A ROMAN IRON WORKING SITE AT CHURCH LANE, ALVINGTON, FOREST OF DEAN

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With contributions by ELLEN SIMMONS, JANE TIMBY and TIM YOUNG

SUMMARY

Archaeological excavation revealed archaeological features and deposits, which represented at least three phases of activity. Phase 1 comprised a cobbled terrace of uncertain function, which was tentatively dated to the earlier Roman period. Phase 2 was datable to the 3rd – 4th century AD and included a stone-built structure, which was associated with a ferricrete deposit, as well as a cobbled pavement and a large refuse pit. This phase was associated with evidence for iron processing. A number of pits and ditches were demonstrably later than the Phase 2 activity. These were poorly dated, although one of the ditches was associated with medieval and post-medieval pottery.

INTRODUCTION

In 2008 Foundations Archaeology undertook a programme of archaeological excavation in advance of the construction of a residential dwelling on land at Church Lane, Alvington (NGR: SO 6032 0063). The site was situated in the garden of 'Rossilyn', on the lower slopes of the Severn escarpment, on ground that sloped gently downwards from west (43.70m OD) to east (42.50m OD). The study area was bounded by the graveyard of St. Andrew's Church to the north, Church Lane to the east and south, and Knapp Lane to

the west. The local geology comprises red clay marl derived from the underlying Lower Old Red Sandstone.

ARCHAEOLOGICAL BACKGROUND

There has been a relative paucity of previous archaeological investigations in and around Alvington. The A48, which is situated approximately 150m northwest of the site, is believed to follow the route of the Roman road from Newnham to Caerwent (Margary 1967, route 60A). The Ordnance Survey 1st edition map of Alvington shows 'traces of Roman Paving' along this route. A settlement is recorded at Alvington in the Domesday Book and St. Andrew's Church is listed in the Gloucestershire SMR as a medieval church, dating to the 13th/14th century, with Norman features and a churchyard cross.

A programme of evaluation trenching was undertaken by Foundations Archaeology (2008a) in advance of the determination of the development planning application. The evaluation identified the presence of a ditch dating to the Roman period, along with several other features, which were possibly contemporary.

METHODOLOGY

Two excavation areas were stripped at the location of a proposed house and associated garage/workshop (Figure 1). Non-significant overburden was removed by machine under constant archaeological supervision. The exposed areas were hand cleaned and archaeological deposits were excavated and recorded in accordance with an agreed Written Scheme of Investigation (Foundations Archaeology 2008b).

SUMMARY OF EXCAVATION RESULTS

Visibility conditions were generally good, although the later (lower) stages of the excavation were hampered by frequent severe flooding. The presence of numerous

shallow and partial features indicated a fairly high degree of truncation of upper features, with further evidence for truncation provided by the lateral spread of fill (2004) beyond the edge of pit [2019] by up to 3.70m. The main focus of archaeological activity was situated in Area 2, with the presence of multiple phases of structural remains (Figures 2, 3 and 5). The archaeological activity in Area 1 comprised a sequence of linear ditches (Figure 4).

A brief summary of the results of the excavation is given below. A comprehensive description, including full feature/deposit dimensions, detailed context descriptions, excavation plans and sections, along with specialist technical reports, is presented in the post-excavation assessment report (Foundations Archaeology 2009).

Phase 1 (earlier Roman);

Terrace [2032] was approximately 16m long, 9m wide and up to 0.50m in depth. It represented the earliest feature in Area 2 and was cut to provide a level surface for cobbles (2028). The cobbles consisted of a generally clean deposit, with no associated artefacts or charcoal, although a small number of burnt fragments of red sandstone were present within the cobble matrix. No dating evidence was associated with its construction; however, the complete lack of Prehistoric artefacts within the investigation areas suggested that the cobbled terrace was unlikely to be of pre-Roman origin.

A number of discrete stone rubble deposits; (2029), (2030), (2031), (2033), (2034) and (2039) were situated directly on top of cobbles (2028). Context (2033) contained two sherds of Roman pottery. It is possible that the stone rubble deposits represented the remains of stone-built structures, however, truncation or demolition of these features, which must have occurred in antiquity, severely hampered their interpretation.

The relative lack of artefacts and the absence of cut features, such as postholes or pits, suggested that Phase 1 was not associated with long-term domestic occupation activity and, as such, cobbled terrace [2032]/(2028) was most convincingly interpreted as a working terrace or platform, which probably dated to the earlier Roman period. The exact nature of the activities associated with the terrace was unclear.

Phase 2 (3rd – 4th Century A.D.)

Contexts (2035), (2021) and (2006) comprised substantial sand deposits, up to 0.40m thick, which were stratigraphically later than cobbled surface (2028) and its associated stone rubble spreads. The sand was almost certainly dumped in order to in-fill terrace cut [2032] and represented the initial construction works associated with Phase 2. A small assemblage of Roman pottery within context (2021) securely dated this event to the 3rd Century AD or later.

A number of features were cut into, or situated directly on top of the dumped sand. Feature [2019] was a large pit which measured 10.5m long, 4m wide and up to 0.47m deep. The pit was cut through sand layer (2021), cobbles (2028) and the underlying natural deposits. The feature was fairly shallow, with an irregular, sloping profile. Context (2004) formed the main fill of the feature and represented a substantial dumped fill, which contained a large amount of industrial waste in the form of iron smelting slags, cinder, grit and charcoal lumps, along with a small amount of charred cereal grains. A relatively large assemblage of pottery from context (2004) dated the fill to the 3rd Century AD or later.

Cobbled surface (2024) was 11.5m long by 3m wide and was situated at the northern end of Area 2. The cobbles appeared to represent a roughly north-south aligned linear

pavement, although ephemeral stone patches (2036) and (2037) indicated that the pavement may have originally extended further to the west. A patch of cobbles (2038), located to the southeast of context (2024), was of equivalent composition and probably represented a continuation of the pavement to the edge of pit [2019].

Feature (2023) comprised two northwest-southeast aligned linear stone spreads, up to 3.6m long by 3.7m wide. The stones abutted, and partially incorporated surface (2024) at the northwest. The feature was relatively ephemeral, but this was unlikely to be a result of later truncation as the stones were largely sealed, and therefore protected, by deposit (2003). Feature (2023) probably represented the remains of a low standing feature, such as a stone-built kerb or stone lining, which enclosed or defined an area at least 3.50m long by approximately 1.50m wide. It was unclear if the northwest and southeast ends of the feature were originally open or enclosed.

