

Worcestershire Archaeology Research Report No.5

Archaeological Investigations at

**WEST MERCIA POLICE HQ,
HINDLIP, WORCESTERSHIRE**



Jo Wainwright

Worcestershire Archaeology Research Report no 5

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West Mercia Police HQ,
Hindlip, Worcestershire**

**(WSM40548)
(WSM40549)**

Jo Wainwright

*With contributions by Emily Beales, Alan Clapham, Laura Griffin,
Derek Hurst, Adam Lee and Roger Tomlin*

Illustrations by Carolyn Hunt and Steve Rigby



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West Mercia Police HQ,
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Front cover illustration: the Iron Age pit alignment by Steve Rigby

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Summary

Archaeological investigations were undertaken at West Mercia Police HQ (NGR SO 8834 5887), Hindlip Hall, Worcestershire, on behalf of West Mercia Police. The client intended to construct a new access road to join the Headquarters complex to the Pershore Lane (A4538) to the north-east, with gatehouse, visitor car parking and landscaping.

Initial investigations comprised an evaluation on the line of a proposed tree planting belt and a 'strip map and sample' exercise undertaken within the footprint of the new road. These investigations identified two areas of archaeological interest within the site. To the immediate east of Hindlip Hall was an Iron Age pit alignment, while in the centre of the site was a cluster of Roman features, largely pits and ditches in the location of the proposed gatehouse.

Following the results of these exercises a programme of excavation was undertaken, targeting the Roman features and the pit alignment within the development area.

The pit alignment consisted of 22 oval or sub-circular pits, orientated from east to west on the crest of the slope, slightly to the east of Hindlip Hall. No pottery was recovered from the pit fills, but the presence of slag and hammerscale (by-products of metalworking), allied to the absence of Roman pottery, supports an Iron Age date. Interestingly, the pit alignment follows a boundary between two geological zones, the 6th terrace of the Severn, on the higher ground to the south and the mudstones in the north. This is a feature which has been noted with other examples of this type of monument across the country. Although other examples are known from Worcestershire, the investigations at Hindlip provided a rare opportunity to carry out an excavation on a monument of this type. Following excavation the pits were backfilled and covered, to be preserved in situ beneath a proposed car park, and they will be marked to present a visible reminder of a past landscape.

Other evidence for Iron Age occupation across the site included small quantities of late Iron Age pottery recovered from the area of Roman settlement, and a vessel which was set into the ground as a storage jar, or perhaps as an animal drinking trough. It is probable that Iron Age settlement associated with the pit alignment survives in the vicinity, perhaps on the well drained gravels on the ridge to the south.

Excavation of the Roman features revealed the presence of a small to medium sized rural settlement spanning the period from the mid 2nd to 4th centuries AD. The main focus of activity took place from the mid 2nd to mid 3rd centuries with the construction of four enclosures with occasional outlying ditches and pits. The smaller of these are interpreted as stock enclosures, while a larger, multi-ditched enclosure, may have been occupied by a family unit or several family units. Occupation must have been largely confined within the enclosures, but the archaeological evidence for this was sparse, although later agricultural activities may have removed any shallow features. The artefactual, environmental and faunal evidence points to a settlement reliant on pastoral farming with occupation peaking sometime in the 2nd and 3rd centuries.

The late 3rd to 4th century activity appears to contract and shift northwards. Three southern enclosures went out of use, while the northern enclosure was re-designed and shifted westwards. A cobbled surface to the east of this enclosure probably represented a floor which perhaps had a building situated on it. An occupation layer above these cobbles contained quantities of pottery, fragments of oven superstructure, nails and querns. It can be suggested

that this surface was used for the production of flour and bread. The presence of large quantities of charred spelt chaff from environmental samples collected in this area supports this hypothesis.

Partially crossing the cobbled surface was a well preserved metalled track running in a north to south direction across the site. Well preserved wheel ruts from Roman carts survived in the top of this track.

Analysis of animal bone from the site demonstrates that few of the animals which died or were slaughtered in this location were of marketable age. It is suggested that the enclosures, in particular the very large example dated to the late 3rd to 4th centuries, were used for the corralling of cattle, perhaps brought to Hindlip prior to being taken on to market at Worcester. Presumably the Roman road, situated less than a kilometre to the west, would have been the route taken. This pattern, also seen at the site at Ball Mill Quarry to the west of Worcester, provides a valuable insight into the Roman economy of the city and its relationship to satellite settlements.

Background

Reasons for the project

Archaeological investigations were undertaken at West Mercia Police HQ (NGR SO 8834 5887), Hindlip, Worcestershire (Fig 1), on behalf of West Mercia Police. The client intended to construct a new access road, gatehouse and visitor car parking, as well as landscaping.

Project parameters

The project conformed to the *Standard and guidance for archaeological field evaluation* (IfA 2008a), *Standard and guidance for archaeological excavation* (IfA 2008b) and the *Standard and guidance for an archaeological watching brief* (IfA 2008c).

The project also conformed to briefs, prepared by the Planning Advisory Section of Worcestershire County Council (HEAS 2007; 2009a), for the various stages of work. Two project proposals (including detailed specification), which the project conforms to were produced (HEAS 2008; 2009b). An assessment report and updated project proposal was prepared when the fieldwork was completed (HEAS 2009c). The investigation was undertaken as part of a planning application to Wychavon District Council (reference W/07/2850).

Further works outside the investigated area were required after the assessment report and updated project proposal was prepared. These comprised, the widening of the road corridor, and the excavation of two ponds and associated drain runs. It was decided by the Curator that a watching brief of these works was appropriate. Consequently a project proposal for these works was produced (HEAS 2009d).

Original aims and objectives

The original aims and scope of the project were identified in the brief and resultant project designs (HEAS 2008; 2009b).

The aims of the evaluation and strip map and sample exercise were to locate archaeological deposits and determine, if present, their extent, state of preservation, date, type, vulnerability and documentation. The purpose of this was to establish their significance, since this made it possible to recommend an appropriate treatment which was then integrated with the proposed development programme.

The aims of the archaeological excavation were to examine the archaeological resource with the defined area with a framework of defined research objectives, to seek a better understanding of and compile a lasting record of that resource, to analyse and interpret the results and disseminate them.

The aims and scope of the archaeological watching brief were to provide further information to add to the data collected in previous stages of the project.

More specifically the following research objectives were identified.

- To assess the relationship of the settlement to the urban Roman centre of Worcester.
- To date and characterise the pit alignment its place in the landscape.
- To consider all results within regional and national research frameworks as appropriate.

Revised aims and objectives

An assessment and updated project design identified further research objectives (HEAS 2009c). Within the regional and local research frameworks (eg Watt 2011; Jackson and Dalwood 2007) the following issues can be highlighted.

- The variation in rural settlement form and material culture between southern and eastern areas of Worcestershire and those to the north and west of Worcestershire has been identified as a key research issue, and these reflect an apparent wider regional north-west to south-east division. Hindlip, located as it is on the 'interface' between these areas, has the potential to provide important new data.
- In particular the potential of the evidence to support understanding of settlement form, function and economic basis and links can be highlighted. Such analysis will potentially allow the evidence from Hindlip to contribute to the wider debate surrounding the hypothesis that the differences between these regions reflect differential agricultural economies and patterns of social organisation.
- Patterns of settlement shift and expansion are beginning to emerge with many late Iron Age and early Roman settlement sites being abandoned for new locations in the early 2nd century, many settlements flourishing and expanding in the late 2nd and 3rd centuries only to be abandoned by the mid-4th century. The establishment of firm settlement chronologies for sites such as Hindlip is therefore seen as important to enable these models to be confirmed and further refined.

Methods

Documentary search

Prior to fieldwork commencing a search was made of the Historic Environment Record (HER). In addition to the sources listed in the bibliography the following were also consulted.

Cartographic sources

- 1811 to 1821 Ordnance Survey surveyors drawings
- c 1840 tithe map of Hindlip (WRO BA 1572/355 ClassS570)
- 1885 Ordnance Survey 25 inch plan
- 1903–4 Ordnance Survey 25 inch plan
- 1930 Ordnance Survey 25 inch plan

Fieldwork strategy

A detailed specification was prepared by the Service (HEAS 2008) and a second specification was prepared in response to the findings made during the fieldwork associated with the original specification (HEAS 2009b). A further specification for an archaeological watching brief was prepared for further works outside of the investigated areas (HEAS 2009d).

Fieldwork was undertaken between 9 January 2009 and 5 November 2009. The site reference number and site code for the evaluation is WSM 40548 and for the strip, map sample exercise, excavation and watching brief is WSM 40549 (numbers prefixed with 'WSM' relate to reference numbers issued by the Worcestershire Historic Environment Record).

The evaluation consisted of the excavation of one trench approximately 380m long and about 1.6m wide in the footprint of the proposed tree planting belt. The site was crossed by new barrier fencing, which in places could not be disturbed, so gaps were left along the length of the evaluation trench where the fence crossed the line of the evaluation trench. The strip, map and sample exercise was undertaken in the footprint of the proposed access road, visitor's car park and turning area. The evaluation trench identified Romano-British features on the line of, and to the south of, the proposed access road. Further features in this area were then identified in the strip, map and sample exercise as well as a pit alignment in the footprint of a proposed car park at the eastern end. Following further consultation with the curator and client, a programme of targeted excavation was then implemented. For ease of recording the site was divided up into areas: Area 1; evaluation trench and central part of the excavation site, Area 2; the eastern part of the site, Area 3; the western part of the site and finally; the area of the watching brief. The location of the areas of excavation is indicated in Figure 1.

Deposits considered not to be significant were removed using a 360° tracked excavator, employing a toothless bucket and under archaeological supervision. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine

their nature. Deposits were recorded according to standard Service practice (CAS 1995). On completion of excavation, trenches were left open at the request of the client. The remaining quadrants of the pits within the pit alignment were preserved underneath the car parking area by covering the pits with geotextile material (Terram), and backfilling the voids with spoil removed during the excavation. The area was then covered with a layer of compacted roadstone by the contractor.

A watching brief was carried out for the widening of the access road at the north-eastern end of the site and the excavation of three ponds and associated drainage.

Structural analysis

All fieldwork records were checked and cross-referenced. The deposits excavated in the evaluation were equated to numbers in the excavation as far as it was possible and in most cases the contexts used here are the numbers from the excavation. Context groups were assigned to certain features and were given the prefix CG. A structural database was created within an access database to support analysis which was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

The project archive is intended to be placed at: Worcestershire County Museum, Hartlebury Castle.

Artefact methodology, *by Laura Griffin*

Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (CAS 1995; appendix 2). The majority of the artefacts were recovered from stratified deposits and a small quantity of further material was recovered from environmental samples which were taken (see below).

Method of analysis

All hand retrieved finds were examined and identified, quantified and dated to period. Where possible, a *terminus post quem* was produced for each stratified context, which was used for determining the broad date of structural phases. Records from both stages of fieldwork were entered into a single Microsoft Access 2000 database. Artefacts from environmental samples were examined, but none were worthy of comment and were not included in the overall quantification.

Pottery was examined under x20 magnification and recorded by fabric type and form. All fabrics were referenced to the fabric reference series maintained by the Archive and Archaeology Service of Worcestershire County Council (Hurst and Rees 1992; WCOD nd). Sherds that could not be identified, or were too small to be identified accurately by fabric were grouped within miscellaneous prehistoric or Roman fabric categories 97 or 98. The pottery was classified into form types on the basis of shape, size, rim type and decoration. Where possible forms were categorised and dated using the appropriate published typology for the specific fabric type.

The preservation of sherds was varied with some display very high levels of abrasion and softening whilst others were virtually unaffected. This was most noticeable amongst the fine wares with some having no slip surviving, whilst others were still glossy in appearance. However, there does not appear to be any obvious correlation between level of preservation and feature type or date. The assemblage also contained a high enough number of diagnostic sherds to enable a measure of 'Estimated Vessel Equivalent' (EVE) using rim measurement.

Where possible, the results from analysis of this assemblage have been compared to assemblages from other local and regional sites in an attempt to identify any common themes.

Environmental archaeology methodology, *by Alan Clapham*

Sampling policy

The environmental sampling strategy conformed to standard Service practice (CAS 1995, appendix 4).

Method of analysis

The samples were processed by flotation using a Siraf tank. The flot was collected on a 300µm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were fully sorted by eye and the abundance of each category of environmental remains estimated. The flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by the Service, and seed identification manual (Cappers *et al* 2006). Nomenclature for the plant remains followed Stace (1997).

It was envisaged that radiocarbon dating could be carried out on charcoal samples recovered from the fills of the pit alignment to refine the date range within the Iron Age period. However, the charcoal fragments that were recovered were not large enough to carry out radiocarbon dating on.

A magnet was also used to test for the presence of hammerscale.

Animal bone analysis methodology, *by Emily Beales*

Sampling policy

The environmental sampling strategy conformed to standard Service practice (CAS 1995, appendix 4). Large animal bone was hand-collected during excavation. Animal bone was recovered both by sampling and during excavation of the features. The state of preservation was poor with the majority of the faunal remains recovered in a highly fragmented state; completeness of bones was generally less than 30%.

Method of analysis

All bone fragments were analysed and, where possible, identified to element and species with any butchery marks, pathological alterations and morphological abnormalities being recorded. Identifications were aided by the reference collection maintained by the Service and standard keys (Schmid 1972; Hillson 1992). Sex was not factored into this analysis as most of the bone elements were too incomplete to gain adequate measurements needed for sex determination. Teeth were identified to species using Hillson (1992) and age was determined through analysis of wear patterning assisted by (Wilson *et al* 1982; Payne 1987).

The collected data was analysed and interpreted to assessment level, although no statistical analysis was undertaken due to the small sample size of identifiable remains.

Topographical and archaeological context,

by Adam Lee and Jo Wainwright

The development site is located within the grounds of Hindlip Hall, Hindlip, which is located on the crest of a ridge to the north-east of Worcester (centred on NGR SO 8834 5887; (Fig 1). The ridge is comprised of sand and gravels of the 6th (Spring Hill) terrace of the River Severn (Fig 1). To the north and east the underlying geology consists of Permian-Triassic and Carboniferous reddish mudstone (Soil Survey of England and Wales 1983). The soils on the ridge are stagnogleyic paleo-argillic brown earths which are typically of a loamy reddish drift nature. Away from the ridge the soils are typical stagnogley soils which are prone to waterlogging (Soil Survey of England and Wales 1982).

The land slopes down to the north and east from the ridge which is at about 68 metres OD. The lowest point, at about 50 metres OD, is to the east of the site. The landscape of the development area is large open arable fields defined by hedges of variable quality and woods to the north and south. Several mature trees are situated in these fields, which are remnants of the park which surrounded Hindlip Hall in the 18th and 19th centuries. By the time of the 1903–4 Ordnance Survey the layout of the park and the later field systems had been remodelled and many of the field boundaries, which were heavily wooded, had been removed.

The name 'Hindlip' is thought to refer to some famous 'hind-leap' due to the presence of fairly steep ground. It is more likely that the name refers to the existence of a 'leap-gate' for hinds. The earliest documentary reference to Hindlip was in 966 where it was referred to as *Hindehlep*. In 1086 it was referred to as *Hindelup*, *Hyndelpe*, in 1191 as *Hindelepa*, in c 1250 as *Hyndelupe*, *Hindelupe* and in 1577 as *Henlype* (Mawer and Stenton 1927, 139), before its current spelling was adopted.

There is limited evidence for prehistoric activity around the development site. A Palaeolithic hand axe was found in an arable field to the north-east of Hindlip Hall within the boundary of Hindlip Park (Fig 2, WSM 29222).

Situated about 600 metres north-east of the site, a crop mark relating to a Roman occupation site, was identified by aerial photography, and consists of a series of irregular shaped enclosures and a central complex (Fig 2, WSM 02239). In the late 1950s two of the ditches within the complex were sectioned and found to contain Roman pottery dating from the 2nd century (Stanley 1959).

It has been suggested that the alignment of the Roman road from Worcester to Lickey ran through Hindlip Park to the north-west of the development site (Fig 2, WSM 30529). The Roman road was described by Margary's survey of the Roman road network in Britain as leaving Worcester via Blackpole and continuing through Hindlip Park where its course is marked by hedgerows and parish boundaries (Margary 1973, road 180). This alignment of the Roman road to the north-west of Hindlip Hall is only conjecture and there is no archaeological evidence to support this theory, although aerial photographs do indicate the line of the road south of Droitwich and it has been located through excavation at Lowesmoor, Worcester (Simon Woodiwiss pers comm).

The original building on the site, before the current Hindlip Hall (Fig 2, WSM 08562), was a timber-framed manor house of medieval date, this building was subsequently replaced by a large brick building in 1572. The 1572 house was destroyed by fire in 1820, and the present structure was built on the site for Viscount Southwell. Upon his death in 1860 the house was sold to a Henry Allsopp, who in 1886 was made first Baron of Hindlip and undertook the pavilion alterations to the house. During the early part of the 20th century the Allsopp family moved to Wiltshire and in 1947 the estate was sold to Worcester County Council and subsequently turned into the headquarters of the West Mercia Constabulary in 1967. To the south-east of the hall is the suspected site of a deserted medieval village (Fig 2, WSM 21738) The grounds of the hall have been heavily landscaped and no significant earthworks relating to the village survive. It is very likely that the medieval village was built around the original medieval timber-framed manor house and subsequently deserted and then destroyed.

The earliest standing building within the vicinity of the hall is timber-framed (WSM 15599; Fig 2) dating to 1470; the building now serves as the West Mercia Police Museum. The building has been added to from the post-medieval period through to the 20th century. During alterations to the building in 1996 archaeological salvage recording took place as new service trenches were excavated inside the north-west part of the museum building and outside to the west (Fig 2, WSM 29649). Internally a hearth, a gully and a posthole were identified but were undated. Outside, close to the west side of the building, a brick-lined well was identified. Material within the well suggests it was backfilled in the early 18th century (Hancocks *et al* 1996).

The church of St James (Fig 2, WSM 38811) lies close to Hindlip Hall to the north-west and dates back to the 15th century, with subsequent alterations in the 19th and 20th centuries.

Results

Site description

Phase 1 Natural

The natural deposits (contexts 102, 2002 and 3002) varied across the site and included red clays, yellow silts, sands and gravels and mudstone.

Phase 2 Earlier prehistoric

One residual flint flake of a probable Neolithic date was recovered from the fill of pit 3068 (fill 3067), and a residual flake of debitage was recovered from fill 334 of a ditch (333=124; Robin Jackson pers comm).

Phase 3 Iron Age

Iron Age activity was identified at the eastern end of the site in Area 3 and consisted of a pit alignment, with no other features or deposits dating to this period (Figs 5–11).

Area 3

A pit alignment of 22 pits was located at the far western end of the area (Table 1; Figs 5–11). The entire length of the exposed line of pits was about 75m and was aligned east to west. The series of pits were mainly ovoid in plan though a small number were circular. The oval pits tended to have been excavated with the longest axis on an east to west alignment. The size of the individual pits in plan varied from a minimum of 2.60m (east to west) and 1.82m (north to south), to a maximum of 4.70m (east to west) and 3.35m (north to south) The depth of the pits varied from 0.27m to 1.00m, and towards the base of each of the pits the natural deposits the pits cut into were reddish clays or a mixture of reddish clays and sands. After excavation the pits were left open for a number of weeks and during this time they rapidly filled with water after high rainfall, and this water did not readily drain away but became stagnant (Fig 33).

The larger of the pits tended to be towards the eastern end of the alignment, where the ground was higher, which suggests that they were better preserved here, and the tops of the features had been subject to a higher degree of erosion by cultivation in the west.

The causeways between each pit varied in width from c 1m to c 0.30m. Several of the pits did not have a causeway between them, but a shallow disturbed area making the edges of these pits difficult to define in plan.

All of the pits were half-sectioned and this demonstrated that there was a degree of variation in the forms of the individual pits. The profiles of the pits varied from irregular to a more regular bowl shape. The number of fills each pit contained and the composition of the fills varied across the alignment. Twenty of the pits contained between one and three fills and the other two pits contained four and five fills each. There is one distinct group of pits with specific numbers of fills, a group of pits each containing four fills situated towards the western end (Fig 6, 3022, 3031, 3039 and 3041). It has been suggested that adjacent groups of pits with comparable fill sequences were not random but that small neighbouring sections of the

pit alignment were redefined by excavation (Rylatt and Bevan 2007, 223). However, there was no sign of any recuts, though a remodelling of each pit could have taken place which would have left no record archaeologically. The composition of the primary fills ranged from clays, silty clays and silty sands and there were no grouping of pits with specific primary fills. However, the primary fills in the deeper pits toward the eastern end tended to show signs of waterlogging.

Table 1: Pit alignment, pit dimensions (east to west)

Pit	Fills	Dimensions (m) north-south	Dimensions (m) east-west	Depth
3052	3049, 3050 and 3051	Minimum 1.70	Minimum 1.60	0.27
3048	3045, 3046 and 3047	2.73	c 3.50	0.51
3044	3042 and 3043	2.51	c 3.40	0.48
3041	3040	1.90	2.38	0.37
3039	3038	1.82	2.60	0.49
3031	3030	2.19	3.19	0.61
3022	3021	2.12	2.16	0.45
3020	3019, 3034 and 3035	1.92	2.32	0.41
3018	3017 and 3023	1.91	2.98	0.66
3016	3015	1.98	3.08	0.39
3008	3005, 3006 and 3007	2.09	2.73	0.45
3014	3012 and 3013	2.32	2.86	0.67
3056	3053, 3054 and 3055	1.90	2.95	0.49
3060	3057, 3058 and 3059	2.59	3.25	0.56
3066	3061, 3062, 3063, 3064 and 3065	2.49	c 3.40	1.00
3072	3069, 3070 and 3071	2.49	3.10	0.90
3068	3067	1.82	2.92	0.65
3080	3078 and 3079	2.32	3.91	0.68
3092	3088, 3089, 3090 and 3091	2.05	2.52	0.76
3083	3084 and 3085	2.43	c 2.50	0.74
3098	3095, 3096 and 3097	3.18	c 3.00	0.77
3101	3099 and 3100	3.35	c 4.70	0.92

Little cultural material such as pottery was recovered from the fills, but both iron slag and hammerscale (from environmental samples) were recovered. The presence of slag and hammerscale (by-products of metalworking) in some of the pit fills allied to the absence of Roman pottery supports an Iron Age date for these features. One flint flake was recovered from pit 3068 (fill 3067) which was thought to be residual.

The relationship between a small pit or posthole (3033) and pit 3031 was not discernable.

The pits are not in an exactly straight line as can be seen in the photographs (Figs 7–9). By aligning the centres of each pit, it is possible to divide the line into three slightly different alignments, the pit centres within each alignment section being straight. These alignments sections being from pit 3052 (or further to the west) to pit 3031, pit 3022 to 3066, and from pit 3072 to 3101 (or further to the east).

Phase 4 Late Iron Age/early Roman

The evidence for late Iron Age/early Roman deposits was sparse and was limited to a vessel set into the natural ground and residual material in Area 1.

Area 1

Several sherds of pottery dating from the late Iron Age to the early Roman period were recovered from the fills of features (eg ditch 362, fill 361 and ditch 171, fill 170), but most of this pottery was present in contexts of a later date or stratigraphically these fills must have been later.

A near complete vessel of Palaeozoic limestone tempered ware (fill 196) was set into a pit (Figs 12, 13, and 26, 1). The purpose of the pot set into the ground remains unclear. Initially, it was assumed that the pot was a cremation urn, but no bone was present in the fill to support this idea. The fill of the pot was sampled for plant macrofossils (Clapham this report). It seems more likely that it was a large storage jar similar to one found at Aston Mill Farm (Dinn and Evans 1990, 23) or possibly a drinking vessel for animals.

Phase 5 Mid-2nd to mid-3rd century

Mid-2nd to mid-3rd century activity was excavated across the whole of the site but was concentrated in the central part in Area 1.

Areas 1 and the western part of Area 2

Four enclosures were identified in Area 1 (Fig 3), but because of the irregular shape of the excavated area it is likely that more could be identified with further fieldwork outside of the area. The profiles of the enclosure ditches were not uniform and varied from U-shaped to a more irregular profile. The fills of all the enclosures were broadly similar, typically grey brown silty clays with inclusions of rounded pebbles.

A large multi-ditched sub-square enclosure (Enclosure A; ditches 171, 207, 209, 219, 221, 241, 243, 244, 246, 248, 250, 262, 282, 284, 297, 300, 336, 364, 366, 367, 379, 381, 386, 391, 393, 395, 398, 405 and 427; Figs 12, 14 and 15) situated in the central part of Area 1 measured c 50m east to west and c 45m north to south. This enclosure had been cut and recut at least four times and on the northern and western sides to cover different areas. On the southern and eastern side at least two cuts were identified but all were in roughly the same location. The stratigraphic sequence could not be defined from the structural evidence alone but allied with the artefactual evidence a broad chronology was defined.

The ditches on the western and northern side of the enclosure all seem to have been excavated in the 2nd century as the pottery recovered from the fills dates from this period. The ditches were generally about 1.50 m wide and varied in depth from about 0.30m to 1.20m, although the outermost ditch in the western and northern side was slightly wider and deeper than the other three. On the southern and eastern side the ditches were larger and the pottery recovered from here dates from the 2nd to 3rd century suggesting that this section may have been recut in the 3rd century. A large posthole (367; Fig 12) almost 1.50m deep and set into the base of the southern arm of the ditch (366) could represent a fence line or perhaps part of a gateway into the enclosure (Fig 16). Pottery recovered from the backfill of the posthole dates from the 3rd to 4th century so it could be that this posthole is associated with a later fence line or stock corralling area. However, no other postholes were excavated in the ditch slots in this area so this theory must remain speculative.

No entranceway for Enclosure A was identified, though it is possible an entrance or entrances existed where the modern hedgerow is situated, or where the enclosure had been truncated by grubbing out of field boundaries in the 19th century (contexts 176 and 325). Alternatively the entrance could have been by means of a bridge over the ditch which has left no archaeological record.

It is highly likely that the ditches on the western and northern sides of the enclosure would not have been excavated all at the same time, but may have been excavated in some sort of sequence. It is possible that the enclosure contracted during the 2nd century and the outermost ditch was the earliest of the cuts on the northern and western sides. Archaeological evidence for this is not conclusive, but a pit (367, fill 365; Fig 12) cut into the top of the eastern side of the outer most enclosure ditch produced pottery dated to the 2nd century. Therefore the ditch must have been backfilled before this pit was excavated.

The only internal features that could be associated with the enclosure are two areas of gravel (373 and 374; Fig 12) which could be interpreted as part of a surface but are more than likely just patches of dirty natural. Two undated small postholes could be part of a fence line associated with the enclosure. It seems that later cultivation on the site has removed the top of deep features and any shallow deposits or features.

A small enclosure, Enclosure B (Fig 17), was located to the south of Enclosure A. This was sub-square in plan. Enclosure B (ditches 312, 314 and 330) measured about 15 m north-west to south-east and went out of use sometime in the 2nd or early 3rd century. The southern arm (ditch 330) was over 2m wide but only about 0.50m deep. Again it appears that truncation by later agricultural activities had removed the tops of features. In the north the ditch (314) had been recut (312) along at least part of its length and the recut ditch was wider and deeper. No internal features were excavated suggesting that this enclosure was used for stock penning or holding. No entrance was identified, but as only part of this feature was within the excavated area an entrance could easily be situated to the west, in the unexcavated area.

Two ditches, in the western part of Area 1, are likely to represent part of another sub-square enclosure (Fig 18). Enclosure C (ditches 191 and 351) was probably similar in size and had the same function to Enclosure B. Two pits (353 and 355), that were cut by the ditch, were undated. Again internal features within the enclosure were sparse. However, the two pits (308 and 448), one with a posthole in the base and a further posthole were undated so they may be of a different date and not be associated with this enclosure.

