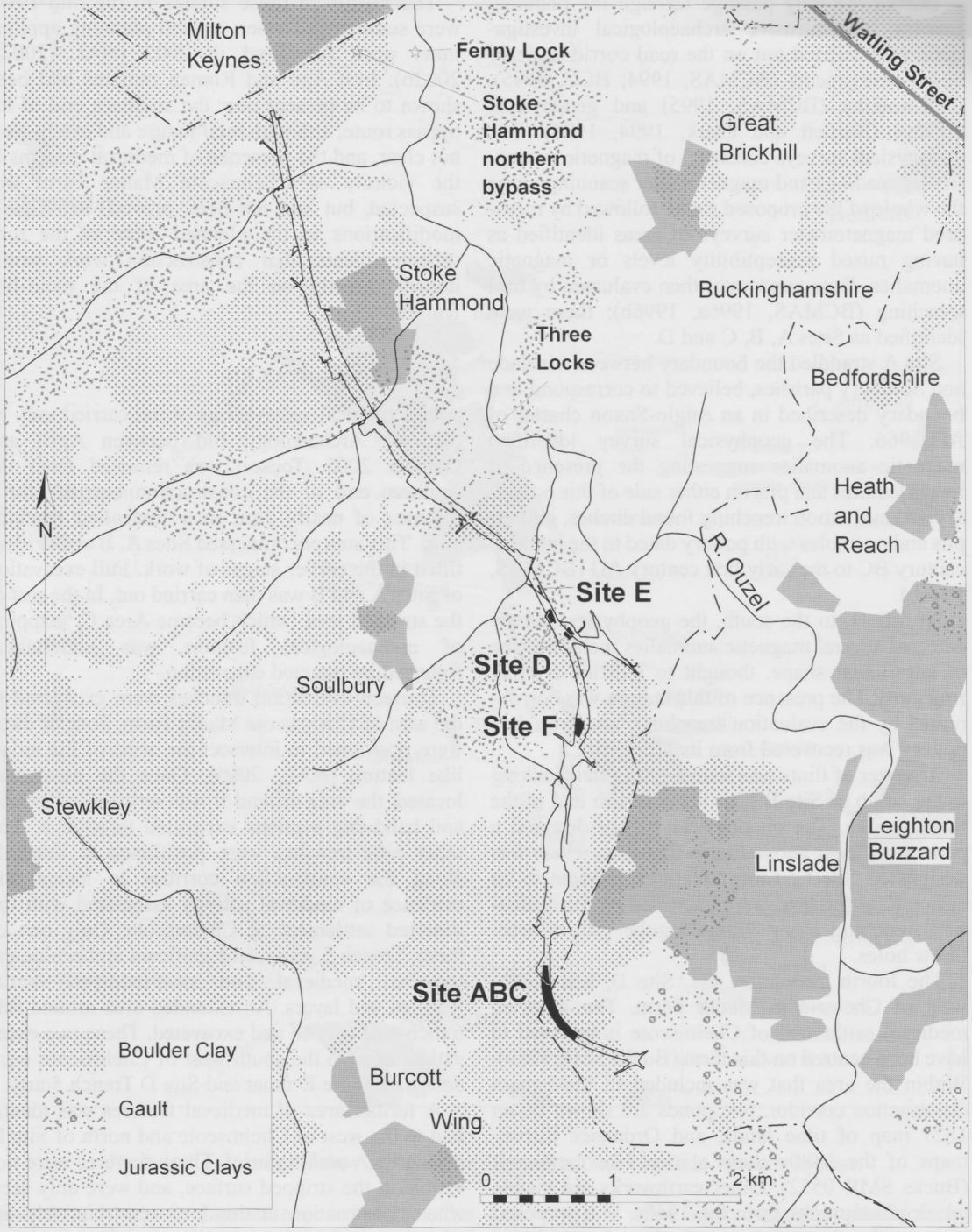


FIGURE 2 The extent of the claylands in the area of the new bypass. Based on BGS 1:50,000 map, sheet E220(1992), reproduced by permission of British Geological Survey. IPR/82-38c. © NERC. All rights reserved.

prehistoric ditches and pits near Dollar Farm on the north side of Leighton Road, excavated as Site F, and further areas extending Site A to the north. During the post-excavation analysis, the Sites A, B and C were considered as a single entity and designated Site ABC.

On completion of the excavations, an assessment report was produced (NAL, 2006). Specialist assessments of all the recovered material were carried out: worked flint (Bradley, 2006), later prehistoric and Roman pottery (McSloy, 2006), post-Roman pottery (Vince, 2006a), metalwork (Major, 2006), fired clay and ceramic building material (Vince, 2006a), cremated human bone (Brayne, 2006), stone finds (Vince, 2006a), metalworking waste and other waste from high-temperature processes (Mortimer, 2006), animal remains (Kitch, 2006), charred plant macrofossils and other environmental remains (Fryer, 2006), soil micro-morphology samples (Lewis, 2006), clay tobacco pipes, heat-affected stone and flint, glass, and shell.

Following the assessment, further analysis was carried out on the late prehistoric and Roman pottery, by Ed McSloy; the medieval pottery, ceramic building material and fired clay, by Alan Vince; and the animal bone assemblage, by Jen Kitch. The results of the assessments and analyses are summarised within the text of this article and copies of the full reports will be included in the site archive, to be deposited at Buckingham County Museum, Aylesbury (accession number: AYBCM 2005.60). Alan Vince's reports are also available on-line (Vince, 2006b).

Excavation results

Early prehistoric

The only evidence for activity earlier than the late Bronze Age recovered from the route was a small assemblage of 86 pieces of struck flint occurring as residual finds in later features or as surface finds (Bradley, 2006). These flints were quite dispersed, generally no more than the background level for the area. The material is not particularly diagnostic but it would fit well with the broadly Neolithic to Bronze Age material documented in the Chiltern region (Holgate, 1995; 1988), indicating at least some activity during this long span of time. The assemblage is dominated by debitage with only a few retouched forms. The retouched pieces are mostly flakes but also include two end and side scrapers, a backed knife made on an irregular flake and a small neatly-retouched piercer. A hammerstone made from an oval flint nodule, used at both ends, was also recovered.

The area identified as a flint concentration in field surveys and designated as Site C in the evaluation (Beds HER 11192) had a slightly greater density of material than elsewhere, but no evidence was found to explain this raised level of activity.

Iron Age

Background

The nature of pre-Roman settlement in the region has only relatively recently begun to be appreciated, as a result of archaeological investigations being routinely carried out in advance of large-scale development projects. The distribution of known sites is consequently heavily biased towards areas in which development has occurred, most notably Milton Keynes, where Iron Age occupation sites have been excavated at Bancroft (Williams and Zeepvat, 1994), Fenny Lock (Ford and Taylor, 2001), Furzton (Williams, 1988), Hartigans Quarry, Pennyland (Williams, 1993) and Wavendon Gate (Williams, Hart and Williams, 1996).

It is likely that there is a similar density of sites in other parts of the region, where the rural character has been maintained and opportunities for archaeological investigations have been far more limited. Recent infrastructure projects have demonstrated this potential; Iron Age settlement sites, in many cases previously unsuspected, have been uncovered, for instance, by quarrying at Salford (Dawson, 2005), construction of gas pipelines linking installations at Huntingdon, Willington and Steppingley (NAL, 2003a, 2003b), and construction of bypasses around Aston Clinton (RPS, 2002) and Great Barford (Beds HER 482, 13410). The view emerging from this accumulation of known sites is of an Iron Age landscape far more densely settled than was once thought.

Nearer to the bypass route, an early to middle Iron Age site was excavated in 2002 on the route of the A421 Stoke Hammond Northern Bypass. The remains of two roundhouses were found, constructed over an earlier enclosure and associated drove-way (Edgeworth, 2006).

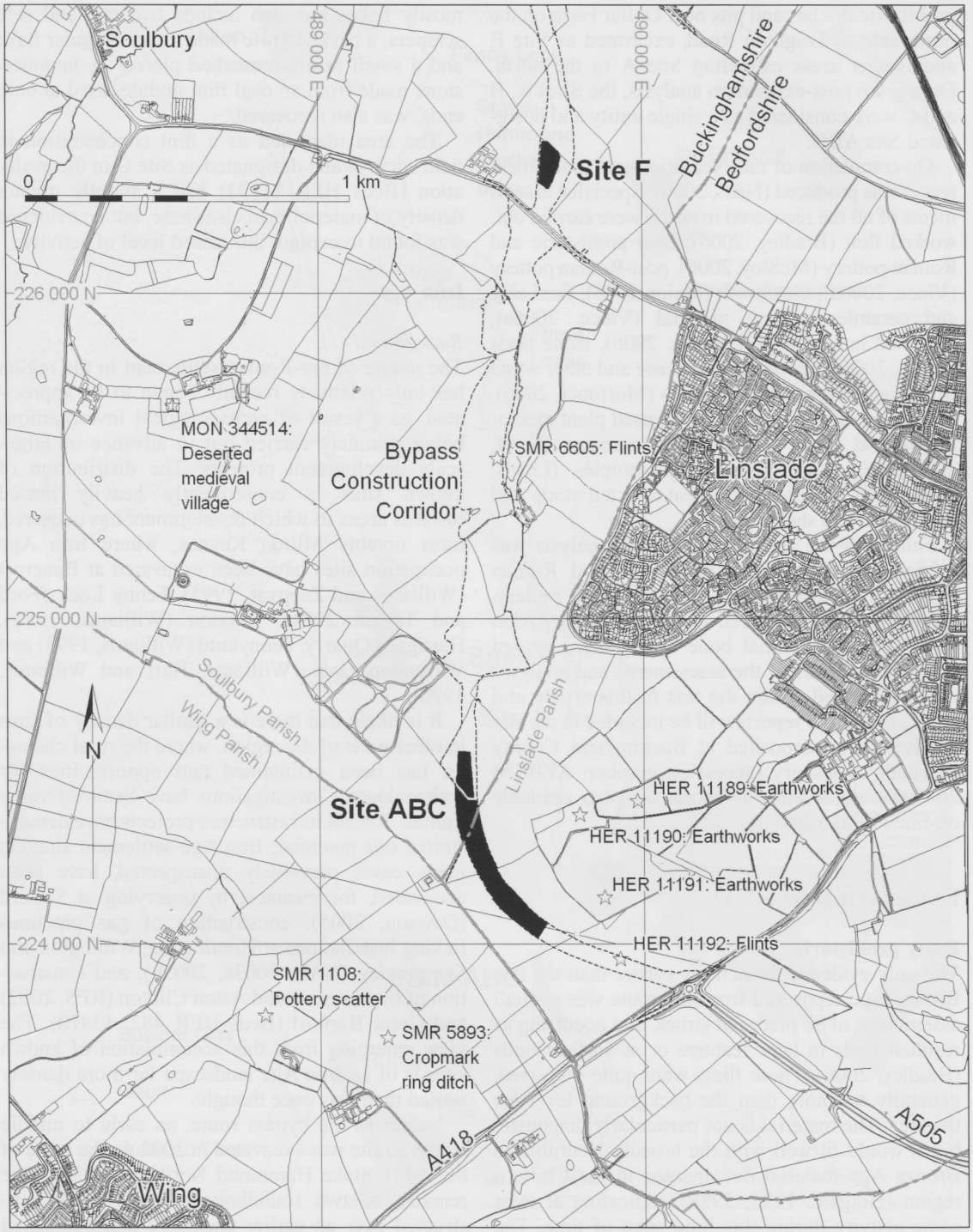


FIGURE 3 Location of Sites ABC and F, with known sites and historic parish boundary. (Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright 2006. All rights reserved. Ordnance Survey Licence number 100021059.)

Site ABC and Site F

The remains of roundhouses and linear features were revealed in both of the areas identified as a result of the pre-construction investigations, when stripped of topsoil. These were excavated as Areas A and B. The subsequent topsoil strip of the area of the surface flint scatter, showed that the archaeological features extended beyond and between Areas A and B. The density of features was lower in this area (excavated as Area C) but it was considered that the three excavation areas together had sufficient archaeological integrity to be considered as a single site, which was subsequently designated Site ABC (Fig. 3). The site was extended again as a result of discoveries during the watching brief on the construction topsoil strip. The construction watching brief also identified a previously unrecorded site with remains of Iron Age features, north of the B4032 Leighton road at Dollar Farm. This was designated Site F.

(a) *Site ABC*

This site (NGR: 489660 224030 to 489440 225600) was on a broad spur of high ground, rising to 140m above Ordnance Datum (AOD), overlooking the Ouzel valley and Linslade to the east. The two concentrations of features, Areas A and B, were both in relatively prominent situations, the land dipping slightly between them. The British Geological Survey maps show that the site lies over Cretaceous Gault clay, close to the interface with Jurassic clays to the west. These strata are overlain by a variable thickness of glacial drift, consisting of boulder clay with some glacial head in lower-lying areas (Fig. 2).

The historic boundary between Linslade and Soulbury parishes, which has also formed the county boundary since the transfer of Linslade from Buckinghamshire to Bedfordshire in 1966, ran obliquely north-east to south-west across Area A, on the line of an existing field-boundary hedge (Fig. 3). This boundary is believed to coincide with a boundary mentioned in a Saxon charter of AD 966 surviving as a thirteenth century copy (Gurney, 1920), authorising a grant of the Manor of Linslade from King Edgar to his kinswoman Ælfgifu (Baines, 1983, Reed, 1979).

(b) *Site F*

This site (NGR: 489750 226250) was also on relatively high ground, just to the south of the crest of a west-facing spur, at approximately 120m AOD, overlooking the valley of a small tributary stream of the Ouzel (Fig. 3). This area is also on boulder clay, probably overlying Jurassic Oxford Clay, although it is close to the interface with the Cretaceous Woburn sands to the east and Gault and Kimmeridge clays to the south and west. The soils are slightly lighter and loamier than on Site ABC. The lower ground surrounding the site on three sides overlies glacial sands and gravels.

Iron Age Features

The remains of six ring gullies were visible in Area B, the more southerly of the two concentrations of features on Site ABC. These were quite clearly defined, although shallow, and had been truncated by later ploughing. Area A had the remains of at least five ring gullies, but these were less clear: typically only short segments of arcs were visible. There were linear features in both areas, those in Area A including a small rectilinear enclosure and parallel ditches possibly defining drove-ways. Site F included two sides of a possible enclosure, together with a number of other, smaller linear features (Fig. 19).

A considerable quantity of late prehistoric pottery, 4928 sherds weighing 24.4 kg, was recovered from Sites ABC and F. Four phases were identified within this assemblage. The phasing of the sites, outlined below, is based on these ceramic phases, incorporating the information from the limited number of stratigraphic relationships between features.

(c) *Phase 1: Late Bronze Age/Early Iron Age (Fig. 4)*

A scattered group of small pits and postholes in Area A and a more discrete group of contexts associated with ring gully 22125 in Area B contained pottery which seemed to have forms developed from the decorated style of the later Bronze Age (Barrett, 1980), and separated here as ceramic phase 1 (Fig. 6). This style, characterised by carinated or round-shouldered jars or bowls with decoration consisting of fingernail or fingertip impressions to rim and shoulder zones was widespread by the eighth century BC (*ibid*, 297–319) and extended to at least the sixth century BC (Parrington, 1978, 39). At least one sherd from Area A is of possible late Bronze Age date, suggesting that the material from here is somewhat earlier than that from the Area B

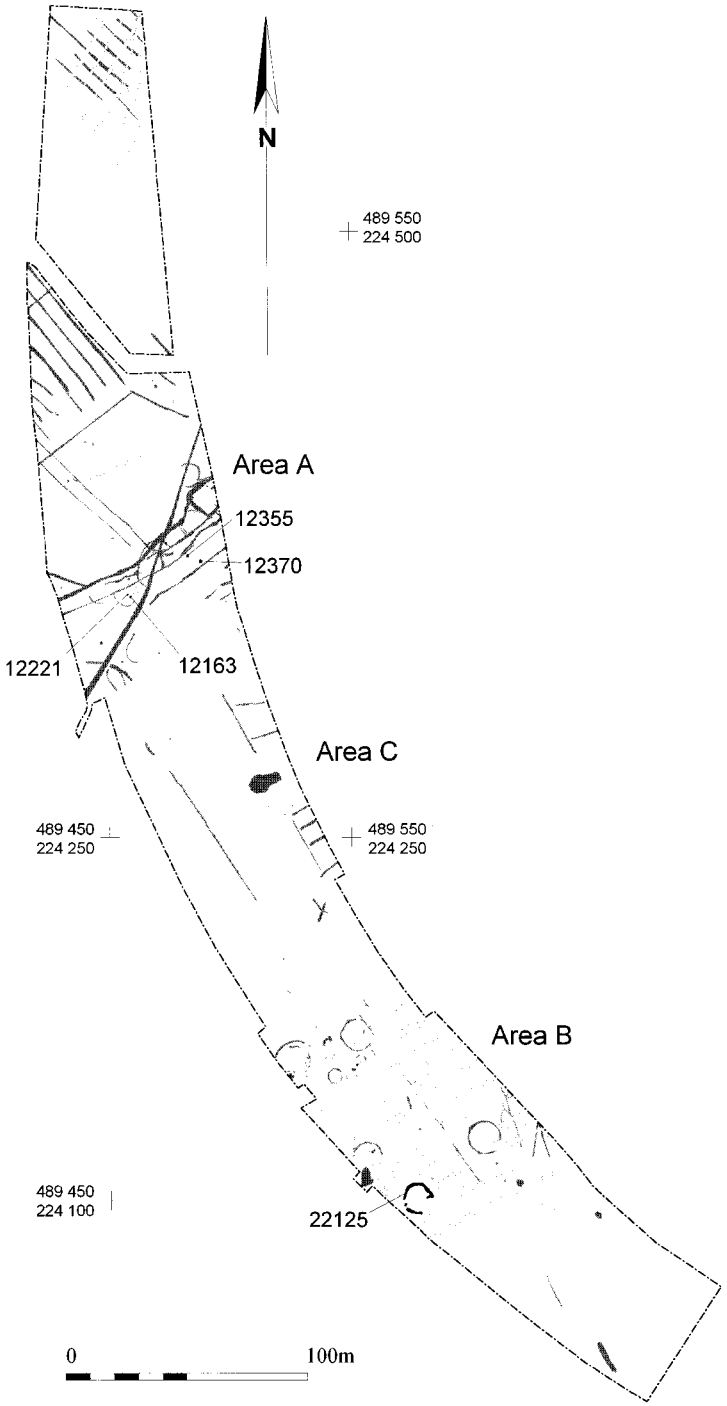


FIGURE 4 Site ABC, Phase 1 features.

ring gully. However, the absence of decorated sherds or diagnostic forms, such as the furrowed forms of probable eighth-century date from Salford (Slowikowski 2005), makes close dating difficult and these features have been broadly grouped together as a single phase.

Area A Phase 1 features

Several small features in the central part of Area A each contained a few sherds of pottery, 56 in total, in flint-tempered and sandy fabrics. Among the few recognisable forms was a large and unabraded sherd of a flint-tempered vessel (Fig. 6, no. 1) with finger-tipping to the shoulder, recovered from a small circular feature 12163, barely 0.10m deep. This feature also contained a fragment of fired daub with wattle impressions. Burnished sherds in high-necked round-shouldered vessels recovered from another similar nearby feature, 12221, and from a small pit 30m to the east, 12355, are consistent with a late Bronze Age to early Iron Age date. Another small pit in the same area, 12370, produced an unusual flint-tempered bossed vessel (Fig. 6, no. 2) for which closest parallels occur among late Bronze Age assemblages from the Upper Thames Valley, including Shorncote, Glos (Morris 1994, Fig. 11, no. 12).

Roundhouse 22125 (Fig. 5)

The most southerly of the ring gullies in Area B was 12m in diameter and consisted of two separate arcs. In places, the northern arc was up to 0.37m deep, measured from the stripped topsoil surface, and had a distinct darker upper fill, but elsewhere the ring gully was shallower and had only a single silty-clay fill. The eastern terminal of the northern arc was clearly defined, and may have formed the northern side of an entrance. Two small postholes, 22353 and 22088, near this terminal were the only features within the ring gully. The west-facing gap may have been no more than later plough-damage, as the ring gully was shallow at this point, but the terminals either side of this gap were fairly well defined, and two small postholes, 22102 and 22114, re-cut as 22105, seem too close to the centre of the gap for their positioning to be coincidental.

Five of the excavated sections through the two parts of the ring gully produced pottery, 94 sherds in total. These are primarily in sandy fabrics. Of four vessels identifiable by form, three are round-

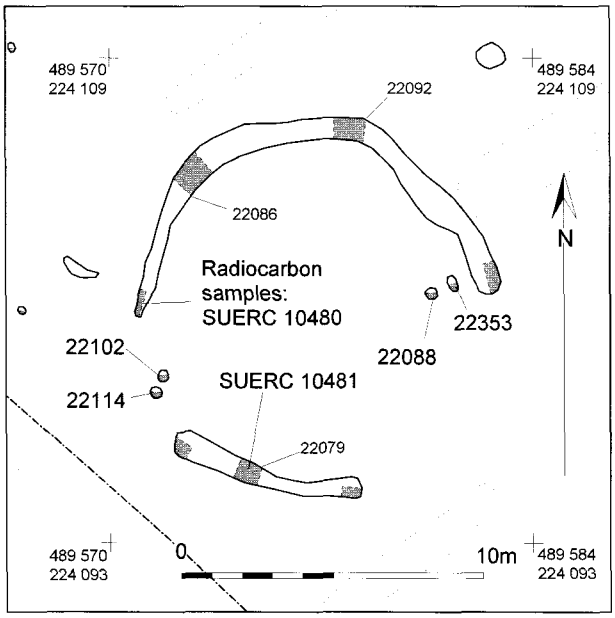


FIGURE 5 Ring gully 22125.

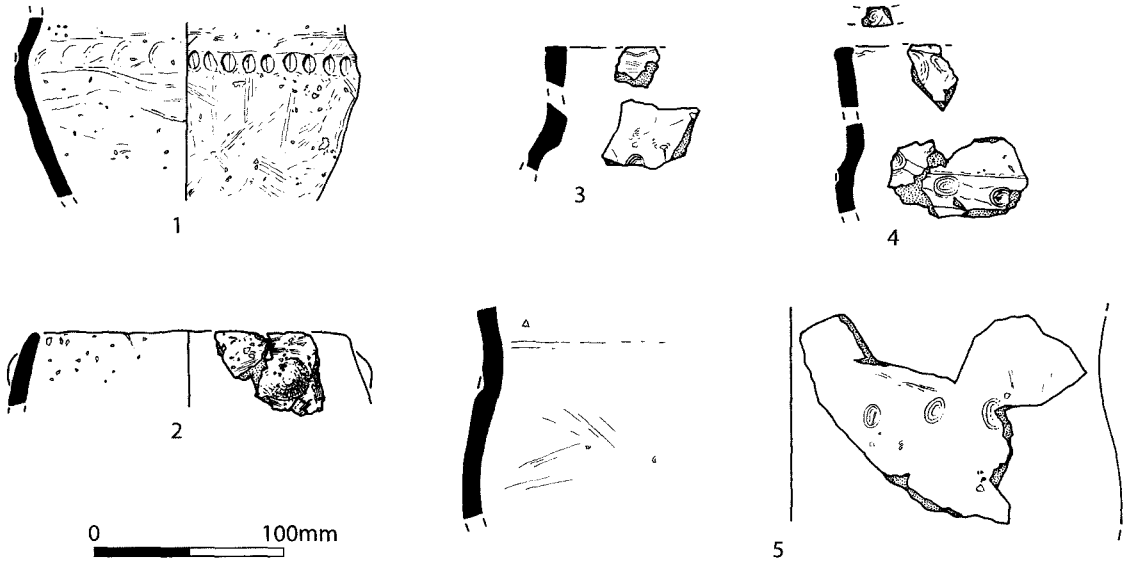


FIGURE 6: Phase 1 pottery, scale 1:4.

Illustrated pottery from Phase 1.

	Context	*Feature*	*Fabric*	*Form*	*Description*
1	12164	12163	F2	JRS	Fingertipping to shoulder.
2	12371	12370	F2	Bossed ?jar	Rim upright, rounded or slightly flattened.
3	22082	22125	Q1	JRS	Rim upright. Fingertipping to rim upper and shoulder.
4	22091	22125	Q1	JRS	Rim upright. Fingertipping to rim upper and shoulder.
5	22091	22125	Q2	JRS	Fingertipping to shoulder.

shouldered jars with finger-tipping to the shoulder (Fig. 6, nos. 3 to 5). One vessel (Fig. 6, no. 4) has an applied strip, a feature of late Bronze Age to early Iron Age assemblages in the region such as that from Ivinghoe Beacon (Waugh, 1969a, Fig. 20a, nos. 126–7).