Context (2003) consisted of an amorphous ferricrete deposit, 4.15m long, 3.16m wide and up to 0.20m thick, which partially sealed structure (2023). Deposit (2003) was associated with a small pottery assemblage, which was datable to the late 3rd to 4th Century AD.

In summary, the Phase 2 evidence was broadly datable to the 3rd to 4th Century AD and comprised a stone-built structure with an associated ferricrete deposit, along with a cobbled pavement and a large iron slag refuse pit. The features appeared to have been contemporary and were associated with iron processing activities.

Undated Features

The ditches in Area 1 were poorly dated. At least three phases were represented, with Roman pottery associated with the earliest ditch [1003]. The features shared a similar co-

axial alignment with that of medieval/post-medieval ditch [2011] and, therefore, possibly represented a continuation of this activity.

In Area 2, ditches [2011] and [2009], along with pit [2017] were cut into Phase 2 structural deposits and thus demonstrated later archaeological activity. These features were difficult to date; however, ditch [2011] was associated with medieval and post-medieval pottery. Pits [2007], [2013] and [2015] were similar to feature [2017], but remained undated.

THE POTTERY *By* Jane Timby

Introduction and Methodology

A moderately small assemblage of 146 sherds of pottery, weighing *c.* 2 kg, and with just 1.5 estimated vessel equivalence was recovered, dating to the Roman, medieval and post-medieval periods. Sherds were associated with 14 recorded contexts. Most of the groups are quite small with the exception of pit [2019]/(2004), which produced 84 sherds, 57.5% of the assemblage. The two medieval and three post-medieval sherds are not described further other than for dating evidence.

The sherds were generally quite poorly preserved with abraded edges, loss of surface finish and with the adhesion of hard, iron-rich accretions on some pieces. An overall average sherd size of 15 g is moderately good and typical of rubbish material.

The assemblage was sorted into fabrics based on the type and character of the inclusions in the clay along with firing colour. Named traded wares were coded using the National Roman fabric reference system (Tomber and Dore 1998), whilst other wares were given codes reflecting the fabrics. The assemblage was fully quantified by sherd count, weight and estimated vessel equivalence (EVE) (Table 1).

Roman

Most of the assemblage, some 140 sherds, dates to the Roman period. Although a very modest group, it contains a mixture of continental and regional imports alongside more local wares. Continental imports include largely Central Gaulish samian and sherds of Baetican amphora from southern Spain. The level of samian is surprisingly high at 10% of the total assemblage by count and includes examples of decorated bowls Drag 37; dishes Drag 31; bowl Drag 38 and a mortarium Dr 45, all products typical of the later phases of the industry in the second half of the 2nd century. The one sherd of decorated bowl shows part of a standing figure and a jumping dog (Oswald 1964, 107) typical of the Trajanic-Antonine period.

Regional imports include 26 sherds of south-eastern and south-western black burnished ware, 19% of the assemblage by count. This includes jars and flanged-rim conical dishes typical of the later 2nd to later 3rd-4th centuries. In addition there are single sherds of Midlands pink grog-tempered ware (PNK GT), Mancetter-Hartshill mortaria (MAH WH) Oxfordshire white-ware mortaria (OXF WH) and south-west white-slipped ware (SOW WS).

The more local wares are dominated by sherds of oxidised Severn Valley ware, 40% of the total, accompanied by various grey wares and micaceous reduced wares. Where datable, forms include types typical of the mid-later Roman period.

Site Distribution

Area 1 produced just five sherds, probably all later Roman, from ditches [1003] and [1006]. These included a grey micaceous ware flask, black burnished ware and a tiny sherd of reduced Severn Valley ware.

The remaining pottery all came from Area 2. No pottery was associated with the Phase 1 construction of the cobbled terrace and just two sherds, moderately small bodysherds of SVW OX, came from layer (2033), which was associated with the use and abandonment of this feature. Phase 2, relating to levelling deposits for construction, produced some 30 sherds (451.5 g). This group includes six sherds of Dressel 20 Baetican amphora, three sherds of Lezoux samian (Drag 37 and Dr 45), a colour-coated reeded-disk mouthed flagon, the single sherd of PNK GT and 13 sherds of SVW OX. Overall this group suggests a *terminus post-quem* of later 2nd-early 3rd century. The largest component of the assemblage came from Phase 2a (Figure 6), and most of this, some 84 sherds, came from pit [2019]/(2004). This group comprises 34.5% Severn Valley wares, 20% black burnished wares, eight sherds of samian and single sherds of OXF WH, MAH WH, SOW WS, BAT AM and OXF RS. Overall the group suggests a date in the later 3rd or early 4th century.

The only other stratified pottery came from ditch [2011], with two sherds of unglazed medieval cooking pot, one sherd of later medieval-early post-medieval Herefordshire Border ware and one re-deposited sherd of DOR BB1.

Conclusion

Although small, this is an interesting group of material which appears to indicate Roman activity from the mid-later 2nd century through to the later 3rd or early 4th century. The assemblage is worth highlighting for two reasons. First, it seems to have been completely unexpected at this location. Second, in terms of composition, it is quite diverse, and has a particularly high level of samian. Whether this is a quirk of the small sample, or reflective of the nature of the site is difficult to determine at present. Normally such high levels of

samian might be expected at an urban centre, rural shrine or perhaps a well-appointed villa.

The general composition of the group is otherwise typical of that to be expected in this area and in this respect is comparable to later Roman assemblages from other iron-working sites in the locality, such as Blakeney (Timby 2000) and Chesters, Woolaston (Fulford and Allen 1993). Although close to Lydney, direct comparison of the assemblages is more difficult as that from recent excavations seems particularly unusual in composition (Dore 1999), suggesting some components, such as Severn Valley ware which appears absent, have been missed or subsumed into other categories. Samian is also apparently absent from this later Lydney group but this may be chronological as some was recovered from previous excavations (Wheeler and Wheeler 1932).

THE ARCHAEOMETALLURGICAL RESIDUES *By* Tim Young

Methodology

All investigated materials were examined visually, using, where necessary, a low-powered binocular microscope. All significant materials were summarily described and recorded to a database. The materials were not subjected to any high-magnification optical inspection, or to any other form of instrumental analysis.

Results

The catalogue of archaeometallurgical residues is presented in Table 2. The materials are dominantly residues from bloomery iron smelting. The certain smelting slags largely fall into two categories:

1. Tapped slag (738g): slag which has been allowed to flow from the furnace. The slag shows characteristic flow-lobed textures. The examples in this assemblage are in flows of

up to 40mm in thickness. One example shows a planar, non-wetted base, suggestive of flow across a stone slab or similar substrate.