In the northern part of Area 1 were a series of intercutting ditches partially overlain by a later track and surface. From the stratigraphic and artefactual evidence it is possible to put forward a hypothesis for the chronology of this area. Although this chronology must remain tentative as refinement of the stratigraphy would surely take place if future excavation were to take place to the north outside of the excavated area. It is suggested that an enclosure was excavated in the mid-2nd century, Enclosure D (ditches 179=385=409 and 2019; Fig 19). Ditch 179 has been ascribed to Enclosure D and the later Enclosure E (see below) as it probably represented the earlier ditch with the later recut, which were not discernible during excavation. Enclosure D measured about 25m east to west and the ditches were about 2m wide and varied in depth but were up to 0.90m deep. The western arm of the enclosure was probably re-excavated at a later date and formed the eastern arm of Enclosure E (see below) though a recut was not discernible during the excavation. The terminus of the southern ditch (385=409) was gently sloping and the base was lined with cobbles suggesting that this was a place for stock to drink. Several other ditches (180, 239 and 215) were associated with this enclosure and there were several internal ditches (187=399=401=423=445, 189=416 and 431). Several of these ditches were intercutting which could be interpreted that this enclosure and area was remodelled several times during the mid-2nd to mid-3rd centuries. This area is at the base of a slope which would be a natural place for the ditches to drain to and one interpretation for this area is that the ditches were excavated primarily for the collection of water for stock to drink.

Other features excavated in Area 1 which dated from the mid-2nd to mid-3rd century were three ditches, which were probably part of enclosures or perhaps field boundaries and several pits and postholes. A small gully (290=309) with a right-angled turn was initially thought to be the cut for a beam slot (Fig 3). However, no other slots were excavated that could be associated with this feature.

Area 2 and eastern areas of the watching brief

A series of intercutting ditches were situated in the western part of the area (Fig 4). It was, however, difficult to produce a chronological framework for these features as many had been re-excavated in the late 3rd to 4th century. In the east of the site, in the areas of the watching brief, activity tailed off with only the occasional ditch excavated. These ditches were probably field boundaries associated with the concentration of features in Area 1. Again these could also have been re-excavated in the later Roman period.

Area 3

Here only three ditches were excavated, two probably date from the mid-2nd to mid-3rd century and one was undated (Fig 5). It is proposed that all three ditches were outlying features, more than likely field boundaries associated with the enclosures in Area 1.

Phase 6 Late 3rd to 4th century

During the late 3rd to 4th century the site was remodelled and the enclosures went out of use. Activity for this period was situated in the northern part of Area 1 (Figs 20, 24 and 25).

Area 1

In probably the late 3rd century a cobbled surface (288) was laid down partially over the backfilled ditches of Enclosure D (Figs 20 and 21). The surface consisted of cobbles which were rounded or sub-rounded with an average diameter of 50mm. In places the cobbles were missing and areas of repair could be discerned when the surface was removed. An indentation within the surface (not numbered) was possibly a posthole and four postholes (435, 440, 442 and 478; Fig 20), uncovered when the surface was removed, were probably originally set into the surface but when the posts were removed cobbles and other debris filled the post void. It therefore appeared as if these features were stratigraphically underneath the surface when in fact they are associated with it. Although they roughly form a square it is difficult to discern if they were part of a building or perhaps part of a stock controlling fence.

A layer (287), above the cobbles contained quantities of pottery, fragments of oven superstructure, nails and querns dating from the late 3rd to early 4th century. Therefore the cobbled surface may have been where ovens were sited. Environmental evidence (see below section 4.3) from layer 287 points to there being some food processing activities taking place, such as flour and bread baking.

A metalled track (259=346=439) was constructed partially over layer 287 and was aligned north to south (Figs 20–3). It was constructed of rounded and sub-rounded cobbles with an average diameter of 25mm which were pressed into the natural matrix. Wheel ruts were visible in the top of the surface (Fig 23). The ruts imply the presence of wheeled vehicles. Along the northern edge of the track it is possible that a cut into the natural was excavated to set the stones into to create a more solid surface. In the south the track became less substantial and narrowed. Part of the route in the south overlay one of the infilled ditches of Enclosure A. Above the track in the north was a layer (285=286) which was probably the top part of layer 287, which had been spread across the track during later cultivation.

A large enclosure was excavated to the west of the cobbled surface sometime in the late 3rd to 4th century, Enclosure E (179, 181, 182, 198, 218, 235, 276, 340, 342, 348 and 368; Figs 24 and 25). The western arm of Enclosure D was re-excavated as the eastern arm of this new enclosure. Although only the southern arms and part of the eastern arm of Enclosure E were identified this enclosure measured at least 103m east to west. An entrance with a pit (211; Fig 24) at one end of one of the ditch terminus was seen in the western part of Area 1. The ditches varied in width but averaged about 2m and depths of the ditches were about 0.60m. In the far west there was a recut to the ditch (340) though no dating evidence was recovered from this section it seems likely that both of these ditches date from the late 3rd to 4th century. A shallow ditch (165=167=338; Fig 3), situated to the south-west of Enclosure E is interpreted as a feature to help funnel stock into the enclosure.

Several internal features were probably associated with Enclosure E though the pottery recovered from these features dates mainly to the late 4th century. Feature 175 is thought to represent a watering hole for stock, perhaps a dew pond (Figs 24 and 25).

Area 2 and watching brief

In the western part of Area 2 some of the ditches were re-excavated during this period and it was difficult to produce a chronological framework for these features.

Area 3

No features excavated in Area 3 can be definitely ascribed to the late 3rd to 4th century.

Phase 7 Medieval and post-medieval

All areas (Fig 3)

A series of shallow furrows running down the slope from the south-west to north-east in Area 1 represent the remains of ridge and furrow which probably date from the medieval period (not illustrated). Only one of these furrows was excavated and although abraded Roman pottery was recovered it is thought this was residual. Each of these furrows was between 1m and 2m wide and ran parallel to each other with a distance of between 3m and 4m between each furrow.

The post-medieval and modern features were limited to a ditch (128), the grubbed out remains of two hedge lines (176 and 325), numerous land drains which crossed the site in all directions and the foundation pads of a small building (Fig 1).

The deposits overlying the earlier features and deposits consisted of a mid yellow brown to beige brown clay silt with sub-rounded and rounded pebbles (101, 2001 and 3001) which was up to 0.30m thick. This was interpreted as a cultivation soil or build up of soil from probably the post-Roman period onwards. Above this was the topsoil which was in the main a dark brown clay silt (100, 2000 and 3000) up to 0.40m thick.

Undated deposits

Linear scars (383; Fig 3) in the natural running east to west between Enclosure A and Enclosure E were possibly wheel ruts from carts and probably date from sometime between the mid 2nd century and 4th century (Fig 3). There were several undated ditches, pits and postholes excavated across the site. On balance it is probable that they date from the Roman period.

Artefact analysis, *by Laura Griffin*

The late Iron Age and Roman pottery, *by Laura Griffin*

Introduction

The excavation and watching brief produced a total of 4647 sherds of pottery weighing 56,285g, the majority from Roman stratigraphic phases (Table 2). The overwhelming majority, 4644 sherds (56,208g), representing 99% of the assemblage, were in Iron Age and Roman fabrics (Table 2). Only these are discussed in detail in the report that follows. A small number of Iron Age fabrics consisting of Handmade Malvernian (Fabric 3), Palaeozoic limestone tempered (Fabric 4.1), Sand tempered (Fabric 5.1) and Sandstone tempered (Fabric 5.2) wares were produced into the Roman period and can be difficult to date if only base or body sherds were represented. It was not always possible, therefore, to separate Iron Age and Roman assemblages for quantification; some of the above wares from Roman contexts may be residual.

Table 2: Quantification of the pottery assemblage by fabric

Fabric	Fabric common name	Count	%	Weight (g)	%
3	Malvernian ware	108	2.3	1090	1.9
3.1	Slab-built Malvernian ware	8	0.2	401	0.7
4.1	Palaeozoic limestone	170	3.6	4158	7.3
5.1	Sand	3	0.06	14	0.01
5.2	Sandstone	12	0.3	167	0.3
12	Severn Valley ware	2845	60.2	30593	53.4
12.1	Reduced Severn Valley ware	39	0.8	485	0.8
12.2	Oxidised organically tempered Severn Valley ware	188	4.0	3305	5.8
12.3	Reduced organically tempered Severn Valley ware	6	0.1	44	0.08
12.5	Severn Valley ware variant	42	0.9	367	0.6
12.6	Severn Valley ware variant	239	5.1	4691	8.2
13	Sandy oxidized ware	60	1.2	611	1.1
14	Fine sandy grey ware	97	2.1	1044	1.8
15	Coarse sandy grey ware	130	2.8	1391	2.4
16	Grog tempered ware (BD32/33)	8	0.2	81	0.1
16.1	Savernake ware (BD30/31)	39	0.8	460	0.8
16.2	Handmade grog tempered ware	7	0.2	234	0.4
18	Malvernian derived ware	1	0.02	23	0.03
19	Wheelthrown Malvernian ware	137	2.9	2158	3.8
20	White slipped ware	1	0.02	12	0.02
21	Micaceous ware	1	0.02	5	0.009
21.3	Early micaceous ware	37	0.8	391	0.7
22	Black-burnished ware, type 1 (BB1)	292	6.2	2265	4.0
23	Shell gritted ware	1	0.02	1	0.002
28	Nene Valley ware	1	0.02	1	0.002
29	Oxfordshire red/brown colour coated ware	53	1.1	530	0.9
30	Oxfordshire white colour coated ware	16	0.3	127	0.2
32	Mancetter/Hartshill mortarium	7	0.2	53	0.09
33.1	Oxfordshire white mortaria	4	0.08	103	0.2
33.3	Oxfordshire red mortaria with red-brown slip	1	0.02	23	0.04
34	West Midlands mortarium (Wroxeter ?)	9	0.2	518	0.9
35	Brockley Hill/Verulamium mortarium	2	0.04	27	0.05
37	Severn Valley mortarium	1	0.02	13	0.02
41	Unprovenanced white ware	13	0.3	90	0.2
41.2	Hartshill-Mancetter white ware	1	0.02	1	0.002
42	Amphorae	3	0.06	54	0.09
43	Samian ware	5	0.1	19	0.03
43.1	Southern Gaulish samian ware	2	0.04	6	0.01
43.2	Central Gaulish samian ware	16	0.3	162	0.3

Fabric	Fabric common name	Count	%	Weight (g)	%
43.3	Eastern Gaulish samian ware	7	0.2	123	0.2
44	Rhenish ware (Mosel Keramik)	1	0.02	1	0.002
69	Oxidized glazed Malvernian ware	6	0.1	89	0.2
85	Modern stone china	1	0.02	1	0.002
98	Miscellaneous Roman wares	92	1.9	788	1.4
103	Wroxeter Raetian mortaria	2	0.04	19	0.03
104	German or Rhenish mortaria	2	0.04	407	0.7
149	Worcestershire imitation black-burnished ware	5	0.1	105	0.2
151	South-west oxidised ware	1	0.02	5	0.009
154	Oxfordshire grog tempered ware	1	0.02	1	0.002
		4627	100	57257	100

The dating of diagnostic sherds indicated that occupation of the site probably started during the late Iron Age. This is, however, difficult to ascertain due to the vast majority of this material being residual within contexts of Roman date.

There was evidence for some 1st century activity, but the main occupation dated to the 2nd century, probably to sometime between c AD 120 and AD 165. There was only slight evidence for activity extending in to the late 3rd to 4th century. The range of fabrics and forms was fairly standard for a Roman rural site in this region. The assemblage was dominated by locally produced coarsewares, though a small proportion of unusual fabrics, not currently present within the Worcestershire Ceramic On-line Database were also included. A selection of forms is illustrated in Figures 26–8.

Fabrics

The range of fabric types identified was wide and varied, consisting of the main groups described below and quantified in Table 2.

Local/regional wares

Malvernian wares (Fabric 3, 3.1 and 19)

Vessels of Malvernian wares comprised 116 sherds of the handmade fabric (Fabrics 3 and 3.1) and 137 of the wheelthrown (Fabric 19). In general, vessels of the handmade fabric date between the late Iron Age and 2nd century AD, whilst those of the wheelthrown version were produced later in the period between the 2nd and 4th centuries. The fragments identified as Fabric 3.1 ‘slab built vessels’ included two rims, which were thought to be from large storage jars (cf Peacock 1968, nos 88 and 89), rather than slab built oven material and dated to the 3rd–4th century.

Palaeozoic limestone tempered ware (Fabric 4.1)

All 170 sherds of this fabric were small and highly abraded and came from a single vessel which appears to have been deliberately placed within its own pit.

The source of this pottery is still uncertain, but has usually been ascribed to the Woolhope area of Herefordshire (Morris 1983, 120). Pottery of this type is found within a 40 mile radius of this part of Herefordshire (Morris 1983, fig 3.3) and only found in Worcestershire in small amounts due to being more common to the west of the Malverns.

Sand tempered ware (Fabric 5.1)

Just three sherds of Sand tempered ware were identified (contexts 217 and 287). All were small, highly abraded and residual. No production site for this fabric has yet been located but it is thought that it may have originated from south Worcestershire.

Sandstone tempered ware (Fabric 5.2)

Twelve sherds of this fabric were present. A small number were diagnostic (contexts 361 and 456) and from jar forms datable between the late Iron Age and early Roman periods (cf Peacock 1968, nos 5 and 23). The majority of sherds were within contexts identified as being of 1st–2nd century date. However, there were two fragments which were clearly residual within 3rd century features (contexts 206 and 334).

Again, no production sites have been identified for this fabric type but it is thought that they were located either in Worcestershire or Herefordshire (Peacock 1968).

Oxidised Severn Valley wares (Fabrics 12, 12.2, 12.5 and 12.6)

Oxidised fabrics of this ware formed the largest proportion of the local wares totalling 3314 sherds. A significant proportion of these sherds were also diagnostic and could therefore be dated accordingly. Those that were undiagnostic were ascribed to the generally established date range for the production of Severn Valley ware between the mid-1st and 4th centuries.

Common variant fabrics often identified within assemblage from Worcestershire included an organically tempered type (Fabric 12.2), a sandy and micaceous type (Fabric 12.5), and a type with non-calcareous white inclusions (Fabric 12.6). In addition, a number of other distinctive variant fabrics could be identified within the assemblage from Hindlip.

- A distinctive brownish orange coloured type which abrades heavily in layers. Doesn't appear to be of a specific date range, rather it occurs throughout the period and in a range of standard forms (B).
- An organic variant which also contained grog. This type was also identified within the early Roman assemblages from Sainsbury's St John's and Beckford (Jane Evans pers comm; G).
- A very fine and micaceous, pinkish orange fabric which is soft and powdery to the touch (P).
- A very fine and micaceous fabric, generally buff or pale orange in colour and soft and powdery to the touch (F).
- A fine, bright orange fabric with a sandy texture and slightly rough feel (O).

The range of forms which could be identified amongst the Severn Valley wares was narrow, consisting of commonly identified vessel types. Vessels of these fabrics remained the dominant ware throughout the period of occupation, although the variations could be seen to peak at different intervals.

In general, sherds of the organically tempered type (Fabric 12.2) were earlier, being of 1st–2nd century date, and diagnostic forms of this fabric also indicated a higher occurrence of large vessels within the group. Fabrics mainly identified within contexts of the 2nd–3rd century included 12B, 12G and 12.6, whilst 12.5, 12F, 12O and 12P were most abundant during the 3rd–4th centuries.

One sherd of Fabric 12.5 was notable for the distinctive graffiti incised into it (context 178). This has been described and interpreted in more detail below.

Reduced Severn Valley wares (Fabrics 12.1 and 12.3)

Local reduced wares formed a far smaller proportion of the assemblage than their oxidised counterparts at just 45 sherds. The similarity, however, in inclusions between some of the oxidised and reduced fabrics would indicate that a number were produced on the same kiln sites, using the same clay source, under different firing conditions. Once more, those of the organically tempered variant (Fabric 12.3) were thought to be of earlier date, and those identified as being 12.1F and 12.1P were found present in contexts of 3rd–4th century.

The range of forms identified was very narrow, consisting of a small number of jars and a single tankard.

Severn Valley mortarium (Fabric 37.1)

Just one sherd of this fabric was present within the assemblage. It came from the rim of a hooked rimmed form dating to the 1st–early 2nd centuries and displayed a fragmentary white slip. Sherds of this mortaria type have been found on the kiln site at Newland Hopfields, Great Malvern and are thought to have been kiln products (Evans *et al* 2000, 43).

Sandy oxidised ware (Fabric 13)

Sixty sherds of this fabric type were present, 39 coming from a single wide-mouthed jar (contexts 200 and 201). The remainder were primarily undiagnostic, although a small number of everted rimmed jar sherds were identified.

No production sites for this fabric type have so far been found. The range of forms identified, however, includes types with affinities to Gloucester Glevum ware and therefore it is thought that they may originate from Gloucestershire (Rawes 1972; Timby 1990). Sherds of this type generally date between the mid-1st and 2nd century.

H6 Fine sandy grey ware (Fabric 14)

A total of 97 sherds were identified as being of Fine sandy grey ware. The source of this fabric is not clear and evidence that exists appears to suggest a number of production areas, possibly in Gloucestershire and Warwickshire.

Diagnostic sherds consisted primarily of everted rim jar forms, similar in form to those seen in Black burnished ware 1 (Wessex Archaeology (WA) form series; Seager Smith and Davies 1993). This pattern could also be identified amongst the bowls within the group with two plain rimmed bowls imitating Black burnished ware 1 form WA type 20 and a single flange-rimmed bowl similar to WA type 22.

Coarse sandy grey ware (Fabric 15)

Sherds of this fabric totalled 130. As with the Fine sandy grey ware above, identifiable forms primarily comprised everted rimmed jars. Two lid and two bowl forms were, however, also present, the bowl forms once more imitating those commonly seen in Black-burnished ware 1.

Vessels of this fabric are commonly found in small amounts on Roman sites in Worcestershire, and are likely to have been produced at more than one source with forms and decorative techniques indicating affinities with both Gloucestershire and Warwickshire products (Bryant and Evans 2004, 33). In general, vessels of this fabric date to the 1st and early 2nd centuries.

Grog tempered ware (Fabrics 16, 16.1 and 16.2)

Grog tempered wares formed a small but notable proportion of the assemblage. The majority were wheelmade (Fabric 16.1) and identified as Savernake ware. Forms amongst this group consisted of jars and bowls and could be dated to between the 1st and early/mid-2nd century.

Remaining sherds consisted of eight fragments of non-Savernake wheelmade fabric (Fabric 16) and seven of handmade fabric (Fabric 16.2).

At present, a source for this latter fabric is not known, although it is thought to have been produced within the Worcestershire region. Likewise, a date range for production is unknown, although on present evidence it would appear to date from the late 1st–3rd century (Bryant and Evans 2004, 34).

White slipped ware (Fabric 20)

A single sherd identified as being of White slipped ware and was the base from a flagon or jug form (context 281).

The distribution of this fabric is not understood at present. Sherds appear to have affinities with those of both the Severn Valley tradition (Rees 1992, 48) and products from the late Neronian kilns relating to the earliest military occupation of Gloucester (Timby 1991, 246). However, the main period of use in Worcester appears to be from the earlier 2nd to early 3rd century.

Micaceous wares (Fabrics 21 and 21.3)

A single, undiagnostic sherd of late Micaceous ware was identified within context 281 and could be dated to between the 3rd and 4th centuries.

A total of 37 sherds of variant micaceous ware (Fabric 21.3) were present within the assemblage. This fabric type was first identified on the New Police Station (Griffin 2002)

and Magistrate's Court (Jones and Vyce 2000) sites on Castle Street, Worcester. A single waster sherd was also identified within the assemblage from the latter (Jeremy Evans pers comm), although a specific source of production has not been ascertained. Identifiable forms from both of these sites were consistently of an early Roman date, with forms of 1st–2nd century predominating. This dating has been further reinforced by forms identified within the assemblages from the Wyre Piddle Bypass excavations (as described in Griffin 2012, 25 and 29), Bath Road, Worcester (Griffin and Evans 2014) and from Wellington Quarry, Herefordshire (Griffin 2004).

Only a small proportion of these sherds were diagnostic. Those that were, however, included forms commonly identified within this fabric type, including rusticated and everted jars as well as a carinated beaker. In addition, thirteen sherds from a flagon (context 288), one from a bowl (context 286) and four from a wide-mouthed jar, were also identified.

Worcestershire imitation black burnished ware (Fabric 149)

Five sherds of this fabric were identified within context 287 and came from two drop flange-rimmed bowls (Seager Smith and Davies 1993, WA type 25). Both were of near identical forms, having high flanges but were clearly different vessels due to diameter.

Sherds of this fabric were first identified within the late Roman assemblage from Upper Moor in South Worcestershire (Griffin 2005a). So far, forms in this fabric consist exclusively of bowl and dish forms commonly associated with Black burnished ware 1. Although the high flange noted on the above vessels would normally indicate a 3rd century date in Black burnished ware 1 examples, this does not appear to be the case in the case of this fabric, with all those identified at Upper Moor having the same flange position, but being within contexts firmly dated to the later 4th century.

Non-local/traded wares

Black burnished ware 1 (Fabric 22)

The non-local assemblage was heavily dominated by Dorset Black burnished ware 1 vessels, with 292 sherds in total. A large proportion of sherds displayed sooting and/or evidence of burning attesting to use of the vessels over a fire, presumably for cooking purposes.

The majority of sherds were diagnostic and displayed a range of forms commonly identified on rural sites in this region, primarily bowls and jars ranging from 2nd–4th century in date, but with those of 3rd–4th century predominating (see Table 3). Thirty-eight percent of sherds were undiagnostic and these were datable from AD 120 onwards, the established date for the first occurrence of this ware in the midlands region.

Shell tempered ware (Fabric 23)

A single tiny fragment of this ware was identified (context 287). The fragment was highly abraded with virtually all of the shell dissolved out and it looks to have been intrusive within the feature which has been dated to the later 3rd century.

Table 3: Relative proportions of vessel types within the assemblage by Rim Equivalent EVE

Form	RE total	% of group
Beaker	0.16	0.5
Bowl	5.83	17.1
Cup	0.06	0.2
Dish	0.28	0.8
Flagon	2.97	8.7
Jar	15.04	44.2
Jar/bowl	4.69	13.8
Lid	1.03	3.0
Mortaria	0.71	2.1
Tankard	3.29	9.7
	34.06	100

Nene Valley ware (Fabric 28)

A single, small sherd of this fabric type was present within the assemblage (context 286). It came from a cup or beaker form and was decorated with the brown slip and barbotine characteristic of this ware type. The sherd was dated to between the 2nd–mid-3rd century and residual within the context which was of late 3rd century date.

Oxfordshire wares (Fabrics 29, 30, 33.1 and 33.3)

A relatively small assemblage of Oxfordshire wares was identified, amounting to 74 sherds, all occurring in contexts of 3rd–4th century date. Due to the varying levels of preservation across the site and lack of surviving slip in some cases, it has been difficult to divide a number of sherds into specific categories. It would, however, appear that Red/brown colour-coated wares (Fabric 29) predominated with 53 sherds present. Forms present consisted primarily of bowls and jars, although a type C8 flagon and C22 beaker were also identified (Young 1977).

In addition, sixteen sherds of White colour-coated wares (Fabric 30) were identified in various states of preservation. Two forms could be identified amongst the group; the first being a C29 beaker and the other a C11 pulley rimmed jar (Young 1977). In addition there were two sherds from a possible bowl form but these were too small and abraded to ascertain a specific parallel.

A total of four sherds were identified as being from mortaria of White-firing fabric (Fabric 33.1), all of which were heavily abraded. Two, however, could be identified as coming from a hook-rimmed M22 form datable to between AD 240 and AD 400+, with one having traces of red paint underneath the flange. A further mortaria sherd was identified as being of oxidised fabric with a red-brown slip. However, the sherd was undiagnostic and not identifiable to a specific form type.

Mancetter Hartshill mortarium (Fabric 32)

A total of seven sherds were identified as being of this fabric type, all abraded and within contexts of 3rd–4th century date. Just one specific form was identified, being of a hammerhead rim form similar to one identified within the assemblage from Deansway, Worcester (Bryant and Evans 2004, fig 168, no 3) which could be dated to between AD 240–AD 370.

West Midlands mortarium (Fabric 34)

Mortaria of this fabric type are commonly identified within assemblages from Worcestershire and are thought to have been produced in the Wroxeter area during the first half of the 2nd century.

Nine sherds of this ware were retrieved from the site, including one large rim sherd with a potter's stamp on the flange and a spout (context 233). This stamp is unfortunately illegible but the same as two previously identified within the assemblage from Sidbury, Worcester (Hartley 1992, nos 34.1 and 34.2). A further diagnostic sherd was present within context 3001 and of similar form to one from Deansway, Worcester (Bryant and Evans 2004, type 34.9).

Remaining sherds were fragmentary and undiagnostic, with the two most highly abraded examples being residual within contexts of late 3rd and 4th century date (contexts 287 and 337).

Wroxeter Raetian mortarium (Fabric 103)

Two sherds of a single vessel of this type were recovered from context 172. It was highly with no slip surviving. Mortaria of this fabric can be dated to between the mid-1st and 2nd centuries.

Brockley Hill/Verulamium mortarium (Fabric 35)

Two sherds could be identified as being of this fabric type. They were highly abraded with the inner surface and grits completely lost and residual within a late 3rd century (context 287). Although only found in small amounts in this region, mortaria of this fabric had a wide distribution throughout Britain in the 1st and 2nd centuries due to supply to the forts along Hadrian's Wall.

White wares (Fabric 41)

All fourteen fragments of White ware present within the assemblage were identified as being of Mancetter Hartshill fabric. Eleven of these sherds came from a single ring necked flagon, all adjoining and dating between AD 70 and AD 110 (context 288; Gillam 1976, type 2). In addition, a further flagon sherd was retrieved (context 374) and dated to between the 2nd and 3rd centuries (*ibid* type 23).

South-west oxidised ware (Fabric 151)

Just one sherd of this fabric was retrieved from the site (context 287). Only four small sherds have found previously in Worcestershire, all coming from the villa site at Childswickham on the Gloucestershire border (Timby 2004). No kilns sites have so far been located for this fabric type but it is thought to have been produced in south-east Gloucestershire or north Wiltshire and is thought to date between the late 2nd and 3rd centuries.

Oxfordshire grog-tempered ware (Fabric 154)

Just one sherd of this fabric was identified within the assemblage (context 2016). As with the South-west oxidised ware, sherds of this fabric have been previously identified within the assemblage from Childswickham. Although no production sites have so far been located, distribution of the ware indicates an Oxfordshire production source with the pottery being of 2nd–3rd century date.

Imported wares

Amphora (Fabric 42.4)

A single, highly abraded sherd of amphora was retrieved from context 2018. It was identified as being of Rhodian fabric (Tomber and Dore 1998, RHO AM1) and datable to between the late 1st and mid-2nd century.

Rhenish ware (Fabric 44)

A small fragment of Rhenish ware dating between the late 1st and mid-3rd centuries was identified within the material from (context 286). The sherd was fine, high-fired and displayed a glaze with metallic sheen, typical of the ware.

German or Rhenish mortarium (Fabric 104)

Two large rim sherds of a mortarium of this fabric were recovered from context 160. The sherds had fragments of white slip surviving on the underside of the flange and a faint makers stamp, although this was unfortunately too abraded to identify.

This ware is thought to have been produced around Soller in the Rhineland and is widespread in Britain between the mid-2nd and mid-3rd centuries, although not in any great number (Tomber and Dore 1998, 79).

Samian ware (Fabrics 43.1, 43.2, 43.3)

A total of 30 sherds of Samian ware were recovered, the majority coming from the Central Gaulish production site at Lezoux (Fabric 43.2). Most of these vessels fell within a general date range of c AD 100 to c AD 200, the main period of export for this ware. A small number of sherds could be identified as being of specific Dragendorff form type and therefore more closely datable.

These forms included seven sherds from a form 37 bowl, one from a form 31 dish, two from 18/31 dish forms and one from a form 27 cup. The latter two forms could be dated between AD 100–50, the 18/31 to AD 100–50 and the 37 being a long-lived form type to between AD 100–200.

Only two sherds of diagnostically 1st century samian were identified, both from La Graufesenque in South Gaul (Fabric 43.1). These were dated to c AD 40–110 and c AD 70–100, but will have remained in use into the early 2nd century.

Seven sherds were identified as being of East Gaulish production (Fabric 43.3), mainly Rheinzabern. All but one could be attributed to a specific form type and dated accordingly. All

diagnostic forms were dishes or bowls and included two of form 31, one 18/31, a form 32, a small fragment of a form 38 and a form 37. The forms 31 and 32 could be dated to between the late 2nd and mid-3rd centuries, the 38 as mid-2nd to mid-3rd century and the 37 from AD 120–AD 250.