Radiocarbon analysis was carried out on cereal grains retrieved from sieved bulk samples taken from both arcs of the ring gully. A carbonised wheat grain from the fill of the north-western ring gully terminal gave a radiocarbon date of 2355 ± 35 BP (SUERC-10480 (GU-14116); $\delta^{13}C$: –24.3 ‰) which calibrates to 540 BC to 370 BC at a confidence level of 94.3%. A second radiocarbon determination from the smaller southern arc of the ring gully (SUERC-10481 (GU-14117)) gave a post-1950 date. A repeated measurement on a second cereal grain from the same sample gave the same result, confirming that this sample contained modern contamination.

(d) *Phase 2: Early to Mid- Iron Age (Fig. 7)*

The other ring gullies in Area B could not be differentiated by pottery dating and have all been included in this phase. The pottery from Area B is generally uniform, with similar fabrics, wall-thicknesses, incidences of surface treatments and, where identifiable, vessel forms (Figs. 12 and 13). The fabrics are predominantly sandy, with some coarse variants. Most characteristic among identifiable

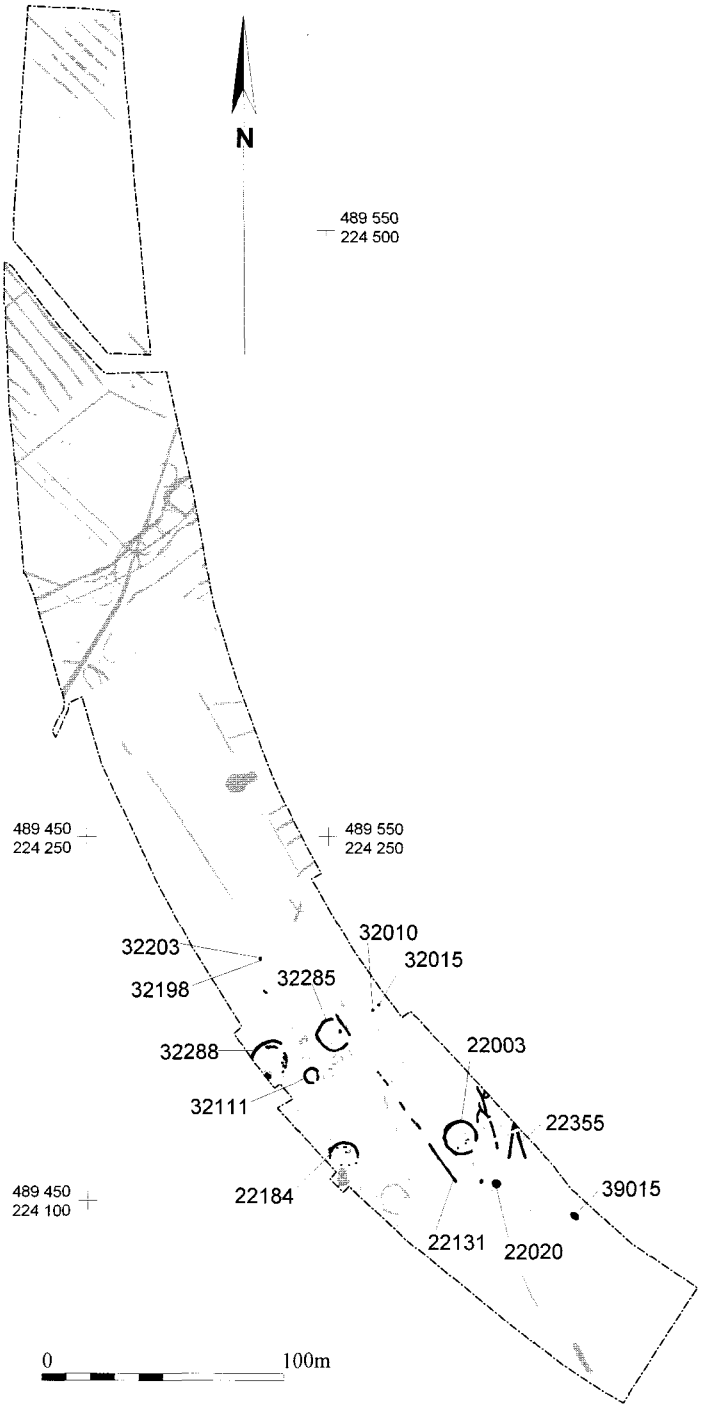


FIGURE 7 Site ABC, Phase 2 features.

forms are tripartite or bipartite bowl forms of the type familiar from early Iron Age assemblages. These include Cunliffe's Long Wittenham Allen's Pit, and Chinnor-Wandlebury styles (Cunliffe, 1991, figs A9–10). Typically, these vessels are well-made and burnished or smoothed in finer sandy or inclusionless fabrics. Most vessels are undecorated. Coarsewares consist of round or slack-shouldered jars with high, upright or slightly flaring rims, with decoration restricted to occasional use of finger-tipping to rim uppers.

Roundhouse 22003 (Fig. 8)

The best preserved of the Area B ring gullies was 12.5m in internal diameter with two terminals defining a south-east facing entrance. The eastern and northern parts of the gully were up to 0.30m deep with a greyish-brown clay upper fill over a cleaner orange clay primary fill, but to the south it became shallower with only a single fill apparent. There were eight small postholes, none deeper than 0.13m, in two distinct groups within the ring gully.

A further four small, heavily truncated features within the ring gully, 22027, 22043, 22051 and 22053, contained charcoal, fired clay, fire-cracked flint and burnt bone. The sieved residue from one of these features, 22053, contained a small amount of human bone: less than 1g. Fragments of phalange were identified, their dimensions and state of epiphyseal fusion indicating that they were from an adult (Brayne, 2006). This deposit was undated, its spatial association with the ring gully being the only reason for discussing it in this phase.

The eight excavated sections through the ring gully produced 134 sherds of pottery, weighing 535g, in mainly sandy fabrics. Forms included small jars or bowls with upright rims (Fig. 13, nos. 30 and 31) and one burnished or smoothed carinated bowl (Fig. 13, no. 27). A sherd of indeterminate form showed incised decoration. The upper fills of two of the excavated sections through the ditch yielded fragments of saddle querns (Fig. 21, nos. 46, 47) and a triangular loom-weight (Fig. 21 no. 48). Bulk samples from these two contexts both produced carbonised barley grains, though only in small quantities (Fryer, 2006).

Radiocarbon dating of a carbonised grain of wheat or barley recovered from a sieved bulk sample taken from the northern terminal of the ring gully gave a calibrated date at the 95.4% confi-

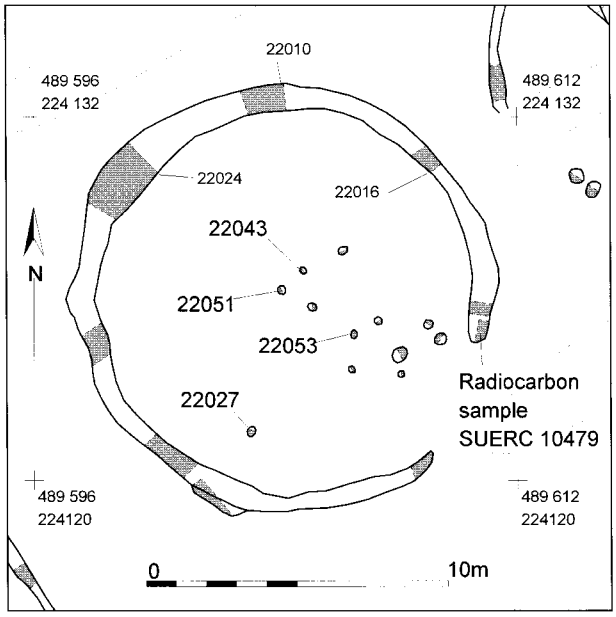


FIGURE 8 Ring gully 22003.

dence level of 410 BC to 350 BC (66.6%) or 300 BC to 200 BC (28.8%), based on a radiocarbon date of 2300 ± 35 BP (SUERC-10479 (GU-14115); $\delta^{13}C$: –24.4 ‰).

Roundhouse 22184 (Fig. 9)

A semicircular gully near the western limit of excavation may have continued to the south as a series of postholes forming an arc between its two terminals. If the gully and the postholes were contemporary, they would have enclosed a slightly elliptical area, perhaps the floor of a structure with a solid northern wall and open southern side. However, the gully was very shallow, 0.24m at its deepest but no more than 0.07m in other excavated sections, and it is possible that it was ploughed out on the south side, leaving the postholes as perhaps the remnants of an internal structure. The excavated sections of the ditch produced 22 sherds of pottery, broadly comparable with the ceramic phase 2 material but with no diagnostic pieces.

There was a line of three postholes, 22241, 22239 and 22237, in the northern part of the area enclosed by the ring gully, with a fourth posthole, 22233, offset from the line. Together, these postholes may have been the remains of the corner of an internal structure. None produced any dateable material. Two small features in the line of the arc of postholes, 22287 and 22285, were both identified as possible cremation deposits during excavation as they both contained charcoal and small fragments of what appeared to be burnt bone in the upper parts of their fills. However, no bone was recovered from the sieved bulk samples taken from them.

Roundhouse 32111 (Fig. 10)

With an internal diameter of only 5.5m, this was smaller than any of the other ring gullies on the site. There were two gaps within the ring, the more northerly probably forming an east-facing entrance. The second gap, to the south, was possibly the result of plough damage, the gully being nowhere more than 0.13m deep. There were postholes, 32097 and 32115, on either side of the entrance, but no other visible internal features. Among the twenty sherds of pottery recovered from the gully, a small group in sandy fabrics included a carinated bowl in a fine, burnished or smoothed fabric and a probable round-shouldered jar with expanded rim form.

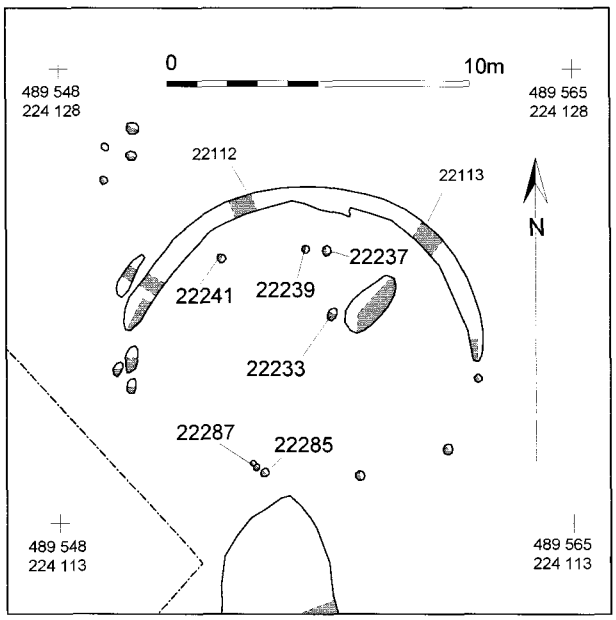


FIGURE 9 Ring gully 22184.

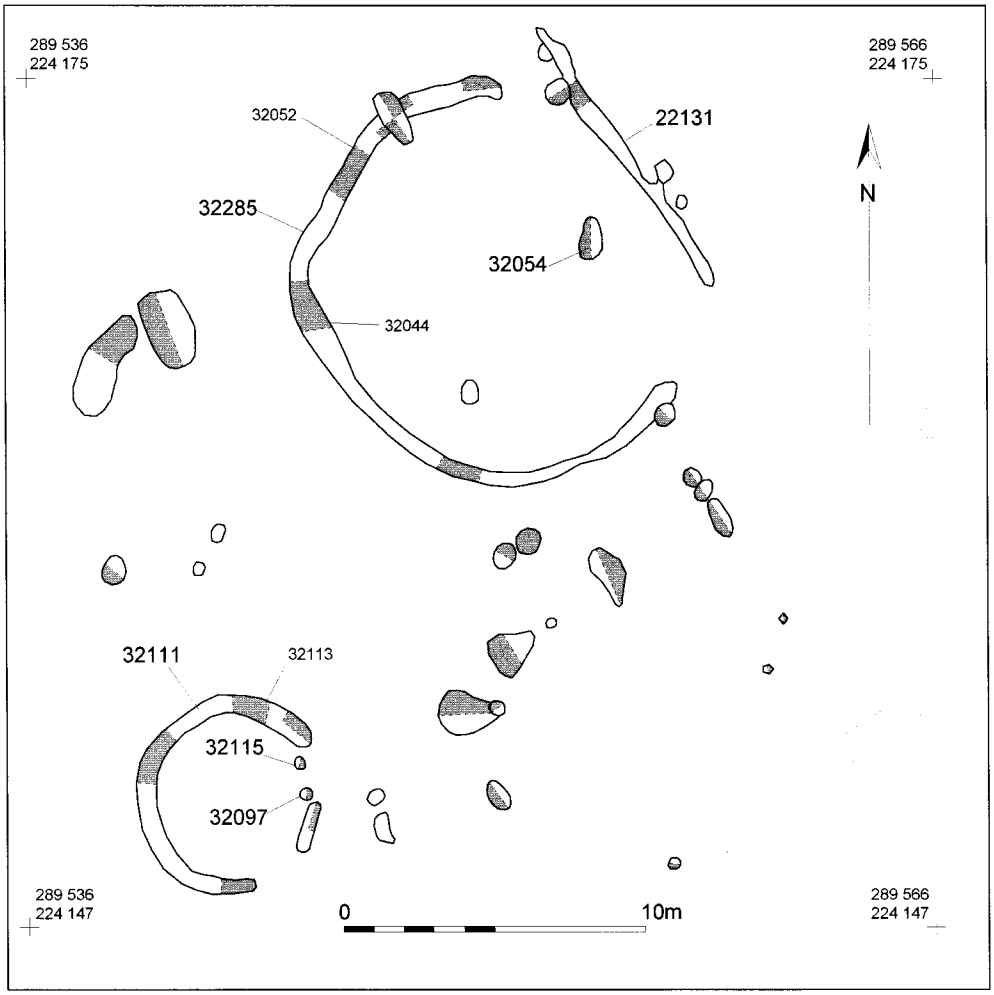


FIGURE 10 Ring gullies 32111 and 32285.

Roundhouse 32285 (Fig. 10)

This, the most northerly of the Area B ring gullies, was 12m in diameter. The western side survived to a depth of up to 0.22m but the excavated sections to the east were much shallower and the north-eastern part of the ring was missing, giving it a C-shape in plan. A linear feature, 22131 (see below), partially supplied the missing part of the ring but was unlikely to have been contemporary. A possible hearth, 32054, was identified by large amounts of charcoal visible on the surface, but otherwise there was little remaining evidence of domestic occupation.

Roundhouse 32288 (Fig. 11)

This group of features, in the north-west corner of Area B, consisted of two roughly-concentric ring gully arcs. Only the northern part of the outer gully survived, running from the western limit of excavation and being lost to later features to the east. The excavated sections showed that it was shallow with a single mid-grey clay fill to the west but became deeper, to 0.34m, to the east, where it had a blue-grey upper fill. The fills produced a relatively rich assemblage of finds including 116 sherds of pottery.

The lower fill of the more easterly of the two excavated sections contained cremated human

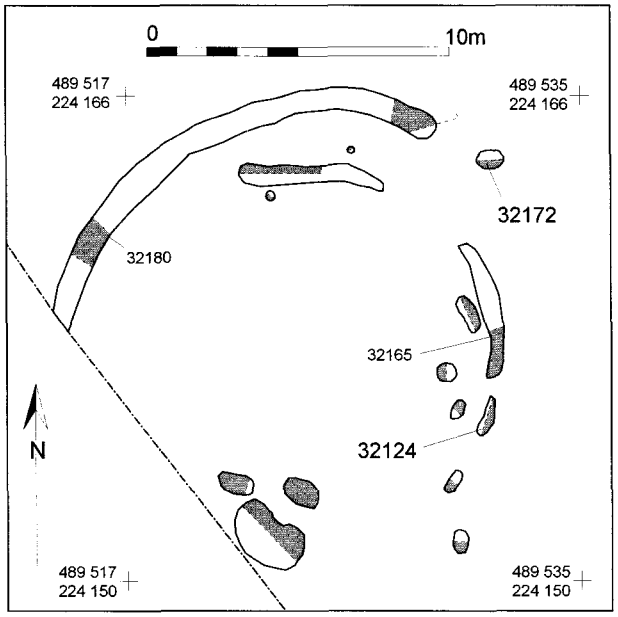


FIGURE 11 Ring gully 32288.

bone. Fragments of metacarpal, phalange, tibia and skull were identified among 25g of burnt bone, all probably from a single individual. The epiphyses present are fused, indicating, along with the general bone dimensions, that this individual was an adult (Brayne, 2006). As this cremated bone was only identified in the sieved residue from a bulk soil sample, it is not clear whether it was a deliberate burial within the ring gully, or the accidental inclusion of displaced cremated material from elsewhere.

The inner ring gully was heavily plough-damaged, and survived only as a series of five short curvilinear segments. The north-western side was missing. A small pit, 32124, containing a cremation deposit, 32125, was in the same arc as the ring gully, in a gap between two segments. A toe phalange from an adult human is present among the 1g of cremated human bone recovered (Brayne, 2006).

There were three pits and a small posthole within the inner ring gully, but it was not clear if these were contemporary with it.

Pottery from the outer ring-gully included large conjoining sherds from a carinated bowl with incised decoration (Fig. 13, no. 20) in the Chinnor-Wandlebury style (Cunliffe 1991, 75–6). The pottery from the inner gully was comparable in terms of fabrics and included a tripartite bowl with a flaring rim.

Pits 32198 and 32203 (Fig. 7)

Two inter-cutting pits, to the north of the Area B ring gullies, were poorly defined, but both appeared to be roughly oval, steep-sided, and around 0.45m deep. They had similar sequences of fills, upper and lower silty-clay fills being separated by thinner layers of ash and charcoal-rich material. Together, these fills produced the largest group of pottery from the site, amounting to 503 sherds weighing 3159g. There is a possibility that this material was a special deposit, part of a ritually motivated process, but the pottery was distributed throughout the fills, which appeared to be dumps of domestic debris. The similarity of the fills of the two inter-cutting pits implies that they were produced by a recurring sequence of events and, while it is possible that this could be a regular ritual occurrence, routine digging, use and backfilling of pits for rubbish is perhaps more likely. The comparative

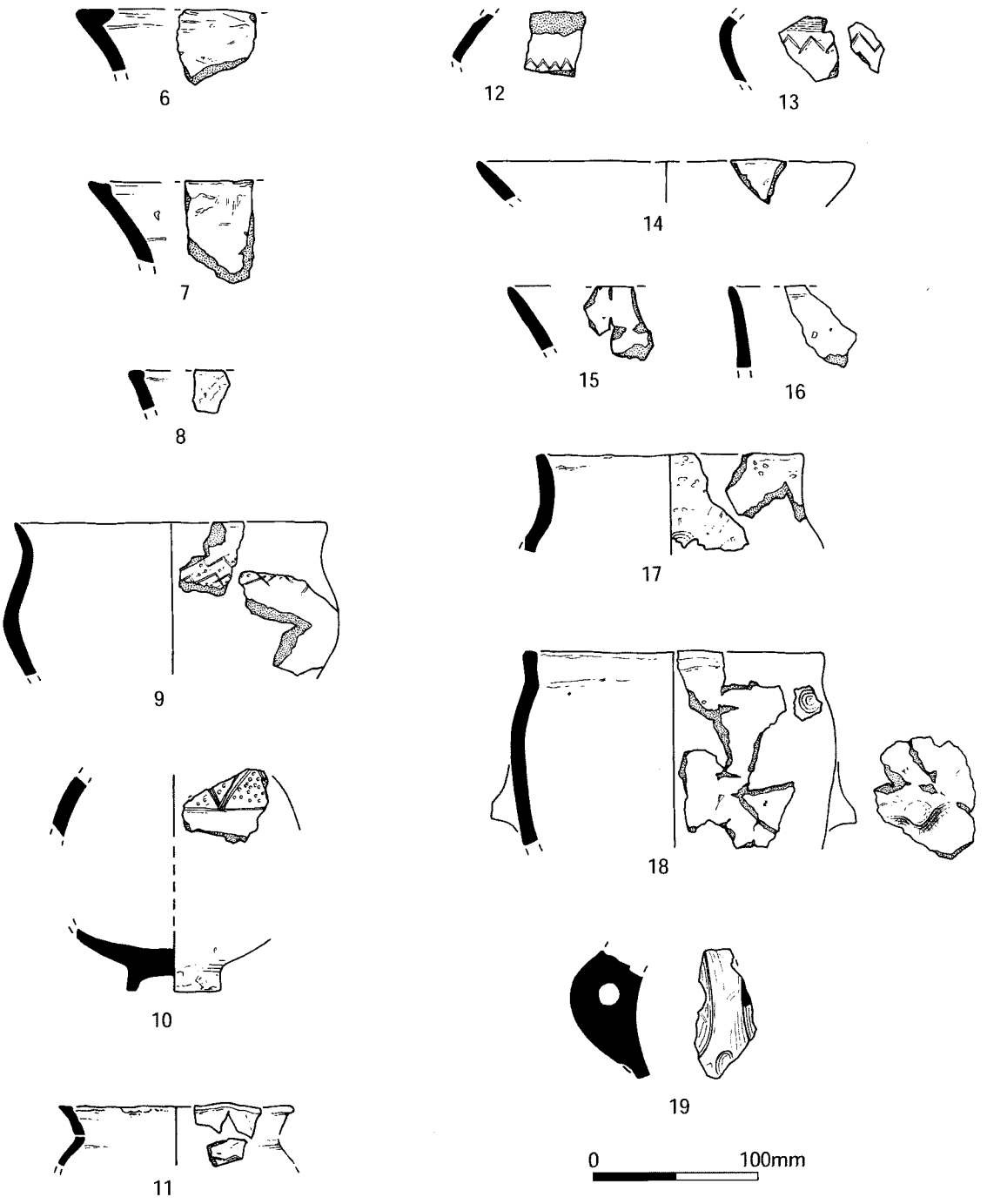


FIGURE 12 Phase 2 pottery from pits 32198 and 32203, scale 1:4.

Illustrated pottery from Phase 2 pits 32198 and 32203.

	Context	*Feature*	*Fabric*	*Form*	*Description*
6	32202	32198	Q2	Jar/bowl	Rim everted/flaring, flattened with internal projection. Burnished.
7	32201	32198	Q2	Jar/bowl	Rim everted/flaring, flattened with internal projection.
8	32205	32203	Q1	J Jar/bowl	Rim everted/flaring, flattened with internal projection.
9	32202	32198	Q2	JRS	Rim upright, rounded or slightly flattened. Burnished. Incised and dot-impressed decoration. Red surfaces.
10	32201	32198	Q1	Bowl	Pedestal base. Incised and dot-impressed decoration. Red surfaces.
11	32202	32198	Q4	?Jar	Rim everted/flaring, flattened with internal projection. Burnished. Incised zig-zag. Black-firing.
12	32201	32198	QG	BTC	Burnished. Incised zig-zag. Black-firing.
13	32201	32198	Q1	BTC	Incised/scored zig-zag. Black-firing.
14	32202	32198	Q2	BTC	Rim incurved; plain, rounded. Black-firing.
15	32205	32203	Q4	Jar or bowl	Rim upright, rounded or slightly flattened. ?indeterminate impressed decoration.
16	32205	32203	Q1	JBRS	Rim upright, rounded or slightly flattened.
17	32205	32203	S	JRS	Rim upright, rounded or slightly flattened. Fingertipping to shoulder.
18	32200	32198	Q2	JSS	Rim upright, rounded or slightly flattened. Imperforate lugs. Burnished. Fingertipping to shoulder. Black-firing.
19	32200	32198	Q1		Loop handle showing method of attachment.

richness of the pottery may simply reflect the lack of other similar rubbish pits on the site.

Most striking in this group are the incidences of incised decoration and other traits comparable to Chinnor-Wandlebury style (Fig. 12, nos. 6 to 19), representing a distinctive and discrete element within the ceramic phase 2 assemblage.

