



# University of Leicester

## Archaeological Services

An archaeological excavation  
on land at Melton Road,  
Barrow Upon Soar,  
Leicestershire  
(SK 583 173)

Leon Hunt



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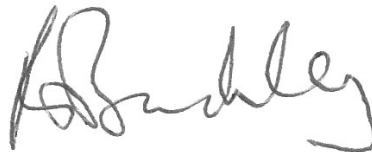
*for*

Jelsons Ltd

**Planning Authority: Charnwood Borough Council**

**Planning Application Number: P/10/1518/2**

**Checked by Project Manager**



**Signed:**

**Date: 17 March 2015**

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**Accession Number: X.A178.2013**

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## **An archaeological excavation on land at Melton Road, Barrow upon Soar, Leicestershire (SK 583 173)**

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### **Summary**

*An archaeological excavation was carried out by University of Leicester Archaeological Services (ULAS) on land at Melton Road, Barrow upon Soar, Leicestershire (NGR: SK 583 173). The work was carried out for Jelsons Ltd as a mitigation strategy in advance of the development of the site for new housing.*

*Previous evaluation work on the site had located a number of lime kiln structures. These had been sampled but not closely dated. The excavation work was an attempt to recover samples from the kilns that could be dated using scientific techniques (archaeomagnetic dating).*

*A total of six areas were excavated down to archaeological layers and the remains of six kiln structures were revealed. Two of these structures were sampled by the excavation of sections and all were hand planned.*

*The kilns mainly consisted of a lozenge-shaped pit surrounded by a halo of burnt clay or siltstone, which was most likely quarry backfill. The pits had a fill of silty soil, clay and ash, which varied greatly in depth from kiln to kiln. At one end of the kilns there was normally a shallow pit or working area where the processed lime had been scraped into. In most of the kilns this had been at least partially truncated by ploughing or machining.*

*Modern glass was recovered from two fills within two separate kilns, which would suggest that the kilns are modern in date. The burnt clay areas around the kilns were fairly friable and not of sufficient stability to be considered for archaeomagnetic dating.*

### **Introduction**

University of Leicester Archaeological Services (ULAS) have carried out an archaeological excavation on land at Melton Road, Barrow upon Soar, Leicestershire (NGR: SK 583 173). The work was carried out for Jelsons Ltd as a mitigation strategy in advance of the development of the site for new housing.

This archaeological work was in accordance with NPPF Section 12: Enhancing and Conserving the Historic Environment.

A previous archaeological field evaluation carried out on the site in 2013 located the remains of a number of lime kilns which were not only all very similar in form (apparently simple clamp kilns), but also could not be closely dated. In view of this, a phased mitigation strategy was implemented, commencing with an initial stage of excavation targeting several kilns for detailed investigation and scientific dating in order to clarify their significance. If this work showed that the kilns had high archaeological research potential in relation to the Barrow limeworking industry (in view of their dating and/or form) the plan was for this to be followed by a second phase of investigation.