Miscellaneous unidentified sherds of note

Miscellaneous Roman wares (Fabric 98)

Of the miscellaneous Roman wares, a group of nineteen sherds from a single vessel of a distinctive fabric particularly stood out (context 227). This fabric had a corky texture being full of voids, some of which are elongated and flat, perhaps indicating the use of grass or shell temper. Both surfaces had an unusual sheen to both surfaces. It is unclear whether this is natural or as a result of surface treatment but it not something that has been noted previously on pottery in this region.

Both the fabric and the base sherds would indicate the vessel to be of early Roman date, with a distinctive groove seen running around the edge of the underside of the base – a feature commonly identified in Severn Valley ware tankard and jar forms of 1st–early 2nd century production.

The largest single group of unidentified sherds consisted of 39 from a single colour-coated everted rimmed bowl (context 227). These sherds were of a very fine oxidised fabric with some affinities of Gloucestershire Severn Valley wares. The most distinctive feature of this vessel was a very nicely formed foot ring with two grooves running around the edge and the centre of the underside.

The only parallels that could be found for this form are in Severn Valley ware but none have this foot ring (eg Deansway; Bryant and Evans 2004, fig 155, no 17). However, these vessels are datable between the 1st and 2nd centuries and therefore provide a guide for the dating of the example from this assemblage.

Remaining miscellaneous sherds of note came from two jar forms. The first was a large fragment of a sand and grog tempered fabric (context 287). The form was an everted rimmed jar, which appeared to be imitating those of Black burnished ware WA types 1 or 2, with some traces of burnish still visible on the external surface. The grog inclusions were large and grey in colour, with some appearing to have yet more grog within them.

The remaining sherd (context 2018) could not be identified as being of a specific jar form but was of a high fired black fabric with large quartz, ironstone and grog inclusions and was considered to be of possible late Iron Age or early Roman date.

Functional composition of the assemblage

The rim sherds present within the assemblage amounted to a 'Rim Equivalent' (RE) total of 34.06. Ten main categories were identified and classified according to the accepted definitions (Millet 1979; Evans 1993). These were beaker, cup, bowl, dish, flagon, jar/bowl, jar, lid, mortaria and tankard. The jar/bowl category consists of a discreet group of wide-mouthed vessels as categorised within the Severn Valley ware typology published by Webster (1976, 28).

Range of forms

The relative proportions of vessels of each form as established by EVE rim equivalent (RE) can be seen in Table 3. From these figures, it can be clearly seen that the jar (including jar/bowl) was the dominant vessel type present, accounting for 58% of diagnostic forms identified. This figure, along with the relatively small proportion of bowl and dishes at just 17.9%, is consistent with that frequently noted within assemblages from rural sites where jars commonly constitute over 50% and bowls under 30% of forms identified (Jeremy Evans pers comm). This high frequency of jar forms can be attributed to the versatile nature of the form serving a variety of functions including the storage, cooking and serving of foodstuffs.

Drinking vessels constituted 10.4% of EVE's by RE. This figure includes tankards, by far the most common type, and beakers. This figure is high for established patterns of rural assemblages, the presence of an unusually large proportion of tankard forms having significantly increased the total. Tankards are a regional anomaly, their production being confined largely to the Severn Valley area (Evans 2001, 30). As illustrated in the case of this site, the occurrence of this vessel type in rural assemblages from this region can raise the drinking vessel proportion of an assemblage to the point where it no longer fits into established functionality patterns.

Vessel form in relation to fabric

Analysis of diagnostic sherds within the assemblage revealed only a narrow range of forms, even in locally produced fabrics. The relationship between fabric and form by EVE RE measurement can be seen in Table 4. Forms of Severn Valley ware, Malvernian ware and Black burnished ware 1, the most commonly identified fabric types are discussed in more detail below.

Severn Valley ware

Vessel forms within these locally produced fabrics were identified according to the main groups identified by Webster (1976). The variety of forms recorded was relatively wide with a variety of common and more specialised form types identified (Table 5).

Forms comprised mainly narrow-mouthed jars, wide-mouthed jars, tankards and bowls, with more specialised forms including carinated cups, colander and handled jar/flagon forms (Table 5). Jars were the most common form type amongst the Severn Valley ware fabrics with narrow-necked types numbering over double those of the wide-mouthed variety. In contrast to the more versatile jar forms only 35 bowls could be identified, possibly as a result of wide-mouthed jars being able to serve the same function adequately.

Tankards of Severn Valley ware were the main specialised drinking vessel form retrieved from the site, with two carinated cups and two beakers being the only additional specific drinking forms, although other vessels may have doubled up to serve this function also. Other specialised forms amongst the Severn Valley wares consisted of two colanders and five flagons and five open mouthed flagon/handled jars.

*Table 4: Quantification by vessel form and fabric
(EVE by RE measurement)*

Form	3	3.1	5.2	12	12.1	12.2	12.3	12.5	12.6	13	14	15	16.1	16.2	18	19
Beaker	3	3.1	5.2	12	12.1	12.2	12.3	12.5	12.6	13	14	15	16.1	16.2	18	19
Bowl				0.07												
Cup				2.53					0.11		0.34	0.19	0.08			0.48
Dish																
Flagon																
Jar				0.34				0.09	0.27							
Jar/ bowl	0.43	0.22	0.32	7.76	0.20	1.15	0.09	0.11	0.70	0.37	0.50	0.42	0.34	0.004	0.13	1.12
Lid				3.67	0.14				0.30	0.25	0.15					0.04
Mortaria	0.18			0.10								0.42				0.33
Tankard																
				2.38	0.10	0.35			0.46							
% of total	1.8	0.6	0.9	49.5	1.3	4.4	0.3	0.6	5.4	1.8	2.9	3.0	1.2	0.01	0.4	5.8

Form	21.3	22	29	30	32	33.1	34	41	43	43.1	43.2	43.3	98	104	149
Beaker		0.05	0.04												
Bowl	0.12	0.70	0.23						0.10			0.05	0.72		0.18
Cup											0.06				
Dish										0.06		0.04	0.18		
Flagon	0.27		1.00					1.00							
Jar	0.32	0.54		0.23									0.09		
Jar/bowl			0.14												
Lid															
Mortaria					0.05	0.11	0.30							0.25	
Tankard															
% of total	2.1	3.8	4.1	0.7	0.1	0.3	0.9	2.9	0.3	0.2	0.2	0.3	2.9	0.7	0.5

Table 5: Quantification of Severn Valley ware forms by fabric (minimum no. of vessels)

Form	Total	12	12.1	12.2	12.3	12.5	12.6
Beaker or tettina	1	1					
Beaker	2	2					
Carinated cup	3	1		2			
Bowl	10	9					1
Bead rimmed bowl	3	3					
Everted rimmed bowl	4	3					1
Flange rimmed bowl	16	16					
Reeded rimmed bowl	1	1					
Segmental bowl	1	1					
Jar	96	74	3	7	1	2	9
Everted rimmed jar	21	16		2			3
Pulley rimmed jar	12	12					
Rusticated jar	1				1		
Large storage jar	1			1			
Wide-mouthed jar	66	59	1				6
Tankard	44	30	1	8	1		4
Open mouthed flagon/ handled jar	5	3	1				1
Flagon	5	4				1	
Lid	2	2					
Colander	2	2					

Malvernian wares (Fabrics 3, 3.1, 3.2 and 19)

Vessel forms within the Malvernian wares were classified according to Peacock (1967). The range of forms identified was narrow but comprised a standard range of types commonly seen on rural sites of this nature (Table 6).

Table 6: Quantification of Malvernian ware forms by fabric (minimum no. of vessels)

Form	Total	3	3.1	19
Flange rimmed bowl	5			5
Jar	9	5		4
Everted rimmed jar	12	1		11
Large storage jar	4	2	2	
Wide-mouthed jar	1			1
Lid	7	3		4

Very few forms were identified amongst the sherds of handmade fabric. The most common, however, was the jar in the form of a tubby cooking pot, followed by the lid. Other handmade vessel types included a large storage jar and a single everted rimmed jar.

There were more identifiable forms within the wheelmade fabric, with the everted rim jar form dominating. Vessels of this form appears to have been imitating jars of Black burnished ware 1. Likewise, there were also five flange-rimmed bowls, a form also more commonly seen in Black burnished wares.

Black burnished ware 1 (Fabric 22)

Black burnished ware vessel forms were classified according to the main groups within the Wessex Archaeology (WA) form series (Seager Smith and Davies 1993). Only a narrow range of forms was present, the majority being of jar and bowl types commonly identified on sites across the west midlands region (Table 7).

Table 7: Quantification of Black burnished ware I forms by fabric (minimum no. of vessels)

Form	22
Miniature jar/beaker	2
Groove rimmed bowl	1
Plain rimmed bowl	6
Flange rimmed bowl	1
Drop flange rimmed bowl	5
Everted rimmed jar	24
Fish dish	1

The most common form type was the everted rim jar, the vast majority of later typology (WA type 3) with just one of the earliest form (WA type 1) and two of typically 2nd century form (WA type 2).

In contrast, the bulk of the bowl forms were of 2nd century date with just five of the later drop flanged rimmed bowl (WA type 25) and a single fish dish (WA type 21) identified. Likewise, the slightly more unusual forms within the group include two miniature jar/beakers (WA type 10) which are also more typical of the 2nd century.

Pottery supply and use at Hindlip

Characterisation of the assemblage from Hindlip has been aided by a recent increase in comparable data resulting from the excavation of similar rural sites across Worcestershire over recent years and the results from this assemblage adds to the growing body of published, quantified data from these rural sites in the county, that can contribute to future syntheses.

The Hindlip site is located on the edge of modern Worcester, but in Roman times would have been a rural site in Worcester's hinterland. Although the site appears to span the Roman period, the range of fabrics and dating of identifiable forms within the assemblage would indicate a peak in occupation on the site between the 2nd and 3rd centuries with a relatively low level of residuality in evidence.

There was a small assemblage of possible late Iron Age material, although the majority of this material could also date to the very early Roman period and in general, was present in contexts of 1st century date. The one exception was the near-complete vessel of Palaeozoic limestone tempered ware set within a pit. Although typically late Iron Age in date, vessels of this fabric have been dated to the early Roman period with those within the assemblage from Ariconium given an end date of AD 75/100 (Willis 2012, 44).

Material of 1st–2nd century date included a significant amount of grog tempered wares – a feature also noted within the early Roman assemblages from George Lane, Wyre Piddle (noted by the author) and St John's, Worcester (Jane Evans pers comm). Some of these sherds appeared to be of local production with fabrics closely resembling those of Severn Valley wares. In addition, a notable amount were identified as being Savernake wares, an industry commonly associated with the production of grog-tempered vessels during this period. In addition, earlier organically tempered Severn Valley ware, Handmade Malvernian ware and Black burnished ware forms were also present in modest numbers.

The latest material within the assemblage consisted of Oxfordshire wares and a small number of sherds of Worcestershire imitation Black burnished ware – both of which can be dated from the late 3rd century and into the later 4th. In addition, there was a single fragment identified as being of shell tempered ware, which is typically of the later 4th century onwards in this region.

As has been described above, the range of fabrics and forms is in most ways typical of rural sites in the region. There is a dominance of locally produced fabrics and utilitarian forms, in particular jars and tankards. The manufacture of Severn Valley ware was part of a widespread regional tradition of similar vessels, with few kiln sites actually located, although production is known to have taken place at various sites along the Severn Valley from Shepton Mallet in the south and as far as Wroxeter in the north (Bryant and Evans 2004, 246). However, neutron activation analysis has indicated that the well-documented kiln sites at Malvern were the most common source of these wares found on sites in Worcestershire (*ibid* 250). The majority of Severn Valley ware sherds retrieved from Hindlip were of oxidised fabrics, as is typical of sites in this region. This would appear in the main to be a conscious decision on the part of the potters. However, the relative proportions of oxidised to reduced fabrics may also have been affected by the small-scale activity on the site during the earlier Roman period, when vessels of the reduced fabrics are thought to have been at their most common.

Sherds of the coarser Handmade and Wheelmade Malvernian wares (Fabrics 3, 3.1 and 19) are also known to have been produced on these same sites (Evans *et al* 2000). The proportions of these wares, however, were far smaller at just 5.3% of the assemblage, a pattern noted on sites across the region possibly resulting from the more specialist function of these vessels as cooking wares. It would appear that by the latest period of production at Malvern, that Black burnished ware 1 had effectively become the dominant cooking ware in the region, resulting in the decline of Malvernian wares from the 3rd century onwards.

Sherds of Black burnished ware formed the second largest ware group within the assemblage at 28.9%. Comparison with other sites within the county indicate that proportions of this ware vary greatly ranging from just 5.8% at Throckmorton (Griffin 2005b) in comparison to 17% at Hoarstone Farm, Kidderminster (Hurst 1994) and the even greater proportion of sherds from Hindlip itself. Previous analysis of Black burnished ware figures from sites in the wider west

midlands region has led to the conclusion that the proportion typically varies from site to site, in part due to transportation routes but also influenced by site status, identity and exchange relationships (Willis 2012; Allen and Fulford 1996). Indeed, this would appear to be the case for Worcestershire, although it could be asserted that rural sites in the south of the county have consistently low numbers of these vessels (Timby 2004; Griffin 2005a and 2012), whereas those in the north such as this site, have a greater proportion.

Pottery of the later Roman period was present in relatively low proportions, just one sherd of South midlands shell tempered ware, whilst Oxfordshire wares (Fabrics 29, 30, 33.1 and 33.3) formed 1.51% of the assemblage by count. However, perhaps the most notable sherds within the late Roman assemblage were those of Worcestershire imitation Black burnished ware (Fabric 149). Despite only amounting to five sherds in total, this fabric has only been identified on a handful of sites across Worcestershire since its initial identification within the late Roman pottery from Upper Moor to the south of the county (Griffin 2005a).

Vessels of South midlands shell tempered ware became the most widely used cooking vessels from the late 4th century following the decline of the Black burnished ware industry and therefore the presence or absence of such sherds are often used as an indication of post-mid-4th century occupation (Evans 1992, 32). The presence of just one sherd within this assemblage, along with the very low number of Oxfordshire products gives the impression that the settlement was in serious decline by the end of the 4th century.

Mortaria used prior to this later period consisted primarily of Hartshill Mancetter, West midlands and Severn Valley mortaria with the addition of single examples from other sources (see above). In addition, as seen at other sites such as Throckmorton (Griffin 2005b) and the Wyre Piddle Bypass (cf Griffin 2012 for comment on the Bypass work), the use of Hartshill Mancetter mortaria appears to have continued alongside those of Oxfordshire manufacture in the earlier 4th century.

The levels of fineware pottery at Hindlip were notably low and consistent with those of a lower order rural settlement with just 30 sherds of Samian ware and 72 of other fabrics including Oxfordshire colour-coated, Nene Valley, White slipped and Rhenish wares. Similarly low levels of these wares have also been noted at Throckmorton (Griffin 2005b), Wyre Piddle (Griffin 2012), Strensham (Ratkai 1995) and Shire Farm, Hawford (Topping and Buteux 1995). Two notable exceptions from the county are Childswickham villa site which had a far wider range of finewares, both imported and regional (Timby 2004) and the assemblage from Upper Moor (Griffin 2012). Therefore, supply into the region does not appear to have been the overriding factor for the paucity of these wares at other sites. Presumably status was an influencing factor at Childswickham, whilst the very late nature of the assemblage from the Upper Moor site has led to a significant increase in fineware levels there.

It can therefore be seen that although the pottery consumed by the site at Hindlip during the Roman period came from a fairly extensive range of sources, this was largely due to the longevity of occupation and the majority of these wares, as would be expected, were of local production. Perhaps the most notable feature of the assemblage can be identified in the relatively low frequency of some key wares, principally those of Malvernian fabric (Fabrics 3, 3.1 and 19). Furthermore, it would appear that the presence or absence of wares was purely a result of preference rather than problems with supply, as proportions from assemblages from adjacent and nearby excavations appear to vary on a site-to-site basis.

A note on the Severn Valley ware sherd displaying graffiti, *by Roger Tomlin*

Body sherd in Severn Valley ware variant (Fabric 12.5); from the shoulder of the vessel, judging by the slightly concave curve. Scratched after firing with a figure now incomplete, a trapezoid outline enclosing three almost-vertical lines; to the right a small attached arc; and above, a sinuous line now incomplete. Context 178, record no 145.

This may be intended for a Roman *modius* holding ears of corn, the motif found on coins of Vespasian and his successors, such as Nerva, Hadrian and Antoninus Pius, to represent imperial provision of food, sometimes explicitly the *annona Augusta*. The *modius* was a bronze corn-measure shaped like an inverted bucket, its curvature indicated here by the three near-vertical lines. In the coin-type, it often stands on three short legs, not indicated here; nor does it there include lifting-handles, if that is what the small arc represents. The drawing is too crude and incomplete for certain identification, and it is also uncertain whether to attach any particular significance to it ('abundance', for example, or even the issue of official rations), but it is certainly more elaborate than the usual marks of identification such as 'crosses', 'grids', 'wheels', 'palm-branches', etc.

Catalogue of the illustrated pottery (Figs 26–8), by Laura Griffin

1. Jar/urn in Palaeozoic limestone tempered ware (Fabric 4.1; context 197), late Iron Age/early Roman.
2. Jar in Handmade Malvernian ware (Fabric 3; context 160), 1st–2nd century.
3. Large flange rimmed jar in Handmade Malvernian ware (Fabric 3; context 101), 3rd–4th century.
4. Large slab-built storage jar in handmade Malvernian ware (Fabric 3.1; context 286), mid-2nd–4th century.
5. Jar in Sandstone tempered ware (Fabric 5.2; context 456), late Iron Age–mid-1st century.
6. Narrow mouthed jar in oxidised Severn Valley ware (Fabric 12; context 160), mid-1st–4th century.
7. Pulley rimmed jar in oxidised Severn Valley ware (Fabric 12; context 365), 3rd–4th century.
8. Pulley rimmed jar in oxidised Severn Valley ware (Fabric 12; context 178), 3rd–4th century.
9. Pulley rimmed jar in oxidised Severn Valley ware (Fabric 12; context 287), 3rd–4th century.
10. Pulley rimmed jar in oxidised Severn Valley ware (Fabric 12F; context 286), 3rd–4th century.
11. Everted rimmed jar in oxidised Severn Valley ware (Fabric 12; context 281), 2nd–4th century.

12. Wide-mouthed jar in oxidised Severn Valley ware (Fabric 12; context 101), 2nd–3rd century.
13. Wide-mouthed jar in oxidised Severn Valley ware (Fabric 12; context 2001), early–mid/late 4th century.
14. Tankard in oxidised Severn Valley ware (Fabric 12.6; context 160), mid-1st–early 2nd century.
15. Tankard in oxidised Severn Valley ware (Fabric 12; context 160), 2nd–3rd century.
16. Tankard in oxidised Severn Valley ware (Fabric 12; context 160), 2nd–3rd century.
17. Tankard in oxidised Severn Valley ware (Fabric 12; context 160), 2nd–3rd century.
18. Tankard in organically tempered oxidised Severn Valley ware (Fabric 12.2B; context 160), 2nd–3rd century.
19. Tankard in oxidised Severn Valley ware (Fabric 12; context 261), mid-1st–4th century.
20. Beaker or tettina in oxidised Severn Valley ware (Fabric 12; context 173), mid-1st–4th century.
21. Groove-rimmed bowl in oxidised Severn Valley ware (Fabric 12; context 287), 2nd–3rd century.
22. Flanged bowl in oxidised Severn Valley ware (Fabric 12O; context 3003), 2nd–3rd century.
23. Bowl in oxidised Severn Valley ware (Fabric 12; context 287), 2nd–3rd century.
24. Bowl in oxidised Severn Valley ware (Fabric 12; context 131), 2nd–4th century.
25. Handled jar in reduced Severn Valley ware (Fabric 12.1; context 101), 2nd–early 3rd century.
26. Wide-mouthed jar in reduced Severn Valley ware (Fabric 12.1; context 173), 3rd–4th century.
27. Flagon in Early micaceous ware (Fabric 21.3; context 288), mid-1st–2nd century.
28. Plain rimmed bowl in Fine sandy grey ware (Fabric 14; context 378), late 2nd–early 3rd century.
29. Everted rimmed bowl in Handmade grog tempered ware (Fabric 16.1; context 229), 1st–2nd century.
30. Ring-necked flagon in Hartshill Mancetter white ware (Fabric 41; context 288), AD 70–110.
31. Everted rimmed jar in Wheelmade Malvernian ware (Fabric 19; context 387), 2nd–4th century.

32. Flange rimmed bowl in Wheelmade Malvernian ware (Fabric 19; context 287), 3rd–4th century.
33. Lid in Wheelmade Malvernian ware (Fabric 19; context 346), 2nd–4th century.
34. Lid in Wheelmade Malvernian ware (Fabric 19; context 286), 2nd–4th century.
35. Miniature jar/beaker in Black burnished ware 1 (Fabric 22; context 2024), 2nd century.
36. Plain rimmed bowl in Black burnished ware 1 (Fabric 22; context 281), late 2nd–3rd century.
37. Drop-flange rimmed bowl in Worcestershire imitation black burnished ware (Fabric 149; context 287), late 3rd–early 4th century.
38. Drop-flange rimmed bowl in Worcestershire imitation black burnished ware (Fabric 149; context 287), late 3rd–early 4th century.
39. Flagon in Oxfordshire red/brown colour-coated ware (Fabric 29; context 101), AD 240–400+.
40. Flanged rimmed bowl in Oxfordshire red/brown colour-coated ware (Fabric 29; context 287), AD 240–400+.
41. Bowl in oxidised Oxfordshire red/brown colour-coated ware (Fabric 29; context 172), AD 240–400.
42. West midlands mortarium with stamp (Fabric 34; context 233), early–mid-2nd century.
43. West midlands mortarium (Fabric 34; context 3001), late 1st–mid-2nd century.
44. Oxfordshire white mortarium (Fabric 33.1; context 101), AD 240–400+.
45. Rhenish mortarium (Fabric 104; context 160), late 3rd–4th century.
46. Wide-mouthed jar/bowl in fine oxidised ware (Fabric 98; context 173), 2nd–4th century.
47. Drop flange rimmed bowl in reduced fabric with black surfaces (Fabric 98; context 287), early–late 3rd century.

Ceramic objects, *by Laura Griffin*

Oven material (Fig 29)

A fairly extensive assemblage of oven material was retrieved from the site, amounting to 206 fragments, weighing 5628g. All was of handmade Malvernian fabric but could be divided in to two distinct diagnostic groups of oven superstructure and oven plate/platters, this latter group being the largest and amounting to 181 sherds. The majority came from contexts of late 3rd–4th century date but a small number of pieces were from earlier deposits with a 2nd century *terminus post quem*.

Due to the fabric of this material being of a type commonly used for the production of vessels in this area, it is highly possible that more oven material is present within the pottery assemblage but hasn't been identified as such, with only the obvious diagnostic fragments from platters and the flanged oven opening having been extracted.

Oven superstructure

A total of 25 fragments of oven superstructure were identified within the assemblage from Hindlip. Very little is known about the form of these ovens due to only fragments being identified within assemblages. Recent excavations at The Butts in Worcester, however, have uncovered what are thought to be footprints of similar structures, which along with sherds from the clay superstructure itself, would suggest that the ovens were of a domed type commonly associated with the baking of bread during the Roman period (C Jane Evans pers comm).

More complete remains identified from across what was the Roman Empire, alongside modern reconstructions and experimental projects indicate that ovens of simple domed form commonly had a separate base made up of flagstones, other masonry or rubble and the dome formed above this. Such ovens were commonly wood-fired and the fire would be set in the oven to bring the heat up before being raked out and the foodstuff to be cooked, placed into the chamber.

The oven remains seen in ground plan at The Butts consisted of shallow circular foundation gullies with substantial scorching to the interior and a further band of scorching around the outside of the cut, following the shape of the structure. This is thought to have resulted from a thick layer of clay which was laid over the ceramic dome to serve as insulation. The remains of the superstructure itself retrieved from both The Butts and Hindlip indicate the oven to have had a large, flanged inverted 'U' shaped opening to the front and a smaller circular opening or chimney at the top. Both of these would have been routinely covered to keep the heat within the oven during cooking.

Ceramic plates

A total of 181 fragments of flat, ceramic 'plates' were identified within the assemblage. Once more, not a huge amount is known about these objects other than that they are present on the majority of sites of Roman date within the county and appear to have been related to the cooking of food due to evidence of sooting and burning to the surfaces. In general, this takes the form of soot and carbonised deposits on the upper surface and burning on the underside – a pattern that has been noted on this type of object elsewhere (Cool 2006a, 41).

None of the examples from this site were complete, but thickness was variable, ranging from 7–26mm. Although, a number fragments appeared to display an edge, it was not possible to measure any diameters. However, it can be seen from parallels elsewhere that this was also very variable ranging from c 14cm to nearly half a meter across (*ibid* 41). They are also known to come in a range of forms with some being more ovoid in shape or having straight sides and rounded ends.

Examples from outside of the county seem to be confined to Oxfordshire and Warwickshire and are all Roman in date, with the majority dating to the latter half of the period, although they are present in smaller number in assemblages of the late 1st century onwards. In addition, they are more common on rural sites (*ibid*, 41).

Roman ceramic building material, by *Laura Griffin*

The site produced a total of 97 fragments of Roman tile, weighing 5928g. Tile from each context was recorded uniformly by the following categories: class of tile, presence or absence of flange, presence of upper and/or lower cutaways, presence of signature marks. A summary of the tile types identified within the assemblage can be seen in Table 8.

Table 8: Quantification of Roman tile

Type	Total	Weight (g)
Undiagnostic tile	73	3569
Tegula	21	2065
Imbrex	1	222
Box flue tile	1	49

Fabrics

Despite the relatively small amount of building material retrieved from the site, there was a range of fabric types present, some of which resembled Severn Valley ware fabrics seen amongst the pottery assemblage.

These included:

- A fine, bright orange fabric with a sandy texture and slightly rough feel (similar to Fabric 12 variant O).
- A finer version of the above bright orange fabric.
- A very fine and micaceous fabric, generally buff or pale orange in colour and soft and powdery to the touch (similar to Fabric 12 variant F).
- A very fine and micaceous, pinkish orange fabric which is soft and powdery to the touch (similar to Fabric 12 variant P).
- A distinctive brownish orange coloured type (similar to Fabric 12 variant B).

The most common of these was the distinctive bright orange, sandy oxidised type which was bright orange in colour and amounted to 31 fragments. All but five displayed sanding on the underside. Closely related to this, was a finer sandy fabric, also bright orange in colour. A total of 17 fragments were identified in this fabric, with five displaying sanding and one also containing a small amount of grog.

The fine micaceous fabric formed the next largest group and amounted to 22 fragments, once more displaying sanded and unsanded examples. Remaining fabrics were only present in small amounts and consisted of the brownish orange type (3 fragments), a fine pink

type with a powdery feel (2 fragments), and a coarse, poorly mixed fabric with white clay pellets (3 fragments). One of these, the latter tile was particularly unusual being very thick in comparison to the other tegulae within the assemblage. It was of particularly poorly mixed clay, had a pitted underside and the upper and lower surfaces were white in colour, whereas the core was orange.

Tile types

Owing to the abraded and fragmentary nature of much of the tile assemblage, the majority of fragments were undiagnostic. However, those which could be identified as of a specific type are discussed below.

Tegulae

Twenty-one fragments of tile could be identified as from tegula. In addition, a number of the undiagnostic fragments are likely to also be from tegulae.

Although the group comprised a range of fabrics, in general thickness was fairly uniform ranging from 19–25mm. The one notable exception was the unusually thick example mentioned above, which measured 32mm (context 2001).

Just one cutaway was identified within the group and was on the upper surface of the flange (context 2024). The tile itself comprised four fragments and was highly abraded being of a fine fabric with an unsanded base.

The largest single fragment within the group had lost its flange but had a definite finger groove at the base of where it would have been (context 2033). This groove ran the length of the tile and is commonly seen on tegulae where they are thought to have aided the channelling of rainwater away from the roof. This particular tile was well-fired and contained sub-rounded red inclusions and white clay pellets and streaks of white clay. The base was sanded.