The chronological relationship of the Chinnor-Wandlebury style pottery with the remaining ceramic phase 2 assemblage is unclear, but there are indications that it may represent a comparatively late development, towards the end of the early to middle Iron Age. This can perhaps be inferred through the incidence of handled forms and of round-bodied bowl forms, suggested on some Oxfordshire sites to be a progression from tripartite forms (Timby, 2005, 152). Tripartite and rounded-profile bowls with incised decoration (Fig. 12, nos. 9 to13), vessels with expanded rim forms (Fig. 12, nos. 6 to 8) and handled vessels (Fig. 12, nos. 18 and 19) find close parallels among assemblages of central eastern England (Cunliffe, 1991, 75–6, fig. A10). The style is considered to date to between the sixth or fifth and third centuries BC, although this has yet to be tested by absolute means.

Five vessels exhibit incised decoration; in two instances (Fig. 12, nos. 9 and 10) this is combined with tooled dot motifs. A single vessel (Fig. 12, no. 10) has a well-made pedestal base, a feature known from Chinnor (Richardson and Young 1951, nos. 31 and 52). Three vessels have distinctive rim forms which are present in the Chinnor assemblage (Crossley-Holland, 1942, no. 2) and occur also with earlier Iron Age vessels from Salford (Slowikowski, 2005, fig. 2.21, nos. 53 and 70). Two vessels have either imperforate lugs (Fig. 12, no. 18) or loop-handles, features which, though not illustrated by Cunliffe, do certainly occur among Chinnor-Wandlebury type assemblages (Richard-

son and Young, 1951, Fig. 6, nos. 23–6).

Thin section characterisation and chemical analysis of twelve pottery samples, concentrating mostly on the Chinnor-Wandlebury type group from pits 32198 and 32203, identified six distinct fabrics. Perhaps unsurprisingly, there was no evidence of long-distance trade, all of the samples being made from raw materials available fairly locally. The most common fabric derived from Gault clay, while one of the others is indistinguishable from daub samples from the site, made from local boulder clay.

Pits 32010, 32015 and 39015 (Fig. 7)

Pottery considered to be of ceramic phase 2 was also retrieved from two small pits in the north-eastern corner of Area B. Identifiable and diagnostic forms included round-shouldered forms from pit 32015 (Fig. 13, nos. 25 and 26), and tripartite or

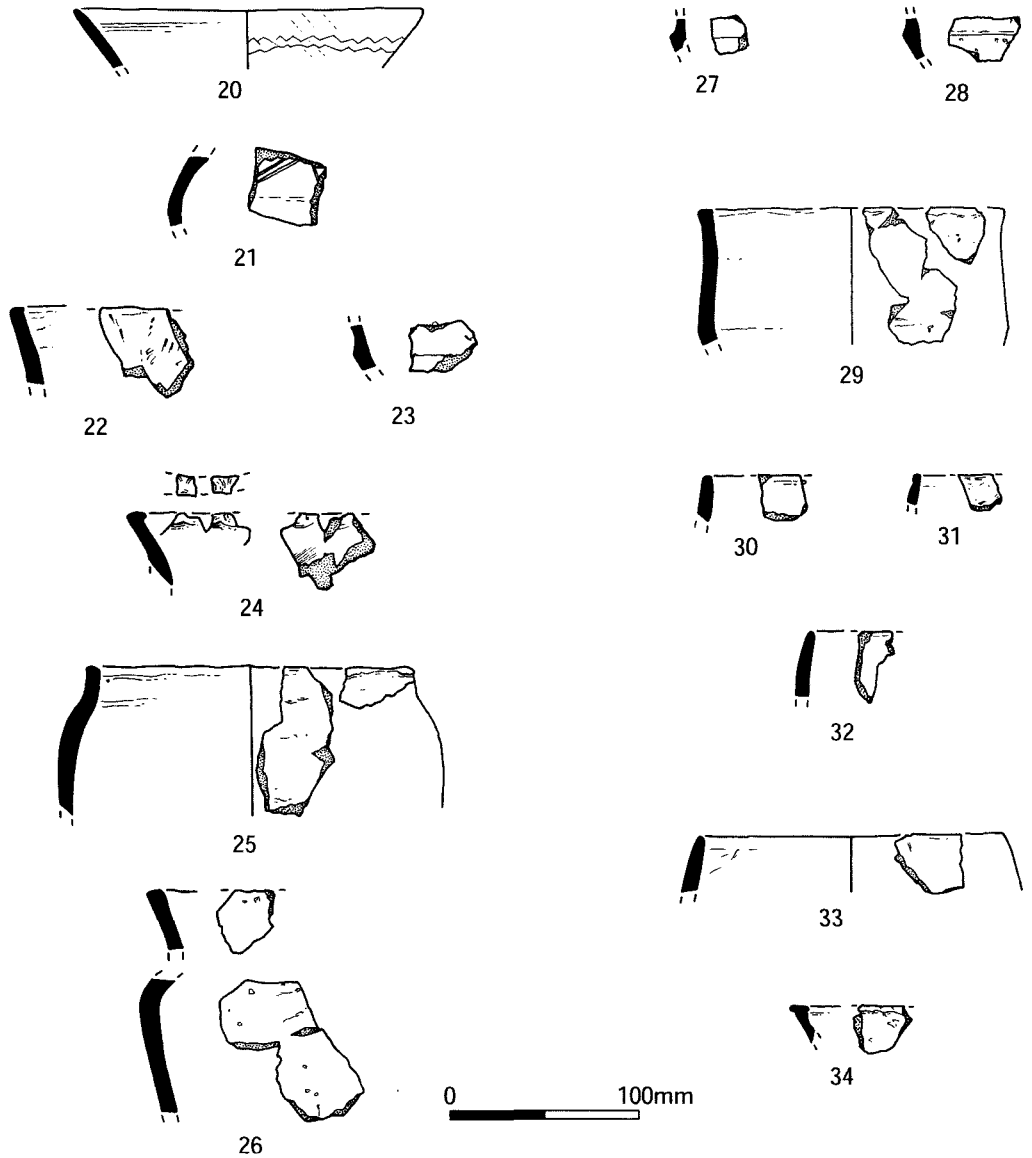


FIGURE 13 Phase 2 pottery from Area B, scale 1:4.

Illustrated pottery from Phase 2 Area B features.

	Context	*Feature*	*Fabric*	*Form*	*Description*
20	32117	32288	Q4		Rim everted, rounded. Burnished. Incised zig-zag motif. Black-firing.
21	22021	22020	Q1	?BRS	Burnished. Incised decoration.
22	22021	22020	Q1	Jar/bowl	Rim upright, rounded or slightly flattened.
23	22021	22020	Q1	BTC	Burnished. Black-firing.
24	22021	22020	Q2	JRS	Rim upright. Fingertipping to rim upper.
25	32016	32015	Q1	JRS	Rim upright, rounded or slightly flattened.
26	32016	32015	Q2	JRS	Rim. upright, rounded or slightly flattened.
27	22025	22003	Q1	BTC	Burnished. Black-firing.
28	32011	32010	Q5	BTC	Burnished. Black-firing.
29	39016	39015	Q1	BB	Rim upright, rounded or slightly flattened.
30	22007	22003	Q1	Jar/bowl	Rim upright, rounded or slightly flattened. Burnished.
31	22019	22003	L	Jar/bowl	Rim upright, rounded or slightly flattened.
32	32090	32089	Q4	BB	Rim upright, rounded or slightly flattened.
33	32090	32089	Q1	BB	Rim upright, rounded or slightly flattened. Burnished.
34	32155	Spread	Q1	Jar/bowl	Rim T-shaped.

carinated forms from pit 32010 (Fig. 13, no. 28). An isolated pit, 39015, at the southern end of the site produced similar pottery to that from pit 32010 (Fig. 13, no. 29). This shallow feature, which had a charcoal-rich fill containing burnt stones, was not fully recorded because of the time constraints of construction work, and its position shown on plan (Fig. 7) is only approximate.

Pits 22020 (Fig. 7)

A wide, shallow pit at the south end of Area B, 22020, had a dark grey, silty upper fill, rich in charcoal, which produced 74 sherds of pottery, weighing 480g. These were almost exclusively in sandy fabrics: a round-shouldered vessel (Fig. 13, no. 21) featured incised double line decoration and a second vessel, a high-necked, round-shouldered jar, (Fig. 13, no. 24) had finger-tipping to its rim upper. Sherds of a carinated bowl in a fine, burnished or smoothed fabric (Fig. 13, no. 23) and further round-shouldered vessels were also present (Fig. 13, no. 22).

Ditch 22131 (Fig. 10)

This linear feature was intermittently visible for over 80m in the centre of Area B but, in the nine sections excavated through it, was never more than 0.23m deep. It produced pottery in fabrics comparable to other features from this phase, though in less diagnostic forms, suggesting that it was broadly contemporary with the ring gullies.

Other Area B linear features (Fig. 7)

A confusing group of small linear features near to the eastern baulk seem to belong broadly to this phase. Some stratigraphic relationships were recorded, with ditches 22356 and 22361 early in the sequence. Ditch 22355 produced pottery comparable to that from the better-dated groups from Area B, and several of the other features also contained similar, but less diagnostic, material.

(e) *Phase 3: Mid- to Late Iron Age (Figs. 14–16, 19)*

The pottery assemblage from Area A, the more northerly concentration of features on Site ABC, includes a number of distinct characteristics which together define a third ceramic phase. Similar pottery was largely confined to a single feature on Area B (Fig. 14). The earliest features on Site F (Fig. 19) also produced pottery conforming to this ceramic phase. Stratigraphic relationships allowed some of the phase 3 features in Area A to be separated into three sub-phases (Fig. 16) but there were no recognisable differences in the composition of the ceramic assemblages from these sub-phases.

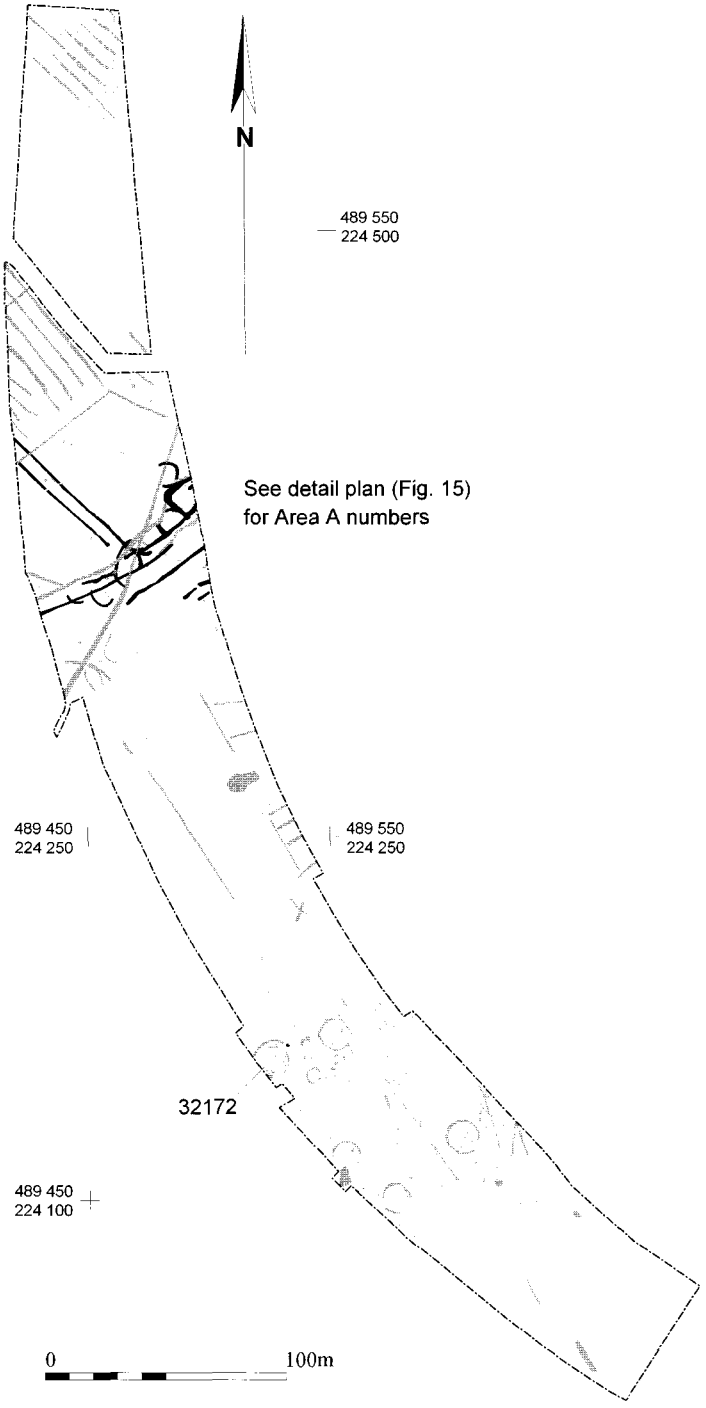


FIGURE 14 Site ABC: Phase 3 features.

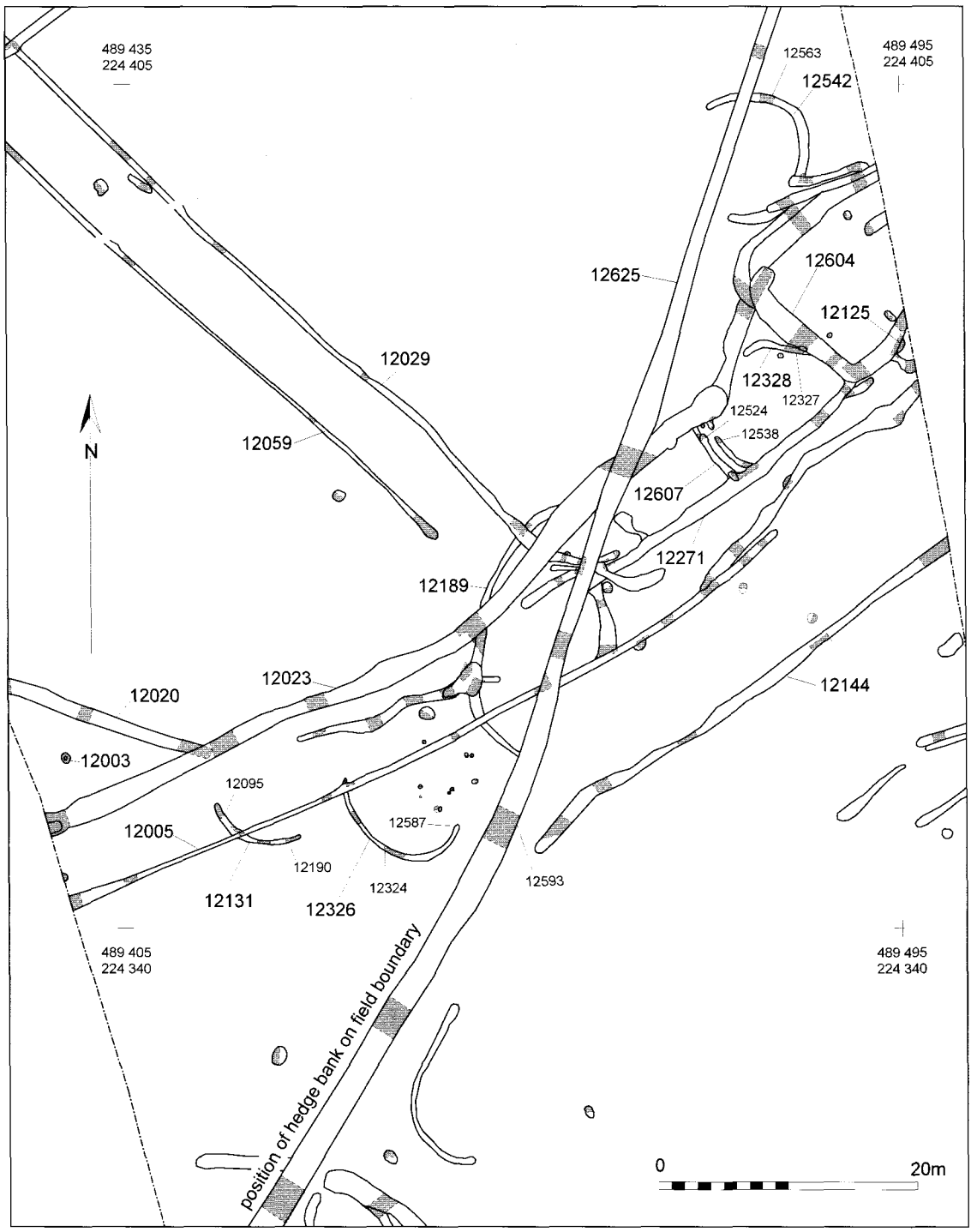
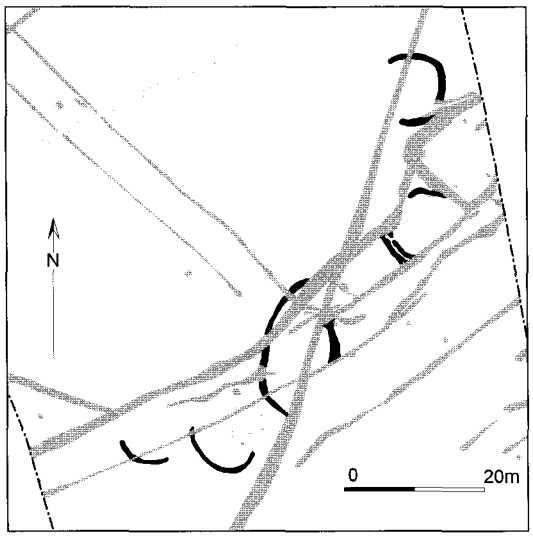
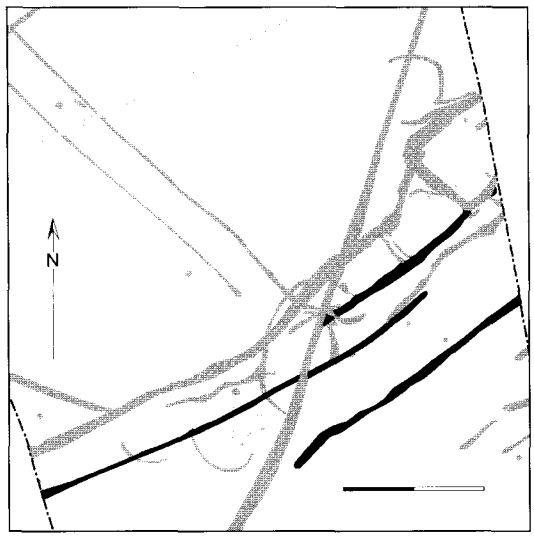


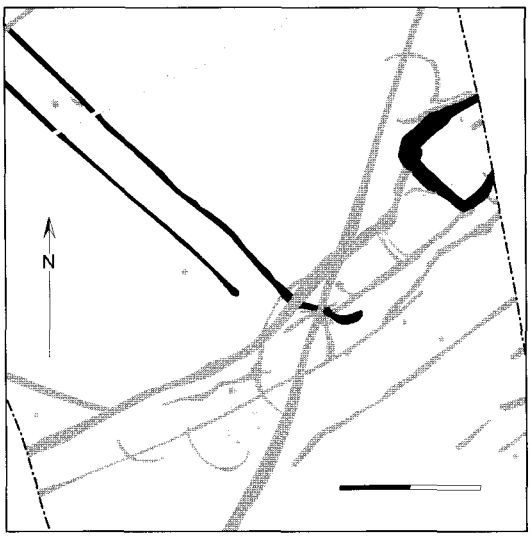
FIGURE 15 Central part of Area A.



Sub-phase 3a



Sub-phase 3b



Sub-phase 3c

FIGURE 16 Phase 3 sub-phases.

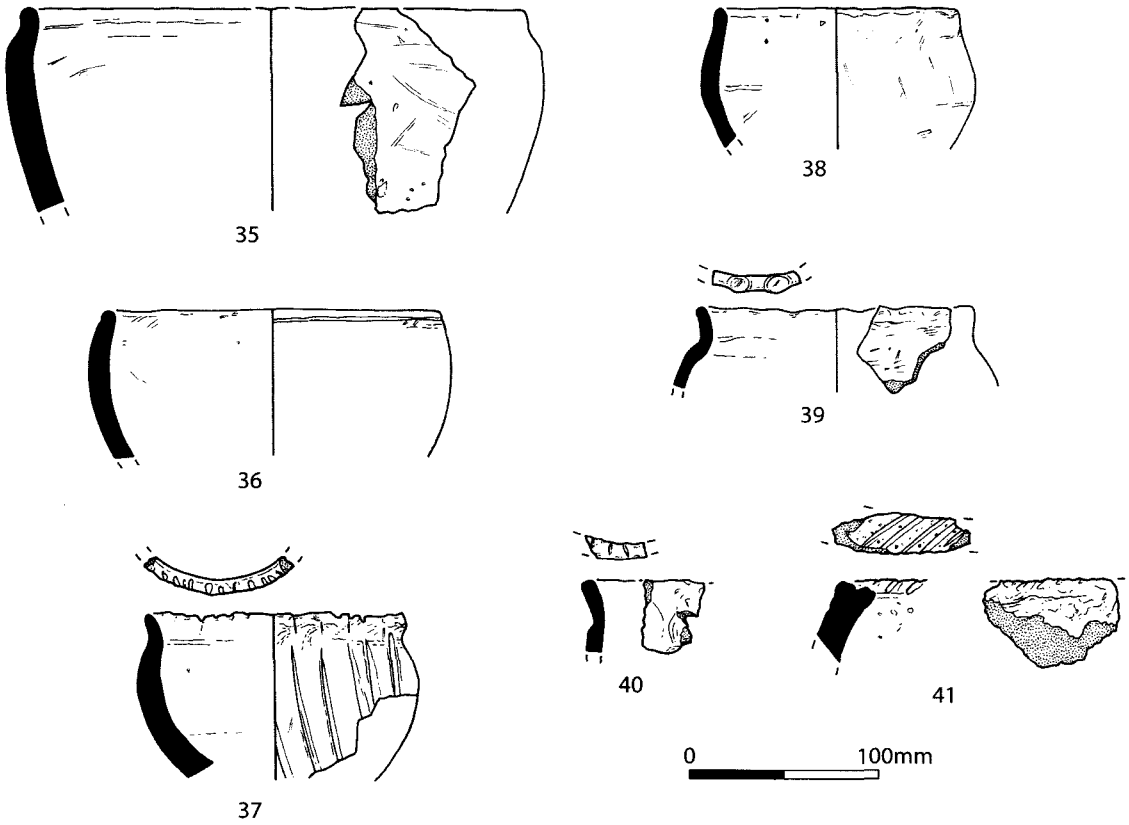


FIGURE 17 Phase 3 pottery, scale 1:4.

Pottery fabrics of this phase are similar to those of the earlier phases, although grogged or argillaceous types and organic-tempered fabrics appear to be associated solely with this period. Forms include jars with rounded-profiles or round-shouldered with short, upright rims (Fig. 17, nos. 35, 37 to 40) and a single globular or hemispherical bowl with a horizontal scored or burnished line below the rim (Fig. 17, no. 36). Restricted fingernail or fingertip decoration, confined to the rim-uppers of some jars, and vertical combing (Fig. 17, no. 37) were also noted. Twenty vessels had vertical scoring to the body. A single vessel from Area F features similar though more regular decoration, probably executed using a comb: this may be an indication of a comparatively late date, as it is more frequently associated with late Iron Age/early Roman vessels.

The ceramic phase 3 pottery recalls middle to late Iron Age assemblages from the region of Milton Keynes (Knight, 1993), Flitwick, Beds (McSloy, 1999) and Salford, Beds (Slowikowski, 2005), which in turn exhibit affinities with assemblages of this date from eastern-central England. Vessels with scored decoration belong to a tradition known primarily from the area between the Ouse and Trent, lasting from the fourth or third centuries to the first century BC (Elsdon, 1992, 83–91). Forms are comparable with those from this region (Knight, 2002), but also find parallels among large middle Iron Age assemblages from the Thames basin, including Gravelly Guy (Duncan *et al.*, 2004) and Ashville (De Roche, 1978).

Area A ring gullies: Sub-phase 3a (Figs. 15, 16)

The ring gullies and curvilinear features in Area A were all stratigraphically early and seem to constitute a distinct sub-phase. They produced relatively small quantities of pottery. This material was

Illustrated pottery from Phase 3.

	Context	*Feature*	*Fabric*	*Form*	*Description*
35	32214	32172	G2	JSS	Rim upright, rounded or slightly flattened, short neck.
36	32214	32172	Q1	BH	Scored line below rim.
37	12485	unstratified	Q1	JRD	Rim upright, short neck. Vertical scoring and slashing/fingernail to rim upper.
38	12220	unstratified	Q1	JRD	Rim short-everted or bead-like.
39	12424	12542	Q1	JSS	Rim upright, short neck. Fingertip to rim upper.
40	70119	70117	Q1	JSS	Rim upright, short neck. Fingernail to rim upper.
41	70197	70196	S	JST	Rim expanded with diagonal slashing. Slashing to rim upper.