2. Massive slags with flow-textured surface (1039g): these slags do not show (in hand specimen) evidence for an internal flow-lobed structure, but do show a flow-lobed top. The slags may represent thick tapped flows (in cases where a thick accumulation of tap slag is formed quickly the internal expression of the flow lobes may be subtle) or might be slags that have formed internal to the furnace, either within the furnace itself, or within the tapping arch. The presence of fired clay adhering to the side of one of the present examples would give support to an interpretation of cooling within the furnace arch. It is interesting that two examples of such slags from (2004) contain large pieces of iron ore that appear to have fallen through the furnace without significant reaction. The ore fragments have the steelyred colour of haematite, but are deeply cracked and fragmented, suggesting contraction during dehydration of an originally goethite ore. The ore fragments show small patches of a residual primary small-scale botryoidal texture, typical of much of the Forest of Dean ore. The size of the ore pieces is unusually large, with the furnace feed usually being less than 25mm. These two classes together comprise almost 70% by weight of the visible slag; the other 847g are slags which are not closely identifiable. Some of this material is in the form of slag crusts. These specimens could be from either iron smelting or smithing, for in both processes molten slag accumulating on the floor of the hearth/furnace may show a similar morphology. One specimen has a “u”-shaped profile and might be part of a slag runner (from between the furnace and the accumulation of tapped slag), but the piece is not well preserved and the identification is tentative. Other pieces are indeterminate from being too small for identification, or too

covered in ferricrete. Over half (3.3kg) of the material is formed by five large pieces of ferricrete entirely enclosing a core (presumably of slag rather than iron since the specimens are non-magnetic) which is entirely concealed. One small specimen of ferricrete appears to have been formed around a small elongate piece of iron, probably a nail.

Interpretation

The collection of residues is indicative of a secondary assemblage of iron smelting waste. There is a complete lack of the charcoal-rich low density internal furnace slags which normally form a significant proportion of smelting assemblages. Many of the slags show only moderately good preservation, and the widespread development of ferricrete shows a high degree of iron leaching, mobility and reprecipitation. The extremely hard deposit (2003) may have been layer (not necessarily a depositional unit) which became entirely cemented through these processes. The ferricrete examined contained very little fine grained ferruginous detritus or fuel debris. Frequently, hard ferricrete deposits may be the results of iron mobility in fines (iron particles, hammerscale, small slag pieces and fuel waste) from smithing, but there is no indication that was the case here. The ferricretes appear to have developed in sandy deposits bearing smelting slags, presumably as a result of acidic porewaters.

The slag assemblage is small, but appears typical of Roman bloomery residues from the area. The key characteristics of this assemblage would be the relatively thin tap-slag flows and the rather thick, possibly internal, flows bearing fragments of iron ore. Similar features have been observed on other sites within the Bristol Channel Orefield. In particular the broadly contemporary nearby site at Woolaston (Fulford and Allen 1993)

shows an occurrence of similar dense “within-furnace” slags forming a large proportion of the assemblage.

THE CHARRED PLANT REMAINS AND WOOD CHARCOAL *By* Ellen Simmons

Introduction

This report summarizes the results of the identification and analysis of charred plant remains and wood charcoal recovered from pit fill (2004). An assessment had previously been carried out in accordance with English Heritage guidelines for environmental archaeology assessments (English Heritage 2002).

The aim of the analysis was to provide information concerning the nature of the feature from which the sample was recovered, as well as for the nature of the local environment and any human interaction with that environment.

Methodology

The sample had been processed using a water separation machine for the recovery of charred plant material and wood charcoal. Floating material was collected in a 250 µm mesh, and the remaining heavy residue retained in a 1mm mesh. The flots and heavy residue were air dried.

The sample was sorted in its entirety using low-power microscopy (x7-x45). Identification of charred plant material was carried out by comparison with material in the reference collections at the Department of Archaeology, University of Sheffield and various reference works (Berggren 1981; Anderberg 1994; Cappers *et al.* 2006). The data is recorded in Table 3. Nomenclature follows (Stace 1997). The seed of the plant is always referred to in this table, unless stated otherwise. The abbreviation *cf*. means ‘compares with’ and denotes that a specimen most closely resembles that particular taxa

more than any other. Charred plant material was stored in glass tubes or sealable plastic bags.

Wood charcoal fragments greater than 2mm in size were fractured manually and the resultant anatomical features observed in transverse, radial and tangential planes using high power binocular reflected light (episcopic) microscopy (x 50, x 100 and x 400). Identification of wood charcoal was carried out to as high a taxonomic level as possible by comparison with material in the reference collections at the Department of Archaeology, University of Sheffield and various reference works (e.g. Schweingruber 1990; Hather 2000). A record was also made, where possible, of the ring curvature of the wood and details of the ligneous structure, in order for the part of the woody plant which had been burnt and the state of wood before charring, to be determined (Marguerie & Hunot 2007). Charcoal fragments were wrapped in aluminum foil in sealable plastic bags. This data is recorded in Table 4.

Preservation

Some evidence of distortion, such as puffing, was exhibited by cereal grains and indicates that charring conditions were relatively poor and post depositional preservation was also poor, the majority of grains lacking epidermis and identifiable by gross morphology only (cf. Hubbard and al Azm 1990). The wood charcoal was also poorly preserved with the majority of fragments exhibiting varying degrees of vitrification.

Results

A glume base, identified as either emmer or spelt wheat (*Triticum dicoccum/spelta*) was present, along with two cereal grains which could only be identified as indeterminate wheat (*Triticum* indet.), due to poor preservation. Again due to poor preservation it was

also not possible to determine whether the barley grain (cf. *Hordeum* sp.) was of the hulled or naked variety or whether the grain was straight or twisted, characteristic of the lateral spikelets of 6-row barley. A lack of oat chaff within the assemblage also prevented the identification of the oat grains (*Avena* sp.) as wild or cultivated. The utilization of wild food resources is indicated by the presence of hazel nutshell fragments. A significant quantity of vesicular material fragments, were also present. It is likely that these represent fragmented cereal grains although identification based on morphology was not possible. The small quantity of wild plant seeds in the assemblage were also not sufficiently well preserved for a positive identification. One seed, identified to the vetch/wild pea genus (*Vicia/Lathyrus*), and one from the clover/medick genus (*Trifolium/Medicago*), was present, along with large grass seeds (Poaceae sp.).

Of the fifty fragments of wood charcoal examined, 26 were of oak (*Quercus* sp.), 11 were of hazel (*Corylus avellana* L.), 5 were of Pomoideae, 3 were of alder (*Alnus glutinosa/incana*) and 5 were indeterminate due to poor preservation. Pomoideae is a large sub-family of the Rosaceae, containing many species, although the native species most likely represented at this site would be hawthorn, apple, pear or rowan/whitebeam (*Crataegus, Malus, Pyrus* or *Sorbus*).