Box-flue

A single piece of confirmed box tile was identified within the assemblage (context 206). This was of very fine fabric, 12mm thick and had very faint combing surviving.

In addition, two highly abraded fragments, also thought to be flue tile were found within the material from (context 287). These were identified on the basis of form only, due to a lack of combing, presumably resulting from abrasion.

Imbrex

Just one fragment could be positively identified as being imbrex (context 3001), although it is highly likely that some of the undiagnostic pieces were originally of this form. The fragment was quite large in size, was 18mm thick and lightly abraded.

Markings

Two signature marks were identified within the assemblage, both on tiles from context 101. Both were faint and on tiles of very fine orange fabric with unsanded bases. The first was a curving double signature and the other, once more double but straight.

Metalwork, *by Laura Griffin*

Iron

A total of 37 fragments of metalwork were retrieved from the site. All were iron and all but nine identifiable as nails of Roman date and more specifically 3rd to 4th century. The majority were highly corroded with spalling surfaces.

Many of these nails came from the cobbled surface and associated occupation layer (contexts 286 and 287) and would add strength to the theory that this represents the demolition of a building during the later 3rd/4th century.

Remaining iron within the assemblage was largely unidentified with the exception of an adze head (discussed below) and a small corroded disc which is most likely the head of a hobnail (context 287).

Roman adze

The most interesting artefact within this group was an adze head retrieved from context 289 (Fig 30). This was complete and although corroded, in relatively good condition. It measured 16.5cm in length and had a straight, triangular blade with a slightly convex edge, and was set at a sharp angle from the socket. The socket was of the same width of the blade with no distinct neck and a rectangular cross-section, and the eye was oval, but set slightly off-centre. Other finds within the same ditch indicate it to be of 2nd century date and although no exact parallel can be found, it most closely resembles an example from Hod Hill (Manning 1985, 17, B10).

Adzes are relatively common on sites across Roman Britain and although traditionally thought to be associated with woodworking, may also in some cases have been employed as a hoe. These latter examples often have a wide blade with a curved edge, whereas those thought to have been used by carpenters generally have a narrow blade with near straight edges and a strong, defined neck (*ibid*, 16). However, the example from Hindlip appears to lie in between these two types, having the narrow, straight-edged blade but no defined neck. There again, the thickness of the blade would suggest that it would be more suited to use as a hoe rather than for finer woodworking.

Lead

A single piece of lead was retrieved from context 287, and was identified as coming from a rivetted pot repair. Lead was the most common metal used for such repairs during the Roman period.

Ironworking slag, by *Laura Griffin*

A small assemblage of iron slag amounting to 63 pieces was retrieved from the site, the vast majority from contexts of 3rd and 4th century date. Where diagnostic, it was possible to identify both smithing and smelting slags, as well as pieces of hearth bottom (Table 9).

Table 9: Quantification of the metalworking slag

Context	Material	Type	Total	Weight(g)
178	slag	Hearth bottom	1	101
261	slag	Hearth bottom	1	536
281	slag	Hearth bottom	1	2048
286	slag	Smelting slag (tap)	5	65
286	slag	Undiagnostic	1	41
287	slag	Smelting slag	6	60
287	slag	Smelting slag (tap)	1	12
287	slag	Smithing slag	4	110
287	slag	Undiagnostic	2	332
326	slag	Undiagnostic	1	286
346	slag	Smelting slag	1	2070
346	slag	Undiagnostic	2	658
388	slag	Smelting slag (tap)	2	179
443	slag	Smelting slag (tap)	2	18
2020	slag	Smelting slag (tap)	1	27
3043	slag	Undiagnostic	13	575
3047	slag	Undiagnostic	4	11
3071	slag	Hearth bottom	1	1768
3078	slag	Undiagnostic	14	730

In a few instances, well-fired clay adhered to the slag, as a result of direct contact with the furnace structure. In addition, a significant amount of hammerscale was noted within the environmental samples, and some contained pebbles, which had become embedded as the slag solidified. This evidence would therefore indicate that both the production and working of iron was taking place on the site during the Roman period.

Two pieces in particular stood out as being unusual. Both were extremely dense and crystalline in appearance when viewed both by eye and under the microscope. Although it is not known exactly what lead to this appearance, it has been suggested that it is due to the slag having remained within the furnace and repeatedly subjected to the high temperatures causing it to melt and solidify several times. This would account, not only for the crystalline structure, but also the lack of bubbles within the slag (Nick Daffern pers comm).

The worked stone, *by Derek Hurst*

There were six pieces of worked stone, the source rock being identified as May Hill-type sandstone, though the exact provenance remains unclear. These comprised five fragments of rotary quern (contexts 287 and 404) which were all of smaller and, therefore, hand-operated, size, and a single fragment of quern of indeterminate type (context 357). At least four rotary querns were represented.

The most recognisable type was a beehive-type quern lower stone (context 404). Upper stones included two examples (both from context 287) with a lateral handle slot in the top of the upper stone, and in both cases these were associated with concave grinding surfaces.

Comparison with other sites

Small rotary querns are typical finds on Iron Age and Roman sites. Such objects probably survived as they are not easily reshaped for an alternative use, once worn out/broken. Such objects, however, have more often been found only in a very fragmentary state, and so the complete types have not been well defined locally, and even where found complete, their excavation context has often been lost (eg Blackstone; Roe 2010), that is if the complete object has not been lost during subsequent curation. It has also been more recently observed that this type of object seems to be selected for structured deposition, especially in pits (cf Shaffery 2008, 463), but none of the Hindlip examples seemed to reflect such a pattern of deposition.

The flint, *by Laura Griffin*

One residual flint flake of a probable Neolithic date was recovered from the fill of a pit (3068) and a residual flake of debitage was recovered from the fill (334) of a ditch (Robin Jackson pers comm).

Shale armlet, *by Laura Griffin*

A small fragment of a shale armlet was retrieved from a late Roman context (172; Fig 29). The piece was in good condition and could be identified as being D-sectioned, and as with the majority of examples found in this region, plain (Cool 2006b, 195). It had a diameter of 80mm, which makes it larger than most parallels identified elsewhere (Crummy 1981, 36).

Environmental analysis, *by Alan Clapham*

One hundred and fifty-eight samples of up to 80 litres were taken from the Hindlip from 139 contexts; from pits, postholes, occupation layers, ditches, linear features and from the contents of a pottery vessel which were all of Roman date or earlier (Table 10). The analysis of the environmental samples was carried out in two stages. The first consisted of the processing 10 litres of each samples and then carrying out a rapid assessment for charred plant remains. The assessment then identified those samples for full analysis. This report will first consider the assessment results and then those for the full analysis. The environmental evidence recovered is summarised in Tables 11, 12 and 13.

Table 10: List of the samples assessed for environmental remains from Hindlip

Context	Sample	Context type	Description	Sample volume (l)	Date
0123	2	ditch 124	upper fill	9	?
0127	1	ditch 128	fill	9	?
0159	3	ditch 124	lower fill	9	?
0172	7	pit 175	upper fill	10	(3-) 4C
0173	8	pit 175	middle fill	10	L4C
0178	4	ditch 179	fill	10	3C
0183	5	ditch 182	primary fill	10	3 (-4)C
0184	6	ditch 182	secondary fill	10	?
0190	9	ditch 191	fill	10	2C
0193	10	posthole 192	fill	10	?
0196		fill of urn	east quad, top	10	Roman
0196		fill of urn	1/2 west quad, top	10	Roman
0196		fill of urn	south quad, top	10	Roman
0196		fill of urn	north quad, top	10	Roman
0196		fill of urn	south quad, bottom	10	Roman
0196		fill of urn	west quad, top	10	Roman
0196		fill of urn	north quad, bottom	10	Roman
0196		fill of urn	east quad, bottom	10	Roman
0196		fill of urn		10	Roman
0196		Fill of urn	west quad bottom Urn	10	Roman
0196(7)	15	part of 197	fill	10	Roman
0200	11	linear terminus 198	middle fill	10	L3-4C
0201	12	linear terminus 198	upper fill	10	L3-4C
0206	13	ditch 207	fill	10	2-3C
0208	14	ditch 209	fill	10	?
0210	16	pot within ditch 161	fill	10	?
0213	19	pit 211	fill	10	Roman
0214	17	ditch 215	fill	10	2 (-3)C
0217	18	ditch 218	primary fill	10	2C
0225	20	pit 224	primary fill	10	L4C
0226	21	pit 224	secondary fill	10	?
0233	27	ditch 235	fill	10	2C

Context	Sample	Context type	Description	Sample volume (l)	Date
0234	26	ditch 235	fill	10	?
0240	22	ditch 241	fill	10	?
0242	23	ditch 243	fill	10	?
0245	24	ditch 244	fill	10	(2C) L3-4C
0247	25	linear 246	fill	10	?
0253	28	gully	fill	10	2C
0255	29	pit	fill	10	M2C
0258	30	track 260	upper fill	10	Roman
0261	31	ditch 262	fill	10	M-L4C
0265	39	ditch 267	upper fill	10	2C
0266	40	ditch 267	lower fill	10	?
0269	32	ditch 268	primary fill	10	L4C
0270	33	ditch 268	secondary fill	10	2C
0271	73	post hole 272	fill	4	?
0277	34	gully 278	fill	10	3C
0279	35	pit 280	fill	10	E3 (-4)C
0281	36	ditch 282	fill	10	3C
0283	37	ditch 284	fill	10	2 (-E3)C
0285	71	cobbles	layer above	10	L3 (-4)C
0286	38	surface 288	layer overlying	10	L3 (-4)C
0286	65	layer above 287		20	L3 (-4)C
0286	66	layer	above surface 286	10	L3 (-4)C
0287	55	surface 288	layer overlying	10	L3 (-4)C
0287	64	surface 288	layer above, se corner of 287	80	L3 (-4)C
0287	67	layer	above surface 288 (eastern end of 287)	10	L3 (-4)C
0287	68	surface 288	layer above	10	L3 (-4)C
0287	72	surface 288	layer above	10	L3 (-4)C
0287	77	layer	above surface 288	40	L3 (-4)C
0291	53	linear 290	fill	40	2C
0291	41	linear 290	fill	10	2C
0293	44	pit 292	fill	20	?
0294	45	pit 292	fill	20	2C
0302(4)	42	ditch 301	fill	10	?
0306	43	pit 305	fill	10	Roman
0307	46	pit 308	fill	10	?

Context	Sample	Context type	Description	Sample volume (l)	Date
0310	47	linear 309	fill	10	2C
0311	48	fill		10	E3C
0313	49	cut 314	fill	10	?
0315	50	post hole 316	fill	10	2C
0318	51	linear 317	fill	10	?
0321	52	secondary fill		10	?
0322	56	gully/beam slot 323	fill	10	Roman
0328	54	post hole 327	fill	10	?
0329	57	enclosure ditch 330	fill	10	2C
0334	58	ditch 333	fill	10	3C
0341	59	ditch 342	fill	10	?
0344	60	post hole 343	fill	4	?
0356	61	ditch 358	fill	10	1 (-2)C
0357	62	ditch 358	fill	10	Roman
0361	63	ditch 362	primary fill	10	LIA-M2C
0363	69	ditch 364	fill	10	3C
0365	70	posthole 367	fill	10	?
0373	74	occupation layer		6	Roman
0374	75	occupation layer		4	2 (-3)C
0375	76	ditch 366	fill	10	2 (-3)C
0387	78	fill	ditch 386	10	2C
0388	79	fill	pit 389	10	3-4C
0390	80	fill	ditch 391	10	2C
0392	82	fill	ditch 393	10	2C
0396	81	fill	ditch 398	10	3 (-4)C
0400	85	fill	ditch 399-187	10	2C
0403(4)	84	fill	post hole 404	10	?
0406	83	fill	ditch 405 = 221	10	Roman
0410	93	fill	ditch 433	10	Roman
0412	86	fill	pit 411	10	?
0419	88	fill	pit 421	10	2C
0424	87	fill	pit 413	10	2-4C
0425	89	fill	stony grey patch	10	3-4C
0426	90	fill	stony grey patch	10	2-4C
0428	91	fill	linear 427	10	?
0432	92	fill	ditch 431	20	2C

Context	Sample	Context type	Description	Sample volume (l)	Date
0434	94	fill	pit/posthole 435	10	?
0436+0437	95	fill	posthole 438	10	2C
0441	96	fill	pit 440	10	?
0443	97	fill	pit 442	10	2C
0447	98	fill	pit 446	10	?
0450	99	upper fill	pit 448	10	?
0452	100	fill	posthole 451	10	?
0454	101	fill	posthole 453	10	2C
0456	102	fill	pit 455	10	(1)-2C
2003	200	fill	Roman ditch	10	3-4C
2005	201	fill	Roman ditch	10	Roman
2016	202	tertiary fill	Roman ditch 2019	10	(E)3C
2018	203	primary fill	Roman ditch 2019	10	(2)-3C
3012	300	fill	pit 3014	10	?
3015	301	fill	pit 3016	10	?
3019	304	fill	pit 3020	10	?
3019	302	fill	pit 3020	10	?
3021	303	fill	pit 3022	10	?
3026	306	fill	cremation pit 3027	50	?
3028	305	fill	pit 3031	10	?
3036	307	fill	posthole in cremation pit 3027	10	?
3038	308	fill	pit 3039	10	?
3040	309	fill	pit 3041	10	?
3042	311	upper fill	pit 3044	10	?
3043	310	lower fill	pit 3044	10	?
3045	312	tertiary fill	pit 3048	10	?
3049	313	tertiary fill	pit 3052	10	?
3053	314	tertiary fill	pit 3056	10	?
3054	315	secondary fill	pit 3056	10	?
3055	316	primary fill	pit 3056	10	?
3057	317	primary fill	pit 3060	10	?
3058	318	secondary fill	pit 3060	10	?
3061	322	fill	pit 3066	10	?
3063	323	fill	pit 3066	10	?
3064	324	fill	pit 3066	10	?
3065	325	fill	pit 3066	10	?
3067	326	fill	pit 3068	10	?

Context	Sample	Context type	Description	Sample volume (l)	Date
3069	319	upper fill	pit 3072	10	?
3070	320	central fill	pit 3072	10	?
3071	321	primary fill	pit 3072	10	?
3073	327	fill	posthole 3074	10	?
3075	328	fill	posthole 3076	10	?
3078	329	upper fill	pit 3080	20	?
3079	330	lower fill	pit 3080	10	?
3084	335	lower fill	pit 3083	10	?
3085	334	upper fill	pit 3083	20	?
3088	331	upper fill	pit 3092	10	?
3089	332	fill	pit 3092	10	?
3090	333	fill	pit 3092	10	?
3093	336	fill	cremation 3094	20	?
3095	337	upper fill	pit 3098	10	?
3096	338	middle fill	pit 3098	10	?
3097	339	lower fill	pit 3098	10	?
3099	340	upper fill	pit 3101	10	?
3100	341	lower fill	pit 3101	10	?

Table 11: Environmental summary for contexts assessed from Hindlip

Context	Sample	large mammal	mollusc	charcoal	charred plant	modern plant	hammer-scale	Comment
127	1	occ		occ	v occ	v occ		part of clay pipe bowl & heat-cracked stone
123	2	occ		occ	v occ	v occ		pottery present
159	3	occ		occ	v occ	v occ		pottery present
172	7			v occ		v occ		v occ pot, heat-cracked stone
190	9			v occ		v occ		
173	8	v occ		v occ		v occ		v occ pot, hobnail
178	4			v occ	v occ	v occ		v occ pot
183	5				v occ			v occ pot
184	6	v occ		v occ	v occ hazel	v occ		v occ pot
193	10	occ		v occ		occ		v occ pot
197	15	v occ		v occ	v occ	mod		occ pot
200	11	v occ			v occ	v occ		v occ pot, flint
201	12			v occ		v occ		v occ pot, hobnail
206	13	v occ		v occ		v occ		v occ pot, heat-cracked stone
208	14	occ		v occ	v occ	v occ		v occ pot
213	19			v occ	v occ	v occ		v occ pot
210	16			v occ	v occ			v occ pot
217	18	v occ		v occ		v occ	v occ slag	v occ pot
214	17			v occ	v occ	v occ		v occ pot, mod fired clay
225	20			v occ		v occ		v occ pot
226	21	v occ		v occ		v occ		v occ pot
233	27	v occ		v occ	v occ	v occ		v occ pot
234	26			v occ		v occ		
240	22	v occ		v occ				v occ pot
242	23	v occ		v occ				v occ pot
245	24	occ		v occ	v occ	v occ		v occ pot, heat-cracked stone
247	25	v occ		v occ	v occ			v occ pot
253	28				v occ	v occ		

Context	Sample	large mammal	mollusc	charcoal	charred plant	modern plant	hammer-scale	Comment
255	29	v occ		v occ	v occ	v occ		v occ fired clay
258	30	v occ			v occ	v occ		v occ pot, Fe object
261	31	v occ		v occ		v occ	v occ slag	v occ pot
265	39	occ		v occ	v occ	v occ		occ pot, heat-cracked stone
266	40				v occ			
269	32	v occ		v occ				v occ pot, heat-cracked stone
270	33			v occ				
277	34			v occ	v occ	v occ		
279	35			v occ	v occ	v occ		v occ pot
281	36	occ		v occ				v occ pot, fired clay
283	37	occ		v occ	v occ			v occ pot
285	71			v occ	v occ	v occ		v occ pot
286	38				abun			
286	65	v occ		v occ	v occ	occ		v occ pot
286	66	v occ		v occ	v occ	occ		v occ pot
287	55	v occ		occ	mod	occ		v occ pot
287	64	v occ		occ	abun	occ		v occ pot, hobnail, heat-cracked stone
287	67	v occ		v occ	mod	v occ	v occ slag	v occ pot, hobnail,
287	68	v occ		mod	occ	occ		v occ pot, heat-cracked stone
287	72			occ	occ	v occ		v occ pot
287	77	v occ		v occ	abun		v occ slag	v occ pot, heat-cracked stone
291	41				mod	occ		
291	53	v occ		v occ	occ	v occ	v occ slag	v occ pot, heat-cracked stone
293	44			abun	v occ	v occ		
294	45			mod	v occ	v occ		v occ pot
302	46			v occ				v occ pot
304	42					v occ		
306	43			occ				v occ pot

Context	Sample	large mammal	mollusc	charcoal	charred plant	modern plant	hammer-scale	Comment
307	46			v occ				
310	47	v occ		v occ	v occ			occ pot
311	48	v occ			v occ	v occ		v occ pot
313	49	v occ						v occ pot
315	50	v occ		v occ	v occ	occ		v occ pot, heat-cracked stone
318	51	occ		v occ		v occ		
321	52			v occ				v occ pot
322	56	v occ						v occ pot
328	54			v occ		v occ		
329	57			v occ	v occ	occ		
334	58	occ		v occ	v occ	v occ		v occ pot, nail
341	59	v occ		v occ		v occ		v occ pot, Fe object
344	60					v occ		
356	61	v occ		v occ	v occ		v occ slag	
357	62	v occ		v occ	v occ	v occ		v occ pot, heat-cracked stone
361	63	v occ		v occ	v occ	v occ		v occ pot, Fe object, fired clay
363	69	occ		occ		v occ		v occ pot
365	70	v occ		v occ	v occ	occ		v occ pot, heat-cracked stone
371	73	v occ		v occ		v occ		
373	74	v occ		v occ		occ		v occ pot, heat-cracked stone
374	75			v occ		occ	v occ slag	v occ pot, nail, heat-cracked stone
375	76	v occ		v occ				v occ pot
387	78	v occ		v occ				v occ pot
388	79	v occ		v occ			v occ slag	v occ pot
390	80	v occ		v occ				
392	82			v occ		v occ		v occ pot
396	81			v occ				
400	85							
404	84	v occ		v occ		v occ		v occ pot
406	83	v occ		v occ				

Context	Sample	large mammal	mollusc	charcoal	charred plant	modern plant	hammer-scale	Comment
410	93			v occ				v occ pot
412	86			v occ				v occ pot
419	88	occ			v occ hazel	v occ		v occ fired clay
424	87	v occ		v occ		v occ		v occ pot
425	89			occ				v occ pot
426	90	v occ		v occ		v occ		v occ pot
428	91			v occ	v occ	v occ		
432	92	v occ		v occ	v occ	v occ		v occ pot
434	94	v occ		v occ		v occ		v occ pot
436+437	95			v occ	v occ			v occ pot
441	96	v occ		v occ				v occ pot
443	97	abun		v occ		occ	v occ slag	v occ pot
447	98	v occ		v occ		v occ		
450	99	v occ		v occ	v occ	v occ		v occ pot
452	100			v occ				v occ pot
454	101	v occ				v occ	v occ slag	v occ pot
456	102	mod		v occ				v occ pot
2003	200	v occ		v occ				v occ pot
2005	201	v occ		v occ				v occ pot
2016	202			v occ	v occ	v occ		v occ pot
2018	203	v occ		v occ	occ	v occ		v occ pot
3012	300		v occ	occ		v occ	occ-mod slag	
3015	301			occ		v occ	occ slag	occ heat-cracked stone
3019	302			v occ			abun slag	
3021	303			v occ			abun slag	occ brick
3026	306	v occ		mod	v occ	v occ		v occ pot, rivet
3028	305					occ		
3036	307							
3038	308					v occ		
3040	309					v occ		
3042	311							
3045	312				v occ			
3049	313					occ		
3053	314			v occ		v occ		v occ pot
3054	315					v occ		
3055	316					v occ		v occ pot
3057	317			v occ		v occ		v occ pot

Context	Sample	large mammal	mollusc	charcoal	charred plant	modern plant	hammer-scale	Comment
3058	318			v occ		v occ		v occ pot
3061	322			v occ				v occ pot
3063	323			v occ				v occ pot
3064	324			v occ				
3065	325			v occ				
3067	326			v occ		v occ		
3069	319			v occ	v occ	v occ		v occ pot
3070	320	v occ		v occ		v occ		
3071	321	v occ		v occ				
3073	327			v occ		v occ		v occ pot, heat-cracked stone
3075	328			v occ	v occ	occ		v occ pot
3078	329				v occ	v occ		v occ pot
3079	330					v occ		
3084	335							nothing present
3085	334			v occ		v occ		v occ pot
3088	331			v occ		v occ		v occ pot
3089	332			v occ		v occ		v occ pot
3090	333					v occ		v occ pot
3093	336	v occ		mod		v occ		
3095	337			occ		v occ		v occ pot
3096	338							v occ heat-cracked stone
3097	339			v occ		v occ		
3099	340			v occ		v occ		v occ pot
3100	341							
196	urn				v occ	occ		fill of urn

Table 13: Charred plant remains from full analysis at Hindlip

Latin name	Habitat	2018	286	286	286	287	287	287	287	287	287
Sample number		203	38	65	66	55	67	64	68	72	77
Sample volume (l)		10	10	10	20	10	30	40	10	10	40
Waterlogged											
<i>Vitis vinifera</i>	F						1				
<i>Lemna</i> sp	E					1					
Charred											
<i>Triticum dicoccum</i> glume base	F	1									
<i>Triticum dicoccum</i> spikelet fork	F	1									
<i>Triticum spelta</i> glume base	F	12	93			8	59	1674	14	26	272
<i>Triticum spelta</i> rachis	F	33	3				2	52		3	42
<i>Triticum spelta</i> spikelet fork	F		6					51			2
<i>Triticum</i> sp grain	F	16	9			16	10	199	3	5	63
<i>Triticum</i> sp grain fragment	F	3						30	3		
<i>Triticum</i> sp tail grain	F	2	2			1		6			9
<i>Triticum</i> sp spikelet fork	F					2	5	193			
<i>Triticum</i> sp glume base	F	21	107			4	85	2216	6	17	290
<i>Hordeum vulgare</i> grain (hulled)	F		1			1		19	1		2
<i>Hordeum vulgare</i> grain fragments (hulled)	F							7			
<i>Hordeum vulgare</i> tail grain (hulled)	F							8			
<i>Hordeum vulgare</i> rachis	F										2
<i>Hordeum vulgare</i> rachis (6-row)	F							1			
<i>Secale cereale</i> rachis (fragment)	F							4			
Cereal sp indet grain (fragment)	F	11	31	1	2		57	1529	8	6	224
cf Cereal sp indet grain fragment	F					6					
Cereal sp indet culm base	F							2			
Cereal sp indet embryo shoot	F	6					4	1			

Latin name	Habitat	2018	286	286	286	287	287	287	287	287	287
<i>Bromus</i> sp grain	AF	3						7			7
<i>Avena</i> sp grain	AF										5
Poaceae sp indet grain (small)	AF	2	1					5			5
<i>Corylus avellana</i> shell fragment	C							2			
<i>Chenopodium glaucum/rubrum</i>	AB							3			
<i>Chenopodium album</i>	AB							2			3
<i>Fallopia convolvulus</i>	AB							6			4
<i>Rumex acetosella</i>	ABD						1	1			
<i>Rumex</i> sp	ABCD							3			
<i>Potentilla</i> sp	BCDE					1			1		1
<i>Vicia/Lathyrus</i> sp (fragment)	ABCD		1								
<i>Pisum sativum</i>	AF										1
<i>Trifolium</i> sp	ABD										1
<i>Galium aparine</i>	ABC							1			
<i>Tripleurospermum inodorum</i>	AB	3	1				1	1			4
<i>Eleocharis</i> sp	E	1						4			1
<i>Carex</i> sp (2-sided) nutlets	CDE						1				
<i>Lolium</i> cf <i>temulentum</i>	AB							19			
Poaceae sp indet (small)	E						1				
<i>Arrhenatherum elatius</i> var <i>bulbosum</i>	ABD						1			1	
unidentified thorn								2			
Sum		115	255	1	2	40	228	6048	36	58	938
no of items/litre		11.5	25.5	0.1	0.1	4	7.6	151.2	3.6	5.8	23.45
cereal/weed		11.77	84	0	0	19	37	107	35	57	28.3
grain/chaff		0.35	0.133	0	0	1.5	0.25	0.245	0.5	0.17	0.3

Wet-sieved samples

Assessment

Only 43 samples of the 158 from 139 contexts produced charred plant remains. Overall, there were few charred plant remains recorded in any of the contexts except for contexts 286, 287, and 2018. For the assessment 10 litres from each context sampled was processed and

then scanned and the plant remains recorded. Overall, the charred plant remains were well enough preserved to allow identification to species, especially from those samples taken from contexts 286 and 287. The results are shown in Tables 12 and 13.

The pit alignment

(pits 3014, 3016, 3020, 3022, 3031, 3039, 3041, 3044, 3048, 3052, 3056, 3060, 3066, 3068, 3072, 3080, 3083, 3092, 3098 and 3101)

Of the 37 samples from the 20 pits of the pit alignment, only three contexts (3045 from pit 3048, 3069 from pit 3072 and 3078 from pit 3080) produced charred plant remains which were present in very small quantities. These included a single barley grain (*Hordeum vulgare*) from 3045, a cereal culm node in 3069 and a possible spelt wheat (*Triticum cf spelta*) glume base, a wheat rachis fragment (*Triticum sp*) and an indeterminate cereal grain fragment from 3078. Unidentified small charcoal fragments were also rarely recorded. This suggests that the charred plant remains found in these contexts are either residual or represent a 'background flora'.

The vessel fill (196)

The fill of the large late Iron Age/early Roman vessel was excavated in the laboratory and divided into quadrants to determine if there was any pattern in the distribution of charred plant remains within the urn. Of the ten samples taken only five produced charred plant remains and these were present in small quantities. These included spelt wheat glume bases, a wheat grain, a cereal culm node, a brome grass grain (*Bromus sp*), a vetch/pea (*Vicia/Lathyrus sp*) and small grass fruits. Again, the contents of these samples suggest a residual component or a 'background flora'.

The occupation layers (286 and 287) associated with the cobbled surface (288)

A total of nine samples from contexts 286 and 287 were assessed (three from 286 and six from 287). These were the richest samples from the site and consisted mainly of cereal chaff remains especially spelt wheat glumes. The other common remain was that of wheat grains. It is most likely that they are associated with the spelt wheat glume bases and are of spelt wheat.

Other cereal remains were rare and included a barley tail grain and a fragment of indeterminate cereal grain. Non-cultivated taxa recorded from these two contexts include black bindweed (*Fallopia convolvulus*), and brome grass. No other taxa were recorded in the assessment.