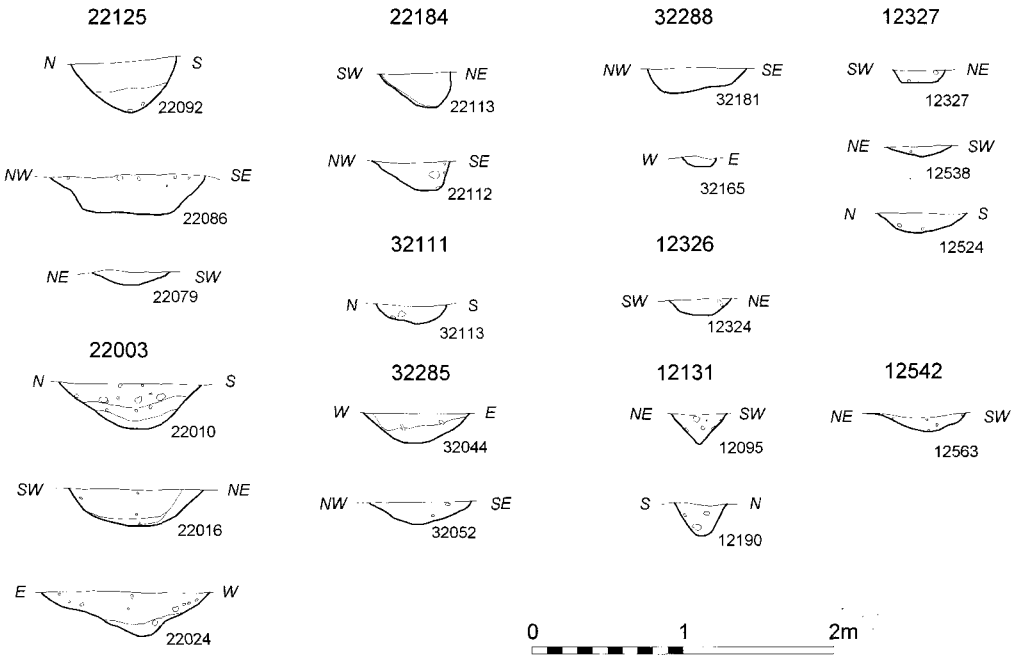


FIGURE 18 Phase 1, 2 and 3 ring gully sections.

typical of the rest of the phase 3 assemblage, which derived mainly from the linear features of the later sub-phases, and does not allow close dating of the sequence of structures.

By comparison with the Area B ring gullies, those on Area A were poorly preserved, typically surviving only as truncated arcs. The most northerly of these features, 12542 (Fig. 15), was the most complete, forming a segment of a ring with an internal diameter of 8.5m, but was very shallow, only 0.10m deep on the eastern side and running out to the west. Two partial ring gullies towards the western side of the area, 12131 and 12326, had contrasting profiles (Fig. 18), gully 12131 being

steeply V-shaped and up to 0.25m deep while gully 12326 was shallower and had a much more rounded profile. Both of these arcs had radii comparable to gully 12542, although the curve of gully 12326 was rather irregular. To the east, a concentric pair of shallow curvilinear gullies, 12607, seemed to form a ring with gully 12328 to the north-east, heavily truncated by later ditches.

Some of the phase 1 features were within the area enclosed by ring gully 12326 but otherwise the ring gullies had no internal features. A curvilinear gully in the centre of the site, 12189, and apparently of the same sub-phase might have been the remains of a small enclosure but it had no obvious association with any of the other features of this sub-phase.

Ring gully 12326 was cut by one of the trenches excavated to investigate the Anglo-Saxon charter boundary, revealing the ring gully in section. A monolith sample was taken through this section for micro-morphological analysis. In the prepared thin section, the ring gully fills and the soil horizon through which the gully was cut can both be seen to have frequent clay and iron oxide nodules formed around charcoal and bone fragments. The moderate to frequent, and often relatively large, charcoal fragments show the presence somewhere nearby of burning deposits, and the highly oxidised clay found in the nodules could have been produced by burning or firing, either domestic hearth rake-out or industrial kiln or furnace materials. The extensive distribution of the charcoal and bone fragments indicate that the soil layer was disturbed before the ring gully was dug (Lewis, 2006). This is most likely to have been a result of cultivation and suggests that the land had reverted to arable use following an earlier, otherwise unrecorded, phase of occupation, pre-dating the phase 3 ring gullies.

Area A ditches: Sub-phase 3b (Figs 15, 16)

Ditch 12005, which cut two of the ring gullies, was no more than 0.20m deep in its excavated sections, but was strikingly regular and extended across the site for over 60m, suggesting the possibility that it was a palisade trench rather than the truncated remains of a simple drainage or boundary ditch. It produced a relatively large quantity of pottery. Sandy and grog/argillaceous fabrics dominate. Forms include round-profile jars (Fig. 17, no. 38) and at least one vessel with a countersunk-type handle. There were ditches with similar dimensions, 12271 and 12144, on alignments parallel to ditch 12005, to the north and south of it.

An oval pit, 12125, near to the eastern limit of excavation may belong to this sub-phase. This pit produced a moderately large pottery assemblage, primarily in sandy fabrics, including a round-profile jar with short neck, and scored sherds.

Enclosure 12604 and drove-way gullies 12029 and 12059: Sub-phase 3c (Figs 15, 16)

A series of more substantial linear features up to 0.70m deep, formed three sides of a small rectangular enclosure, 12604, extending beyond the eastern limit of excavation. The enclosure ditches showed signs of being re-cut on at least one occasion. From the stratigraphy, the enclosure would appear to be one of the latest components of this phase. The various excavated sections of the enclosure ditch produced 99 sherds of pottery with a further eight sherds from the re-cuts. There was little diagnostic material among these sherds, which were mainly sandy fabrics with a smaller number of grog/argillaceous and organic-tempered types.

Gullies 12029 and 12059 were 5m apart running north-west on parallel alignments from the centre of the area to the western limit of excavation. The ditches contained only small quantities of dateable material but gully 12029 was stratigraphically later than gully 12189, which formed part of the probable curvilinear enclosure in sub-phase 3a, and may have also cut ditch 12271. These relationships suggest that the two gullies may have been contemporary with the rectangular enclosure 12604. Although very shallow, both gullies were very regular and clearly defined throughout their lengths. They were interpreted as possible drainage features on either side of a drove-way.

Area B: Pit 32172 (Fig. 14)

This oval pit may have cut the eastern terminal of ring gully 32288, but was in an area disturbed by land-drains. It had a fill rich in charcoal and burnt clay and was notable as the only feature in Area B producing ceramic phase 3 pottery in any quantity. The 151 sherds recovered are in medium/fine sandy and argillaceous/organic fabrics. Forms include slack-shouldered (Fig. 17, no. 35) and barrel-shaped jars (Fig. 17, no. 36). The illustrated example of the latter has a scored line below its rim reminiscent of some western British pottery styles. A rim sherd from a slack-shouldered jar has finger-

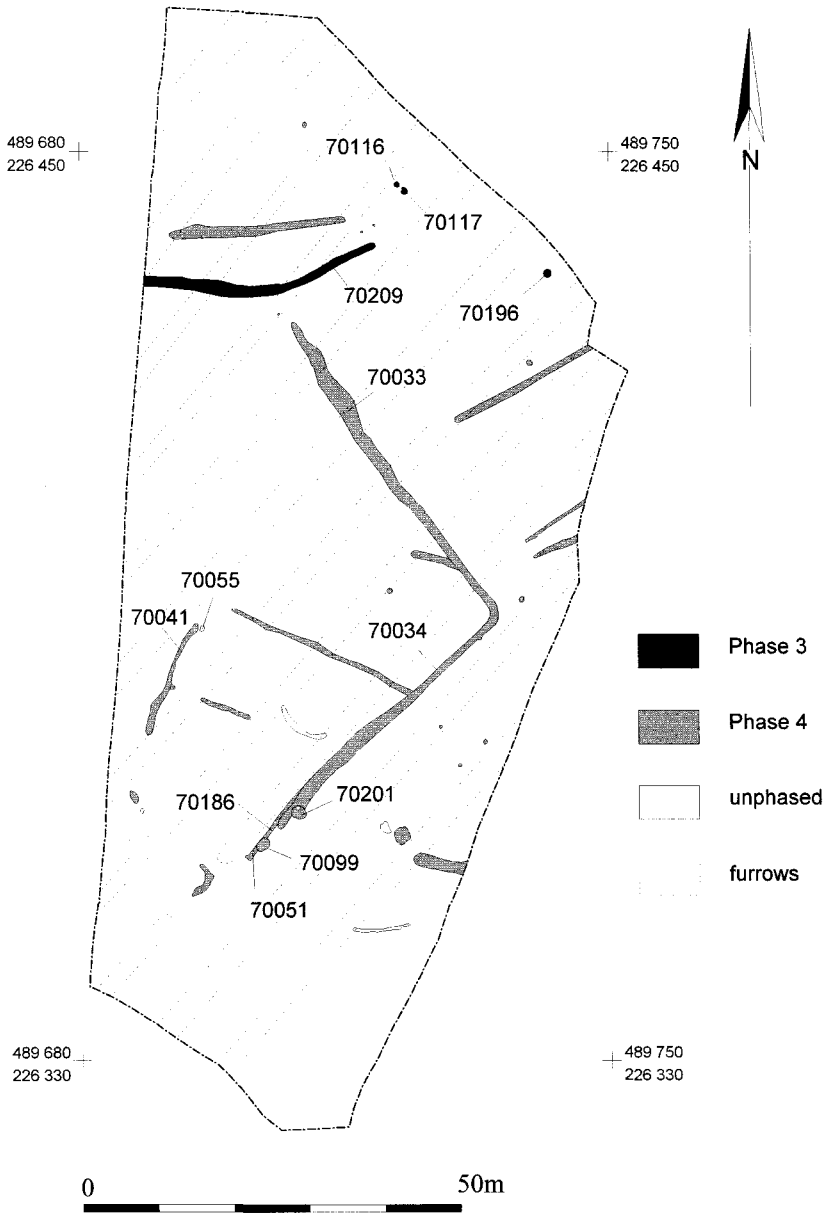


FIGURE 19 Plan of Site F.

nail decoration to its rim upper (Fig. 17, no. 40). The pit was relatively rich in other finds, with 149g of animal bone, fragments of a triangular loom-weight (Fig. 21, no. 49), and a piece of fired daub with two clear wattle impressions.

Site F features (Fig. 19)

A number of features at the northern end of Site F contained pottery similar to the ceramic phase 3 material from Site ABC. These included an east-to-west aligned curvilinear ditch, 70209, deeper and

with a sharper profile than almost all of the other linear features on Site F.

Three shallow depressions, 70196, 70116 and 70117, showed clear evidence of burning; their fills contained heat-reddened stones, high proportions of ash and charcoal, and re-fired and sooted pottery sherds. One of these features, 70117, also produced eight fragments of crucible. Differences in the wall thickness probably indicate that at least two vessels are represented. All of the pieces have slagging on the exterior, and a grey, reduced appearance inside. None has visible non-ferrous deposits. One piece could be a pouring lip, as the rim seems to be rather pinched-in, and has a small accumulation of vitrified material at this point (Fig. 21, no. 50). The largest thin-walled fragment could be from a thumb-pot type, a style of crucible so long-lived as to be undateable, but existing from the Iron Age and Roman periods onwards. The largest thick-walled fragment seems to have very little curvature along the length of the rim, which suggests it could come from a triangular form, which was typical of the Iron Age. At one fracture of this piece, there is also a slight suggestion that the inner surface was beginning to turn at an angle rather than a continuous curve, which would tend to supports this identification (Mortimer, 2006).

A superficially similar, but undated, feature to the south, 70055, produced a small quantity (less than 1g) of poorly-preserved cremated human bone. The only identified bone was a fragment of a finger phalange, the fused epiphysis indicating that this came from an adult (Brayne, 2006).

(f) *Phase 4: Late Iron Age (Fig. 19)*

Most of the pottery assemblage from Site F, together with a small amount from Area A, is markedly distinct from that from the earlier phases. This ceramic phase consists almost exclusively of wheel-thrown vessels in grog-tempered fabrics. The fabrics and forms are consistent with 'Belgic' pottery, characteristic of the late pre-Roman Iron Age and earliest Roman period across south-east and central England (Thompson, 1982). Comparable assemblages in the region include material from the Milton Keynes region (Marney, 1989, 87–95) and Clapham, near Bedford (Slowikowski, 1988, 11–18).

A narrow range of forms are represented, primarily necked jar forms with single or multiple cordons (Fig. 20, nos. 42 and 43), jars with combed or 'rusticated' decoration to the body (Fig. 20, no. 44), and channel-rim jars (Fig. 20, no. 45). Channel-rim or 'lid-seated' vessels are representative of a regional tradition, common in the Nene and Ouse valleys (Friendship-Taylor, 1999) and seemingly contemporary with necked and cordoned jar forms.

Site F: Enclosure ditches 70033 and 70034

These two ditches, meeting at a near right-angle, together formed the corner of a field or enclosure, the most prominent and substantial feature on the site. This enclosure ditch survived to a depth of more than 0.70m in some of its excavated sections, but was shallower, only 0.25m deep, elsewhere. There was evidence that it was a fairly long-lived feature, re-cut at least once and having a smaller predecessor, surviving as ditch 70051 beyond the southern terminal.

Taken together, the excavated sections through the two arms of the ditch yielded the largest assemblage of pottery from the site, 725 sherds weighing 5324g. This pottery forms a consistent group. Forms include five examples of wheel-thrown necked jars/bowls with cordons, and three examples of channel-rimmed forms. Sandy fabrics, typical of Phase 3 material, constitute 8.6% of the group; these are mainly smaller and abraded sherds which appear likely to be residual.

Other finds included a fragment of daub or loom-weight and thirteen pieces of red deer antler. Although antlers sometimes constitute special deposits thought to be of ritual significance, their distribution here through several fills suggests a more mundane interpretation as the detritus of craft working. The southern terminal of ditch 70034 was cut by several features containing fuel-ash slag: pits 70201 and 70099, and a small gully, 70186. This material is formed by the reaction of ashes with fuel, normally charcoal, and indicates the occurrence of a high-temperature process. Small amounts of iron slag were recovered from one of the sections through the ditch. One piece appears to be iron-smithing slag, but the other pieces are very small and nondescript. The quantity represents a very low, background level and is not enough to confirm ironworking on, or even very near, the site (Mortimer, 2006).

Other Site F features

Most of the smaller linear features on the site

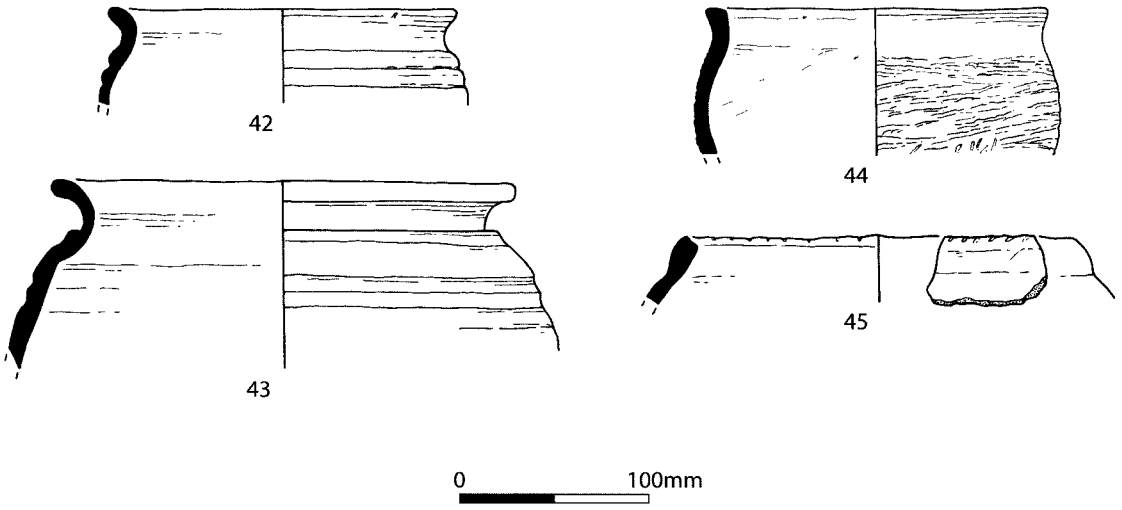


FIGURE 20 Phase 4 pottery, scale 1:4.

Illustrated pottery from Phase 4.

	Context	*Feature*	*Fabric*	*Form*	*Description*
42	70069	70033	G3	JNCORD	Rim out-curved simple or thickened.
43	70069	70033	G3	JNCORD	Rim out-curved simple or thickened.
44	70049	unstratified	G3	JN	Rim out-curved simple or thickened; combed 'rustication' below shoulder.
45	70016	70015	G3	JLS	Rim simple or bead-like, single channel. Slashing to rim angle.

Illustrated late prehistoric finds.

	Context	*Feature*	*Description*
46	22025	22003	Ferruginous sandstone saddle quern.
47	22019	22003	Fine-grained sandstone rubber stone; one worn surface.
48	22019	22003	Pyramidal loomweight; fabric with sparse angular white sandstone <2.0mm; abundant rounded quartzose sand, including polished grains <2.0mm; rounded dark red clay/iron grains <1.0mm.
49	32214	32172	Pyramidal loomweight; fabric as above.
50	70119	70117	Crucible; fine glauconitic fabric, abundant quartz inclusions; exterior vitrified; inside grey, reduced.

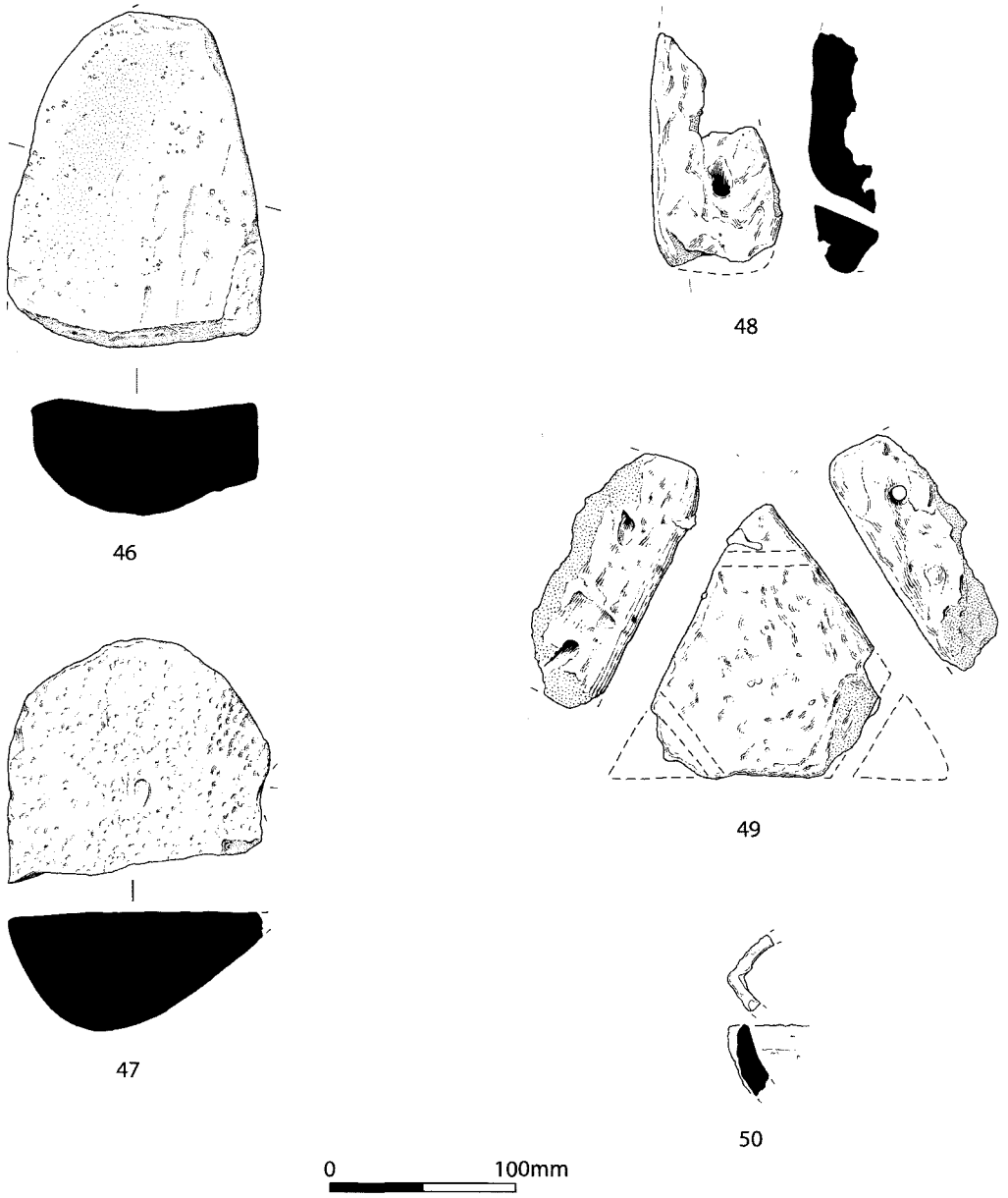


FIGURE 21 Late prehistoric finds: Saddle querns, triangular loom-weights and crucible fragment, scale 1:4.

produced pottery of a similar date, but in smaller quantities. Several of these features were on alignments which would have intersected with ditches 70033 or 70034, but their relationships were generally unclear and they could not be phased by pottery dating. Ditch 70041, on the western side of the site, produced 180 sherds of pottery and 17g of iron slag.

Discussion of Iron Age Sites

(g) *Dating: Site ABC*

The date of the earliest occupation of Site ABC is uncertain. There are indications from the phase 1 pottery that there may have been activity in Area A in the late Bronze Age, but the earliest pottery groups are small and lack any identifiable fineware forms that would allow more accurate estimation of date. The pottery is comparable to the material from Ivinghoe Beacon (Waugh, 1969a, 233–4), for which a date of around 600 BC was originally proposed, but is now widely thought to be earlier, around the eighth century BC (Barrett, 1980). A possible late Bronze Age date for at least some of the Area A material would accord with the earlier dating, while the later date would be more compatible with the radiocarbon determination on the sample from ring gully 22125.

The radiocarbon date, on a single charred cereal grain, needs to be treated with caution and certainly should not be taken as providing unequivocal dating for the feature. The post-1950 AD date for the second radiocarbon sample from ring gully 22125 highlights the strong possibility that finds within the shallow ring gullies could be intrusive. Disturbance by burrowing animals was evident in many features and rabbit bones were recovered from two contexts; these are almost certainly intrusive as this species is considered to have been introduced in the eleventh or twelfth century. The potential for surface material to find its way into archaeological deposits, whether scattered pottery or the products of twentieth-century stubble burning, is clear.

The peak of activity on Area B probably occurred around the early fourth century BC, as suggested by the calibrated radiocarbon date for the sample from the Phase 2 ring gully. The pottery from this phase is notable for the presence of incised decorated Chinnor/Wandlebury style sherds in some of the feature assemblages, with a suggested broad date range of 600 or 500 BC to 300 BC (Cunliffe, 1991, 75–6). Material corresponding to this style was only present in a few features, most conspicuously pit 32198, and it may be that these were slightly later than the rest of the Phase 2 features.

The character of the pottery assemblage from Area A is sufficiently different to that from Area B to indicate that it was of a later date. Although it cannot be closely dated, it appears to be typical of middle to late Iron Age assemblages from the locality and the wider region, dating around 300 BC to 100 BC. In contrast to Site F, on Site ABC there was very little material from the immediate pre-Conquest Iron Age, indicating a probable period of abandonment here before the Roman activity in the north-west part of the site.

In general, fabric groups were long-lived and where identifiable forms were not present, assigning feature assemblages to one of the ceramic phases was not possible. A high proportion of the features containing late prehistoric pottery remain unphased. The late prehistoric pottery assemblages are summarised in Tables 1 to 4.

(h) *Dating: Site F*

The earliest activity on Site F seems to be middle to late Iron Age, broadly contemporary with the occupation in Area A. However, the Site F assemblage is dominated by later, wheel-thrown forms.

TABLE 1 Late prehistoric pottery ceramic phases by area.