Interpretation and Discussion

Both emmer and particularly spelt wheat were widely cultivated in Britain during the Iron Age and into the Roman period (Grieg 1991). Barley and oat are also typical crops of the Roman period, although oat is less common and often assumed to be a weed (*Ibid.*). The cereal grain in this sample may represent human or animal food which became charred either by accident during crop processing and food preparation or as a component of

animal dung burnt as fuel. The charred wild / weed plant seeds present in the sample may have originated in the arable fields and been harvested along with the crops or also be representative of animal dung burnt as fuel. The wild plant types present are typical of arable fields as well as other open or disturbed ground environments such as are common in the vicinity of human habitation.

Oak and hazel are common species found in archaeological charcoal deposits. This is likely to be due to their suitability as fuel woods as well as to their prevalence in the landscape. Both were often coppiced (Rackham 2003), although this is difficult to identify morphologically from the charcoal fragments, the strong ring curvature of the hazel charcoal suggests the use of smaller branches. The intermediate to weak ring curvature exhibited by the oak fragments, however, suggests the use of larger branches or tree trunks. The presence of tyloses in a number of the oak fragments, also indicate the use of heartwood, (Marguerie & Hunot 2007). The ring curvature of the Pomoideae and alder charcoal fragments was intermediate, also suggesting the use of larger branches or trunks.

Hazel, and the likely Pomiodeae species represented (hawthorn, apple, pear or rowan/whitebeam) are common understory species of oak woodlands (Rackham 2003). Alder is associated with damp ground, often growing alongside streams or rivers (*Ibid.*). It would seem, therefore that the charcoal present in context (2004) represents a mixture of kindling and fuel wood collected from trees and associated understory species of oak woodland as well as from trees growing on damp ground or alongside a watercourse. Vitrification has been taken to indicate high temperature burning or the burning of green wood. Recent experimental work by McParland *et al.* (2010) has, however, demonstrated

that this is not the case and that vitrification is more likely due to a combination of pre and post depositional factors.

Conclusion

The crop types cultivated by the inhabitants of the site included barley and emmer or spelt wheat. These crop types are typical of the Roman period in Britain (Grieg 1991). Oats were also present, although it could not be determined whether these were of the wild or cultivated types and may represent a weed. The presence of hazel nutshell also indicates the utilization of wild food resources.

Wood selected for use as fuel included larger branches or trunks of oak, including heartwood, along with smaller branches of hazel and intermediate to large branches of alder and Pomoideae. This suggests the use of kindling and fuel wood collected from oak woodlands and associated understory species along with wood collected from alder trees growing on damp ground or alongside a watercourse.

DISCUSSION OF THE ROMAN EVIDENCE *By* Andrew Hood

PHASE 1: Terrace [2032] was only partially contained within Area 2, which, itself, equated to the footprint of a modern four bedroom house. The size of the terrace, along with the presence of a cobbled surface and evidence for internal stone-built structures indicated that it would have been a relatively permanent feature within the landscape and represented a fairly significant investment, both in terms of labour and materials. As noted above, there was a paucity of evidence relating to the activities undertaken within the terrace and, as such, it was not possible to directly ascertain its specific function, although, presumably, it was some form of working area or platform. It was also unclear if the feature occurred in isolation or as one of series of terraces, and/or as part of a larger

site. The terrace could only be dated in relation to the subsequent Phase 2 activity, which provided a relatively broad 3rd to 4th Century *terminus ante-quem* for its construction and use.

Given the absence of evidence for the activities undertaken within terrace [2032], further interpretation regarding its function is particularly difficult, however, terracing was present at the nearby Roman iron working sites at Millend Lane, Blakeney (Barber & Holbrook 2000, 38) and Woolaston (Fulford and Allen 1993, 171). It is therefore tempting to suggest that, at this general locale, these types of features were related to iron working, although caution should be applied here as terraces are fairly generic, with many potential uses.

PHASE 2: The deliberate in-fill of terrace [2032], which occurred no earlier than the 3rd Century AD, was associated with the subsequent construction of a cobbled pavement (2024)/(2038) and a large iron slag refuse pit [2019], along with a stone-kerbed feature (2023) with an associated ferricrete deposit (2003). These features appeared to be contemporary and were commonly associated with iron working debris, cinder, charcoal and burnt materials. It was clear that this phase of activity represented a significant change in the site layout, and that, by the 3rd to 4th Century AD iron processing was being undertaken within or near the site. This date range corresponds extremely well with the main phases of iron working at both Blakeney (Barber & Holbrook 2000, 35 - 39) and Woolaston (Fulford and Allen 1993, 163). There was no evidence for *in-situ* smelting or smithing within the investigated areas; however, given that both cobbled pavement (2024) and pit [2019] extended beyond the limits of excavation it was clear that Area 2 had revealed only part of a larger site of unknown size. Analysis of the recovered slags

suggested that the site was related specifically to the production of bloom iron. Due to a general paucity of artefactual evidence, it was unclear which, if any, of the features within Area 1 were associated with this phase of activity.

In light of the limited area of investigation, further interpretation of the iron working activities at this site remains somewhat tentative. The spatial association of stone-kerbed feature (2023) and ferricrete deposit (2003) was unlikely to have been coincidental and presumably represented some form of iron processing or, possibly, storage; although the author has been unable to find directly comparable features in the literature. The ferricrete deposit was relatively amorphous and occurred both inside and outside the area defined by the stone kerbs, this suggested that the ferricrete was more likely to have been formed by chemical leaching as opposed to being deposited by a physical process, such as smithing, which would have been more likely to deposit material either inside or outside of the kerbed structure. Unfortunately, the absence of direct evidence relating to any specific activity at this location severely limited further interpretation of feature (2023)/(2003).

The Phase 2 deposits appeared to represent a well planned space and it is entirely plausible that the layout of the features might reflect a fairly linear process; which involved the movement of materials along pavement (2024)/(2038), past stone-kerb feature (2023) to pit [2019]. Clearly, at this stage, this is a speculative interpretation, but it does highlight the apparently highly organised nature of the structures and features in this phase of activity. Likewise, Fulford and Allen noted that the spatial distribution of features at Woolaston pointed to '…a highly organised enterprise engaged in the production of bloom iron.' (1993, 199).