Ditch (2019, fill 2018)

This context (2018) was the only other context from the site which was rich in plant remains. These included spelt wheat glume bases, possible spelt glume bases, wheat grains, a hulled barley grain, a fragment of indeterminate cereal grain. Non-cultivated taxa included scentless mayweed (*Tripleurospermum inodorum*) and brome grass.

The rest of the samples were taken from a variety of features including postholes, pits, ditches and other linear features and contained very little in the way of charred plant remains. They were mainly Roman in date. The cereal remains mostly consisted of spelt wheat chaff (spikelet forks, glumes and rachis fragments). Wheat grains were also present. Other

crops recorded were pea (*Pisum sativum*) from context 210. Weed seeds were also poorly represented and included knotgrass (*Polygonum aviculare*), docks (*Rumex* sp), cabbage (*Brassica* sp), cinquefoil (*Potentilla* sp), vetch/pea, cornflower (*Centaurea cyanus*), spike-rush (*Eleocharis* sp), fescue (*Festuca* sp), meadow-grass (*Poa* sp), onion couch (*Arrhenathrum elatius* var *bulbosum*), small grasses and in context 329 duckweed (*Lemna* sp). In general, the non-cultivated taxa can usually be found in arable or disturbed ground habitats and were most likely associated with the cereal crop. The spike-rush and the duckweed remains suggest that there was some waterlogged ground present. The duckweed suggests that there may have been standing water in the ditches. The very low occurrence of charred plant remains in these contexts suggests that they represent a 'background flora'.

Full analysis

From the assessment of the contexts it was suggested that full analysis should be carried out on the occupation layers (286 and 287) found above the cobbled surface (288), and the ditch fill (2018). The results from this full analysis are discussed below and presented in Table 13.

Ditch 2019, fill 2018

Context 2018 was dominated by cereal remains, especially spelt wheat glume bases and rachis fragments, wheat grains were also recovered and are most likely to be of spelt wheat. A single glume base of emmer wheat was identified (*Triticum dicoccum*). This is most likely to be a contaminant of the main crop of spelt wheat. Weeds seed numbers were limited and consisted of brome grass, small grasses, scentless mayweed and spike-rush. It is likely that the weeds were associated with the crop.

Occupation layers 286 and 287

A total of nine samples from the two contexts were fully analysed for charred plant remains. Three were from context 286 and six from 287.

Context 286

Of the three samples (38, 65 and 66) from this context only one (38) produced any substantial charred plant remains. This sample was dominated by cereal remains especially chaff which made up 88% of the assemblage (Fig 31). The chaff was mainly of spelt wheat glume bases, spikelet forks and rachis fragments. Other unidentifiable wheat glume bases were also recorded but it is most likely that these are also of spelt wheat. Cereal grains made up 11% of the assemblage and were mainly of wheat, again most likely spelt wheat. A single grain of hulled barley was identified. Weed seeds only made up 1% of the assemblage and were of vetch/pea, scentless mayweed and a small grass fruit.

Context 287

Context 287 is a layer of occupation debris overlying a cobbled surface (285) and underlying another cobbled surface (346). The layer was described in the field as containing very frequent charcoal fragments and flecks as well as other organic fragments. There was a large amount of pottery recovered from this layer and was dated to late 3rd century AD, with some

possibly dating to the 4th century AD. Apart from the domestic pottery, other types of ceramic were identified including fragments of clay ovens and other pieces of fired clay. Non-ceramic finds included quern stone fragments, and nails.

Six samples from context 287 (55, 64, 67, 68, 72 and 77) were fully analysed for charred plant remains. Samples 64 and 72 were the richest but overall, the assemblages contained similar components. Five of the six samples were dominated by chaff remains, mostly glume bases and spikelet forks of spelt wheat. Sample 55 contained a higher proportion of cereal grain than the other five. The percentage of chaff ranged from 43% in 55 to 83% in 72 with cereal grain ranging from as high as 54% in 55 and as low as 15% in sample 72. In all of the samples from 287 weed seeds made up the lowest proportion ranging from 1% in 64 to 4% in 77 (Fig 31).

Other crops present in the samples included a small amount of hulled barley, and rye (*Secale cereale*), which was represented by four rachis fragments in sample 64. A single garden pea was found in sample 77. Oat grains (*Avena* sp) were present in sample 77 but it is not possible to say whether they represent a crop or a weed species. Non-charred cultivated species included a fragment of a grape pip (*Vitis vinifera*), but as the majority of the plant assemblages were preserved by charring it is most likely a modern contaminant.

Weed seeds from 287 compared with the amount of cereal chaff recovered were few and far between. They included brome grass, oak-leaved/red goosefoot (*Chenopodium glaucum/rubrum*), fat hen (*Chenopodium album*), black bindweed (*Fallopia convolvulus*), sheep's sorrel (*Rumex acetosella*), docks, cinquefoil (*Potentilla* sp), clover (*Trifolium* sp), cleavers (*Galium aparine*), scentless mayweed, spike-rush, sedge (*Carex* sp), possible darnel (*Lolium temulentum*), small grasses and onion couch tuber fragments. The weeds were present in low numbers and as stated above formed a small proportion of the assemblages. The majority of the weeds represent arable or disturbed/waste ground and therefore most likely to be associated with the crop. Darnel is often associated with Roman charred plant assemblages and was considered a pernicious weed in the past and has a reputation as a 'poisonous grass' but this reputation is unwarranted as this only occurs if the caryopsis is infected with ergot. As it is a host species for ergot it is therefore necessary to remove it from the crop just in case there is cross-infection with the cereal crop (Cope and Gray 2009). The presence of sheep's sorrel suggests that soils where the crops were cultivated were acidic. The majority of the weeds have a similar size (in at least one dimension) to wheat grains and those that do not, such as scentless mayweed may originally have been present as seed heads which have a similar size to grain. This distribution of weed sizes suggests that the crop was stored fully clean and the proportions of chaff to cereal grains suggests that these assemblages represent the final stages of cleaning before further processing, such as grinding into flour prior to consumption.

The presence of several fragments of charred hazel nutshell may indicate the presence of a wild food source.

The finds of clay oven remains and quern stone fragments suggests that there may have been some food processing activities such as flour and bread baking. The presence of large quantities of charred spelt chaff and a smaller amount wheat grains may help to support this hypothesis. Whereby the cleaned spikelets of spelt wheat were processed (possibly by parching in the ovens), then pounded to release the grains, which were then ground into flour and made into dough, then put in the ovens to produce bread, which was fuelled by the

chaff and weed seeds from the earlier stages of processing. The presence of nails and other building debris such as tile fragments may help to suggest that there was a building on the cobbled surface which may have housed the oven/s.

As both the biological and ceramic remains are similar in context 286 it may be suggested that similar activities took place within this context. From the stratigraphical record, however, it is likely that context 286 represents the top part of layer 287, which had been spread by cultivation processes across the later track.

Overview of environmental evidence

The distribution of charred plant remains at this site was scattered and were present in very low numbers apart from contexts 286 and 287, which were extremely rich in cereal chaff remains. This lack of charred plant remains from any of the other features on the site suggests that the crops may have been imported and not grown on the site. Due to the low numbers of weed species present in the assemblages and their seed sizes and the large amount of chaff it is possible to say that the spelt wheat crop was brought onto site in spikelets rather than as clean grain.

It is thought that the charred plant assemblages from contexts 286 and 287 represent domestic activity, mainly the processing of a cleaned spelt wheat crop into flour, and then into bread. This is supported by other artefacts present in the contexts such as fragments of clay ovens. The dominance of chaff over grains and weed seeds suggests that the crop was not grown on site, or if it had been, the majority of the processing had been done on another part of the site which was not excavated. The chaff which was detached from the wheat grains was then used as a fuel in the oven/s. Other crops found included barley, rye and a pea.

Discussion

Charred plant assemblages from rural Roman sites are few in the county (Jackson *et al* 1996a). Those that have been studied in the past include Strensham, Norton-Juxta-Kempsey (Jackson *et al* 1996a) and Norton and Lenchwick (Jackson *et al* 1996b). All of these assemblages are composed of wheat grains and chaff (mostly spelt wheat), weed seeds (mostly small grass seeds and other cereals in smaller numbers such as barley and rye, and were generally sparsely scattered over the site apart from a few concentrated areas). Overall, this is in agreement with what has been found at this site. But closer analysis of the composition of the various assemblages shows that there are major differences between the sites and may well reflect different activities at each site (Fig 31 and 32).

At Norton-Juxta-Kempsey chaff and weed seeds were in equal proportions at 48% and 46% respectively with only 6% cereal grains, this represents a typical fine-sieving stage of crop processing whereby the smaller chaff and weed seeds pass through the sieve with the majority of the cereal grains being retained on the sieve (Hillman 1981). This by-product was then most likely used as a fuel.

At Strensham, there were three phases of Roman occupation and Figure 32 shows the make-up of the assemblages for each phase by combining the results from each context in that phase. Overall, the three phases show very minor variations, with chaff dominating the assemblages, and with the weed component ranging from 6% in Phase 2 to 34% in Phase 4. The cereal proportion dropped from 16% in Phase 2 to only 5% in Phase 4. It may be argued

that at Strensham in Phase 4 the assemblage is similar to that at Norton-Juxta-Kempsey and may represent the fine-sieving stage of the crop-processing. Whilst in Phases 2 and 3 there may have been some mixing of different crop-processing products and by-products most likely representing different events.

Charred plant remains associated with an oven were found at Norton and Lenchwick (Jackson *et al* 1996b). This assemblage was dominated by chaff of spelt wheat with some wheat grains and large weed seeds. Unfortunately it is not possible to present this data graphically as it was only taken to assessment stage. This assemblage was interpreted as not being of either a fully processed cereal product or a waste by-product and two interpretations were given. Firstly, the assemblage represents the parching of spelt spikelets, whereby the glumes are rendered brittle and easier to remove by pounding with some of the resultant glumes becoming charred. Or secondly, the clean grain was drained in the oven prior to storage or milling and became accidentally mixed with chaff for fuel and therefore became charred. The ratio of glume bases to cereal grains could conceivably result from either process but as no spikelet forks were found it was suggested that it was unlikely to be the first method.

In comparison to the results from Hindlip in Figure 31, it can be seen that the proportions of the different components of the assemblages bear little resemblance to those from the other sites. The first noticeable difference is the proportion of weed seeds. Here the highest percentage is from context 2018, with 13%, whilst those from contexts 286 and 287 do not reach double figures. The lowest cereal content in the samples is from context 286, with 11%, and the highest is from sample 55, with 54%. The rest of the samples from 287 fall between 15% and 30%.

In sample 55 (from context 287) the proportion of cereal to chaff suggests that this assemblage is of a cleaned storage product, in which the spelt wheat has been stored as spikelets. This sample may have represented the crop before it was processed further by parching in the oven in order to help in the removal of the enclosing glumes, the charred remains suggesting an accident. The other samples from context 287 (64, 67, 68, 72 and 77) all have a greater proportion of chaff than cereal grains. This may suggest that these assemblages represent crop processing waste, which may have been used as fuel for the ovens. The presence of grain may either be, there by accident, or of being of small enough dimensions (tail grain) to pass through the sieve. The low numbers of weeds and the large size of the majority of them suggest that the assemblages came from a near fully cleaned product which was stored in spikelets. The presence of fragments of quern stones as well as clay oven fragments does suggest that this area of the site was involved in the processing of grain and perhaps the production of bread.

It appears that the charred plant assemblages from rural Roman sites do show a wide range of variation, and it is most likely dependant on the context or feature type in which they are found. This may be linked to the function of the feature in which they were deposited.

The animal bones from the site also provide inconclusive evidence for the use of the site. None of the remains were of marketable age (Beales this report) which suggests that the cows, sheep and horses were kept for milk, wool or traction. The large number of ditches on the site may suggest animal corralling, before being sent off to market. This may explain the

lack of charred plant remains across the site as there was very little domestic activity apart from the provision of food for the stockherders. This may explain the function of the cobbled surface which was most likely inside a building which served as a bakery.

The charred plant remains from the other sites mentioned above suggests that there was very little evidence for crop production on the site and this appears to be the case at Hindlip as well.

Animal bone, by Emily Beales

The faunal assemblage at Hindlip consists of three identifiable species, *ovis aries*, *bos* and *equus*. This does not rule out the possibility that other species may also be represented in the assemblage, however, the fragmentary nature of the remains leads to difficulty in identification.

Ovis aries

Of the 457 faunal fragments found at Hindlip 36 were identified as *Ovis aries* (sheep). The most prominent skeletal element of this species were teeth (both complete and fragments) although other skeletal elements present included mandible fragments, one femur, two radii, two metatarsals and three vertebral fragments. The bone fragments were mostly found in the ditch fills in Area 1, dated to between 1st–4th centuries. Three teeth were found in context 286, thought to be an occupation layer, which was perhaps disturbed by cultivation at a later date. Two teeth were found in context 287 identified as an occupation layer of the 3rd–4th century. The wear patterns on the molars of the sheep teeth indicate a mortality profile falling between 3–8 years.

Bos

Twenty-nine fragments were identified to the genus *Bos* (cow/cattle) with this assemblage exhibiting a greater variety of skeletal elements than that previously seen in *Ovis aries* remains. The elements present include teeth, two phalanges, metatarsal fragments, radii, rib fragments, tibia, tarsal fragments, pelvic fragments, and mandible and skull fragments. The bone fragments were found in the ditch fills of Area 1. The age-at-death indicated by tooth wear patterning ranges from 10–14 years.

Equus

The bone fragments identified to the genus *Equus* comprised the smallest contributor to the assemblage with just nine fragments being identified. *Equus* was solely represented by teeth with no other skeletal elements represented. The horse bone fragments were also recovered from the ditch fills of Area 1. The age-at-death profile for the limited sample of horse remains fell between 10–13 years of age.

Butchery marks and pathological alterations

The presence of butchery evidence is low with only seven out of the 457 fragments exhibiting butchery marks, and one sheep mandible with a pathological alteration. In addition fifteen bone fragments show evidence of gnawing and/or weathering, indicating that there was a small amount of perthotoxic agents involved in the deposition of the bone. Finally a large

space occupying lesion was identified on the lingual surface of a right sheep mandible due to the close proximity of the lesion to the canine tooth socket it may have been caused by a dental abscess.

The percentage of identifiable fragments is fairly poor for this site (16%); a common feature due to the acidic soils of Worcestershire resulting in poor preservation. A mortality profile was not constructed due to the limited quantity of diagnostic elements, there were only 21 premolars or molars available for wear patterning analysis and the fragmentary nature of the long bones did not allow further age analysis. It has been noted however the range of ages for each species that have been identified but, the small data set would not allow for a meaningful statistical analysis.

Synthesis

The main aim of any faunal analysis is to portray the interactions between animals and people in a cultural setting. Despite the small quantity and state of preservation of the assemblage, a basic analysis of the cultural setting of Hindlip can be constructed. First and foremost there is evidence of a continuation of animal bone deposition, likely to be related to animal husbandry, from the 1st–4th centuries with three species being represented at all stages.

The age-at-death information does not suggest a market economy as there is not an abnormal frequency of sub-adults. All of the ages inferred from the teeth for both cows and sheep show that the animals were living way beyond the ‘marketable age’ (La Voi 1934; see also Table 14).

Table 14: Comparison of Marketable age against age of animals found at Hindlip

	Sheep	Cow
Marketable Age	6-12 months	6 months- 5 years
Age range of assemblage	3-8 years	10-14 years

The lack of ‘marketable’ aged livestock at Hindlip also rules out the possibility of a consuming community. The likely conclusion is that the assemblage represents a self sufficient pastoral community; this is strengthened by the presence of horses of older ages. The small quantity of butchery marks and their position also suggests that the presence of animals was not for meat production or consumption. The marks exhibited on the bones suggest decapitation which could possibly have been undertaken post-mortem for easier disposal of the animal, or for meat consumption at the occurrence of the animal’s natural death. If the site, however, was being used for a more specific reason, like the corralling of animals from the locality before being herded to market, then the archaeological record for the site would not contain marketable age animals, only the animals utilised on site for the provision of the stockherders.

Significance

In conclusion the assemblage found at Hindlip would tend to indicate that between the 1st and 4th centuries sheep, horse and cows were kept most likely for their residual products (eg wool, milk and traction), rather than for meat production or sale. It is possible, however, that the lack of evidence for animals of marketable age is because the site was used for corralling

 [to previous view](#)

of animals of this age before being sent off to market, and therefore none of these animals would have been present on the site for a long period of time. In this way they would have left little trace in the archaeological record. The lack of a larger dataset means that caution must be used when applying the data to the wider economy of the region. More excavation may provide a more detailed and accurate data set allowing firmer conclusions to be drawn for both the site and the wider economy.

Discussion, by Jo Wainwright

Prehistoric activity

Three residual flint flakes were recovered from the site suggesting that Neolithic activity was taking place in the vicinity of the site.

The Iron Age pit alignment

The evidence for Iron Age activity at Hindlip consists of a pit alignment. Pit alignments are enigmatic monuments found all across Britain, but with concentrations in the Yorkshire Wolds, East Anglia, central-eastern Scotland and the English midlands. Their function is not known but most commentators agree that they represented a form of linear boundary that operated at a landscape scale (Wigley 2007, 119). Most pit alignments were created between the late Bronze Age and early Roman periods, though dating is often difficult due to the paucity of finds within the pit fills. Presumably this is because most are sited away from the environs of contemporary settlement (Rylatt and Bevan 2007, 220). At Hindlip, the presence of slag and hammerscale (by-products of metalworking) in some of the pit fills, allied to the absence of Roman pottery, supports an Iron Age date (800 BC to AD 43).

Several examples of pit alignments are known from Worcestershire (examples can be found at Ripple (WSM 01089); around Kempsey (WSM 02118, 30509 and 30504) and north-east of Kinsham (WSM 05098) as cropmarks from aerial photographs, but this is the first one known to have been excavated.

Although there is some variation, the classic characteristic of pit alignments is of a series of circular, oval or sub-rectangular pits in an extended linear arrangement. The diameter of each pit is between 1m and 2m and each pit is separated by a causeway of between 1m and 2m. The profiles of each individual pit tend to be varied. The pit alignment at Hindlip has all the typical characteristics outlined above except that a larger diameter to the pits was recorded and the causeways were narrow or there was no distinct causeway (and presumably even less of one if the contemporary ground surface is reconstructed above the excavated surface). It has been argued that generally pit alignments would have not functioned as an effective stock-proof boundary because the causeway between each pit was too wide, coupled with the general lack of evidence for banks, hedges or fences (Rylatt and Bevan 2007, 221). Although at Hindlip there is either no causeway or only a very narrow strip of land separating each pit, the alignment would still not have been an effective boundary. It is possible that a hedge line existed along the top of the alignment but there is insubstantial evidence for this hypothesis. The evidence from Hindlip, and from the excavation of pit alignments in general, points to pits being excavated then left open to naturally silt up.

Some of the primary pit fills at Hindlip showed evidence of waterlogging. It has been argued that the water holding properties of pits was a fundamental characteristic of alignments in some locations (ie Gardom's Edge and Kilvington; Rylatt and Bevan 2007, 222). Water held a particular interest to Iron Age communities, and it is possible that the pits at Hindlip were deliberately excavated into the areas where the underlying geology was impermeable clay which had degraded from the underlying mudstone. The water holding abilities of the pits

were seen at first hand when the pit alignment at Hindlip was excavated in the Spring of 2009 and after heavy rain the pits filled up and retained water for a considerable period of time (Fig 33).

The pit alignment at Hindlip follows the edge of a slope and defines a boundary between two geological zones, the 6th terrace of the Severn, on the higher ground to the south and the mudstones in the north (Figs 1 and 5). It has been suggested that this division between the lighter soils on the ridge and the probable areas of pasture on the lower ground to the north must have been a deliberate act to define and control access to a variety of resources and this situation has clear parallels with boundary systems of late Bronze Age–early Iron Age date (Wigley 2007, 126).

Although the western and eastern limits of the pit alignment are not known, presumably the feature continues in both directions. The monument does not appear to have a relationship with field boundaries shown on the tithe plan of c 1840 (not illustrated).

The centres of the pits are not on an exactly straight line, but it is possible to suggest (albeit over a relatively short total excavated length) that the line is made up of a series of shorter groups of pits in alignment with each other (Fig 6). If this observation is real, it may indicate that the pits were excavated in separate blocks, perhaps by different work groups.

The pit alignment at Hindlip probably represents a boundary as much symbolic as practical in an Iron Age settled landscape. Although no other evidence for Iron Age occupation associated with the pit alignment was excavated at Hindlip, other boundaries, enclosures and probably domestic structures must have been located nearby, perhaps on the well drained gravels on the ridge to the south. Indeed, examples of pit alignments in Worcestershire, known from aerial photographs, are rarely seen in isolation to other monuments.

In the late Iron Age or early Roman period in Area 1 there was limited activity. A near complete vessel of Palaeozoic limestone tempered ware set into the ground, could be a large storage jar or possibly a drinking vessel for animals, but no other late Iron Age/early Roman features were associated with the vessel. Residual late Iron Age pottery was also recovered from the site. This evidence suggests that the site was on the periphery of an Iron Age settlement. Again it could be argued that the settlement was situated on the well drained gravels of the ridge.

Mid-2nd to mid-3rd century settlement

The mid-2nd to mid-3rd century activity consisted of four enclosures with occasional outlying ditches and pits. It is likely the settlement would have consisted of a series of enclosures, some for stock, with perhaps the larger multi-ditched enclosure being occupied by a family unit or several family units. Occupation must have been largely confined to within the enclosures but the archaeological evidence for this was sparse, although later agricultural activities may have removed any shallow features. The artefactual, environmental and faunal evidence points to a settlement reliant on pastoral farming with occupation peaking sometime in the 2nd and 3rd centuries.

The lack of any substantial earlier evidence for occupation suggests that this was a new settlement, that had perhaps shifted from a location nearby, and that had been occupied in the Iron Age. This has been paralleled in other rural sites in Worcestershire such as at

Norton-Juxta-Kempsey (Jackson *et al* 1996a, 51) though it is not known at present whether this sequence is seen all over the county or is only concentrated in specific areas like river valleys (see Morton and Holbrook 2007, 105 for a discussion on this research theme).

The evidence from other contemporary rural settlements in the vicinity shows that other sites seem to be more Romanised during this period. At Stonebridge Cross there was evidence of several large stone buildings within a regular set of walled enclosures (Miller *et al* 2004, 23). This contrasts with Hindlip, where no evidence for stone buildings was excavated, and it would seem probable that at Hindlip the more native style of building, the roundhouse, was still in use. Roof tile was recovered from the site which suggests that more Romanised buildings were constructed at Hindlip, but this evidence alone is not conclusive.

There is a paucity of evidence for industrial activity during the mid-2nd to mid-3rd century perhaps this is a reflection of a settlement that was based on a pastoral and not an arable economy.

Late 3rd to 4th century settlement

The late 3rd to 4th century area of activity appears to contract and shift northwards. The three southern enclosures went out of use and the northern enclosure was re-designed and shifted eastwards. Again, evidence for occupation within the enclosure was sparse and internal features appeared to be associated with the watering of stock (a pond). An external ditch situated close to the entrance of the enclosure was probably used as a funnel for the movement of stock in and out of the enclosure.

A cobbled surface partially overlying the earlier enclosure ditch in the north probably represents a surface. An occupation layer above the cobbles contained quantities of pottery, fragments of oven superstructure, nails and querns. It can be suggested that the surface was used for flour and bread making. The presence of large quantities of charred spelt chaff from the environmental samples lends weight to this hypothesis. It has been argued that areas of metalling with large quantities of domestic material lying on the surface, represent interior floor surfaces (Lockett 2003). These buildings would have been mainly constructed of cob or turf and would leave little archaeological trace. The five postholes set in the surface may represent roof supports.

One of the latest features excavated on site was a metalled track aligned north to south, which ran across part of the cobbled surface. Wheel ruts from Roman carts had been worn into the top of this track. The large enclosure adjacent to the track continued in use when the track was laid.

Environmentally there was little evidence of arable cultivation on the site, which suggests a mainly pastoral economy. It has been suggested that pastoral farming was predominately carried out in the vicinity of Roman towns (White and Gaffney 2003, 223). Roman Worcester, situated about four or five kilometres to the south-west, would have been a major market in this period and it is likely that the settlement at Hindlip would have provided animals for this market. Indeed the faunal evidence points to very few marketable age animals either being slaughtered or dying at Hindlip. The enclosure constructed during the late 3rd to 4th century is larger than the ones ascribed to the 2nd to 3rd century. It is possible that this enclosure was

used for the corralling of cattle, perhaps brought to Hindlip from areas further away, before being taken on to market at Worcester. Presumably the Roman road (Fig 2; WSM 30529), situated less than a kilometre to the west, would have been the route taken.

The artefactual evidence points to the settlement at Hindlip being in serious decline by the end of the 4th century. This can be seen at other sites in the vicinity of Worcester during this period and amongst others were Stonebridge Cross (Miller *et al* 2004, 24) and Norton-Juxta-Kempsey (Jackson *et al* 1996a, 58).

Medieval and post-medieval activity

The remnants of ploughed out ridge and furrow attest to the site being under cultivation in the medieval period. It is probable that this ridge and furrow formed part of a more extensive system presumably under the open field system of agriculture. Usually open fields were situated surrounding a settlement itself, and if the remains of the deserted village of Hindlip are located close to the hall (WSM 21738), it is possible that the area of the site was within one of these fields.

The post-medieval period saw the study area forming part of the Hindlip Estate. The two grubbed out hedge lines are shown as hedges on the 1885 Ordnance Survey 25 inch plan. However, by the 1903–4 Ordnance Survey 25 inch plan the hedges have been removed to create larger fields.

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Personnel

The fieldwork and report preparation was led by Jo Wainwright. The project manager responsible for the quality of the project was Tom Rogers. Fieldwork was undertaken by Jo Wainwright, Tom Rogers, Andy Mann, Adam Lee, Tim Cornah, Tegan Cole, Christine Elgy, Mike Nicholson, Chris Gibbs, Claire Christiansen, Sean Rice and Steve Woodhouse. Finds analysis was by Laura Griffin, Claire Christiansen and Dennis Williams; environmental processing and analysis by Alan Clapham, Nick Daffern, and Simon Wade; illustration by Steve Rigby and Carolyn Hunt. Roger Tomlin commented on the graffiti on the pottery. Simon Woodiwiss reviewed this report.