Phase	*Period*	*Area A*			*Area B*			*Area C*			*Site F*		
		Ct.	*VNo.*	*Wt.*	*Ct.*	*VNo.*	*Wt.*	*Ct.*	*VNo.*	*Wt.*	*Ct.*	*VNo.*	*Wt.*
1	LBA-EIA	78	7	339	95	54	687						
2	EMIA	21	20	80	784	465	3402	540	201	3413			
3	MLIA	928	201	3839	140	75	1224				175	57	1261
4	LIA-C1	10	4	64	4	1	6				991	420	5832
1–3	LPRE	362	150	1531	603	249	1796	5	5	18	72	42	209
RB*	RB*	40	15	137	7	4	22				68	27	532
Totals		**1439**	**392**	**5990**	**1633**	**848**	**7137**	**545**	**206**	**3431**	**1306**	**546**	**7834**

*material residual within Romano-British dated contexts

TABLE 2 Late prehistoric pottery: quantification by fabrics.

	Phase 1			*Phase 2*			*Phase 3*			*Phase 4*			*Complete assemblage*			
	Ct.	*VNo.*	*Wt.*	*Ct.*	*VNo.*	*Wt.*	*Ct.*	*VNo.*	*Wt.*	*Ct.*	*VNo.*	*Wt.*	*Ct*	*Wt*	*MinV*	*%MinV*
F1	4	2	7	7	6	51	2	2	4				32	81	16	0.8
F2	28	2	151	24	1	160	18	5	111	2	2	5	74	432	12	0.6
Q1	71	43	355	714	524	2880	569	276	3234	70	36	450	2024	8876	1261	63.1
Q2	17	5	327	415	112	2809	11	3	126				520	3781	148	7.4
Q3				15	1	125							15	125	1	0.1
Q4				30	12	156	4	2	5				47	196	19	0.9
Q5	18	1	33	1	1	8	28	2	32				51	82	7	0.4
Q6				1	1	43							4	85	2	0.1
Q7							70	4	336				79	374	10	0.5
QG				1	1	10	1	1	14				3	29	3	0.2
QO				1	1	7	46	7	377	1	1	9	50	419	11	0.6
G	1	1	1	20	5	204	1	1	26	89	22	575	178	1356	41	2.0
G2							471	14	1835				530	1946	20	1.0
L				5	2	12	9	1	55				14	67	3	0.2
G3							1	1	73	744	339	4426	812	5024	366	18.3
GO							18	3	138	7	3	135	25	273	6	0.3
GQ										5	5	104	5	104	5	0.3
O							3	2	19				7	27	4	0.2
S	7	4	5	111	19	430	23	7	85	87	17	198	453	1115	62	3.1

The introduction of wheel-thrown pottery in the region may have taken place as early as the first century BC (Mackreth, 2005, 128–31). The absence of imported wares, or forms or fabrics characteristic of the Romanising period, hints at a relatively early, pre-conquest date.

(i) *Roundhouses*

The better preserved ring gullies, in Area B, fall within the range of typical Iron Age roundhouses in the region. With the exception of roundhouse 32111, their internal diameters are between 11m and 12.5m. This is comparable with the 10m to 11.5m at Pennyland (Williams, 1993, 27), 9.0m to 12.5m at Wavendon Gate (Williams, Hart and Williams, 1996, 15), 8.0m to 12.1m at Bancroft (Williams and Zeepvat, 1994, 51) and 11m at Stoke Hammond Northern Bypass (Edgeworth, 2006).

They are typical in other respects also, having south-east-facing entrances, where these can be distinguished, and, in some cases, postholes inside the terminals of the entrances. Unfortunately, the general lack of structural evidence or other interpretable features internal to the ring gullies also seems to be typical. Various interpretations of ring gullies and their relationship with roundhouse structures are possible, but in this case it is likely that they were eaves-drip gullies, collecting water dripping from the roofs and draining it away from the walls of the structure. A few fragments of daub with wattle impressions were recovered from the site, providing tenuous evidence for the mode of construction of the circular walls set within the ring gullies.

The Area A ring gullies were less clearly defined, but it is likely that at least some of them were the remains of roundhouses. The surviving gully arcs have smaller radii than the Area B roundhouses: had the rings been complete, they would have had internal diameters of around 9m or slightly less. It is possible that the Area A ring gullies were structural, holding the bases of the walls, rather than being eaves-drip gullies, in which case the roundhouses may have been of comparable size in both areas, but it is more likely that the Area A roundhouses were of similar construction to those in Area B, but smaller.

Roundhouse-type ring gullies did not necessarily

TABLE 3 Late prehistoric pottery fabrics.

Fabric	*BTS**	*Description*
F1	F01B	Sparse, medium-coarse flint. Sparse calcined flint inclusions 1–3mm. Typically dark grey throughout or with pale or mid brown surfaces.
F2	F01A	Abundant coarse flint. Common to abundant calcined flint inclusions 1–3mm.
Q1	F28	Fine glauconitic sandy type. Abundant or common clear quartz inclusions 0.3–0.8mm. Rare glauconite pellets 0.1–0.3mm. Typically dark grey throughout or with red brown external surfaces. Sandy or harsh feel.
Q2	F29	Medium coarse glauconitic sandy. As Q1 with rare quartz inclusions up to 2mm
Q3	–	Coarse glauconitic sandy type. As Q1 with common coarse quartz, 1–3mm.
Q4	F35	Fine micaceous type. Rare fine quartz and black-lined voids from burnt-out organic inclusions. Typically dark grey throughout.
Q5	–	Fine sandy/inclusionless. As Q4 with mica absent.
Q6	–	Ferruginous type. Distinctive medium coarse sandy type with ?glauconitic ferrous inclusions 0.5–2mm. Reddish brown surfaces and break.
Q7	F01C	Quartz with rare flint. As Q1 with rare flint inclusions 0.5–1mm.
QG	F03	Fine/medium quartz with rare grog or argillaceous inclusions. Red-brown throughout.
QO	F19	Fine/medium quartz with black-edged void. Dark grey throughout.
G	F17	Grogged/argillaceous inclusions. Common self-coloured grog or clay pellet/argillaceous inclusions. Rare fine/medium quartz. Typically dark grey throughout or with red-brown surfaces. Soapy feel.
G2	F22	Grogged/argillaceous with frequent organic inclusions. As G with black-lined voids from burnt-out organic inclusions.
L	–	Yellow ?argillaceous inclusions. Common or rare medium pale yellow brown rounded inclusions and rare fine or medium quartz. Mid brown surfaces and grey break.
O	F04	Organic. Common linear voids from organic inclusions, visible in surfaces and break, 2–4mm. Smooth feel. Dark grey throughout or with mid brown exterior surface.
SH	F16/F07	Leached shell-tempered type. Common plate-like voids from probable fossil shell inclusions. Typically dark grey throughout.
G3	F06B	Medium grog. Common self-coloured or black medium (1–2mm) grog. Typically grey throughout or with mid-brown surfaces. Soapy feel.
GO	F22	Grog with organic. As G3 with common organic inclusions.
GQ	–	Grog with quartz. As G3 with common fine quartz (0.2–0.3mm) inclusions.

* Bedfordshire fabric types series (Parminter and Slowikowski, 2004).

enclose domestic dwellings: the small size of ring gully 32211 suggests that it served a different function, perhaps draining a storage- or working-area. Similar small roundhouses are a fairly common feature on comparable sites, such as Great Barford Bypass Site 2 (Beds HER 482). If the interpretation of ring gully 22184 as an element associated with a partly post-built structure is correct, this too may have had a non-domestic function.

It is not clear whether the separate gully arcs of roundhouse 32288 were both of the same date, although they seemed to be concentric, suggesting that they were at least broadly contemporary. Roundhouses with concentric ring gullies occur quite commonly, for example, at Bancroft (Williams and Zeepvat, 1994, 43–51) and Salford (Dawson, 2005, 45–67). The outer gully was the only one of the roundhouse gullies to contain the distinctive Chinnor-Wandlebury style pottery, which was otherwise confined to intercutting pits 32198 and 32203, around 30m to the north. This may be an indication that it was slightly later than the others on Area B, in

TABLE 4 Late prehistoric pottery forms.

Form	*Description*
JRS	Jars or probable jars with rounded-shoulders with upright or slightly flaring rims.
JSS	Jars with 'slack' or poorly defined shoulders. Most often with short upright rims.
JRD	Jars with rounded or globular profile. Short, upright rims.
JBAR	Neckless, barrel-shaped jar. One example only (no. 36), which features scored line below rim.
JST	Neckless large, storage jar.
BTC	Tripartite form bowls with pronouncedly angular (carinated) profile (nos 23, 27, 28) and flaring rims (nos. 14–15)
BB	Bipartite form bowls.
JN	Necked jars (or bowls). Wheelthrown and comparing to 'Belgic' forms considered by Thompson (1982). Typically with curved rims with thickening of the rim extremity.
JNCORD	As above with single or multiple cordons.
JLS	Channel-rim or 'lid-seated' jars. Neckless vessels with thickened rim and channel to rim upper. Type is fully discussed by Friendship-Taylor (1999).

which case the double ring could indicate a stylistic development of the basic design. Alternatively, there may have been a distinct activity in this part of the site, perhaps hinted at by the occurrence of cremated bone within the fill of the ring gully.

(j) *Development of settlement*

While some of the ring gullies may have had non-domestic functions, there is little doubt that Areas A and B were domestic settlements, not least because of the quantity and range of pottery recovered. Site F produced a similarly rich pottery assemblage, particularly from ditches 70033 and 70034, probably deriving from domestic activity. Remains of structures at this site could have been beyond the construction corridor or lost to ploughing or erosion within the area of the site. Most of the Site ABC ring gullies were very shallow, barely surviving below a depth of 0.20m. Had they been any shallower, or the ground surface been truncated to a greater depth, little evidence of domestic structures would have survived. This could easily account for the lack of surviving remains of structures at Site F.

One of the roundhouses, 22125, seems to have been earlier than the others on Area B, and roundhouse 32288 may have been later, but the ceramic dating evidence lacks the fine resolution that would indicate whether any or all of the roundhouses were in contemporary use. However, there is no inter-cutting of the roundhouses, and they all appear to respect the areas occupied by the others, suggesting that they formed a single coherent settlement, developing through time.

A fairly clear change in the pottery assemblages can be discerned between the Areas B and A, which suggests that there was an interruption between the occupation of the two areas. The site could have been abandoned and resettled, or the focus could have moved from Area B to an area beyond the limits of the bypass corridor before moving back to Area A.

The roundhouses on Area A all seem to have belonged to the first sub-phase of activity. In contrast to Area B, there was clear continuity of activity subsequent to the settlement phase, in the form of drainage ditches, and possibly a small ditched enclosure and drove-ways. The finds from these features, however, imply that the area of settlement was still close by. The lack of structural evidence from later phases at Area A could also be a consequence of a change in building practice, to a design which did not produce visible remains in the surviving subsurface deposits. There were no finds from Area A from the immediate pre-Roman conquest period, but the possible north-west to south-east aligned droveway seems to have continued as a feature of the landscape as it constrained the pattern of cultivation features in the Roman period.

The earliest activity on Site F seems to overlap with the occupation on Area A; the two sites, which were less than 2 km apart and inter-visible, perhaps being occupied simultaneously. However, occupation at Site F may not have been continuous into Phase 4. Much of the earlier handmade

pottery occurred with material of the later tradition and appeared abraded and residual. This would perhaps be more consistent with an interruption between the two phases, the earlier material being disturbed and scattered before the later features were dug.

(k) *Iron Age Economy*

Evidence of economic activity from either of the sites is sparse. Fragments of loom-weights recovered from both sites show that weaving was being carried out, and the postholes within roundhouses 22003 and 22184 might have supported looms. Thin section and chemical analysis of the loom-weight fragments indicated that they were of local clay, identical in composition to samples of daub from Area B.

The fragments of crucible found at Site F are significant, as Iron Age sites in the region have rarely produced evidence for non-ferrous metal working. The shallow feature which produced these fragments, and the similar features nearby, contained copious charcoal and ash. They were probably dumps of furnace residue, rather than the actual furnace sites, as the underlying clay did not seem to be heat-affected, but their presence implies that metal working was almost certainly taking place at the site. Pieces of fuel-ash slag were recovered from phase 4 features; this material is produced in a number of high temperature processes and its archaeological significance is not always clear, but it is possible that it resulted from continuing small-scale metal-working at the site. A small quantity of iron slag, probably from smithing, was also recovered. By contrast, there was very little evidence of metal working at Site ABC, only two tiny fragments of iron slag.

The red deer antler fragments retrieved at Site F from three of the sections through ditches 70033 and 70034 suggest another possible activity occurring at this site. These fragments show evidence of deriving from naturally shed antlers, probably deliberately collected. None has direct evidence of having been worked, but collection for future utilisation is perhaps more likely than alternative explanations such as ritual deposition.

An extensive programme of environmental sampling produced almost entirely negative results (Fryer, 2006). Of 166 floated bulk samples from Site ABC, a total of 2050 litres of soil, only 103 produced small quantities of charcoal, fragments of charred root or stem. The remaining assemblages are all extremely small, and almost certainly contain material derived from scattered or wind-blown refuse. Grains of barley and wheat are recorded, though at an average density of less than 1 grain per 10 litres of soil processed. Chaff and weed seeds are almost completely absent. There are no indications of any specific activities associated with the excavated features. The picture is similar at Site F, where only 7 out of a total of 39 processed samples, a total of 625 litres of soil, contained plant remains, other than charcoal fragments. Cereal grains, seeds and chaff elements were present in very small quantities, insufficient to enable accurate interpretation of any of the excavated features.

Poor preservation and recovery conditions in the clay soils may be a factor causing this paucity of plant remains (Fryer, 2006). Similar factors may also account for the lack of small animal bones from commensal species, such as mice and rats, and from young individuals from domestic species (see below). The alternative interpretation, taking the results at face value, might indicate that the sites were consumer-based, relying on imported batches of semi-cleaned or prime grain, rather than being involved in any form of agricultural production. Comparable assemblages have been noted at other contemporary sites within eastern England, where the local soils have either been too heavy or infertile for cereal production, as at Stansted, Essex (Murphy, 1990) and Fisons Way, Thetford, Norfolk (Murphy, 1992). In such instances, it is assumed that the inhabitants followed a pastoral regime and imported their grain as required (Fryer, 2006). Nearer at hand, similar negative results were found on the Stoke Hammond Northern Bypass site (Edgeworth, 2006).

A lack of cereal production is also suggested by the almost total absence of the steep-sided pits, interpreted as storage for seed corn, characteristic of many Iron Age sites. Only fourteen pits deeper than 0.40m were recorded, of which almost all were very irregular or had wide, dished profiles. Only one, 12308, had a profile consistent with use as a storage pit. By comparison, fifteen storage pits were excavated at Pennyland (Williams, 1993, 31–35, 39–41), with 22 other probable examples unexcavated. Conditions for storage of grain would, though, be very dependent on local geology: in the less well-drained parts of the Pennyland site several shallow pits were interpreted as abortive grain stores, abandoned when they were

found to flood, and four-post structures in the same area of the site were considered as evidence of above-ground stores (Williams, 1993, 44).

As well as grain storage pits, the clay-lined pits seen on other Iron Age sites in the area, such as Bancroft (Williams and Zeepvat, 1994, 51–52), Pennyland (Williams, 1993, 29–31) and Furzton (Williams, 1988) were also absent from the A4146 sites. These pits, which typically have fire-affected stones in their fills, are distinctive and were clearly related to a specific function; whatever this was, it does not seem to have been taking place at the A4146 sites.

The animal bone assemblages recovered from the sites are limited in size, especially when separated by phase, and any inferences about husbandry practices are extremely tentative. Cattle, which accounted for 60.4% of the identified bones at Site ABC and 72.9% at Site F, were probably the main livestock animals, while sheep or goat made up 24.0% of the bone assemblage at Site ABC and 22.0% at Site F (Table 5). These figures probably underestimate the contribution of sheep or goat as there was a fairly high proportion of unidentified bone classed as medium mammal, which would have included sheep or goat material. No pig bones were recovered. This may simply reflect the age of slaughter of pigs, as bones from immature animals are porous and fragile and may not survive in areas where soil conditions do not favour preservation, but a similar lack of pig remains was noted at the Iron Age site at Pennyland, Milton Keynes (Holmes, 1993, 151), and may indicate a lack of wooded areas suitable for foraging.

Horse bones make up 19.8% of the identified elements from Site ABC and 5.1% from Site F. Relatively high proportions of horse bones have been reported from other Iron Age sites in the area, such as Hartigans, where horse was said to form a surprisingly large component of the assemblage (Burnett, 1993, 199), and Stoke Hammond Northern Bypass (Edgeworth, 2006, 142), but the assemblages from Sites ABC and F are too small to say whether these sites fit into the same general pattern; calculation of the minimum number of individuals (MNI) shows that a single animal in each phase could account for all the horse bone (Table 6).

A sieved sample from posthole 12192, which was undated but in the same part of Area A as the phase 1 features, produced a spine from a thornback ray. This is a coastal marine or estuarine species, and its presence hints at the possibility of trade, probably from the Thames or Great Ouse valleys. However, finds of fish remains have been rarely reported on Iron Age sites in the region and it is perhaps more likely that this find is of a later date.

TABLE 5 Total animal bone fragments from Sites ABC and F: hand-collected and (in brackets) from sieved residues.

Phase:	*P 1*	*P 2*	*P3 ABC*	*P 3 F*	*P 4*	*Roman*	*Unp'd ABC*	*Unp'd F*	*Total ABC*	*Total F*
Equid		3	1		3	13	2		19	3
Cattle	1	9 (1)	27 (2)	1	37 (2)	5	12 (1)	3	54 (4)	41 (2)
Sheep/Goat		3 (4)	1		8 (4)	5	5 (5)	1	14 (9)	9 (4)
Red Deer					3 (10)					3 (10)
Roe Deer							4		4	
Rabbit						1	1		2	
Large Mammal		52 (2)	9	(1)	79 (15)	14	2 (10)	33	77 (12)	112 (16)
Med Mammal		5 (18)	22 (17)	1 (1)	34 (34)	16	4 (8)	3	47 (43)	38 (35)
Small Mammal					(1)					(1)
Thornback Ray							(1)		(1)	
Unidentified		207 (35)	128 (8)	2 (2)	376 (81)	172	36 (1)	102	543 (44)	480 (83)
Total ABC	1	279 (60	188 (27)			226	66 (26)		760 (113)	
Total F				4 (4)	542 (147)			142	686 (151)	

TABLE 6 Minimum number of individuals (MNI) for Sites ABC and F by phase.

Phase:	*Phase 1*	*Phase 2*	*Phase 3: ABC*	*Phase 3: F*	*Phase 4*	*Roman*
Equid	0	1	1	0	1	1
Cattle	1	2	1	1	1	1
Sheep/Goat	0	1	1	0	2	1
Pig	0	0	0	0	0	0

The bone assemblage as a whole is consistent with a small-scale mixed farming regime, with animals being raised and utilised on site. The meagre data available suggests that secondary products, such as wool and milk, were being maximised in addition to meat production. The assemblages from Sites ABC and F seem to be of a similar make-up, and there is no evidence to suggest any radically different activities. Other contemporary Iron Age and Roman sites within the general region, such as Fenny Lock, Pennyland and Hartigans in Milton Keynes, have animal bone assemblages broadly comparable to the A4146 material, especially with respect to the make-up and general abundances of the main domestic species and limited numbers of wild species (Hamilton-Dyer, 2001 and Holmes, 1993).

(l) *Cremated human bone*

Six deposits containing cremated human bone were identified, one of which, in Area A, could be securely dated to the Roman period and another, in Area C, may also have been Roman (see below). Of the remaining four, three were associated with Area B roundhouses.

The small amount of material from ring gully 32288 may have been a later intrusive burial, though it would be a coincidence for an isolated burial to have been randomly placed exactly within roundhouse gully terminal. It may have been redeposited from a disturbed earlier deposit: the nearby cremation, 32125, would be an obvious source. The other possibility is that it was broadly contemporary with the roundhouse, either deposited while the structure was in use or soon afterwards. If this were so, its deposition would almost certainly have had some symbolic meaning. It would also suggest that the other cremation deposit associated with this roundhouse, 32125, was also contemporary. Cremation deposit 22053 was undated, and it is difficult to judge whether its location within roundhouse 22003 is significant or coincidental.

The cremated bone from Site F was recovered from a feature similar in appearance to three others which seem to have been associated with metalworking, including the one which yielded the fragments of crucible. This suggests that the burnt bone resulted from accidental inclusion of scattered human remains within a furnace, rather than being deliberately cremated.

Burials dated to the early to middle Iron Age are rare in the country as a whole (Taylor, 2001, 65) and within the region (Dawson, 2004, 70), and whatever funerary rites were used in this period seem to have left little trace in the archaeological record. The few examples known from the area seem all to be inhumations, and generally date from towards the end of the period. A burial associated with second-century BC pottery was found during quarrying at Eggington in 1932 for example (Matthews, 1973), and inhumations have recently been found in the backfill of a middle Iron Age ditch which was part of an enclosure with possible ritual significance, and in late Iron Age features, at Great Barford Site 2 (Beds HER 482). An undated burial on the Stoke Hammond Northern Bypass (Edgeworth, 2006) may be of similar date. Cremation burials, common in the Bronze Age, reappear in the late Iron Age, the cluster of urned burials at Salford (Dawson, 2005, 78–81) providing an example from the region. The association of the Site ABC cremations with the ring gullies seems to suggest that the cremations are of early to middle Iron Age date, but the lack of firm dating evidence means that the possibility that they are either the remnants of a Bronze Age cemetery or are of late Iron Age or Roman date cannot be ruled out.

(m) *Place in the landscape*

Both sites are just below the crests of ridges of high ground commanding wide views across the landscape. This seems to fit into a local pattern of Iron Age settlement: the sites at Pennyland (Williams, 1993, 4), Wavendon Gate (Williams, Hare and

Williams, 1996, 9), Bancroft (Williams and Zeepvat, 1994, 11), North Furzton (Williams, 1988), Salford (Dawson, 2005, 1) and Stoke Hammond Northern Bypass (Edgeworth, 2006) were all in similar locations, on raised land above the Ouzel or its tributaries. This concentration of settlement on high land is not so apparent elsewhere in the region. Roundhouse sites at Coldharbour Farm, Aylesbury (Parkhouse and Bonner, 1997), and Sites 23 and 52 on the Willington to Steppingley pipeline (NAL, 2003b), for instance, were on comparatively low-lying ground.

Evidence of the local environment of the bypass sites is largely negative, the processed soil samples produced few identifiable plant remains and no mollusc shells. On Stoke Hammond Northern Bypass (Edgeworth, 2006) only a single sample produced terrestrial snail species, the other recorded mollusc species being largely aquatic. The lack of aquatic species from the A4146 sites perhaps reflects drier conditions, with none of the ditches having standing water throughout the year. The soil micro-morphology analysis suggested that the Area A roundhouses were cut through a pre-existing ploughsoil, implying previous arable use. The remains of saddle querns show that at least some grain processing was taking place on Site ABC. Otherwise there is little to suggest that the setting of the sites was anything other than a largely pastoral landscape.

The settlement in Areas A and B appears to have been unenclosed. Apart from the confusing area of ditches on the east side of Area B, there is little to suggest that there was any large-scale division of the land in the earliest phases of occupation. This changes in the later phases of Area A, and at Site F, with the establishment of more extensive ditches and the possible small enclosure. Although the eastern side of this feature was beneath the edge-of-site baulk, it is likely that it belonged with the class of small polygonal ditched enclosures widely recognised as a common type in the region (Williams, 1993, 46).

Site ABC appears to fit into a pattern of many other Iron Age sites in the region, where roundhouses occur with drove-ways on the same site. However, the drove-ways and domestic structures are normally of different phases. On the Stoke Hammond Northern Bypass, the earliest drove-way pre-dated the roundhouses (Edgeworth, 2006), a pattern also noted at Coldharbour Farm, Aylesbury (Parkhouse and Bonner, 1997). The sequence of events at Pennyland (Williams, 1993, 44–45) was more like that on Area A, with a drove-way seemingly established after at least some of the roundhouses had gone out of use. The establishment of drove-ways suggests that the landscape was becoming apportioned and enclosed, constraining movement of stock to pasturelands. The presence of a drove-way would in turn have influenced the subsequent development of occupation, the relatively long-lived settlement at Aston Clinton Bypass Site B (RPS, 2002) providing a good example.

It has been suggested that elements of the Iron Age landscape of Buckinghamshire tended to be aligned parallel and perpendicular to the Icknield Way and the Chiltern ridge, a pattern partly preserved in the modern orientation of roads and tracks (Bull, 1993). The orientations of drove-ways at a number of excavated sites seem to fit this pattern, and the north-west to south-east aligned drove-way in Area A would certainly be consistent with it. There is evidence of continuity of alignment into the Roman period and the local orientation of the modern field boundaries is, in turn, consistent with that of the Roman features. However, to draw even tentative conclusions about modern survival of Iron Age landscape elements from the results of the bypass excavations would require a great deal of speculative extrapolation.