Due to the limited size of the excavation the precise nature and scale of the iron processing at Alvington is currently unknown and, as such, the general context of the site remains to be determined. Its location between Chesters villa, Woolaston and Park Farm villa, Lydney (Fitchett 1986, 24 - 7), both of which contained evidence for iron making, raises interesting possibilities; was the activity at Alvington a satellite operation related to one of these villas? Or, perhaps, associated with a third, as yet undiscovered iron making villa? The Alvington site lies within the 16km² minimum territory of the Woolaston villa, as postulated by Fulford and Allen (1993, 201) and, therefore, would most likely be associated with that site. However, the relatively high percentage of samian ware pottery at Alvington may suggest that a high status building, such as a villa, was located nearby. The current evidence, therefore, does not rule out either possibility. It seems clear from this that our understanding of the interconnections between the villas and iron making sites in this area is far less certain than previously assumed.

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Table 1: The pottery from Church Lane, Alvington.

	Fabric	Description	No	% No	Wt	Wt %	EVE	% EVE
Imports	LEZ SA	Central Gaulish samian	13	9.1	128.5	6.3	16	10.6
	EG SAM	East Gaulish samian	1	0.7	33	1.6	0	0.0
	BAT AM	Baetican amphorae	9	6.3	368	18.0	0	0.0
Regional	DOR BB1	Dorset black burnished ware	17	11.9	151	7.4	28	18.5
	MAH WH	Mancetter-Hartshill whiteware	1	0.7	13	0.6	0	0.0
	PNK GT	pink grog-tempered ware	1	0.7	8	0.4	0	0.0
	OXF RS	Oxfordshire colour-coat	1	0.7	4	0.2	0	0.0
	OXF WH	Oxon whiteware mortaria	1	0.7	18	0.9	0	0.0
	SOW BB1	South-west black burnished ware	9	6.3	113	5.5	0	0.0
	SOW WS	South-west white slipped	1	0.7	32	1.6	0	0.0
Local	SVW OX	Severn Valley ware oxidised	52	36.4	735	35.9	27	17.9
	SVW RE	Severn Valley ware reduced	5	3.5	55	2.7	0	0.0
	BW	black sandy BB1 imitation	1	0.7	4	0.2	0	0.0
	BWMIC	black micaceous ware	1	0.7	17	0.8	0	0.0
	CC	unknown colour-coated ware	1	0.7	16	0.8	37	24.5
	GYMIC	grey micaceous ware	2	1.4	27	1.3	43	28.5
	GYSY	medium grey sandy ware	13	9.1	198	9.7	0	0.0
	OXMIC	micaceous oxidised ware	10	7.0	99	4.8	0	0.0
	OXIDSY	oxidised sandy ware	1	0.7	5	0.2	0	0.0
	OO/VIT	unclassified / vitrified crumbs	3	2.1	25	1.2	0	0.0
TOTAL			**143**	**100.0**	**2049.5**	**100.0**	**151**	**100.0**

Table 2: Catalogue of archaeometallurgical residues from Church Lane, Alvington.

Context	Weight (g)	Number	Description
1004	342		Ferricrete largely concealing angular fractured slag lump.
	68		Fragment of thin tapslag flow.
	47		Fragment of thin tapslag flow.
2004	1506		Rounded lump of ferricrete completely encasing core material - must be very dense slag, non-magnetic.
(bag 1)	686		Angular block of extremely dense slag, has a smooth, if curved, surface suggestive of a flow and possible impressions of flow lobes on other side - if so suggests a c.80mm flow. Contains a moderately large 40mm piece of part-reacted ore.
	28		Small fragment from a thin tapslag flow.
	18		Angular chip of dense slag.
2004	373		Very dense massive slag similar to 686g piece above, has large ore lump (>75mm) also has fired clay attached to one face.
(bag 2)	524		Ferricrete on dense concealed slag.
	164		Tap slag in >40mm thick flow.
	182		Tap slag in >40mm thick flow.
	108		Tap slag in >20mm thick flow.
	139		Ferricrete on curved crust fragment with possible tubular vesicles.
	90		Tapslag in c.20mm thick flow resting on planar base - tapped onto stone?
	15		Ferricrete on iron - nail?
	32		Angular freshly broken weathered grey massive slag.
	257	2	Ferricrete on elongate vesicular slag with a rounded base - possibly a low-density runner, small separate piece broken from one end.
	83		Probably a crust fragment - but of uncertain origin.
	47		Fragment of vesicular slag similar to the possible runner above.
	45		Tap slag fragment.
	13		Probably burnt weathered chert?
	6		Tap lag fragment.
	47	12	Small indeterminate slag fragments.
2006	70		Curved sheet of dark vesicular slag. Convex surface has fuel dimples and is very dark and shiny. Concave side is smooth with maroon bloom - similar to the top of some smithing cakes.
	21		Indeterminate grey vesicular slag fragment.
	102		Iron slag nub with concreted sand. Upper surface has some smooth areas visible - but unclear if this is flown surface on a smelting slag or upper face of a smithing slag.
2012	608		Rounded dense ferricrete lump - presumably contains slag not iron since non-magnetic.
2014	31		Small angular fragment of dense dark slag.
2024	277		Ferricrete on angular fragment of very dense slag with very few vesicles, small area of flow surface on one end so probably tap slag or from furnace arch, but dense and thick.

Table 3: Charred plant remains from Church Lane, Alvington.

Sample Number:	**3**
Context Number:	**2004**
Context Type:	
Provisional date:	**Roman**
Non seed material	
Metallurgical debris	22
Charred bark fragments	7
Vesicular material	473
Parenchyma (undifferentiated plant storage tissue)	1
Hazel (*Corylus avellana* L.)	
nut shell	2
Crop material	
Emmer / spelt wheat (*Triticum dicoccum/spelta*)	
glume bases	1
Wheat (*Triticum* sp.)	
grains	2
? Barley (*cf. Hordeum* sp.)	
indet grains	1
Oat (*Avena* indet)	
grains	1
? Oat (*cf. Avena* indet)	
grains	2
Cereal indet	
grains	5
> 2mm culm node	1
Wild/weed plant seeds	
Large grass (> 2mm Poaceae)	2
Vetch/wild pea (*Vicia/Lathryus* sp.)	1
Medick /clover (*Medicago / Trifolium* sp.)	1

Table 4: Wood charcoal from Church Lane, Alvington.