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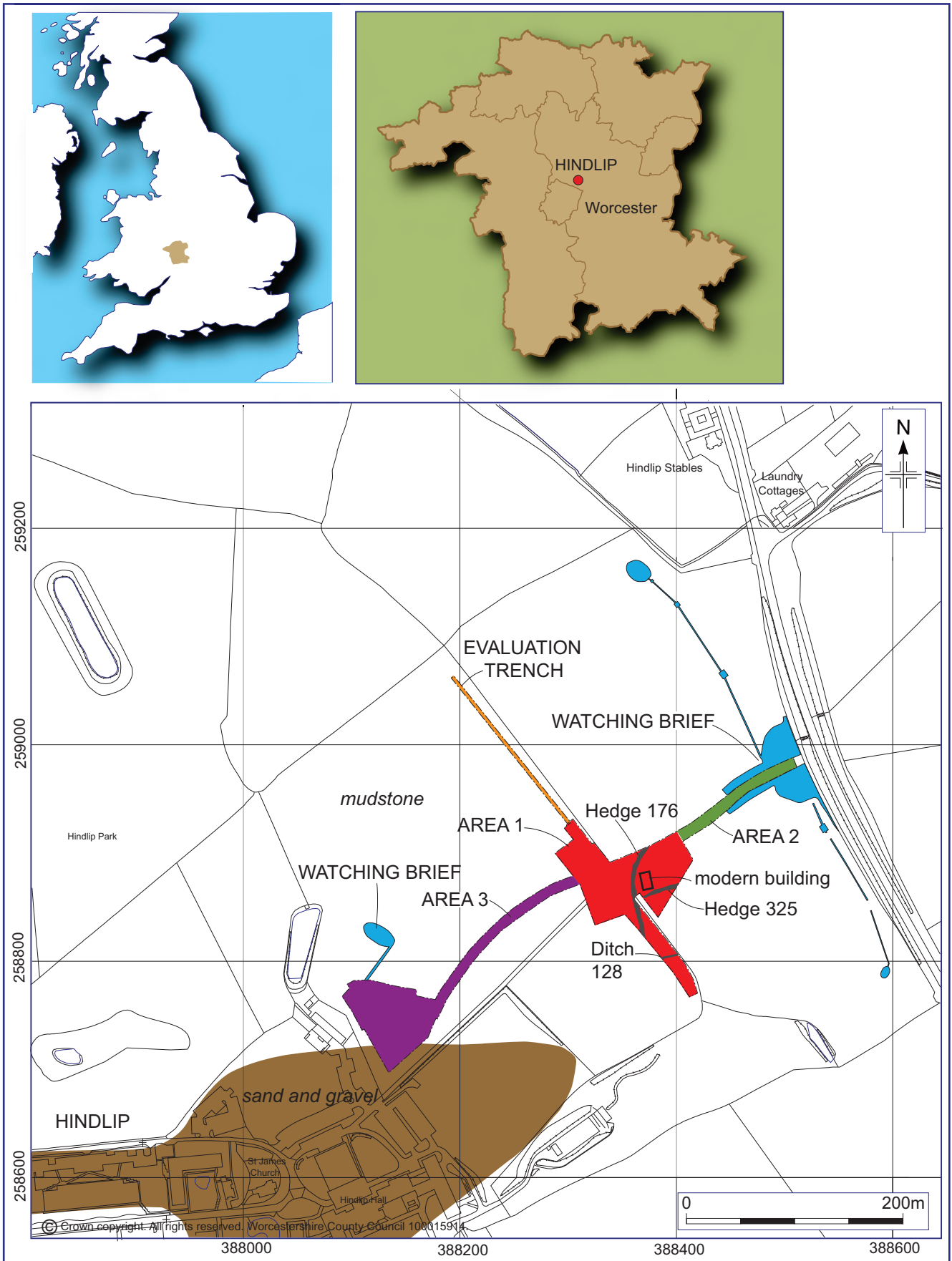


Figure 1: Location of the site, areas of excavation and geological area

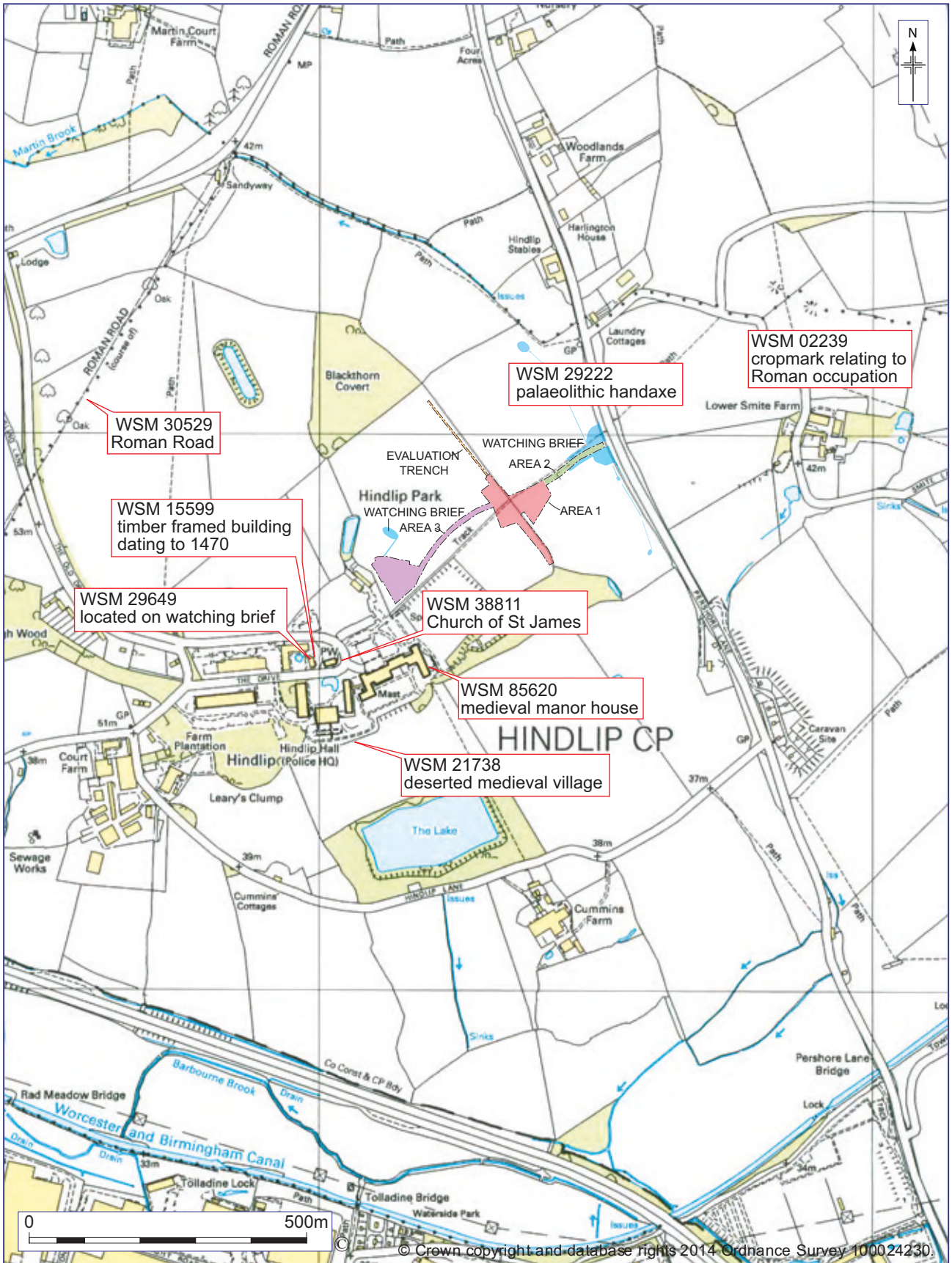


Figure 2: Plan of areas of excavation and sites in the vicinity

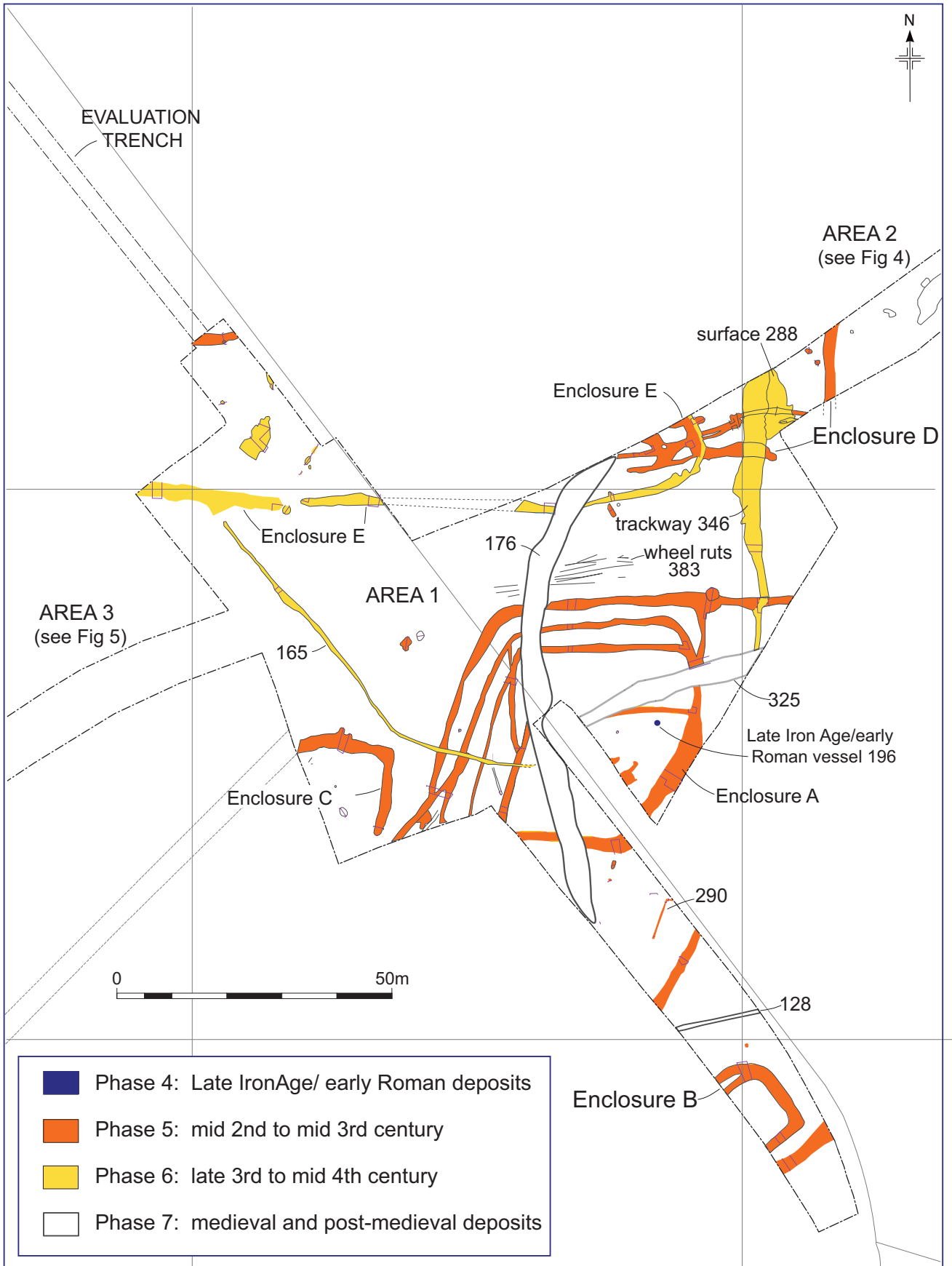


Figure 3: Phased plan of Area 1



Figure 4: Phased plan of Area 2

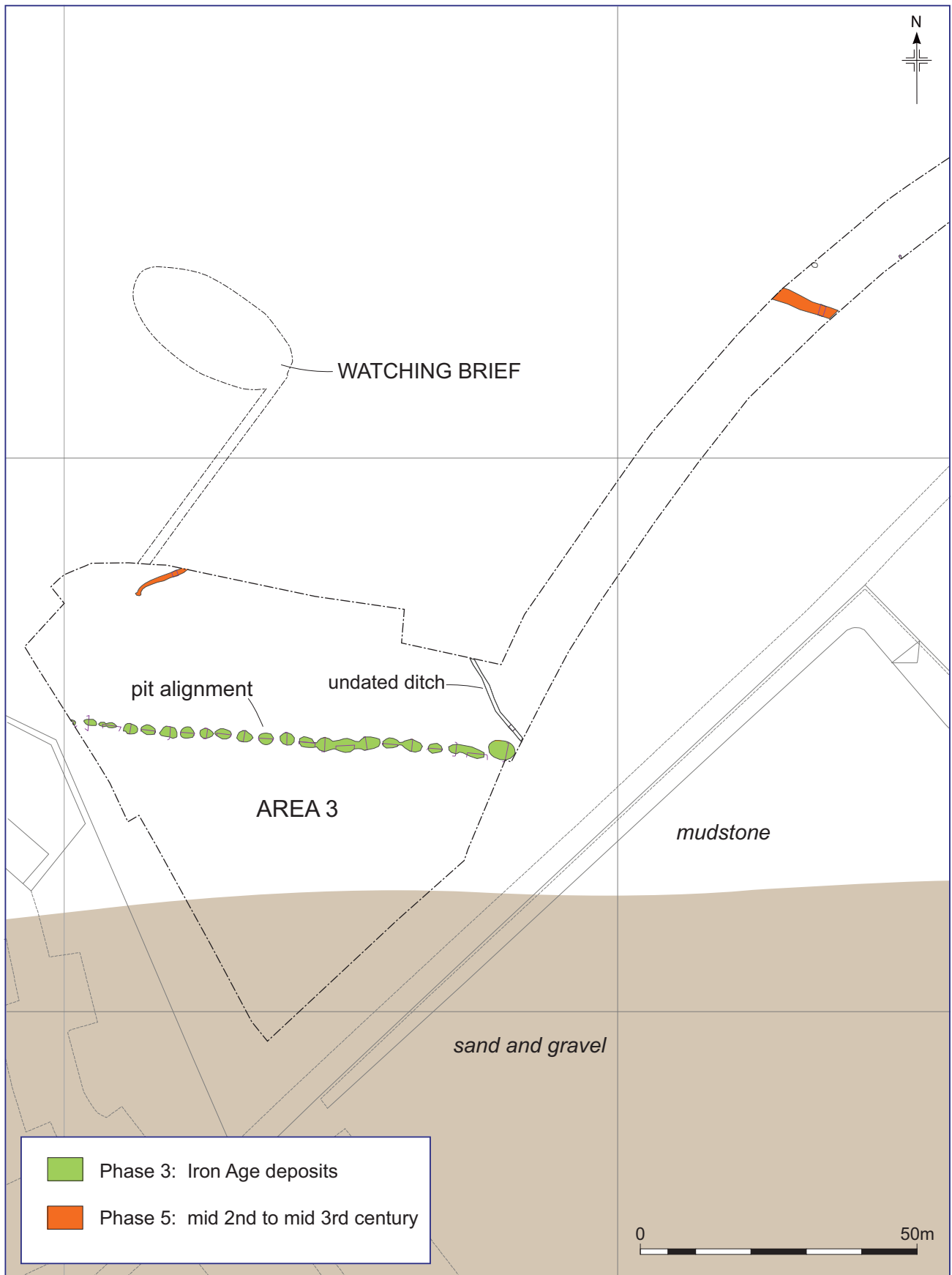


Figure 5: Phased plan of Area 3 (with geology)

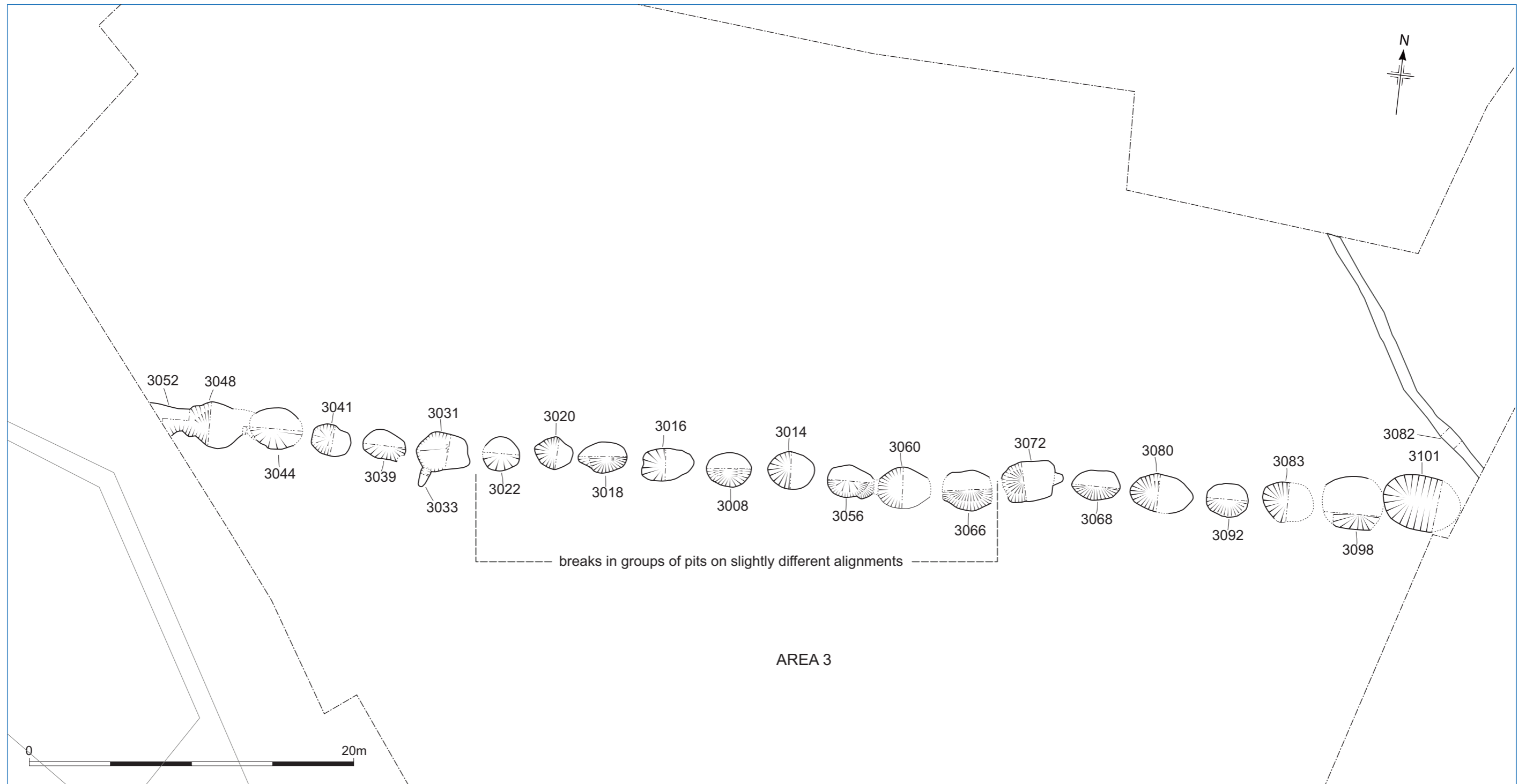


Figure 6: Plan of pit alignment Area 3



Figure 7: Unexcavated pit alignment, view east

Plate 1

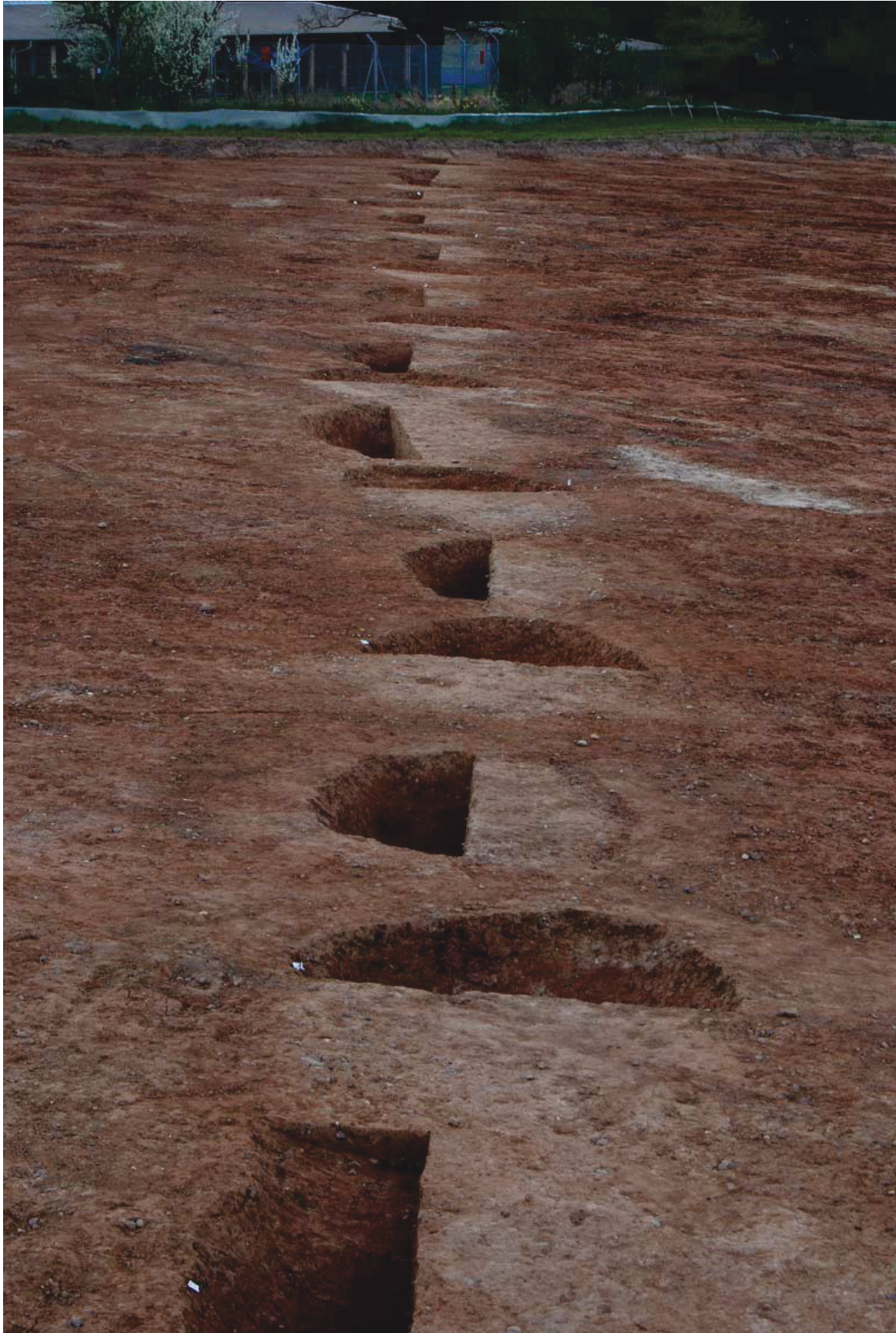


Figure 8: Excavated pit alignment, view west

Plate 2



Excavated pit alignment with excavators, view west

Plate 3

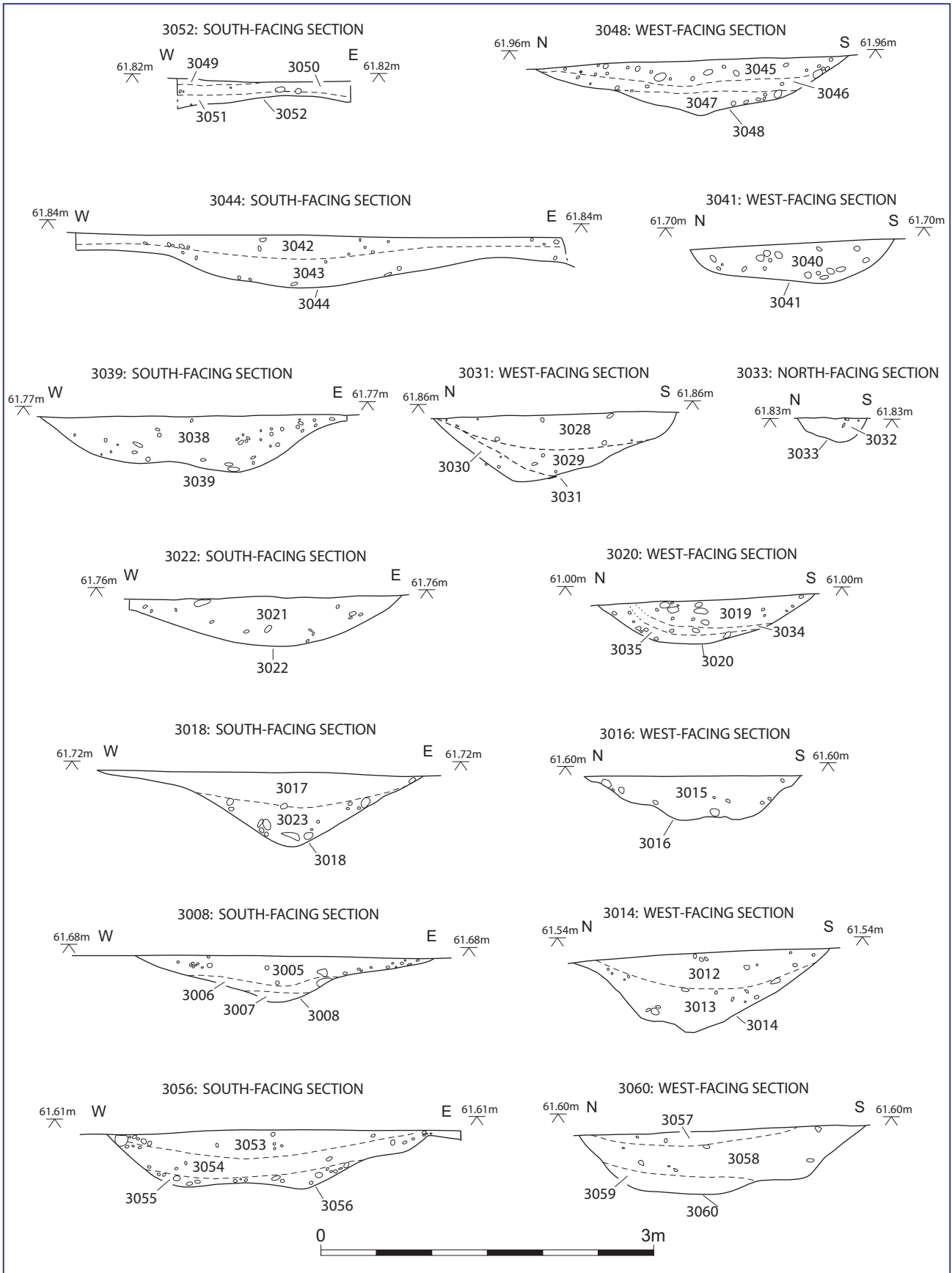


Figure 10: Sections of pit alignment Area 3

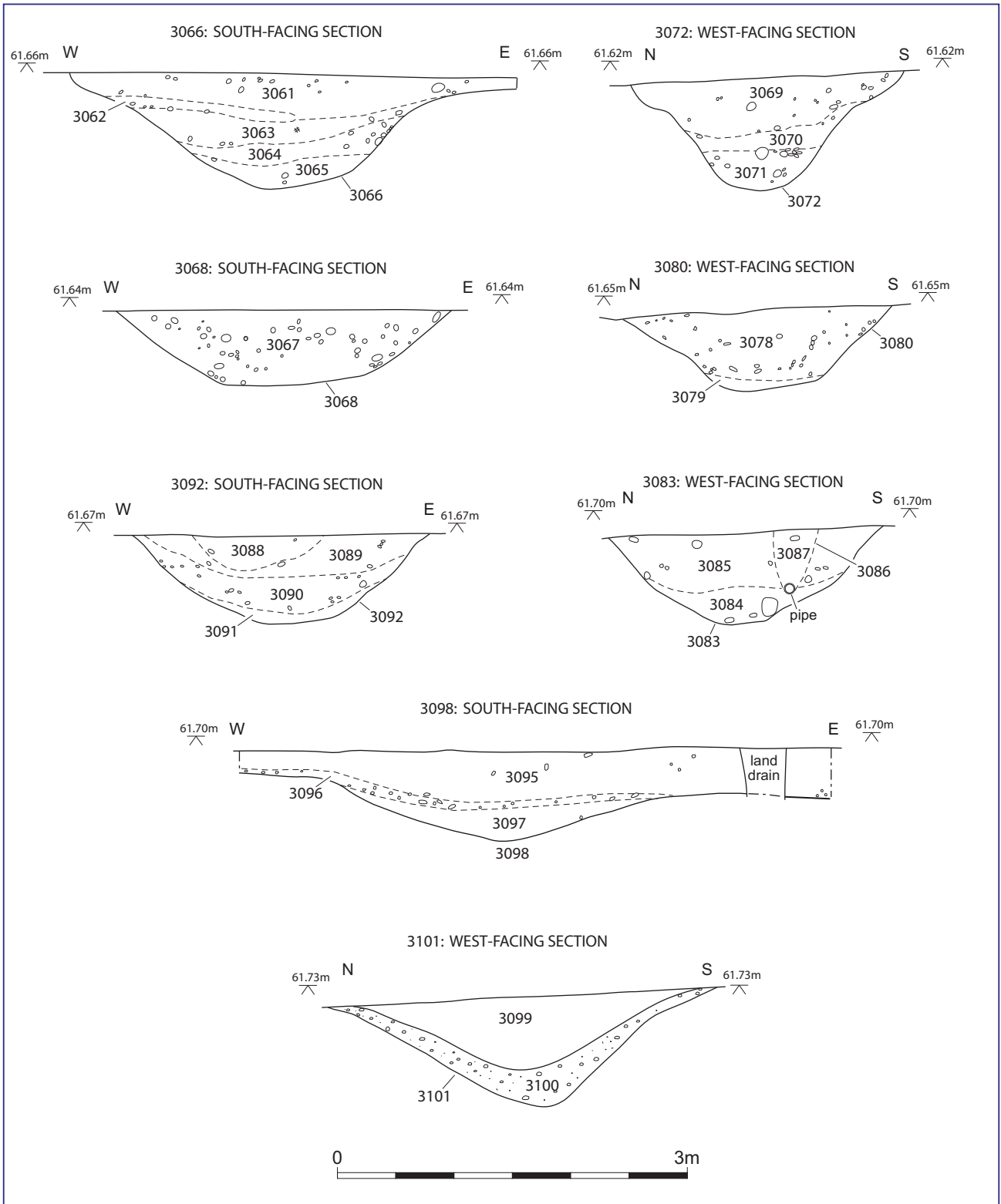


Figure 11: Sections of pit alignment Area 3 (continued)