Roman Features

Stratified finds from the Roman period were largely confined to the north and west parts of Area A (Fig. 22), although there were scattered surface finds over a wider area. There is a possibility that the Phase 4 features on Site F could extend into the early post-conquest period.

(n) *Area A: Ditches 12023 and 12020 (Fig. 15)*

Ditch 12023 was one of the largest of the linear features in Area A, over 2m wide and up to 0.60m deep. It probably terminated in the region of ring gully 12607, although this part of the ditch was not excavated. Several sections showed re-cuts, and it may have been a long-lived survivor from the Iron Age landscape. It produced undiagnostic Roman pottery. Near its western end it was cut by the terminal of a steep-sided ditch on a different alignment, 12020, which also contained Roman finds, including two small pieces of samian ware, dated to the second century or later.

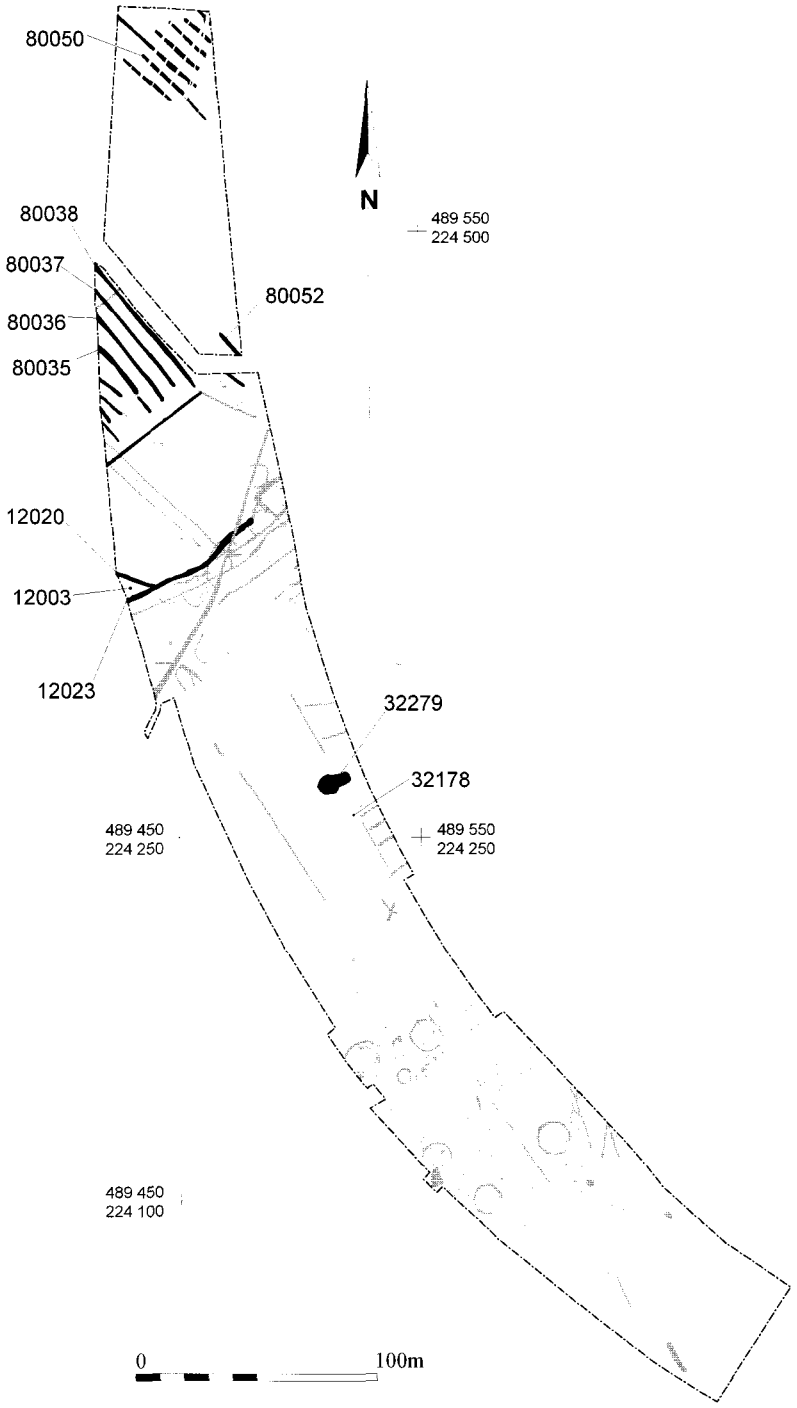


FIGURE 22 Site ABC, Roman features, and large pit 32279.

(o) *Cremation 12003 (Fig. 15)*
A small isolated pit within the angle formed by ditches 12023 and 12020 contained a cremation deposit, 12003, lying within and around the remains of a shell-tempered jar which had presumably served as a burial urn. A land-drain cut across the pit, neatly bisecting the urn and scattering the cremated bone through the disturbed fills of the feature. This would account for a coin found with the cremated material, initially thought to be Roman, but on cleaning proving to be an 1886 half-penny.

The urn was accompanied by two smaller ancillary vessels, a whiteware flagon and a locally produced bag-shaped beaker in a greyware fabric. The flattened rim and angular profile of the urn (Fig. 24, no. 51), is matched by shell-tempered vessels from Milton Keynes (Marney 1989, Fig. 25, nos 22 and 28). The flagon (Fig. 24, no. 52) is derived from ring-necked types of the first and second centuries and is unlikely to date from before the later second century: comparable forms in Oxfordshire whiteware are dated AD 240 to AD 300 (Young 1977, 102). The other accessory vessel (Fig. 24, no. 53) is unusual, and may reflect continental and British fineware beaker forms of the mid- and late second century.

The colour of the cremated bone indicated a pyre temperature of at least 650° C. Preservation was very good and 47% of the 447g of bone recovered could be identified by skeletal element. There was a preponderance of bones from the neck, upper limbs and lower face and skull bones, which may indicate deliberate selection of bones for burial rather than differential survival, as elements that do not usually survive well are well represented. However, the disturbance by the land-drain could have caused bias in the proportions of elements present (Brayne, 2006).

All of the bone appeared to be from a single adult individual. The upper and lower surfaces of the most intact cervical vertebral body had marginal lipping and distortion of the joint contour, and the lower surface was very porous, typical of the effects of degenerative disc disease. This kind of damage to the bones of the neck was particularly common in women in the Roman period, apparently caused by carrying heavy loads on their heads. There were, however, no other indications of the sex of the individual.

Goupings of an urn and accessory vessels, usually drinking vessels, are a common feature of Roman cremation burials dating from before the mid-third century AD (Taylor, 2001, 101–4). Inhumation rapidly superseded cremation as the normal funerary rite after this date.

(p) *Cremation 32178 (Fig. 22)*
An undated deposit of cremated bone was recovered from a discrete feature, 32178, in Area C. Iron nails, some with mineral-replaced wood on their shafts, were present in the surrounding pit fill. This perhaps indicates that the cremated bone was buried in a wooden box, common practice in the Roman period (Major, 2006). The 9g of bone recovered included fragments of metacarpal, phalange and skull vault, the epiphyseal fusion indicating that they came from an adult. Iron hob nails were found in the same deposit, which suggests that the body was placed clothed onto the pyre (Brayne, 2006).

(q) *Parallel linear features (Fig. 22)*
Two groups of parallel linear features in the north part of Area A were separated by an area heavily disturbed by construction traffic before they were recognised, and may originally have formed a single continuous area. The features were around 6.5m apart and had steep-sided ditch-like profiles (Fig. 23). A moderate quantity of pottery was recovered from these features, especially from the southern group: 80035, 80036, 80037 and 80038. The pottery is in grogged or grog-with-quartz fabrics, together with reduced sandy and shelly wares of likely early Roman date. A wheel-thrown jar or bowl sherd with shoulder grooves is the only distinctive form.

Shallow parallel trenches have been recorded at other Roman sites in the region. At Wollaston in the Nene valley, palynological analysis detected grape pollen and there were regularly spaced postholes in the bases of the trenches, leading to their interpretation as planting trenches for vines supported by poles (Brown and Meadows, 2000). A site with similar features at Stanton Low in Buckinghamshire has also been interpreted as a vineyard (Woodfield, 1989). Elsewhere, features of this kind of have been considered to be evidence of cultivation in raised lazy-beds and an increasing number of examples have been recognised from sites in the region, including Grendon quarry in Northamptonshire (Jackson, 1995); Love's Farm, St Neots; and

Bob's Wood near Huntingdon (Mark Hinman, pers comm.). The Area A features must have been used for some kind of cultivation but as no environmental evidence was recovered it is not possible to say what crop was grown. A single posthole was revealed in the base of one of the excavated sections, but nothing that would compare with the pattern of postholes seen at Wollaston.

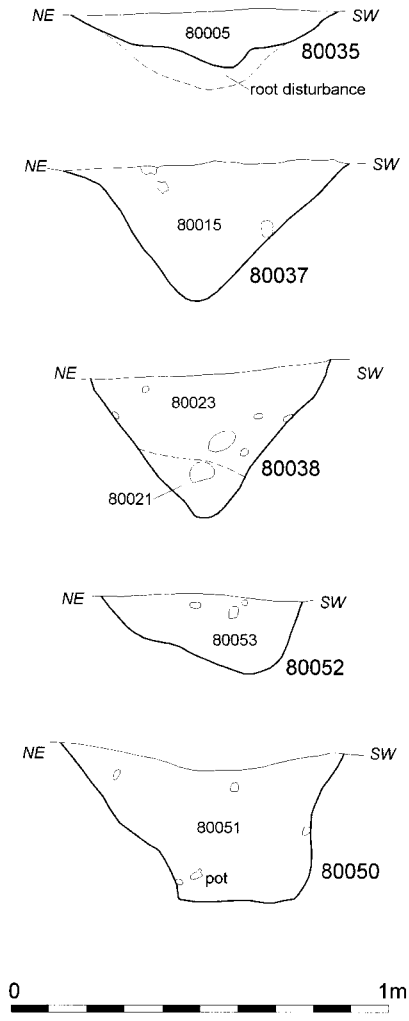


FIGURE 23 Sections through cultivation trenches, Area A.

(r) *Other features with Roman finds*

A single isolated pit, 39049, was recorded at the southern end of the bypass route, over 350m beyond the main excavation area, at NGR 490036 223889. This pit, 1.5m in diameter and 0.35m deep, had a fire-reddened base and charcoal-rich fill. Two sherds of pottery were recovered from the top of its fill, including a rim sherd from a flint-tempered Silchester-type jar (Fig. 24, no. 54).

In the centre of Area C, pit 32279 (Fig. 22) was up to 16m long and 8m wide at the surface with stepped sides to a flattish base, 1.85m deep. Its primary fill contained a sherd from a white jug with plain glaze, probably of late twelfth- to fourteenth-century date, but its other fills also contained 23 sherds of residual Roman pottery as well as two worked flint flakes. During excavation, this feature was thought to be a well or waterhole, but it might be better explained as an outlier of medieval or post-medieval quarrying activity in the sides of the valley to the east of the site, a possible interpretation for the earthwork sites (Beds HER 11190, 11191, 11192) in this area.

Discussion, Roman

(s) *Dating*

Much of the Roman pottery (510 sherds weighing 3026g in total) was from typical necked jars in common, long-lived coarseware fabrics which are not possible to closely date. There are single sherds of Verulamium-region whiteware, Silchester-type ware and four sherds of samian ware which indicate dates from the mid-first to second centuries AD. The Roman pottery fabrics are summarised in Table 7. The few vessels with diagnostic forms indicate a date before AD 250. There is overall an absence of wares and forms specific to the later Roman period. Along with the tighter date-range for the cremation deposit, this suggests that there may have been activity at the site in the late first or early second century AD but it had ceased by the mid-third century. This activity does not seem to have been continuous with the Iron Age occupation of the site.

(t) *Roman Economy*

The presence of the cultivation trenches and the concentration of pottery suggest that there was a nearby settlement. The distribution of known sites in the region, as with the Iron Age, is biased

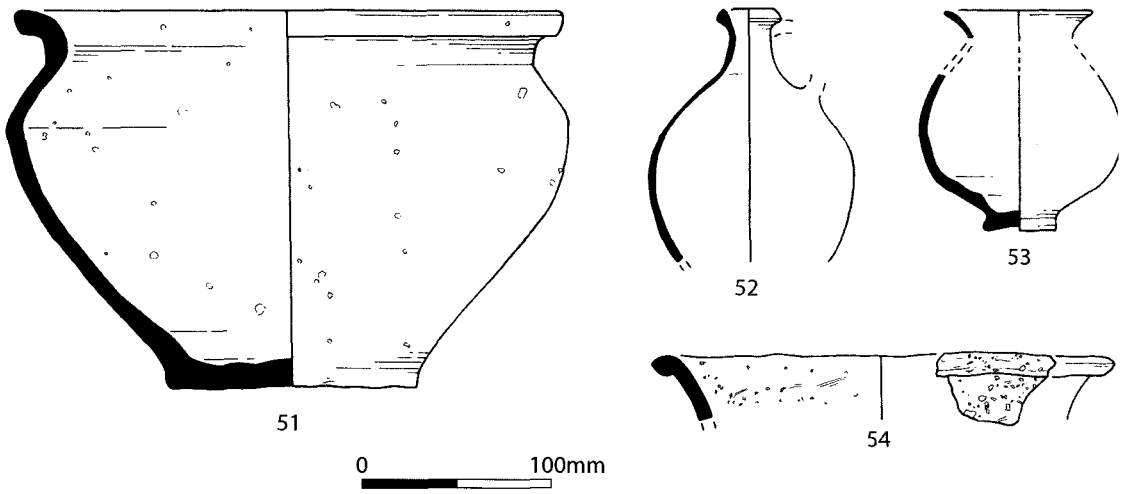


FIGURE 24 Roman pottery, nos. 51–53 from cremation 12003, scale 1:4.

Illustrated Roman pottery.

	Context	*Feature*	*Fabric*	*Form*	*Description*
51	12098	12003	Shell-tempered	Wide-mouthed jar	Cremation vessel.
52	12098	12003	Fine whiteware	Flagon	Single handle, disc-rim.
53	12098	12003	Greyware with black slip	Bag-shaped beaker/ small jar.	
54	39050	39049	Coarse flint-tempered (Silchester type).	Necked jar.	

towards recently developed areas, in particular in Milton Keynes. Near the northern end of the bypass route, an occupation site has been excavated on the Lakes housing estate (Bucks SMR 3035), and a field system and trackway at Three Locks golf course, around 4km north of Site ABC (Ford, 1998). A cropmark site to the north of Stoke Hammond (Bucks SMR 5608) has produced Roman surface finds. These sites, along with the small town of Magiovinium on the banks of the Ouzel near Fenny Stratford, would presumably have formed part of the economic context of the activity at Site ABC. The strong bias in the distribution of finds towards the western side of the road corridor suggests that there was a focus of settlement on that side. A scatter of finds in this area (Bucks SMR 1108) on the upper slopes of the small valley running down towards Burcott village, may mark the site of this settlement.

The pottery assemblage provides some evidence of the nature and economy of this putative settlement. Much of the material is in coarseware fabrics typical of the region and will have been made fairly locally. The four samian sherds, probably from central Gaul, are the only identified continental imports from Site ABC, although an amphora sherd, probably from southern Spain, was found on Site F, the only convincingly post-conquest pottery from that site. There is also a small quantity of material originating from the wider region. This includes Verulamium whiteware from the Hertfordshire area, coarse flint-tempered Silchester-type ware from north Hampshire or Berkshire (Timby 2000, 239–44) and fine whiteware from either Oxfordshire or the upper Nene valley. The Upper Nene valley may also have been the source of the reduced sandy wares though these are probably more local. Shell-tempered wares are similar to

TABLE 7 Roman pottery quantification by fabric.

Fabric Group	*Description*	*BTS equiv.**	*Min vess.*	*Count*	*Weight(g)*
Amphora (A)	Cadiz type amphora?	–	1	1	24
Reduced sandy (RS)	Local type Black sandy	RO7B	19	28	206
	Greyware, buff surface	–	1	1	10
	Greyware, self-coloured	RO6	10	77	377
	Greyware with black slip	–	1	19	129
	Upper Nene type grey (pale core)	–	1	1	3
Shell-tempered (SH)	Shell-tempered includes Harrold type	R13	23	360	2109
Soft pink grogged (PK)	Soft pink grogged	RO9A	2	3	9
Silchester type (SIL)	Coarse-flint tempered	–	1	1	33
Whitewares (WH)	Gritty whiteware. Verulamium region type	RO3B	1	1	3
	fine whiteware. Upper Nene or Oxfordshire type	RO3	2	13	91
Samian (SA)	SAM CG	RO1A	5	5	22
Totals			**97**	**510**	**3026**

*Bedfordshire fabrics types series (see Parminter and Slowikowski 2004)

material from Milton Keynes (Marney 1989) at least some of which probably originated from Harrold, in north Bedfordshire (Brown, 1994).

Overall, the finds provide little evidence of trading links beyond the immediate neighbourhood. This, together with the almost complete absence of finewares, is consistent with a small settlement operating within a local agricultural economy. It is possible that this settlement could have been a minor element of a larger estate, although there are no known high-status sites in the near vicinity.

Medieval Features

The stated aims of the fieldwork included investigation of an Anglo-Saxon charter boundary, and evaluation trenching of the area around Chelmscote Manor Farm to locate and characterise the moat-like feature shown on nineteenth century Ordnance Survey maps and to identify any remains associated with the medieval settlement of Chelmscote.

The possible Anglo-Saxon charter boundary

The boundary between Linslade and Soulbury parishes ran obliquely across Area A following an existing hedge on a slightly raised bank (Figs. 3, 15). To the west of the site, it joins the boundary with Wing parish, the point where the three boundaries meet being the highest point in the landscape, at over 140m AOD, for a radius of at least 3km. Identifying the geographical features mentioned in the charter requires a degree of interpretation, but a plausible reading would have it following the present day boundaries between Linslade and Wing, and Linslade and Soulbury. At one point it refers to a 'hlaw', a word meaning a barrow or other mound. This may simply be the top of this hill where the boundaries meet, or refer to a vanished barrow nearby (Gurney, 1920).

Five sections were dug by machine through the hedge-line where it crossed Site ABC (NGR: 489470 224365). In all of these sections, a ditch, 12625 (Fig. 15), could be seen running just to the south of the existing hedge-line. A re-cut, displaced further to the south, was visible in two of the sections and is likely to have been present in the other sections, but the area close to the hedge was heavily disturbed by roots and animal burrows. In one section (Fig. 26), the ditch appeared to cut a shallow feature, 12589, tentatively interpreted as a cultivation feature, which was also cut by one of the Iron Age ring gullies. The main ditch, 12625, was also investigated in three hand-excavated sections, where it could be seen to cut Iron Age and Roman features. Only one of these sections produced any finds, three sherds of undiagnostic Iron Age pottery.

The results of the excavations show that an Anglo-Saxon or early medieval origin for the feature is quite feasible, but did not provide any

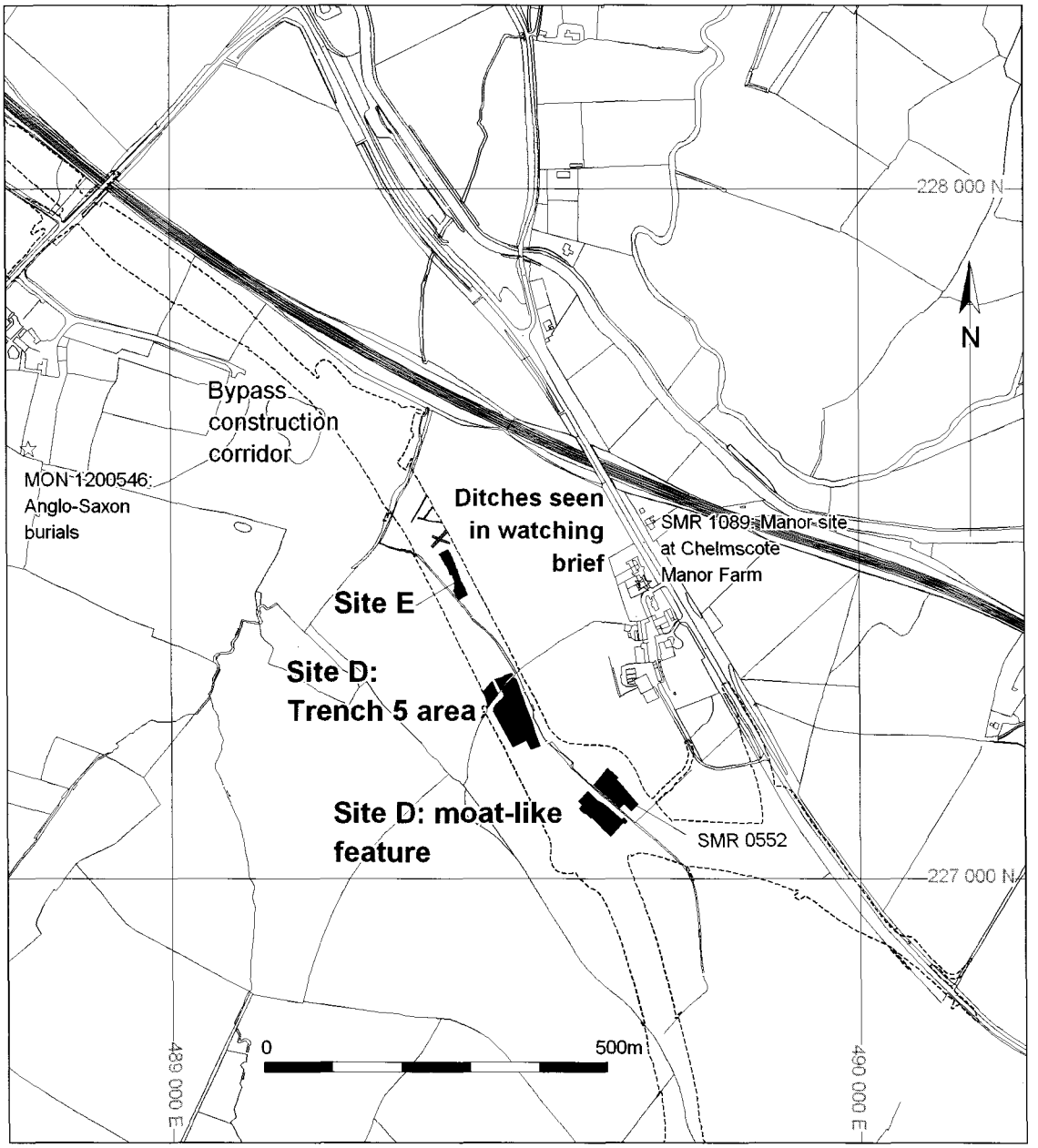


FIGURE 25 Location of medieval and post-medieval sites. (Mapping reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright 2006. All rights reserved. Ordnance Survey Licence number 100021059.)

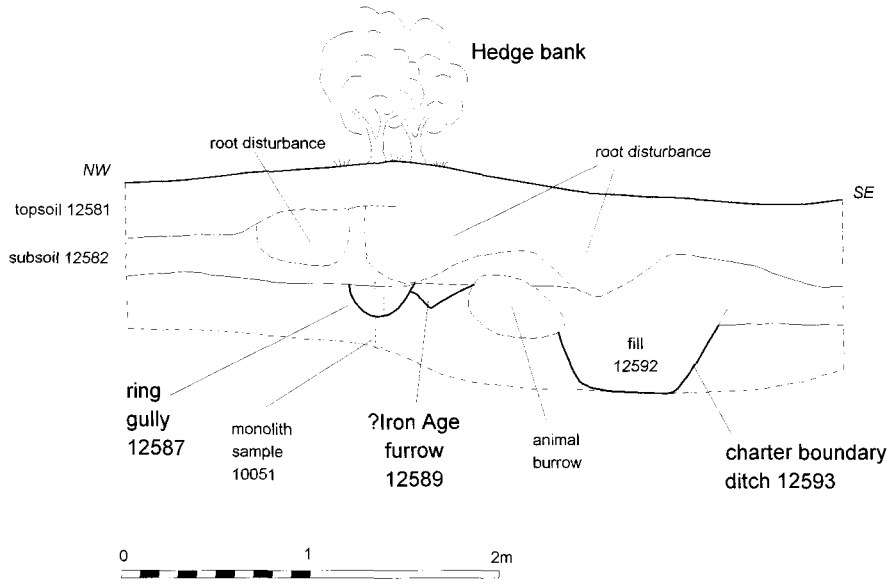


FIGURE 26 Section through possible Anglo-Saxon charter boundary, between Soulbury and Linslade parishes.

confirmatory evidence for this. The boundary is clearly a long-lived feature within the landscape, and the ditch is likely to have been maintained by cleaning-out or re-cutting many times.