Sample Number: 003

Context Number: 2004

Provisional Date: Roman

Weight of Sample (grams): 2.4

Fragment Number	Fragment Size	Species	Ring Curvature[a]	Vitrification[b]	Radial Cracks[c]	Tyloses[c]
1	4mm	*Quercus sp*	2	2		1
2	4mm	*Quercus sp*	2	2		
3	4mm	*Corylus avellana* L.	3			
4	4mm	*Corylus avellana* L.	3	1		
5	4mm	*Corylus avellana* L.	/	1		
6	4mm	*Quercus sp*	3	2		
7	4mm	*Corylus avellana* L.	3	1		
8	4mm	*Corylus avellana* L.	3			
9	4mm	*Indet*	/	3		
10	4mm	*Corylus avellana* L.	2	2		
11	4mm	*Corylus avellana* L.	3	1		
12	4mm	*Quercus sp*	1	2		1
13	4mm	*Indet.*	/	3		
14	4mm	*Quercus sp*	2	2		1
15	4mm	*Quercus sp*	1	2		
16	4mm	*Pomoideae*	3			
17	4mm	*Quercus sp*	1	2		
18	4mm	*Quercus sp*	2	2	1	1
19	4mm	*Corylus avellana* L.	3	1		
20	4mm	*Indet.*	/	3		
21	4mm	cf. *Quercus sp.*	2	2		
22	4mm	*Pomoideae*	2			
23	4mm	*Corylus avellana* L.	3	2		
24	4mm	*Indet.*	/	3		
25	4mm	*Pomoideae*	2			
26	4mm	*Pomoideae*	2			
27	4mm	*Quercus sp.*	2	2		1
28	4mm	*Quercus sp.*	2	2		1
29	4mm	*Quercus sp.*	1		1	1
30	4mm	*Quercus sp.*	1			
31	2mm	*Quercus sp.*	/			
32	2mm	*Alnus glutinosa/incana*	3	2		
33	2mm	*Alnus glutinosa/incana*	2	2		
34	2mm	*Indet*	/			
35	2mm	*Quercus sp.*	/	2		1
36	2mm	*Quercus sp.*	/			

Sample Number: 003

Context Number: 2004

Provisional Date: Roman

Weight of Sample (grams): 2.4

Fragment Number	Fragment Size	Species	Ring Curvature[a]	Vitrification[b]	Radial Cracks[c]	Tyloses[c]
37	2mm	*Quercus sp.*	2	2		1
38	2mm	*Alnus glutinosa/incana*	/	2		
39	2mm	*Pomoideae*	2			
40	2mm	*Quercus sp.*	2	2		
41	2mm	*Corylus avellana* L.	2	1		
42	2mm	*Quercus sp.*	2	2		
43	2mm	*Quercus sp.*	/	2		1
44	2mm	*Corylus avellana* L.	3	2		
45	2mm	*Quercus sp.*	1	2		
46	2mm	*Quercus sp.*	/	1		
47	2mm	*Quercus sp.*	1	2		
48	2mm	*Quercus sp.*	1	2		
49	2mm	*Quercus sp.*	/	2		
50	2mm	*Quercus sp.*	/	1		

[a] 1 = low curve rings; 2 = intermediate curved rings; 3 = strong curve rings
[b] 1 = low brilliance; 2 = strong brilliance; 3 = total fusion – dense, non-recognisable mass
[c] 1 = yes