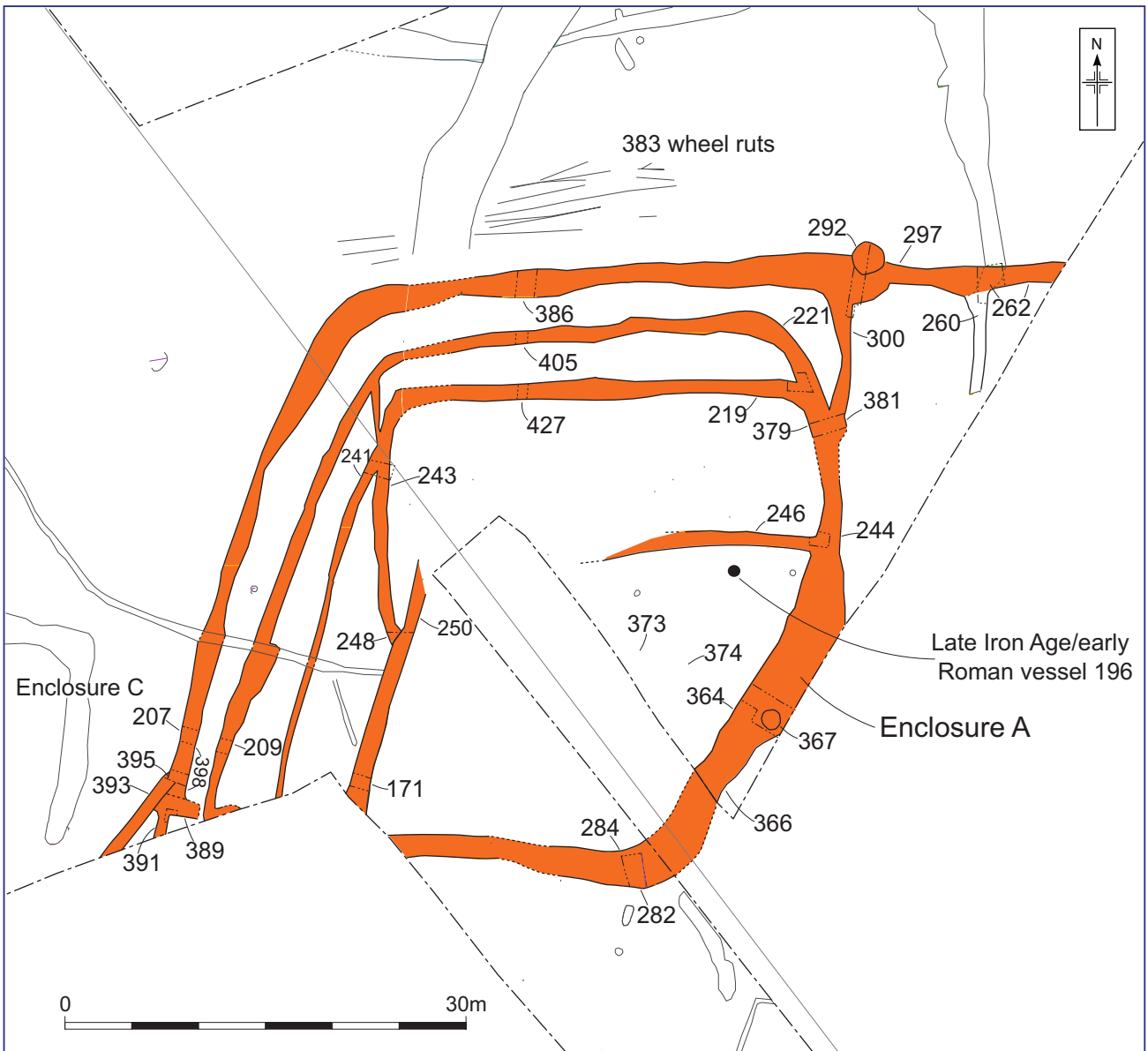


Figure 12 : Plan of Enclosure A



Figure 13: Vessel (196) during excavation

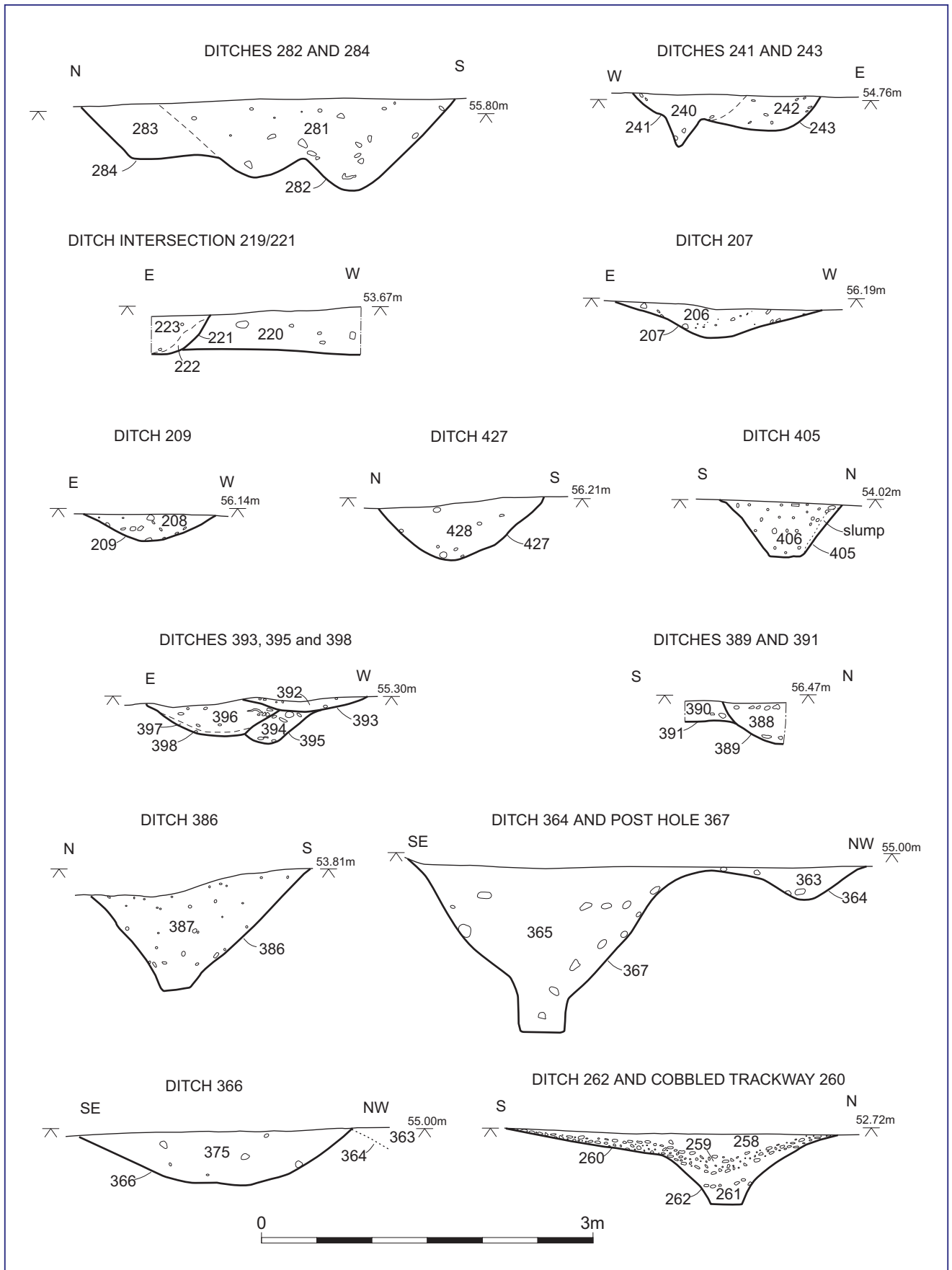


Figure 14: Sections of Enclosure A

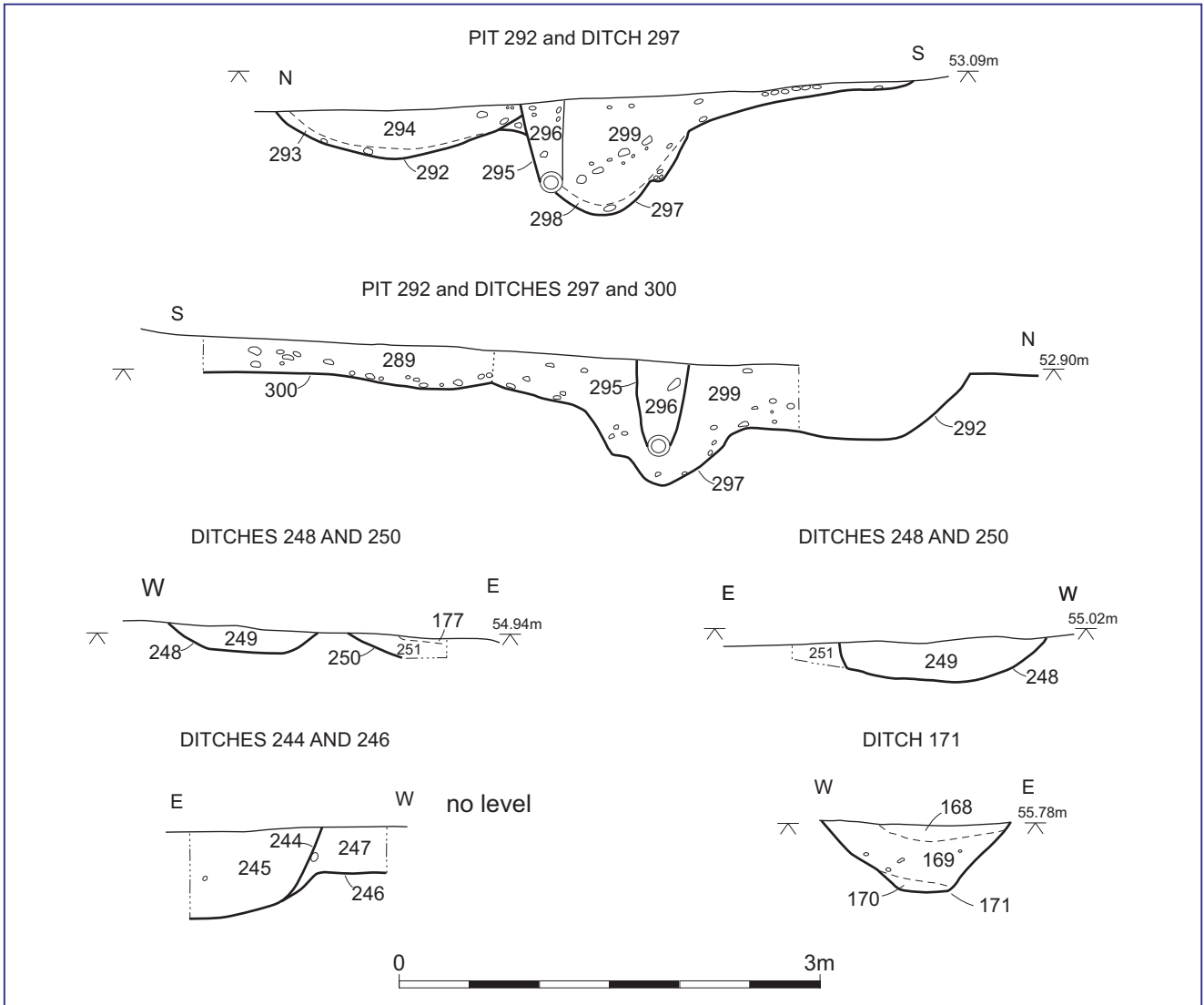


Figure 15: Sections of Enclosure A (continued)



Figure 16: Ditch (366) with posthole (367) cut into its base, view west

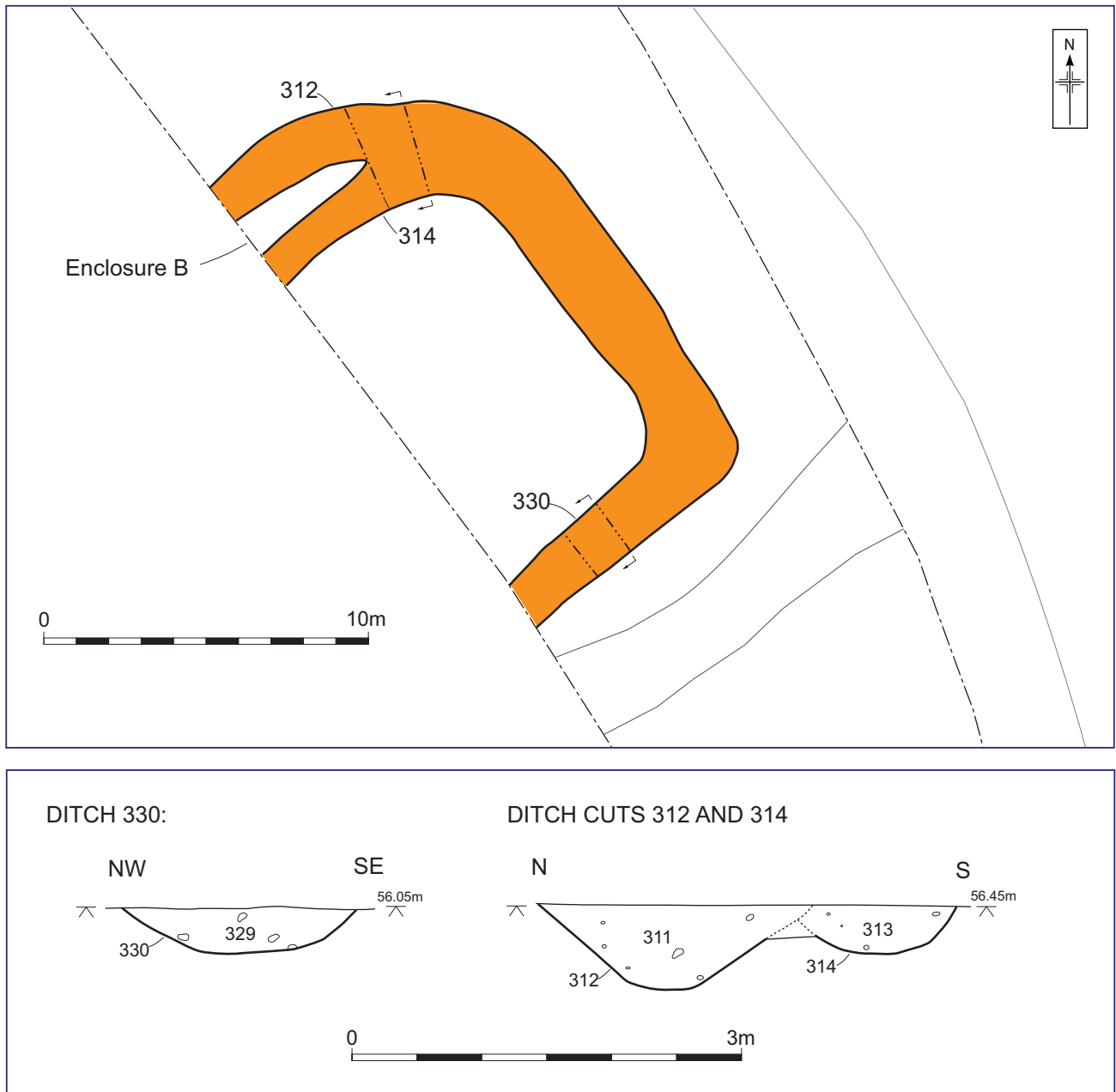
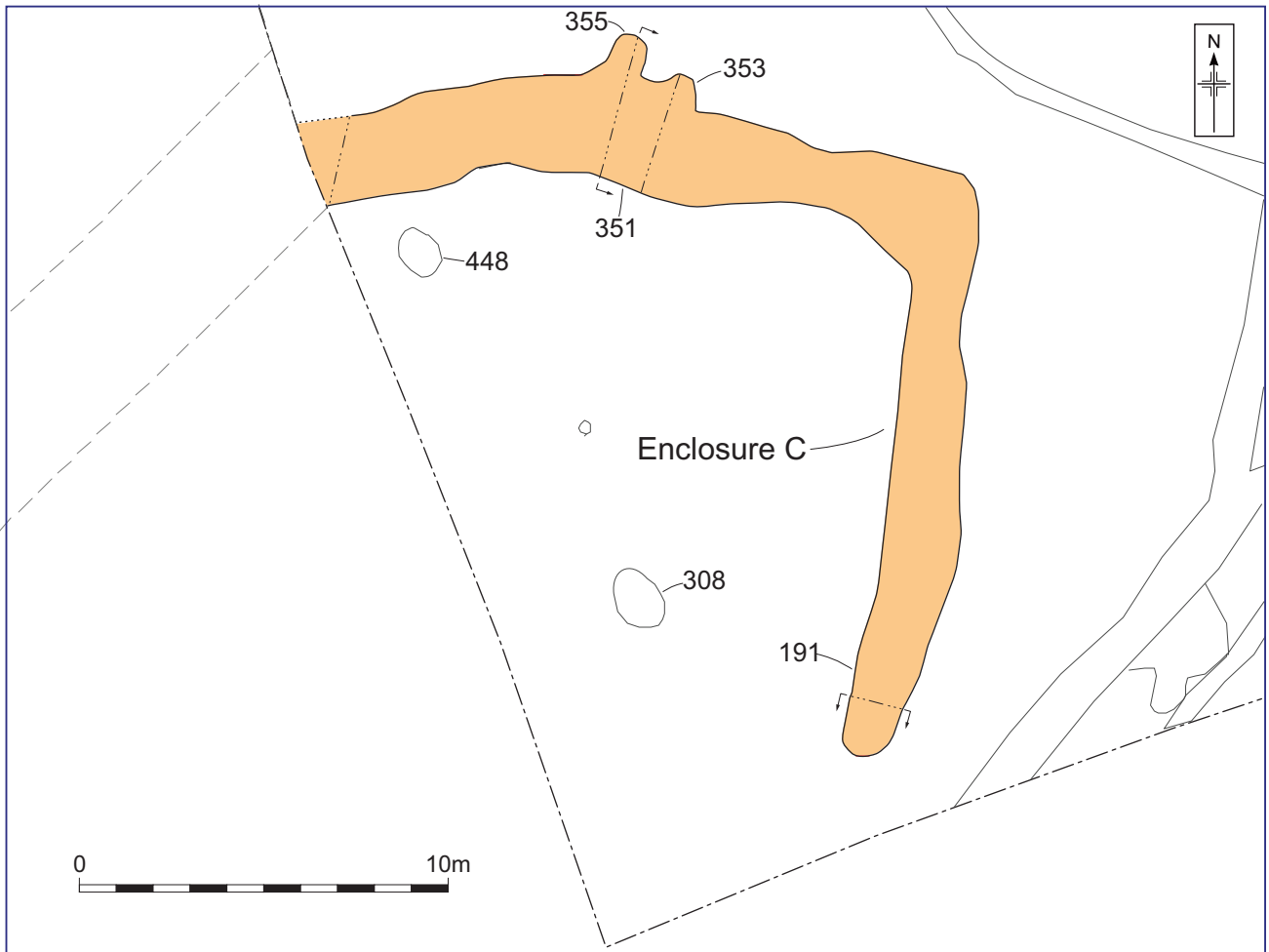
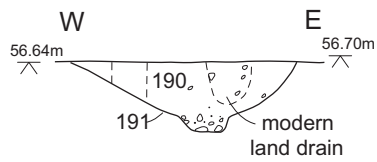


Figure 17: Plan and sections Enclosure B



DITCH 191: SOUTH-FACING SECTION



DITCH 251 and PITS 353 and 355: EAST FACING SECTION

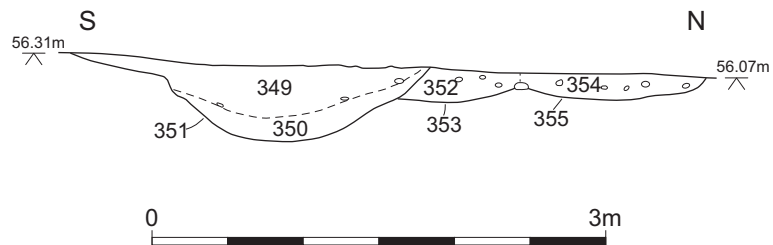


Figure 18: Plan and sections Enclosure C

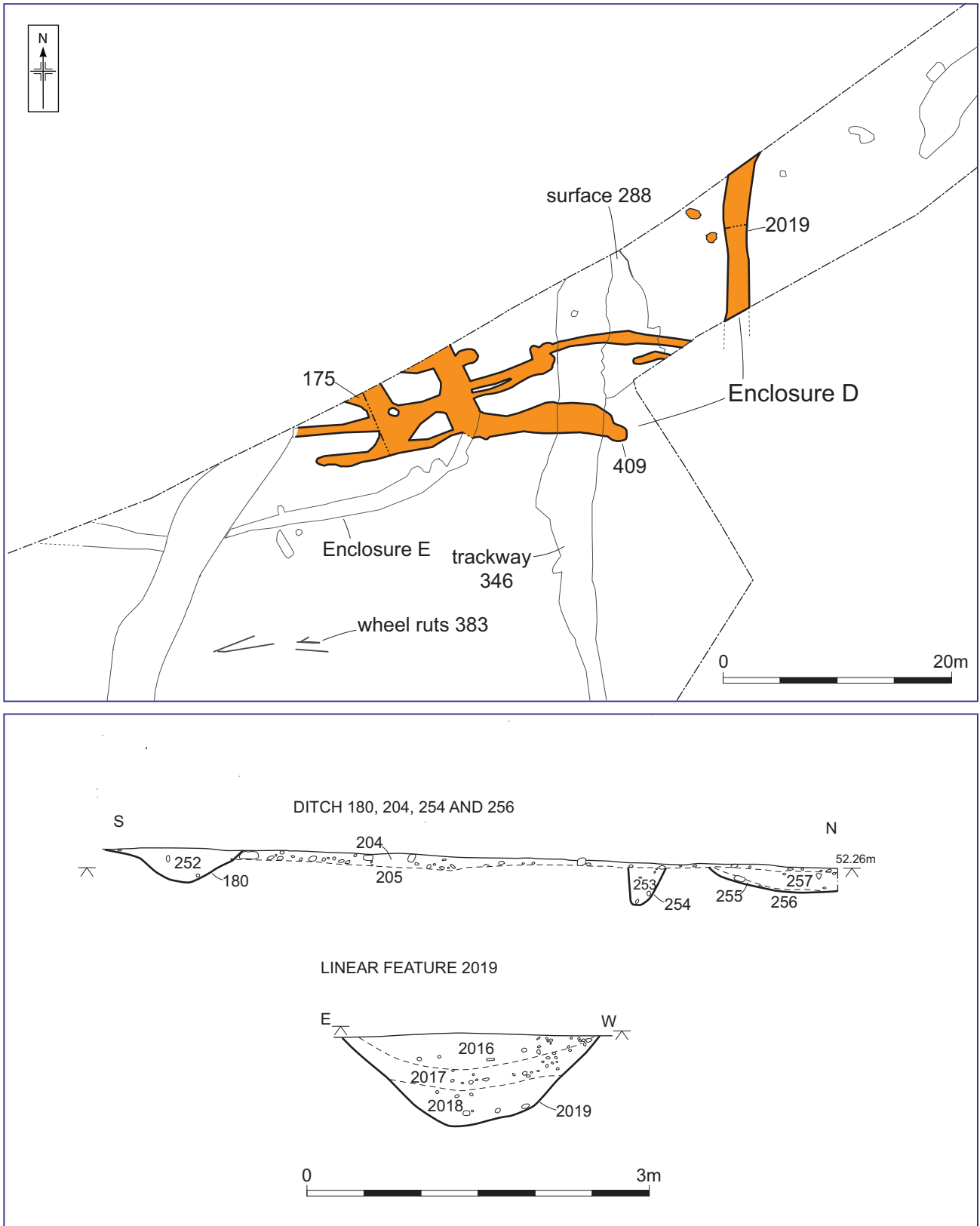


Figure 19

Figure 19: Plan and sections Enclosure D

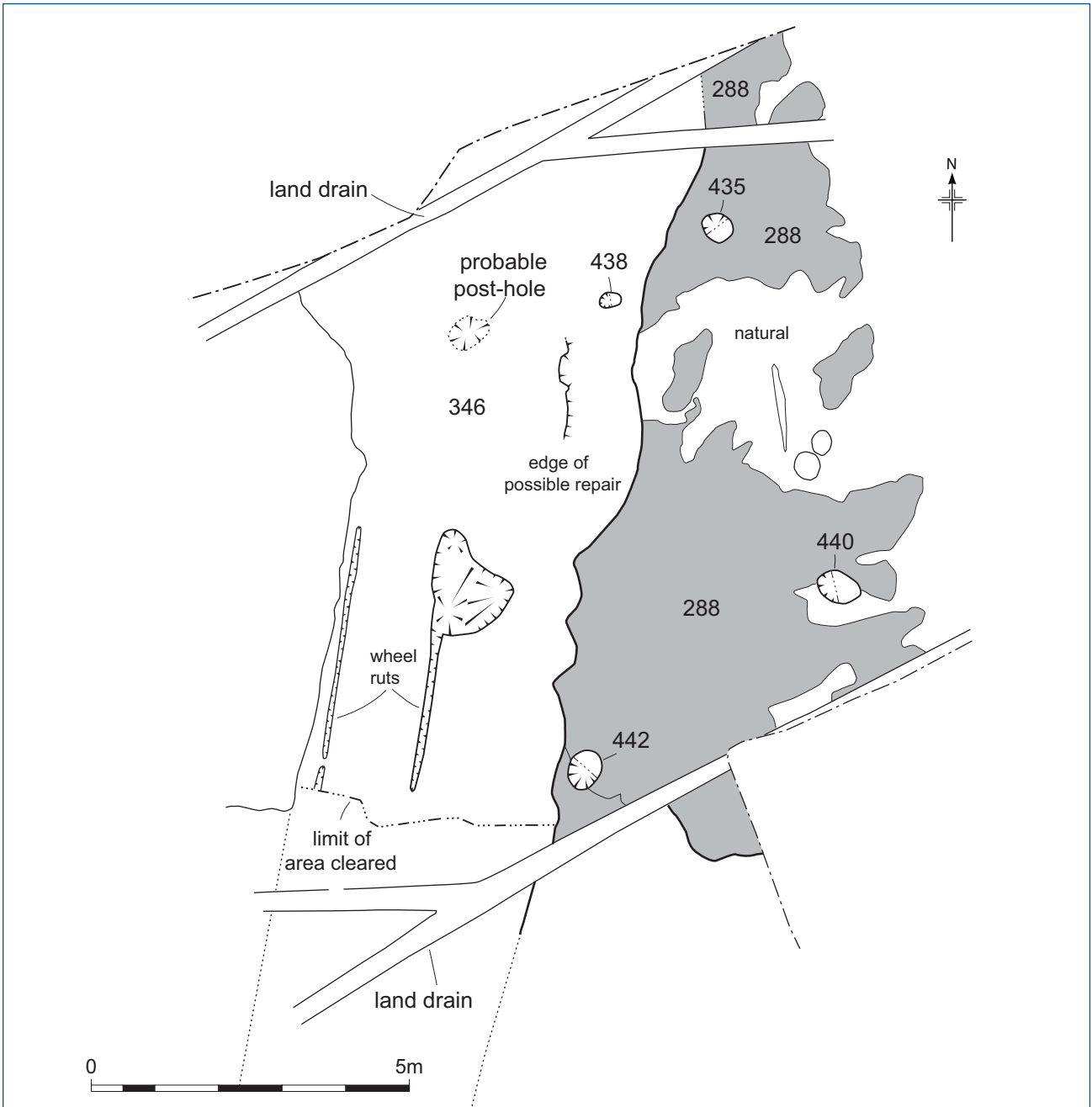


Figure 20: Plan of surface (288) with later trackway (346)