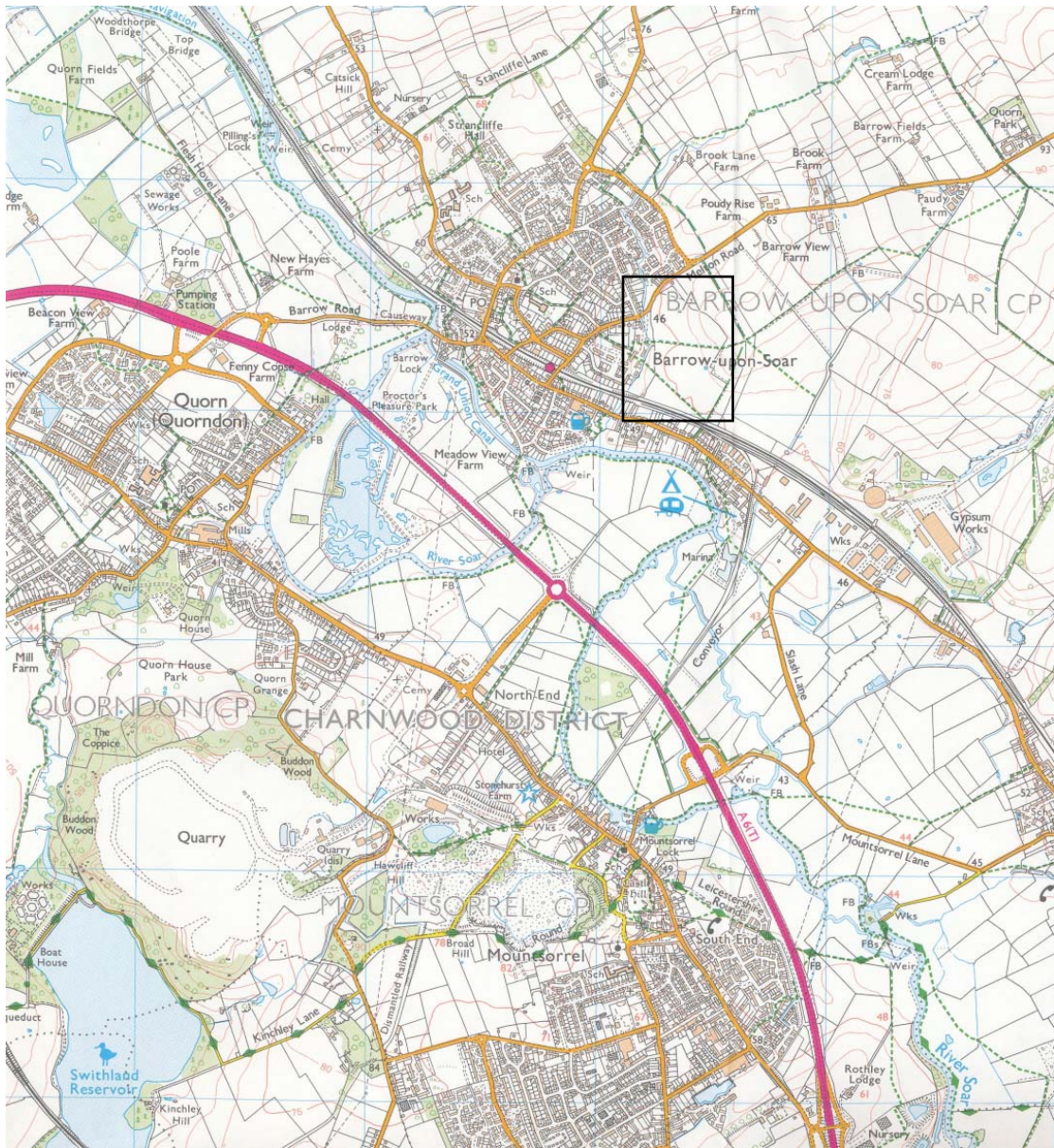


Figure 1: Site Location

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## Location and Geology

The site, locally known as 'The Breaches', is a large agricultural field of *c.*13.5 hectares, which lies at the south-eastern edge of the town of Barrow upon Soar, in the Charnwood District of Leicestershire, around 4 miles south-east of Loughborough (Figure 1).

The Ordnance Survey Geological Survey of Great Britain, Sheet 142 indicates that the underlying geology is likely to consist of Barnstone Member interbedded mudstone and limestone, overlain by Scunthorpe Member Mudstone on the eastern edge of the site and by Head along the western edge of the field near the Fishpool Brook. It also records that there may be areas of made ground associated with the quarrying of the area.

The previous evaluation had identified that much of the area was covered in the back-fill from earlier quarrying, with islands of undisturbed natural substratum. Extant medieval ridge and furrow earthworks on the eastern side of the field had attested that this part of the field was likely to be undisturbed and all the limekilns were situated on the western and southern parts of the field and largely lay upon disturbed ground.

The site lies on undulating ground, located on a south-west facing slope ranging in height from c.64m aOD in the north-east corner to c.47m aOD in the south-west at the boundary with Fishpool Brook.

Two footpaths cross the site; one from east to west across the centre of the site and another from the centre of the site towards the south-east.