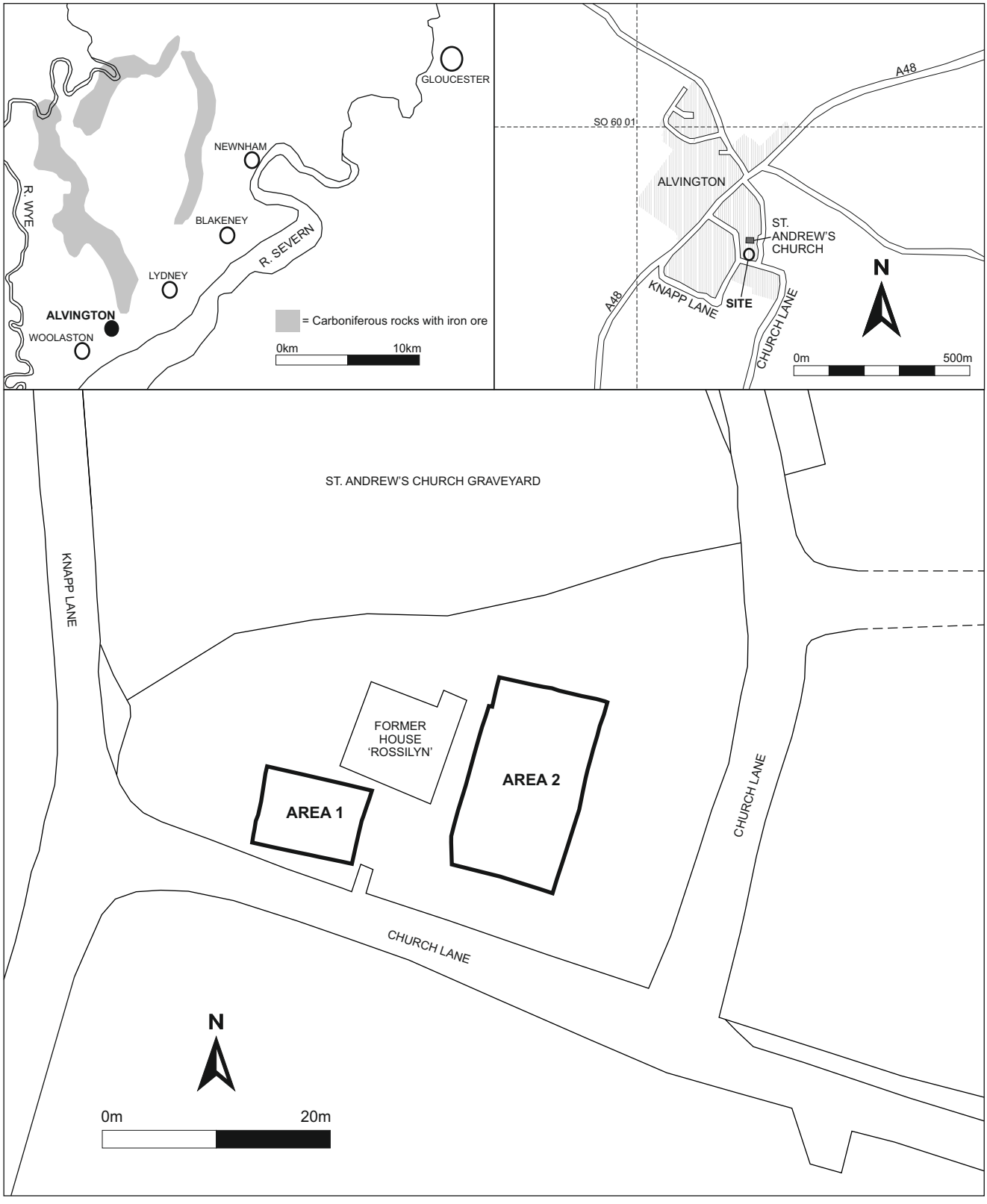


FIGURE 1: Site Location

FIGURE 2: Area 2, Phase 1 Plan

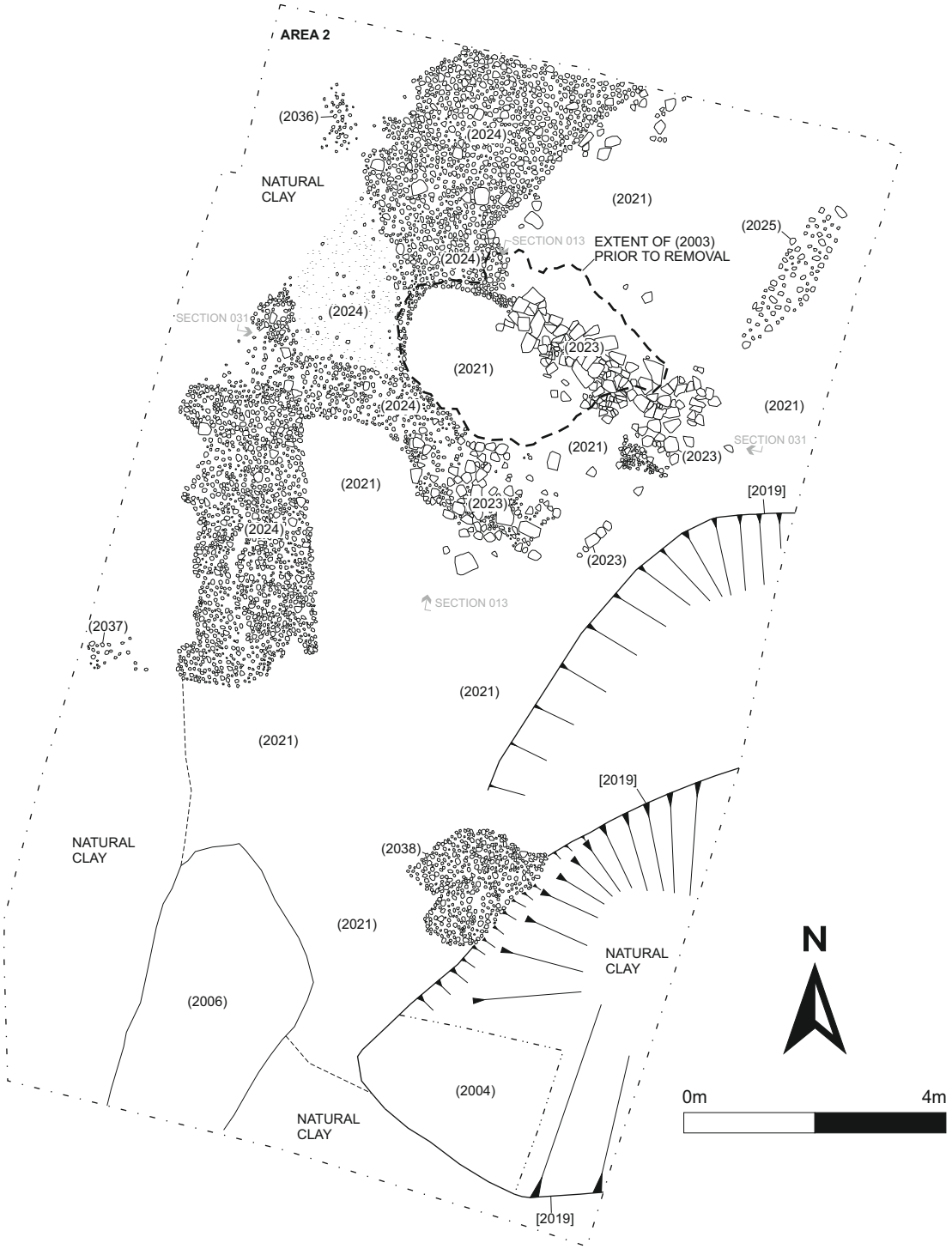


FIGURE 3: Area 2, Phase 2 Plan

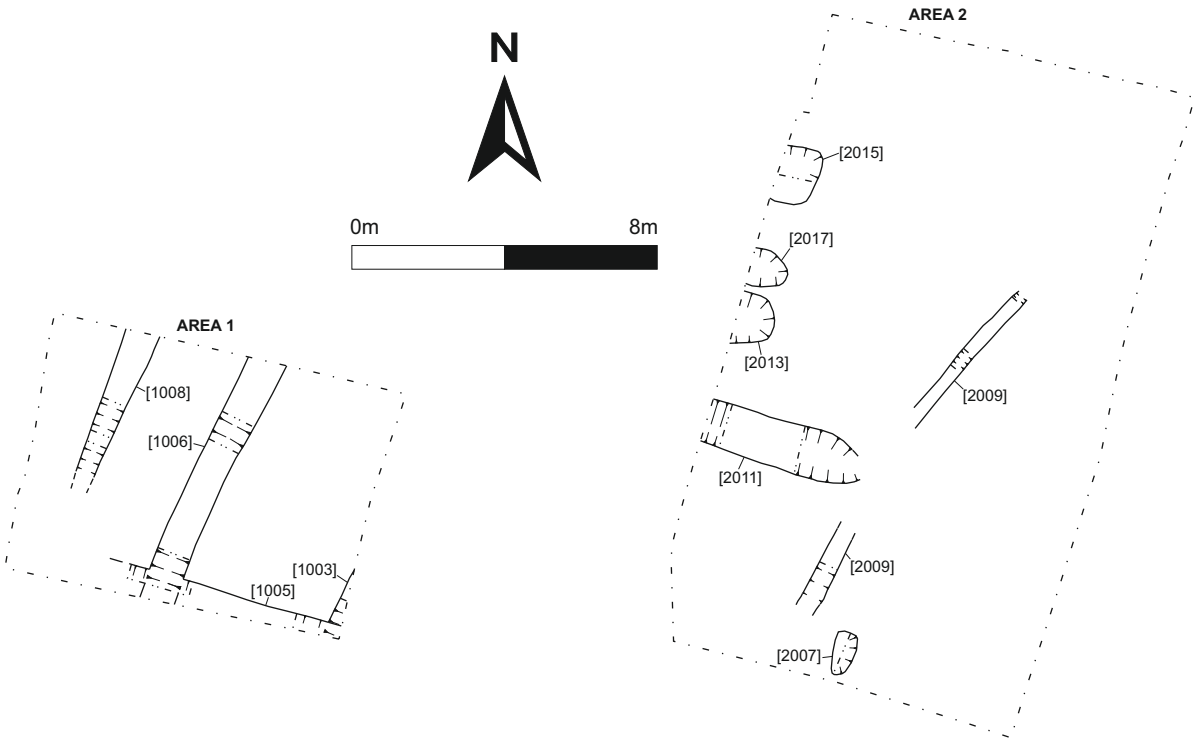
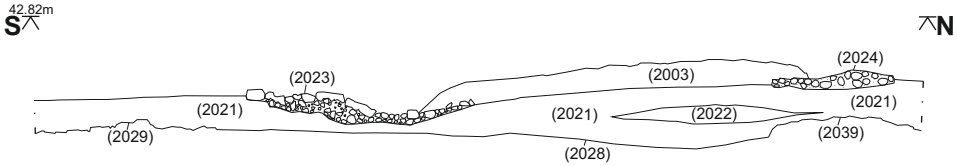
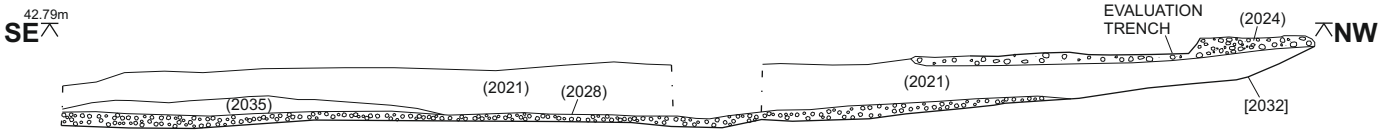