South-west of Chelmscote, Trench 5 Area (Fig. 27)
During the evaluation of the area south-west of Chelmscote, one of the trenches, Trench 5 (NGR: 489500 227230, Fig. 25), revealed three features containing medieval pottery. To investigate these features, an area extending 10m on either side of the evaluation trench was stripped of topsoil by machine. The topsoil could be seen to be of very variable depth and overlay a series of interleaved layers of silty clay subsoil, possibly a cultivation horizon pre-dating the recorded features. On partly machining away the subsoil, several features were revealed in plan (Fig. 27). After hand-excavation of this area, it was extended by 20m to the west, leaving a 30m-long baulk in the centre of the site to enable features on the newly stripped western side of the site to be compared and oriented with those on the eastern side. A later extension of the excavation area to the south revealed some large post-medieval features which are discussed in the next section.

The excavated features were shallow and ill-defined (Fig. 28), but nevertheless produced 698 sherds of medieval pottery, weighing 4361g, of which 90% by weight and 71% by sherd count came from four linear features, 4010, 4012, 4025 and 4168, in the centre of the site. The topsoil and subsoil layers produced a further 183 sherds, weighing 1267g. There was little variation in the pottery assemblages from different features, most containing a range of wares consistent with a date of around the mid-twelfth century.

Of the features containing medieval pottery, the most striking was a 0.70m-deep ditch, 4012, which had a wider but shallower re-cut, 4009, for part of its length. The excavated sections of this ditch and re-cut together produced 46% of the entire pottery assemblage from the site. Three iron nails, one identified as a medieval horseshoe nail (Major, 2006), and a hone stone (Fig. 29) were also recovered. The hone is small, with an elliptical section, and seemingly complete. It is Norwegian Ragstone, which was quarried at Eidsborg, in southern Norway and found in large quantities on sites in eastern England. Importation of this type of stone seems to have started in the tenth century, well before the Norman conquest, but increased sharply

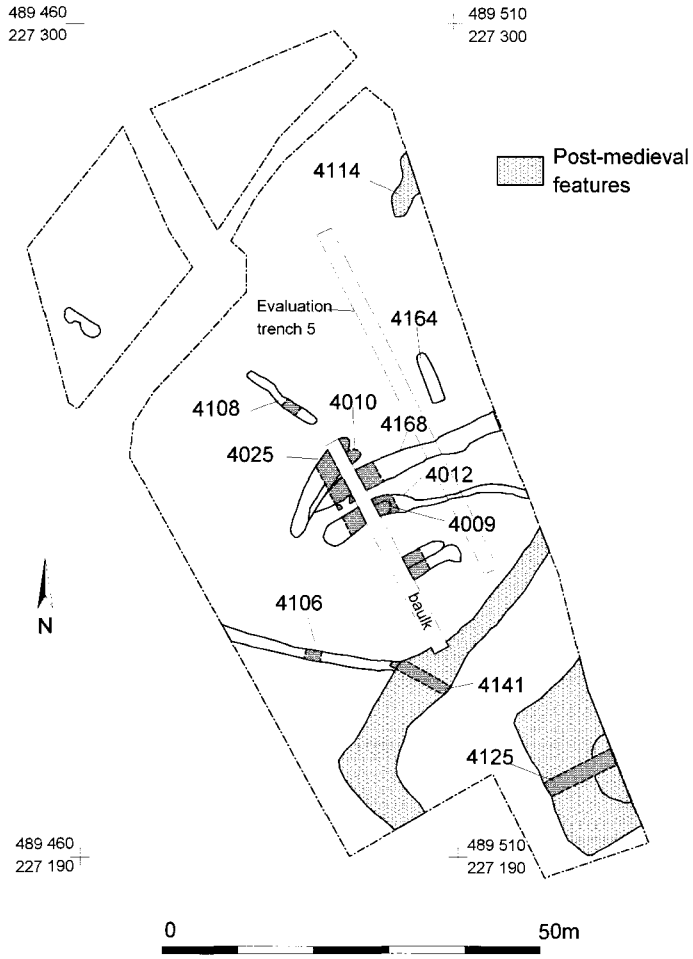


FIGURE 27 Plan of Site D: Trench 5 area.

in the later eleventh century and continued into the fourteenth century.

The similarity of the fills of features meant that stratigraphic relationships were difficult to determine, and the relationship between two shallower intercutting features to the north, 4025 and 4010, could not be clearly established. They appeared to be cut into the fill of a wide, unusually deep furrow, 4168.

Two small gullies towards the north of the site, 4108 and 4164, were cut from a higher level and ran out before the points at which they would have intersected other features. Both contained small amounts of medieval pottery, as did another gully, 4106, which was truncated to the south by post-medieval features.

An irregular spread of stones towards the north-eastern corner of the site, 4114, produced sherds from two later medieval pottery vessels, a jug and a jar. These finds provide a late thirteenth century date for this context, at the earliest, although there is a strong possibility that they were residual in a more recent deposit.

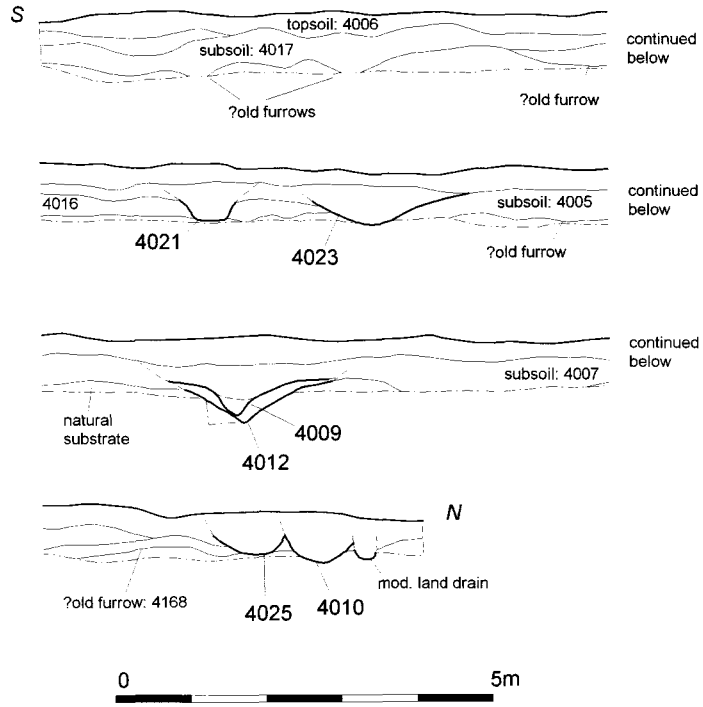


FIGURE 28 Section through features in Trench 5 area.

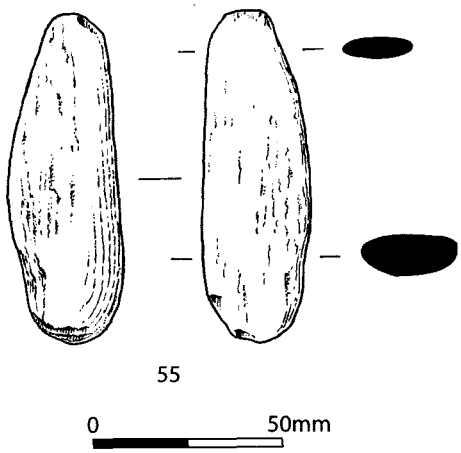


FIGURE 29 Norwegian Ragstone hone from fill 4129 of ditch 4009, scale 1:2.

West of Chelmscote, Site E (Fig. 30)

West of Chelmscote, and north of the area described above, another area with similarly dated finds was exposed during construction work. This site, which became Site E (NGR: 489410 227455), was discovered at a late stage in the construction process, a masking subsoil layer obscuring it when the topsoil was removed. It was found after the western side of the construction corridor had been graded down, leaving only a narrow strip available for excavation.

A number of linear features were seen to the north of the excavation area during the construction watching brief. These were recorded in plan (Fig. 25) but could not be fully excavated because of the very tight construction timetable.

Within the small excavation area, removal of the subsoil layer by machine revealed an oven-like feature, 60033, possibly associated with a stone surface, and the remains of a trackway, 60074, in addition to ditches, gullies and small pits (Fig. 30). A considerable quantity of medieval pottery was recovered from the site. The range of wares was similar to that from the Trench 5 area to the south, although it included a rather higher proportion of later types.

(u) *Ditches (Fig. 30)*

One of the more substantial ditches, 60117, had a very different orientation to the others, being

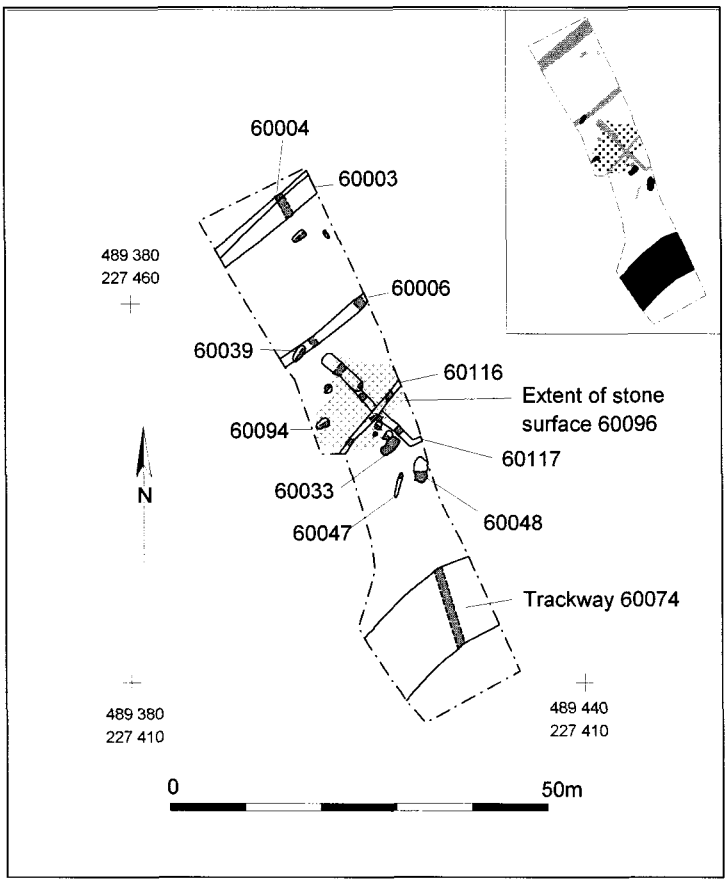


FIGURE 30 Plan of Site E with inset showing later phase features containing tile.

aligned north-west to south-east, and probably represented an early phase of activity. The four excavated sections through it produced 209 sherds of pottery, 38% of the total assemblage recovered from the site. The range of pottery types was generally consistent with a late eleventh- to mid-twelfth-century date, although the upper fills of several sections contained later sherds and tile fragments which were probably intrusive. At its south end, this ditch turned abruptly eastward, suggesting that it may have formed part of a rectilinear enclosure, and to the north, it appeared to terminate before the point at which it would have intersected the more southerly of two parallel ditches, 60006.

The remaining ditches were all aligned roughly south-west to north-east. The larger of two parallel ditches, 60004, at the northern end of the excavation area was over 3m wide and nearly 0.70m deep. Its excavated sections showed a smaller re-cut, 60003, just over 0.50 m deep. Both ditch 60004 and a smaller parallel ditch to the south, 60006, contained small quantities of early medieval pottery, chalky wares and Olney Hyde-type wares, suggesting that these features also belonged to a late eleventh to mid-twelfth century phase. However, the sherds were abraded or leached and may have been residual. A small linear feature, 60047, not aligned with any other, produced larger sherds of these wares, and is more likely to be from this early phase.

The re-cut, 60003, of ditch 60004 produced 13 sherds of Hertfordshire Reduced ware, which might indicate a date as late as the fourteenth century. Similar pottery was also recovered from one of the sections through a ditch on an almost parallel alignment, 60116, which was stratigraphically later than ditch 60117.

(v) *Oven 60033 (Fig. 31)*

Feature 60033 was teardrop-shaped, 2.20m long by 1m wide with steep sides to a flat base 0.35m deep. It had fire-affected internal surfaces and its lower fill consisted of irregular stone rubble blocks within a mid-greyish brown clay matrix. The stones were fire-reddened, mostly only on their upper surfaces, although in some cases the lower surface had been heat affected (Fig. 31), as they would have been if the stones had been part of a domed roof structure. There was a lower charcoal layer at the east end of the structure, towards the narrow end of the teardrop shape, extending beyond the stone fill. This was overlain by a clay deposit similar to, and perhaps continuous with, the matrix between the stones.

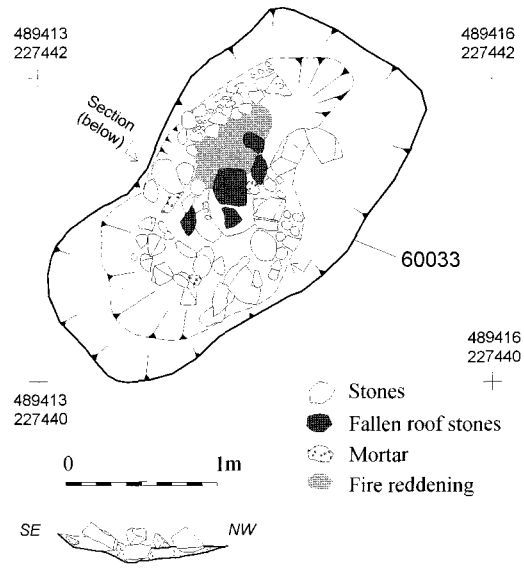


FIGURE 31 Plan and section of oven 60033.

Sieved bulk soil samples taken from two fills of the oven, and from the charcoal layer to the east, produced assemblages containing varying densities of cereal grains, large pulses, chaff and weed seeds. Contemporary sites elsewhere in the country have produced similar deposits of fuel or usage waste from such structures (Fryer, forthcoming), although the quantity of chaff recorded is, perhaps, rather low. Oven-like features would have been used for a variety of domestic, agricultural and light industrial purposes during the medieval period, and it is rarely possible to differentiate specific uses from the fuel residues alone. However, the puffed and distorted condition of many of the grains, the apparent lack of chaff and the presence of abundant fragments of black cokey residue indicate that this feature was fired to very high temperatures during the latter period of its use.

The processed samples from other Site E features were broadly similar to those from oven 60033, but with a far lower density of seeds and chaff. It is likely that this material derived from

wind-dispersed rake-out waste from the oven (Fryer, 2006).

The combined fills of the oven produced 52 pottery sherds, weighing 193g, including 36 sherds of Hertfordshire Reduced wares. In addition, 46 pieces of medieval tile, weighing 1.4kg in total, were recovered.

A number of other features on Site E also contained relatively large quantities of medieval tile, including two shallow pits, 60039 and 60094, a stone filled hollow, 60048, and the trackway at the southern end of the excavation area, 60074. An irregular stone surface, 60096, also produced tile, as did the machined topsoil and subsoil. In all, the site produced 219 pieces of tile, mostly flat roof tile, in at least six different fabrics. Only two small fragments were recovered from the fills of the linear features: it is almost certain that the ditches were largely filled before any tile was introduced to the site. This tile horizon therefore appears to divide the contexts into distinct phases, (Fig. 30, inset). It was only in the second half of the twelfth century that the use of flat roof tiles became common on secular, non-aristocratic buildings in towns. Their spread to rural areas was patchy and slow, and it is likely that it was some time later before they were routinely used in this part of Buckinghamshire.

(w) *Stone surface 60096 (Fig. 30)*

Much of the central area of the site was covered by an irregular 0.12m-deep layer of stones in a loamy matrix, 60096. This appeared to respect oven 60033, suggesting that it may have been a contemporary feature, deliberately laid to provide a working surface. It is possible that it was an internal floor surface, although there were no structural remains of any walls enclosing it.

(x) *Trackway 60074 (Fig. 30)*

A shallow linear feature, 60074, crossed the southern end of the site on a south-west to north-east alignment. It was over 10m wide and up to 0.43m deep, and appeared to be the remains of a trackway. Its base was irregular, with two apparent wheel ruts, and it had a lower fill of gravel and larger stones. Fifteen sherds of pottery and nearly 1kg of tile fragments were recovered from this layer and the two overlying silty fills.

Early maps, including the Ordnance Survey 2" drawings of 1813, show a track running north-west from Chelmscote, crossing the stream to the north-east of the area of Site E and turning abruptly west to meet the road north of Soulbury village. Trackway 60074 could have been an earlier, more direct route, perhaps crossing the stream immediately to the west of the site.

The medieval pottery

The most notable aspect of these two small excavation areas, Trench 5 area and Site E, was the quantity of the pottery recovered: 1426 sherds weighing over 10kg in total (Table 8). Although the two sites were around 200m apart, the similarity in the range of wares argues strongly for this material deriving from a common area of occupation close to the sites.

The date range of the assemblage is quite tightly constrained. Sites in the area with activity dating from before the Norman conquest, such as Loughton, Milton Keynes (Vince, 1998), have large quantities of St Neots-type ware: its absence here almost certainly rules out any significant pre-conquest activity. As the use of St Neots ware probably continued for some time after the conquest, the earliest date for the pottery assemblage here would be towards the end of the eleventh century. However, 248 sherds of Early Medieval Chalky Ware were present (Fig. 32, nos. 65 and 68). These sherds are identical, by eye, to vessels found in the City of London from the mid-eleventh to the mid-twelfth centuries (Vince and Jenner, 1991, 70–72). In London, this ware was most common just before and after the conquest, and declined in frequency in the later eleventh to mid-twelfth centuries after which it was no longer used. The A4146 material may be from a different source, and this type of ware may have continued in use longer in Buckinghamshire than in London, but its presence here suggests that the occupation which gave rise to this assemblage was underway by the middle of the twelfth century, at the latest.

A middle twelfth-century date is also likely for the 253 sherds of medieval shell-tempered ware, similar, or identical, to that produced at Olney Hyde, about 30km north of the A4146 sites (Fig. 32, nos. 60, 61 and 62). This differs from St Neots-type ware in the range of vessel forms: the vessels from Trench 5 area and Site E include bowls and dishes and a handled jar, but, in contrast to Olney Hyde, no jugs in this fabric.

The 522 sherds of sand-tempered, handmade

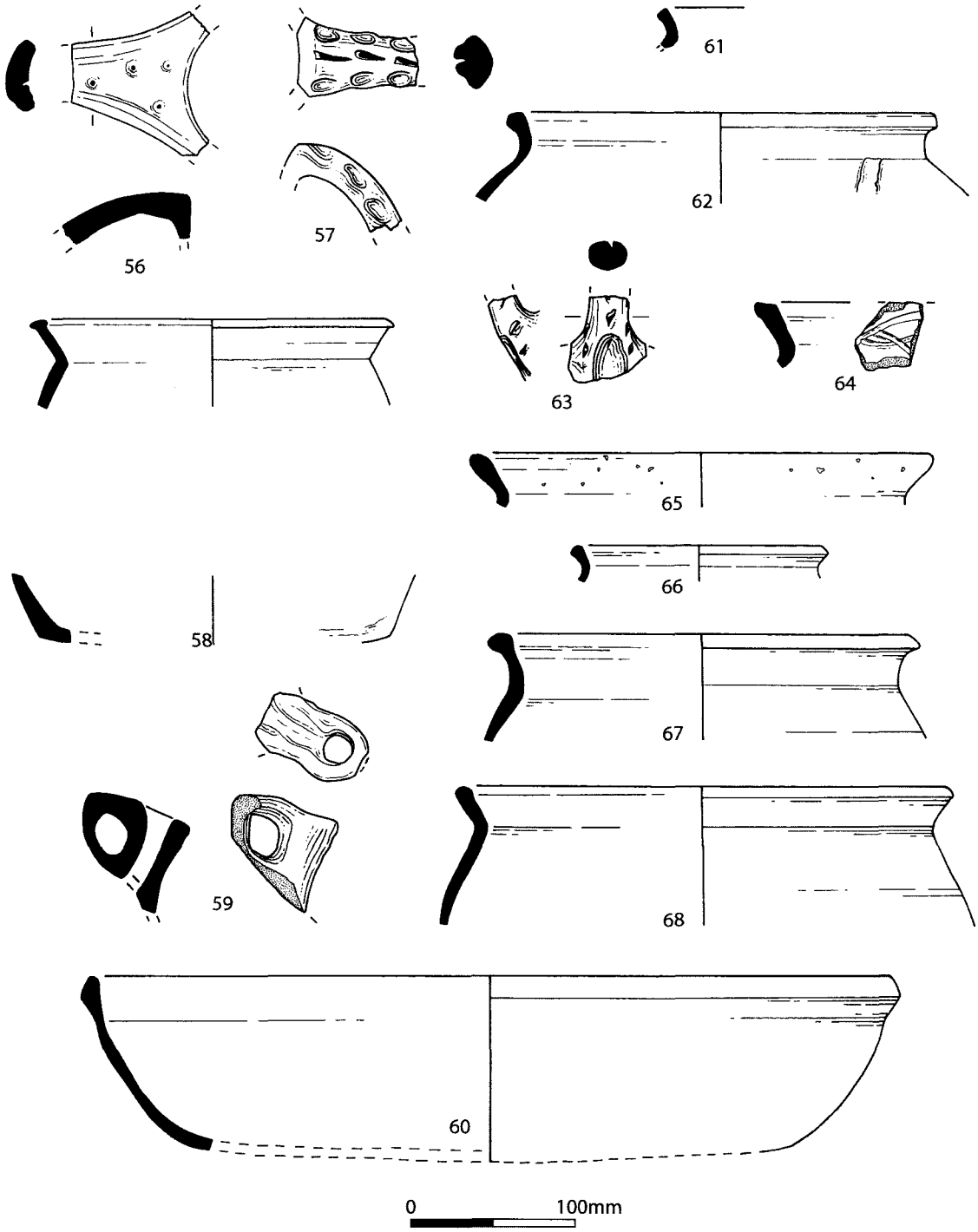


FIGURE 32 Medieval pottery, scale 1:4.

Illustrated medieval pottery.

	Context	*Feature*	*Fabric*	*Form*
56	40208	Unstrat. watching brief	SHER	JUG
57	60002	Subsoil layer	SHER	JUG
58	60049	60048	SHER	JAR
59	60068	60064	MEDLOC	SPP (Spout)
60	60112	60113	OLNEY HYDE	BOWL
61	4007	4183	OLNEY HYDE	JAR
62	4008	Subsoil layer	SHER	JAR
63	4138	4010	SHER	JUG
64	4165	4164	MEDLOC	JAR
65	4135	Subsoil layer	EMCH	JAR
66	4135	Subsoil layer	OLNEY HYDE	JAR
67	4129	4009	MEDLOC	JAR
68	4129	4009	EMCH	JAR

wares, 37% of the total assemblage, probably include the products of several centres (Fig. 32, nos. 59, 64 and 67). These sherds are similar in fabric, although differing in manufacturing technique and form, to later medieval sand-tempered wares produced to the north-east and east of the sites, at Brickhill, Everton and Flitwick. This suggests that they may come from earlier kilns, as yet undiscovered, in the same area. Four sherds of jugs, two of which were glazed, and one sherd from a spouted pitcher were found; the remaining sherds in this fabric were from jars. Spouted pitchers were produced in the late Saxon period and continued in production and use into the twelfth century, after which time jugs became common.

All the 249 sherds of Hertfordshire Reduced ware were from wheel-thrown vessels (Fig. 32, nos. 56 to 58, 62 and 63). Most were reduced to a light grey colour, though some had been fired in an oxidizing atmosphere and then reduced at the end of the firing, giving a dark grey surface. Globular jars with squared, flat-topped rims were the most common forms but parts of three handled vessels, probably narrow-necked jugs, and a thumb-decorated bung from a cistern were also recovered. Two of the handles joined the body at the top of the rim, a feature of early to middle twelfth-century jugs in the east midlands and Yorkshire but not typical of Hertfordshire Reduced ware jugs. This may indicate that these vessels similarly date to the mid-twelfth century, but Hertfordshire Reduced ware, which was produced at several centres in Hertfordshire and Middlesex, was certainly still in use well into the fourteenth century.