Figure 21: Surface (288) in foreground with Trackway (346) overlying surface in background, view west



Figure 22: Trackway (346), view north



Figure 23: Trackway (346) with wheelruts, view north

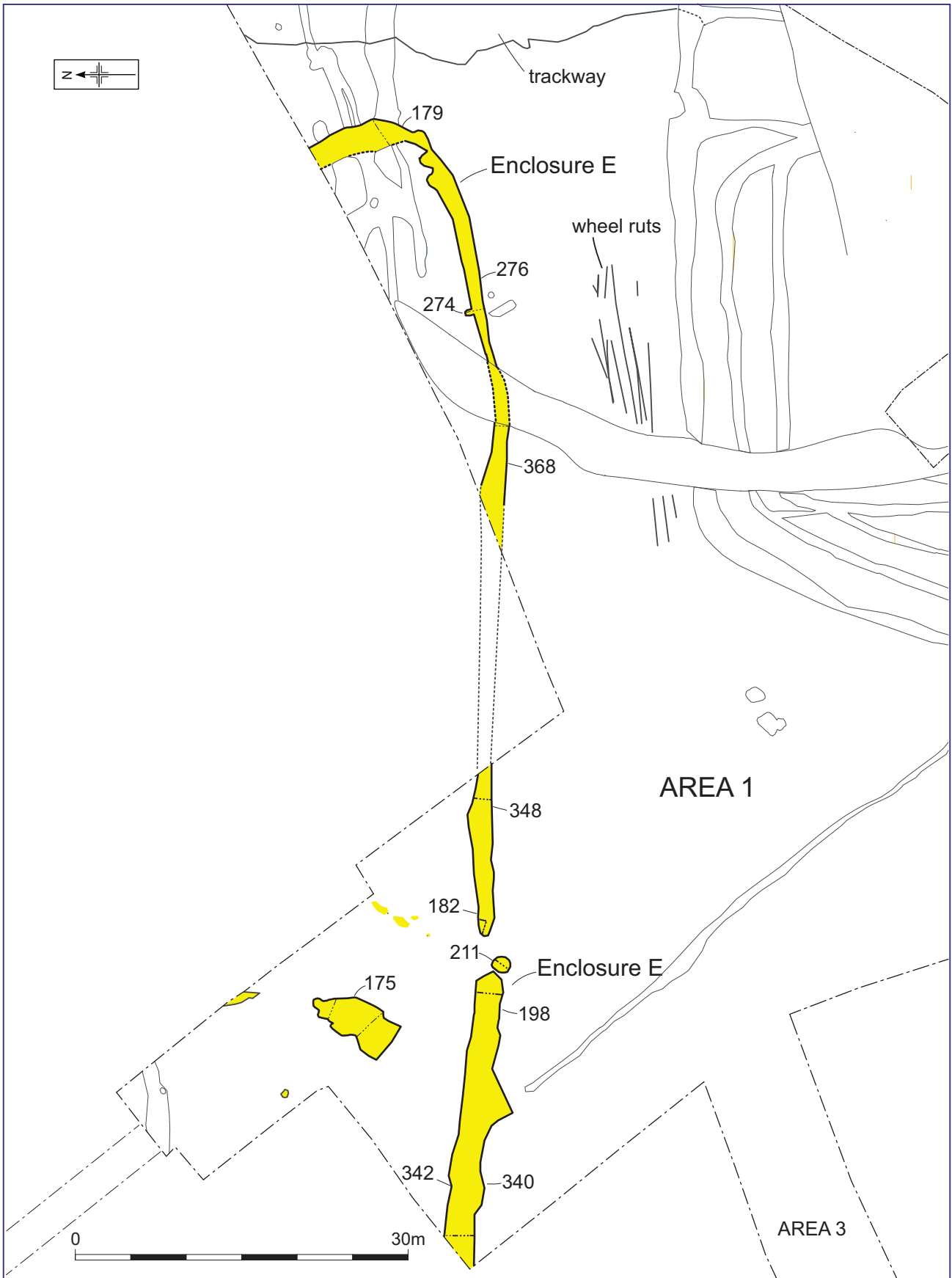


Figure 24: Plan of Enclosure E

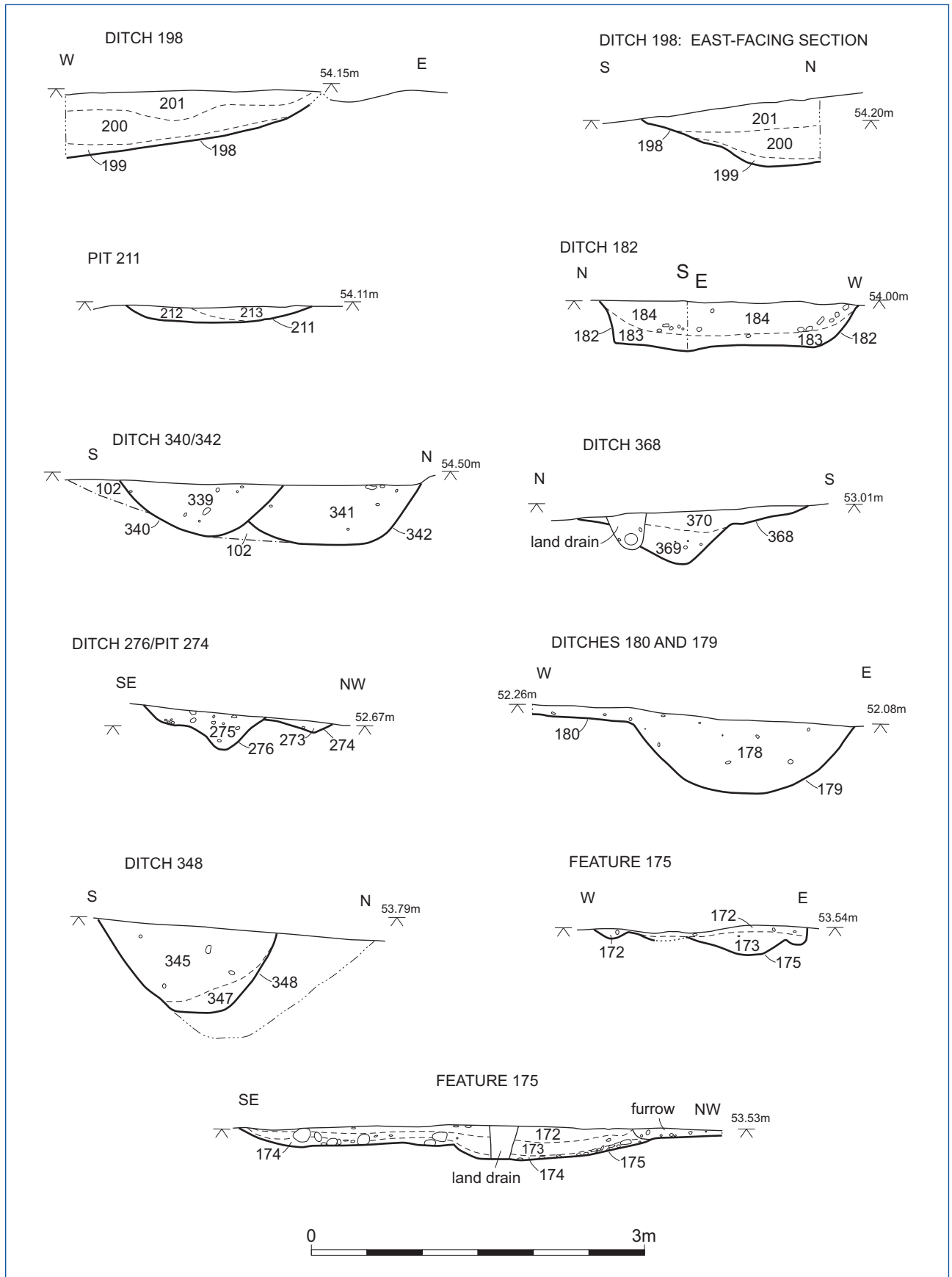


Figure 25: Sections of Enclosure E

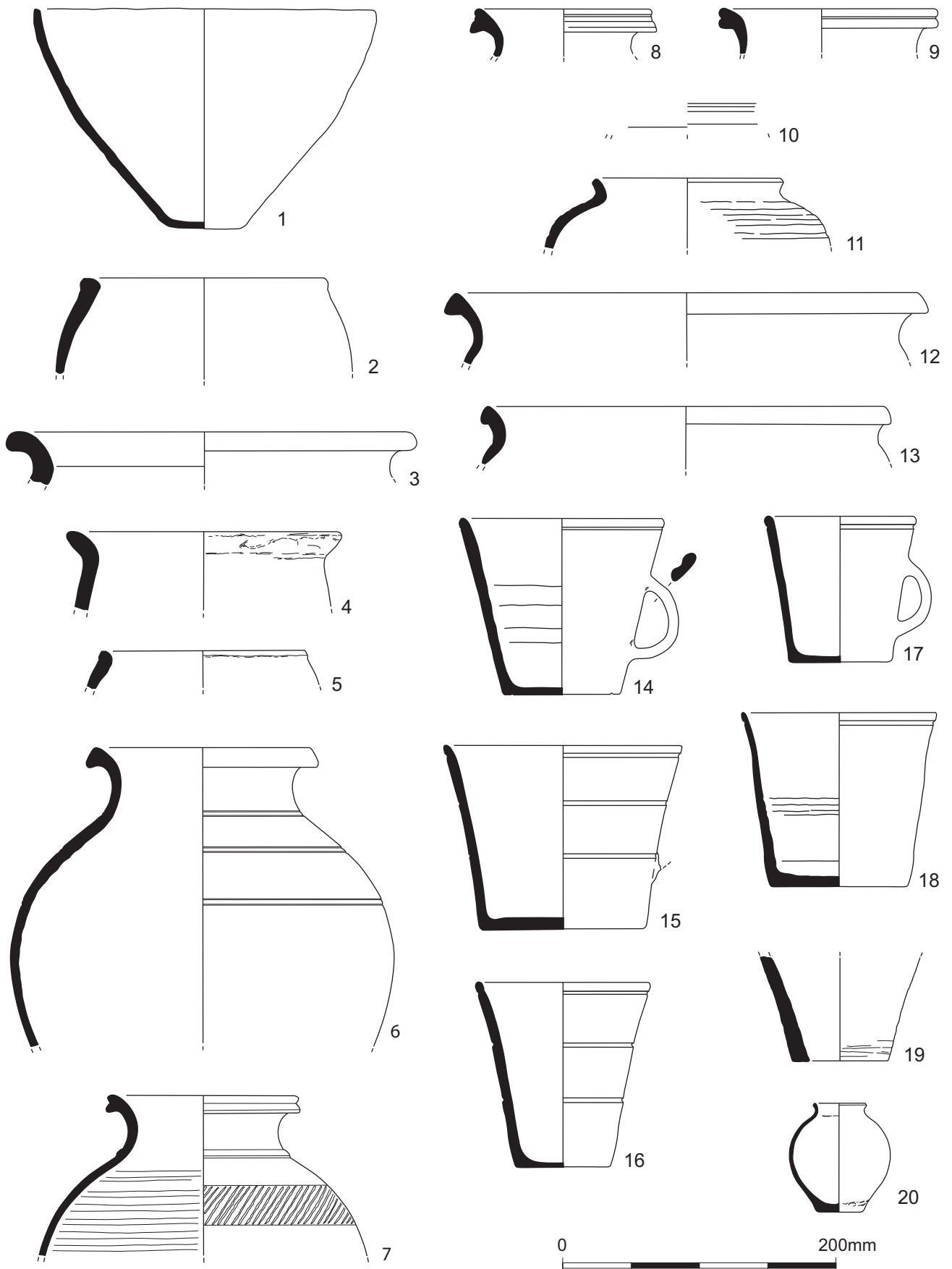


Figure 26: Pottery

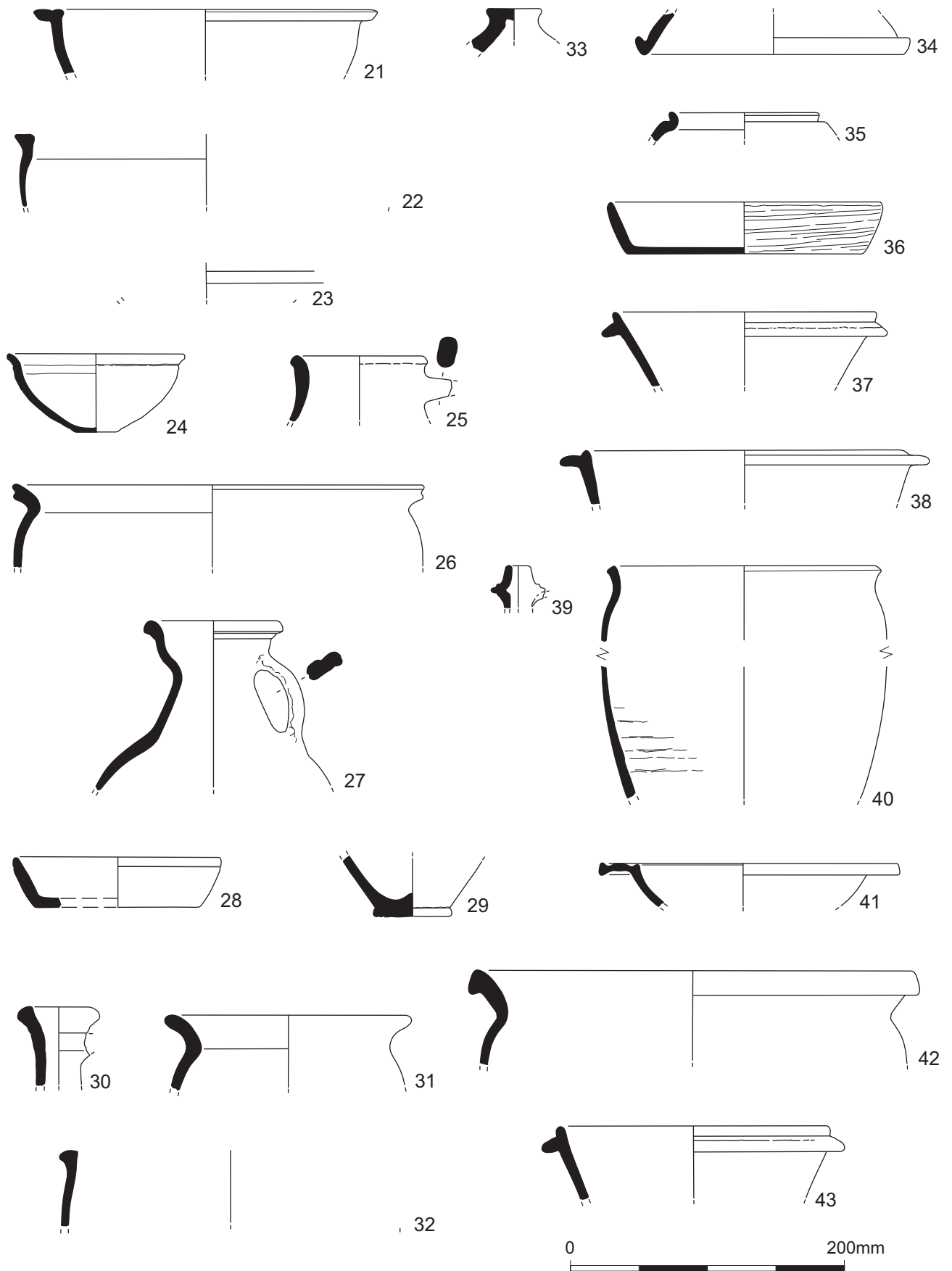


Figure 27: Pottery (continued)

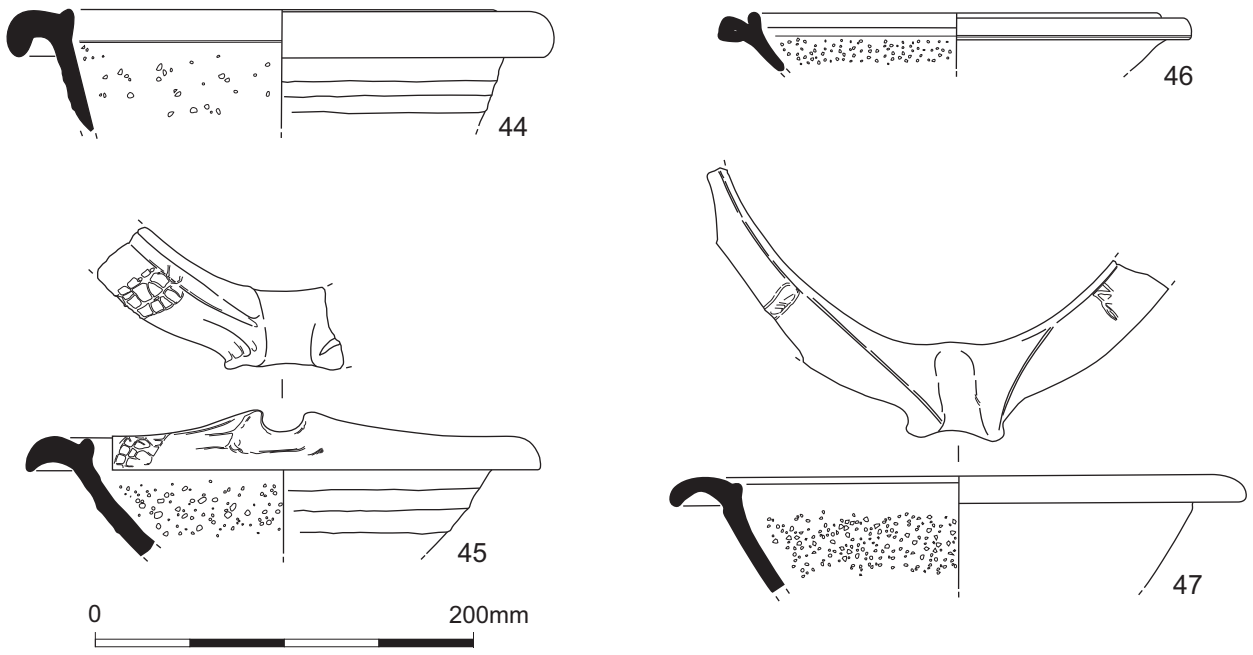


Figure 28: Mortaria

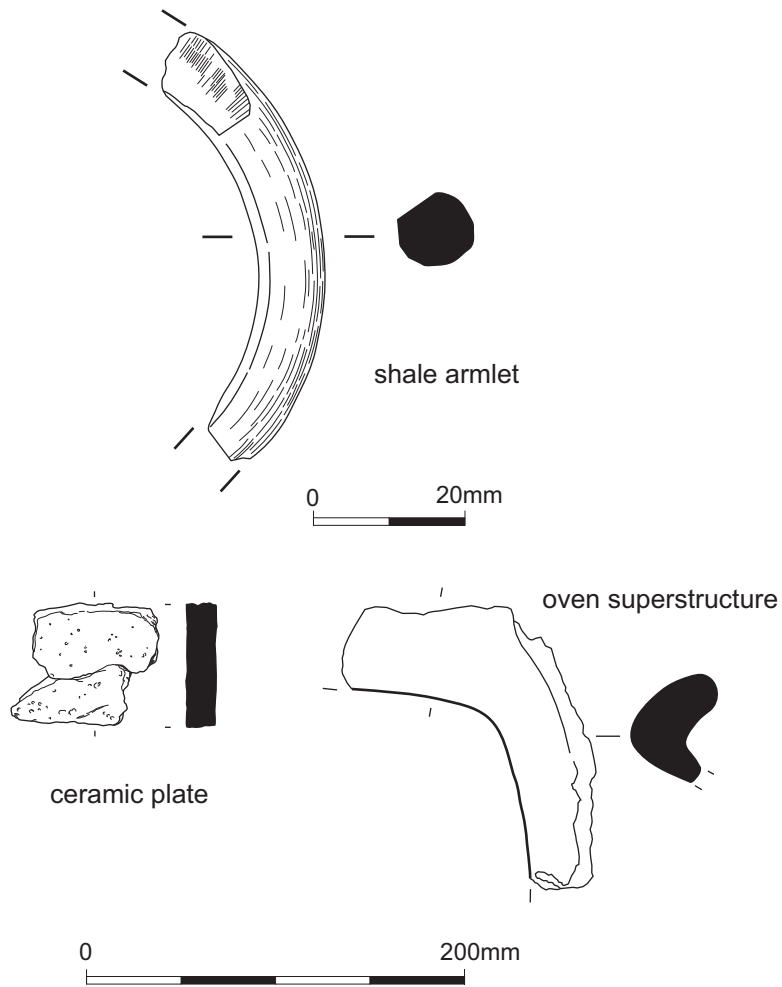


Figure 29: Shale armet and oven material



Figure 30: Adze head from context (289)

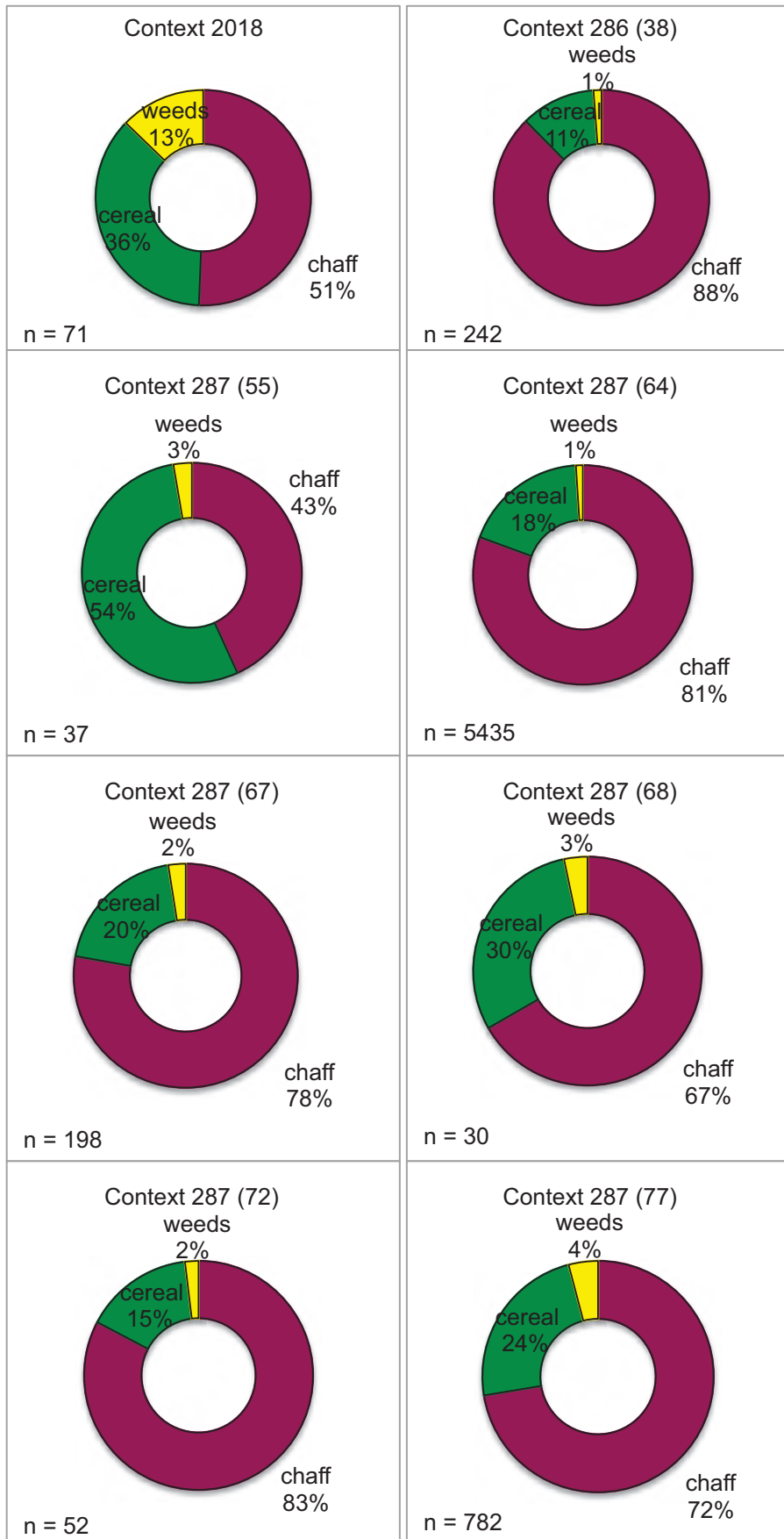


Figure 31: Proportions of the various components of the charred plant assemblages (wheat only) from Hindlip

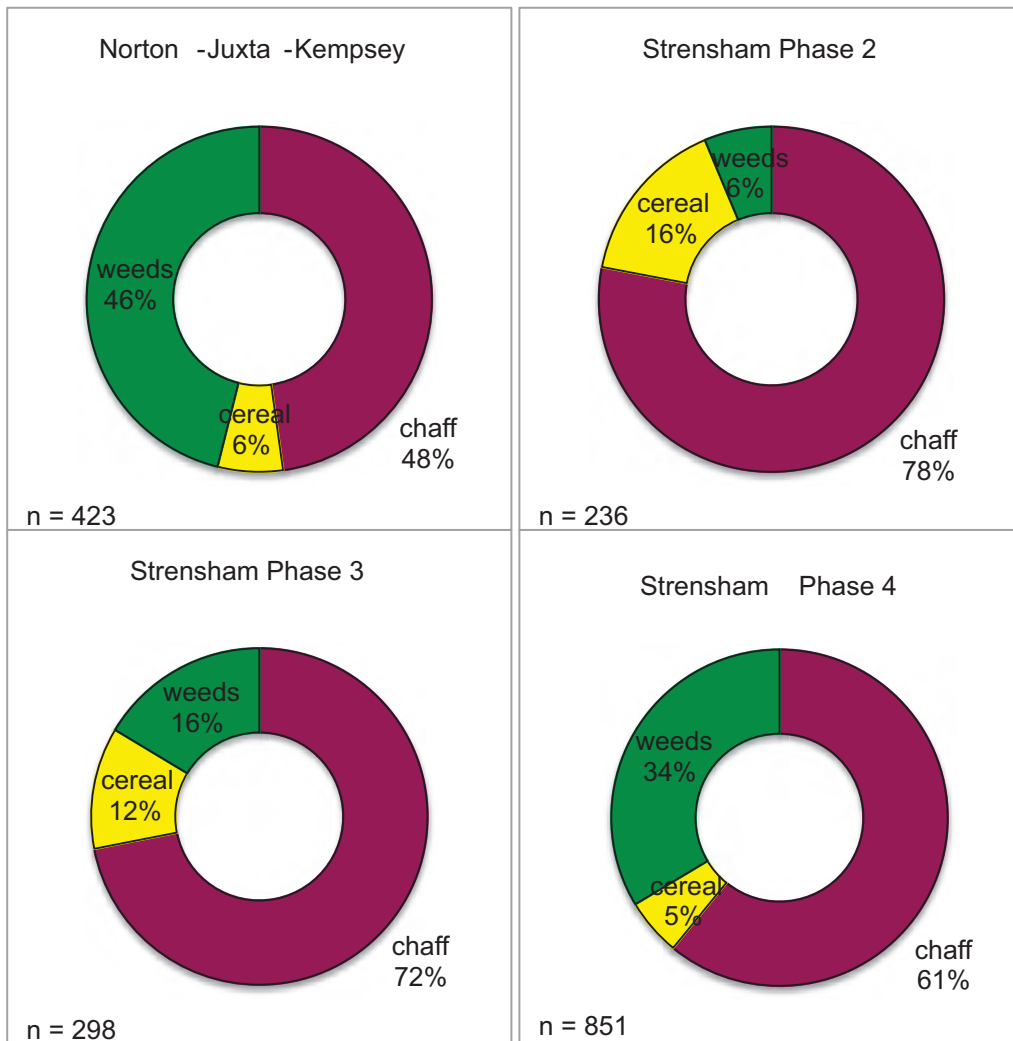


Figure 32: Proportions of the various components of the charred plant assemblages (wheat only) from other Roman rural sites in Worcestershire



Figure 33: Pit alignment full of water after excavation, view east



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