FIGURE 4: Areas 1 and 2, Plan of Undated Features

SEC 013: EAST FACING SECTION (2003), (2021), (2022), (2023) and (2024)



SEC 031: NORTHEAST FACING SECTION [2032], (2028), (2035), (2021) and (2024)



SEC 033: SOUTHWEST FACING SECTION [2032], (2028), (2031), (2033) and (2034)

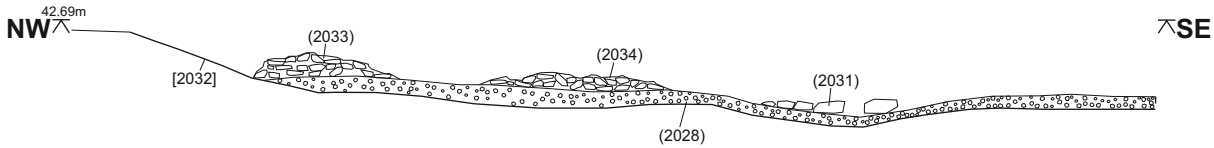


FIGURE 5: Selected Sections

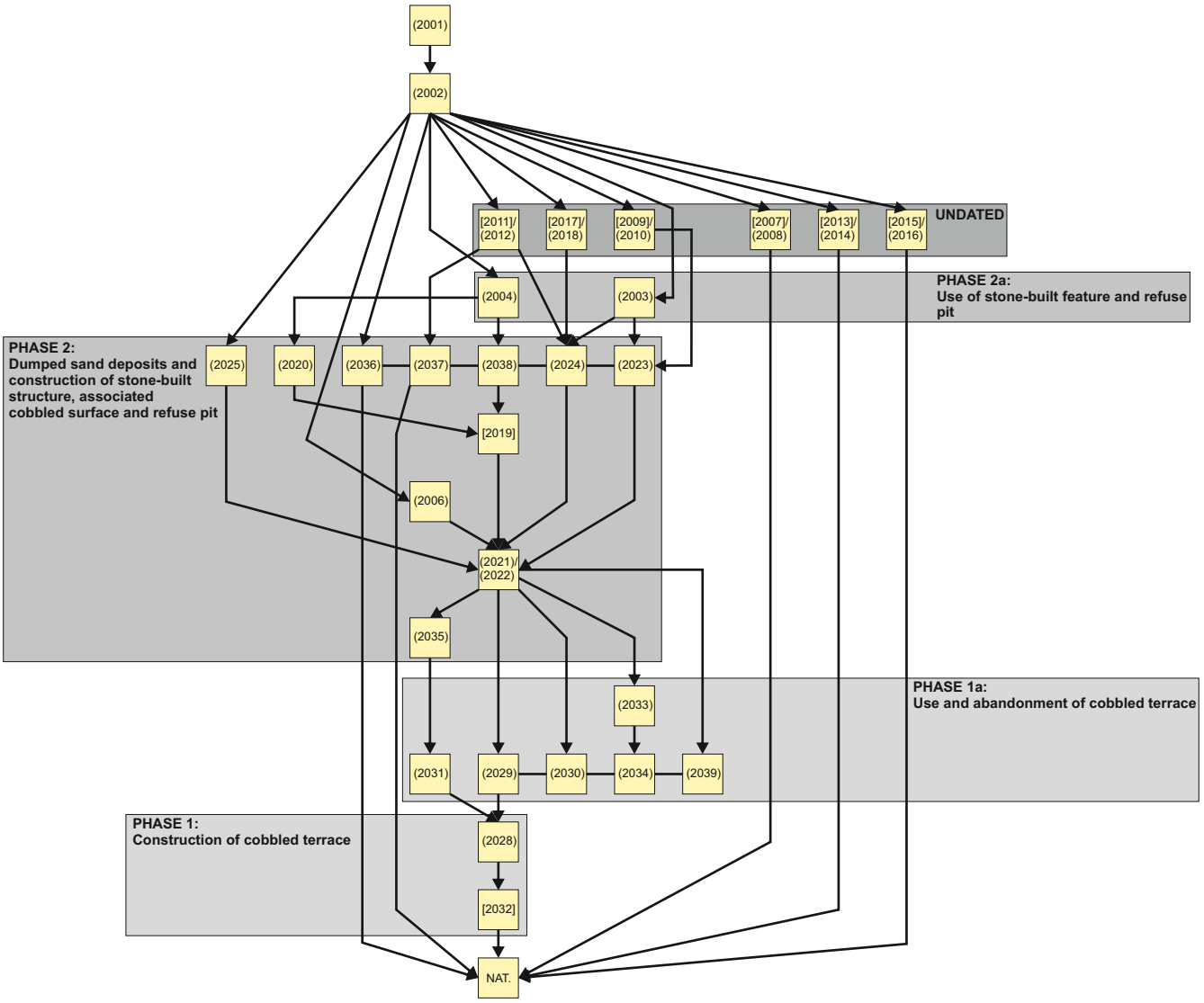


FIGURE 6: Harris Matrix