The remaining medieval pottery is all of types of later twelfth- to fourteenth-century date. It includes 11 sherds of mid-thirteenth- to fifteenth-century Brill/Boarstall ware, 17 sherds of later thirteenth- to fifteenth-century Potterspury ware and four sherds, all of unglazed jars, of early thirteenth- to mid-fourteenth-century Lyveden/Stanion ware. These sherds may be contemporary with at least some of the Hertfordshire Reduced ware sherds.

A single sherd of post-medieval Brill ware and a possible sherd of early Anglo-Saxon pottery were present in the topsoil. Otherwise, both the topsoil and subsoil contexts produced a similar range of wares to those from the medieval features they overlay.

(y) *Petrological and chemical analysis of the medieval pottery*

The medieval pottery can be divided into three groups: shell-tempered, hand-made low-fired sand tempered and higher-fired, reduced, wheel-thrown wares. Samples from each group were selected for both thin-section and chemical analysis in order to determine their source and relationships.

Ten shelly-ware samples were prepared, and compared to samples of similar wares from other sites in the region. All of the samples examined derived from middle to upper Jurassic clays, but three of the A4146 samples could be distinguished by having a higher aluminium content. Factor analysis indicated that these three samples were

TABLE 8 Summary of pottery from Trench 5 area and Site E.

Fabric	ESAX		EMCH		MEDLOC		OLNEY		SHER		STANLY		OXAM		P'PURY		BERTH		PMBRILL	
	sh	vess	sh	vess	sh	vess	sh	vess	sh	vess	sh	vess	sh	vess	sh	vess	sh	vess	sh	vess
Topsoil D			7	7	34	34	15	14	25	23					1	1			3	3
Subsoil D			23	22	41	34	12	12	9	6					11	2			2	2
4009			40	12	147	114	44	40	27	31										
4010			6	6	78	71	18	15	23	18										
4012			12	8	24	13	11	6												
4106			1	1													1	1		
4108			1	1	13	13	1	1	9	4										
4139			23	22	100	97	36	31	36	27										
4164					4	4			1	1										
4168			7	7	11	11	4	4	3	3										
4183			4	4	5	5	4	4	4	2										
Topsoil E 1	1				8	7	3	2	7	3					1	1			1	1
Subsoil E			47	3	19	18	13	12	11	11			2	2	2	2				
60028					1	1														
60030			1	1	14	13	4	4	13	2										
60033			3	3	23	19	4	4	3	3										
60039							4	2												
60045													1	1	1	1				
60047			1	1	5	2														
60048			14	2	2	2			36	1										
60051			1	1	1	1	3	1	1	1										
60055			1	1	2	2	2	2	2	2										
60061							2	1												
60068					19	19	5	5	8	8			7	6						
60071					1	1			1	1										
60072			9	7	37	31	7	6	2	2					1	1				
60074					10	8			4	3			1	1						
60086			4	3							4	3								
60087			4	2	1	1			9	3										
60089			1	1																
60092			1	1	1	1														
60094					6	6			3	3										
60101			35	6	10	10	6	6	4	2										
60113			2	2	15	13	59	15	8	6										

ESAX	Probable early Saxon
EMCH	Early Medieval Chalky Ware
OLNEY HYDE	Compares with 12th to 13th centuries Olney Hyde ware
MEDLOC	Later medieval sand-tempered local wares
SHER	12th to 14th century Hertfordshire Reduced ware
STANLY	Early 13th to mid 14th-century Lyveden/Stanion ware
OXAM	13th to 15th century Brill/Boarstall ware
POTTERSPURY	Later 13th to 15th Potterspury ware
BERTH	Post-medieval brown-glazed earthenware
PMBRILL	Visually similar to 17th-century material from Brill

very similar, but not identical, to samples from Harrold Middle School, while the remainder plotted with samples of Peterborough hand-made shelly wares. These differences were small, and do not necessarily imply that the two groups derived from different sources.

Petrologically, the A4146 shell-tempered wares were indistinguishable from samples from Harrold Middle School and of developed St Neots ware from Peterborough, all having inclusions of bivalve, punctate brachiopod and echinoid shell fragments. These sherds were identical macroscopically from material from the production site at Olney Hyde, but unfortunately, material from this site was not available for thin-sectioning.

Six fabric types were distinguished in the 25 samples of sand-tempered wares analysed, one major fabric, represented by 19 sherds, and five others with one or two sherds. There was no clear petrological distinction between the handmade and wheel-thrown vessels.

Chemical analysis indicated that the major fabric type probably came from Nettleden, north of Hemel Hempstead, or at least used clay from the same source as the pottery from that site. Of the other fabrics, a variant with a higher proportion of opaque grains is likely to be from the same source, while another, with coarser quartz grains, may be also. The fabric of two sherds of handmade vessels, including one of a spouted pitcher, closely matches samples of later medieval pottery from Flitwick. This may indicate that the Flitwick industry had its origins in the eleventh or twelfth century, earlier than previously thought. The other two fabric types did not match any of the comparison samples from Buckinghamshire and Bedfordshire sites, and they may derive from a source further to the north or west.

Six samples of the Early Medieval Chalky ware were compared to samples from the City of London, which they resembled macroscopically, and with other material from the Greater London, Bedfordshire and Northamptonshire areas. This showed that the A4146 samples have a similar composition to the City of London samples, suggesting that they both had a common source. This may be at the foot of the Chiltern scarp slope or in the Thames valley, perhaps in the Staines area, downstream of where the river passes through the chalk.

Discussion of the medieval sites

The pottery assemblages are the most significant aspects of these sites. Apart from the oven-like feature and the trackway on Site E, the recorded features were unexceptional and probably related to water management for agriculture. The function of the oven-like feature is uncertain. The plant remains from the environmental sampling of its fills are mostly of food species, particularly cereals and pulses, with smaller quantities of weeds such as vetch and dock. These remains probably derived from tinder used to fuel the oven, rather than from the material being processed. The evidence for high-temperature firing would be more consistent with an industrial use rather than, for instance, bread making, but there were no clues as to what this might have been.

The pottery clearly derived from an area of domestic occupation fairly close by, peaking in the mid-twelfth to thirteenth centuries, with no evidence for its continuation beyond the fourteenth century. This probably corresponds with the period of occupation of the hamlet or manor of Chelmscote. There is documentary evidence that Chelmscote Manor was reduced to a single farm after the thirteenth century (Sheahan, 1862, 748). The area of the deserted settlement is assumed to have been around Chelmscote Manor Farm, at least 250m from the sites. The density of pottery finds was too great to be the result of normal manuring activities and it is unlikely that the pottery could have been transported this distance by ploughing or other agricultural activities, despite the relative steepness of the slope down to the valley bottom.

This leaves two possibilities: the pottery was either deliberately dumped on the site, or it originated from a much closer area of occupation. Deliberate dumping could have been related to water management. The 1827 map of titheable lands shows two fishponds to the south of these sites, presumably formed by damming the watercourse. Debris from an abandoned settlement 250m upslope might have been an ideal source of material for this kind of operation. The evidence for different phases of activity, especially the fairly clear distinction between deposits with and without tile, would imply that there was more than one episode of dumping.

Perhaps more likely, given the quantities of pottery and building material found, is that there was a structure, or several structures, on or near the

site. The remains of such buildings could be immediately beyond the limit of the road scheme corridor, or within the corridor but in areas disrupted by later activity. Alternatively, they could have been structures with insubstantial foundations, timber-framed buildings resting on base-plates, for instance. These would have left little or no trace within the surviving archaeological horizons and could have been present within the areas excavated. Both the oven and the stone surface at Site E could reasonably be interpreted as indicating of the presence of a building, but without more definite structural evidence, this is inconclusive. If the pottery and building material do indicate occupation at both Site E and Trench 5 area, it would seem to imply that the medieval settlement at Chelmscote was considerably more extensive than was previously thought.

A number of different fabrics were identified among the roof tile assemblage with one fabric in particular being distinctly different from the rest. This could have reflected the use of different sources of clay or variability within the clay sources. Most were derived from local boulder clays, although all were different in composition to daub samples assumed to use the clays present on the site itself. It is not possible to say whether these fabrics came from the same tilery, but the variability suggests that the tiles came from more than one building, or at least from a building with more than one phase of construction.

The analysis of the pottery provides evidence for the economy and trading patterns of this part of north-east Buckinghamshire during the twelfth and thirteenth centuries. Where the site of manufacture of the pottery can be postulated with some degree of confidence, the sources seem all to have been fairly local: Flitwick, Olney Hyde and Nettleden. Other wares may extend this contact region to the Thames valley and clay-lands of the South Midlands, but there was no evidence of longer-range trading links. This may be a reflection of the domestic, utilitarian nature of the assemblage, but might also indicate that this was an economically fairly self-contained region at the time, with few trading contacts beyond the Chilterns and upper valley of the Great Ouse.

Ridge and Furrow

The remains of the bases of furrows could be seen in the stripped topsoil surface through large parts of the bypass route, on a spacing typical of medieval or early post-medieval ridge-and-furrow ploughing. These were particularly clear on Site F, where they corresponded to well preserved upstanding ridge-and-furrow visible on air photographs from the 1940s (RAF/CPE/UK/1897 frame 4190, 12th Dec 1946) and later. Although the site plans show the furrows as straight, they have extended reverse S-shapes on the air photographs and it is clear that they were contained within the existing northern boundary of the field.

At Site ABC, two areas of furrows were recorded: in the north part of Area A and throughout Area B. Those in Area A were aligned parallel to the Anglo-Saxon charter boundary but had been ploughed out by the 1940s and are not visible on any of the air photographs in the National Monument Record collection. The furrows in Area B possibly correspond to the pattern of furrows visible on a 1949 air photograph (RAF/541/340 frame 4221, 26th July 1949), although these may be the result of recent ploughing. An earlier air photograph (US/7PH/GP/LOC157 frame 8014, 25th Jan 1944), which shows the area to the south-west towards Wing covered by a striking pattern of ridge-and-furrow pre-dating the modern field boundaries, shows no sign of furrows in the field in which Area B was located.

Post-medieval

South-west of Chelmscote, Site D 'Moat' (Fig. 33)

The moat-like feature shown on the first edition Ordnance Survey map, surveyed in 1880, as a trapezoidal area enclosed by a ditch, was in the base of a small valley to the south-west of Chelmscote Manor Farm (NGR: 489640 227105). A small open drain or brook flowing to the north-west towards the River Ouzel forming the boundary between two fields, divided the feature roughly in half (Fig. 25).

Evaluation trenching located the feature in its expected position. Removal of the topsoil by machine revealed its distinctive shape (Fig. 33), its fills clearly distinct from the substrate of glacial head consisting of mid-brown silt with areas of patchy gravel. Trenches were excavated by machine to investigate the north and west corners, as well as the three longer arms. Machine sections were also dug through deposits within the area

enclosed by the main ditches, revealing small linear features and a spread of silty material.

In the machine section through the western corner, a layer of clay could be seen to be banked up on the inner side of the moat-like feature, up to 0.5m thick and covering an area of approximately 15m^2. This is thought to have been the spoil from the excavation of the moat. It overlay a group of small ditches, 4045, 4043 and 4039, all with similar profiles, which together formed a U-shaped feature. A sherd of seventeenth-century pottery was recovered from the fill of ditch 4045. On the eastern side of the stream, an amorphous area of reddish silt, 4065 overlay a small ditch, 4069, seen only in section. These few linear features were the only evidence of activity pre-dating the digging of the moat.

In the evaluation trenches through the four arms of the feature, it appeared to have fairly consistent dimensions: around 3m to 4m wide at the top with sides sloping to a flat base around 0.80m deep. However, the more detailed investigations following topsoil stripping revealed a number of variations between its different parts. In the western corner it was particularly shallow, the underlying natural clay being reached at a depth of only 0.32m below the stripped surface. The section through the north-western side showed a second, V-shaped ditch displaced to the south and probably cutting the original ditch at the top of the section, but this relationship was not clear.

Two sections were excavated through the north-eastern moat arm. Excavation of one was abandoned because of rising water levels. The second revealed an apparent cut, 7.2m wide and not bottomed in the 1.4m deep trench, clearly visible against the natural sandy clay. A layer of small freshwater shells visible in its fills towards the base of the section suggested that this was a natural feature. An interface between fills at a depth of approximately 0.9m probably corresponded to the cut of the moat seen in other sections.

The machine-trench in the northern corner revealed a more complex series of deposits. The trench was enlarged to investigate a spread of dark silt to the north-east of the corner, revealing the remains of a wooden structure, 4180. As found, this consisting of a number of planks, up to three side by side, running along the outside edge of the moat for 12m from the corner. Seven roughly tipped stakes were fairly regularly spaced, 0.7m to 1.1m apart lying across the planks. Two naturally Y-shaped branches were lying against the western side of the planks, 3.1m apart, and the whole structure appeared to be a revetment to shore up the side of the feature, which nevertheless had collapsed.

A pit, 4177, in the northern corner, close to the wooden feature, contained the same silty material as the moat and may well been contemporary with it. The only feature recorded which was definitely later than the moat was a gully, 4047, cutting the north-western arm of the moat.

Artefactual dating evidence from the site was sparse. Two sherds of twelfth- to fourteenth-century pottery, one of Hertfordshire Reduced Ware and the other a local ware, were recovered from a primary silting layer of the moat. However, the sequence of land-drains offers some insight into its chronology. Ribbed ceramic drains, dating from the 1920s (Tibbles, forthcoming), were noted in the fills, but elsewhere, horseshoe-shaped drains, of a type first produced between 1815 and 1820, could be seen to be cut by the moat, clearly demonstrating its nineteenth-century origin.

Dating for the wooden structure in the northern corner presents contradictory evidence. It was cut by an early horseshoe drain, but the stakes appeared to be made from machine-stripped wood, which would imply a post-1945 date (Maisie Taylor, pers. comm.).

South-west of Chelmscote, Trench 5 Area (Fig. 27)

In addition to the medieval features described above, there were also a number of post-medieval features at this site, relating to the earthworks visible on air photographs in the area to the south-west of Chelmscote Manor Farm. A 5m-wide linear feature, 4141, with a slightly obtuse-angled bend crossed the southern end of the excavation area. A machine section excavated through it revealed a re-cut over 1.4m deep. Both the ditch and its re-cut had similar, wide U-shaped profiles. The original ditch contained ceramic building material dated to the medieval to early post-medieval period and the re-cut produced a small quantity of pottery of a similar date.

A large shallow silt-filled feature, 4125, occupied the south-east corner of this excavation area. This produced pottery dated to the late sixteenth century from its silting horizon.

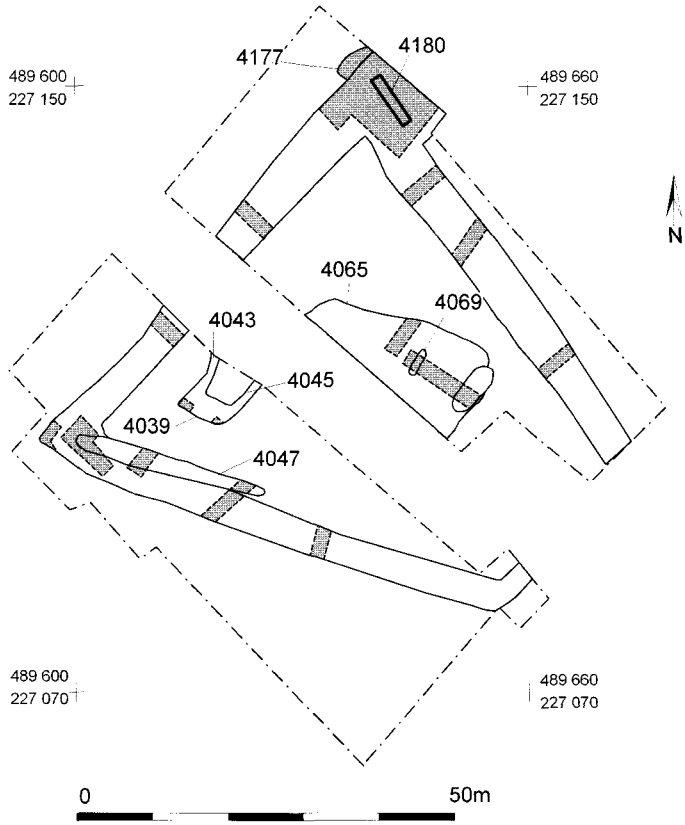


FIGURE 33 Site D, plan of moat-like feature.

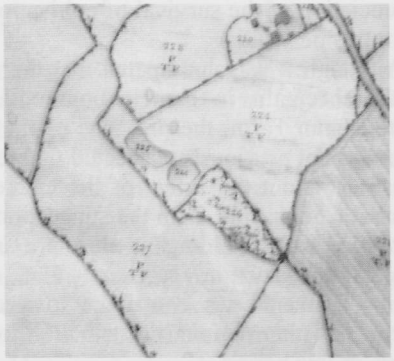
Discussion, area south-west of Chelmscote

The complex landscape history of this small area can be partly reconstructed from the available cartographic and other sources. The 1827 map of titheable and other lands in the parishes of Soulbury and Linslade (Bucks RO ref: Ma/190/1.T) is accurately surveyed and reliable: where landscape features survive their positions correspond well with the 1881 first edition 25" Ordnance Survey map (Fig. 34).

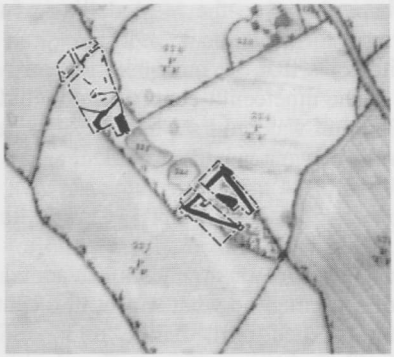
The area of the moat-like feature is shown as an irregular triangle of land, distinctively coloured and with scattered tree symbols, presumably indicating woodland or scrub. The stream is not clearly indicated, but probably flowed along the north-eastern side of this plot of land. The straightness of this boundary would imply that the stream had already been diverted from its natural course. The south-eastern side of the plot forms a sinuous curve, suggesting that it followed a former watercourse.

The two ponds, shown on the tithe map in the area to the north-west, between the moat-like feature and the Trench 5 excavation area, survived as earthworks and were visible on an air photograph taken in 1946. The earthworks shown on this photograph also include the moat-like feature, with internal details, and a third pond. This third pond and the field boundary to the north-west of it correspond to features 4125 and 4141 in the southern part of the Trench 5 excavation area. The earthworks also show a straightened southern boundary to the plot containing the moat-like feature.

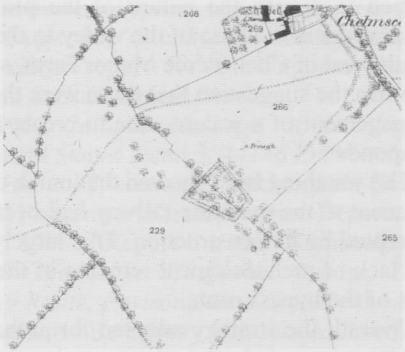
A plausible sequence of events might have the stream diverted from its southern course, possibly utilising an earlier natural channel and dammed to form a chain of fishponds. This may have occurred



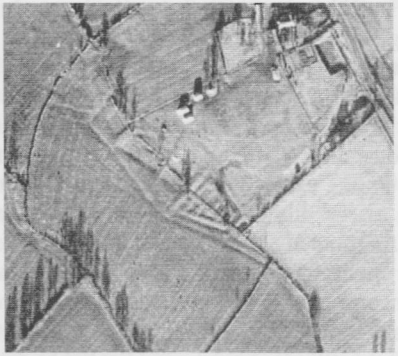
1827 Map of titheable land



1827 Map with site plans overlaid



1881 Ordnance Survey map



1946 Air photograph

FIGURE 34 Comparison of 1827, 1881 and 1946 sources, showing moat-like feature and fishponds south-west of Chelmscote Manor Farm. (Tithe map (Ma/190/1.T) reproduced courtesy of Centre for Bucks Studies, air photograph courtesy of English Heritage (NMR) RAF Photography.)

in the medieval period, contemporaneously with the activity in the north part of the Trench 5 area and Site E, or some time later. The pattern of field boundaries, which seems to have been established at a relatively early date by non-parliamentary enclosure, incorporates and respects these changes.

By 1827, one of the fishponds had already disappeared, and the other two probably followed soon after. It may have been at this time that the stream was straightened to run between its diverted and original course, leaving these, perhaps, as the 'traces of a moat' reportedly at Chelmscote in the mid-nineteenth century (Sheahan, 1862, 748). The moat-like feature itself seems to have been sculpted out of these remnants of old stream courses or field boundary ditches, some time between 1827 and 1880. This would have principally involved the realignment of the south-western arm and the excavation of the short south-eastern arm.

The reasons for its construction are less clear. It seems to have enclosed a wooded area, possibly maintained as a game covert, although this would not explain the internal details visible on the air photographs. Whatever the reason for its construction, it seems to have had a relatively short life, not appearing on Ordnance Survey maps after 1900.

If the wooden structure found in the northern corner was constructed from machine-trimmed timber, it presumably dates from the final levelling of the ground, some time between December 1946 and August 1961 by which time no remaining trace of the moat can be seen on air photographs. On the other hand, it was apparently cut by early land drains, suggesting that it may have been an earlier

feature, perhaps dating to the re-modelling of the stream course to form the moat.

Overall, it seems that the moat-like feature was constructed in the nineteenth-century, but included elements of natural watercourses and medieval and post-medieval water management works.

Conclusions

Excavation of the two Iron Age sites has added to knowledge of settlement in what was until recently a relatively unstudied part of the region. The history of pre-Roman occupation in the claylands of central England has only recently begun to be understood and these sites fit into a pattern which is becoming increasingly detailed and complex as development projects allow transects through the rural landscape to be investigated. Unenclosed prehistoric settlement sites are often difficult to detect by non-invasive methods as the remains are rarely substantial enough to show on air photographs or as readily interpretable geophysical anomalies. As the density of known sites increases, it becomes apparent that much more of the landscape had been cleared for agriculture in the Iron Age than was once thought.

The earliest settlement excavated probably dates to the early to middle Iron Age, some time before 400 BC It seems to have been a small-scale agricultural settlement consisting of a cluster of roundhouses, successively constructed and abandoned as the focus of the settlement moved gradually northwards.

There may have been a period of abandonment before a second settlement was established a short distance to the north, perhaps in the fourth or third centuries BC. After a fairly short period, domestic occupation here seems to have moved just beyond the limits of the bypass corridor, giving way to an agricultural landscape of ditches and small enclosures. The earliest activity at the smaller of the two sites dates from this time, with evidence for metalworking on a very small scale. Activity at this site peaked in the late Iron Age, probably in the period immediately before the Roman conquest, when there seems to have been an area of occupation very close by. Domestic activity at the large site had dwindled away by this time.

The less extensive Roman remains are of lesser significance, but contribute to the knowledge of the distribution of cremation sites, and to an emerging appreciation of the survival of cultivation features, from this period.

Although it was anticipated that there could be medieval remains in the neighbourhood of Chelmscote Manor Farm, the presence of the two small sites was not previously suspected. These sites raise questions about the extent of the medieval settlement at Chelmscote, with the suggestion that there were tile-roofed buildings in close proximity to the bypass construction corridor. The excavation results and analyses contribute to a developing picture of the regional distribution of ceramic wares in this period.

Of more local significance, the excavations have helped to clarify the nature of the ploughed-out earthworks in the base of the valley to the west and south-west of Chelmscote Manor Farm, seeming to confirm the suggestion that these were the result of management of a watercourse to create a chain of fishponds.

The watching brief showed that much of the land adjacent to the mainline railway had been severely disrupted by its construction. This largely explains the lack of archaeological remains in the northern part of the bypass route.

Overall, the strategy adopted for archaeological investigation of the bypass route has been fairly successful. The pre-construction surveys carried out in the mid-1990s located elements of the large Iron Age site, but failed to highlight the smaller site, despite raised magnetic activity in this field. The targeted evaluation trenching, in both 1996 and 2005, successfully identified areas of activity, although a more extensive programme of evaluation might have led to the earlier identification of Sites E and F. Geophysical survey methods have been refined since 1994, and re-surveying using modern practices might also have identified these sites, despite the relative unresponsiveness of the local clays. The watching brief successfully located Iron Age and medieval sites that had not previously been recorded. The known areas of activity and the sites discovered during the investigations have been successfully characterised by the area excavations.

In common with most development projects, the construction of the bypass provided a view of only part of the sites that were investigated. The knowledge that the sites extend beyond the construction corridor beneath the adjacent land will help to inform decisions about any future development in the area.

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