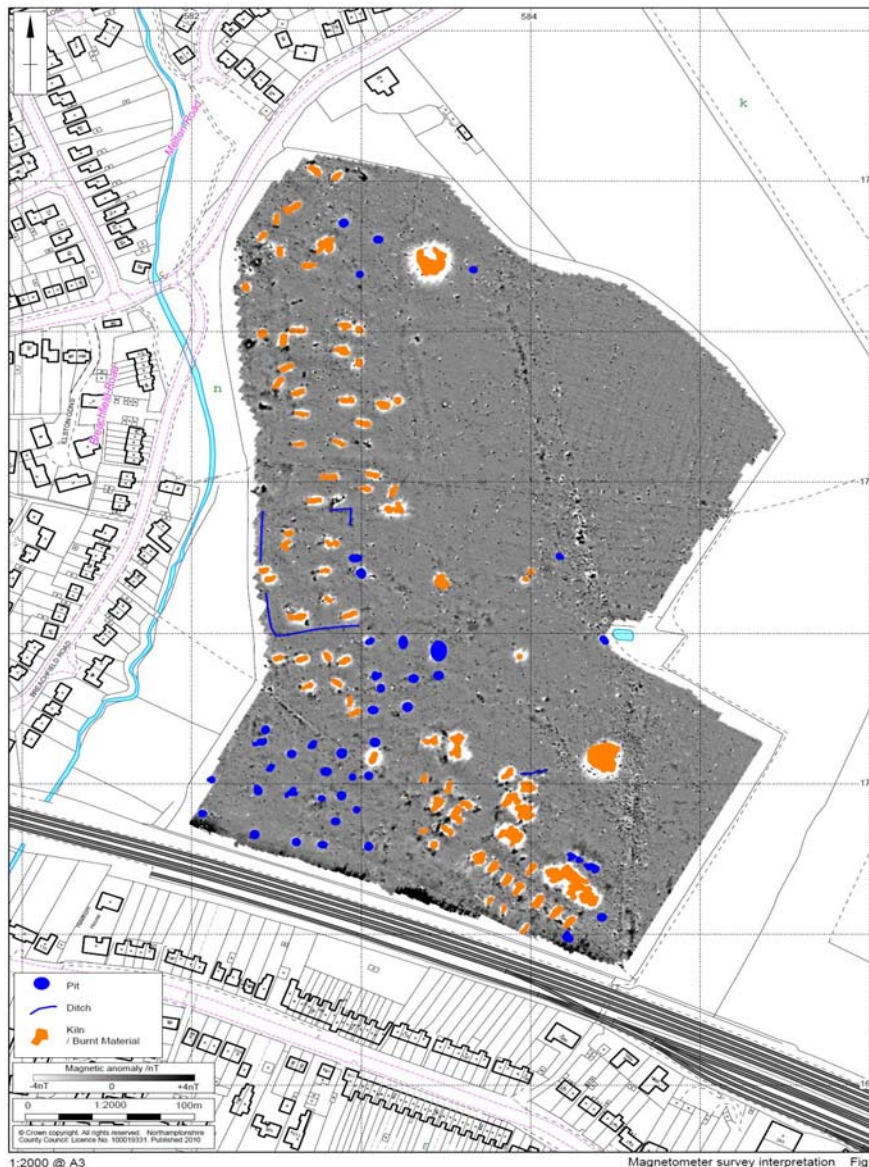


Figure 2: Plan of results of magnetometry survey.  
Provided by Northamptonshire Archaeology

## Historical and Archaeological Background

An archaeological desk-based assessment was prepared in 2009 (Clarke 2009). Among the possibility of earlier Roman remains the Historic Environment Record (HER) for Leicestershire and Rutland also has records of a number of post-medieval lime kilns located within the area and cartographic evidence indicates that some of these may have been in use until the early part of the 20th century. The excavations of the lime pits are likely to have had a damaging impact upon any earlier archaeological deposits located within the affected areas. Early maps show mainly the central parts of the site affected by quarrying, but it is possible that much of the field had previously been excavated for limestone.

A magnetometry survey was carried out on the site in 2010 by Northamptonshire Archaeology on behalf of ULAS (Ladocha and Butler 2010). The survey revealed evidence of approximately 76 possible lime kilns, associated pits and two backfilled quarry pits (Figure 2). A possible rectangular ditched enclosure was identified on the western side of the field. The survey also revealed a linear feature running broadly north to south along the central/ eastern side of the field. This corresponds broadly with a mineral railway indicated in the 1904 OS map of the area.

Subsequently an archaeological field evaluation was carried out on the site in 2013 (Hunt 2013) (Figure 3). A total of 26 trial trenches were placed across these anomalies and nearly all the features shown on the previous survey were identified as either ‘clamp’ or linear kilns or debris associated with kiln material. The evaluation also revealed that much of the field had been previously quarried for limestone and therefore any earlier archaeological remains may have been destroyed.

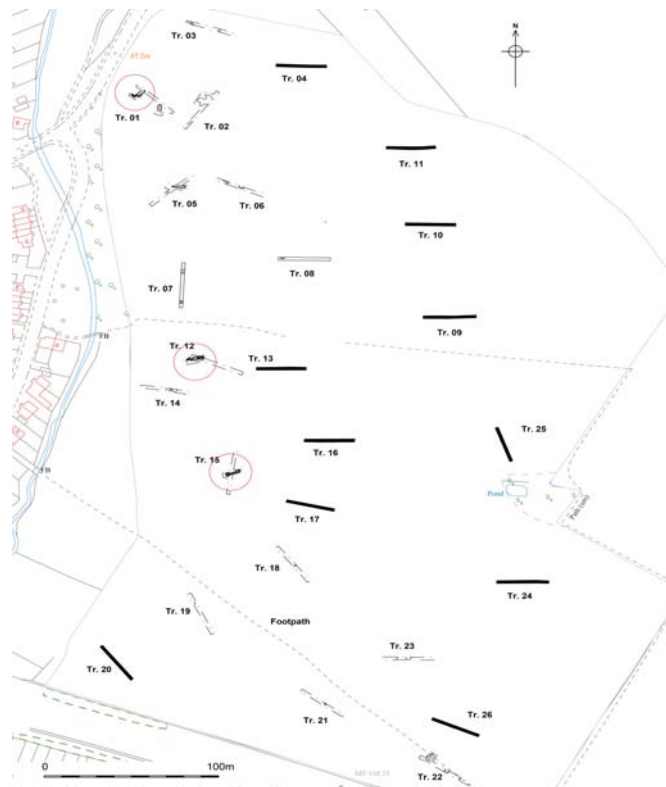


Figure 3: Plan of previous archaeological trench evaluation, showing positive (white) and negative (black) trenches. Ringed trenches contain excavated clamp kilns

Three kilns were excavated and recorded but no dating evidence was attained during the work (Figure 3). It was felt that further work may have yielded material that could be closely dated and that samples taken of kiln material could be dated using archaeomagnetic techniques.

Excavations at nearby Strancliffe Hall, Barrow (to the north-west of the town), revealed further kilns of this type (Hunt 2014) where they consisted of a lozenge-shaped pit around 7m long, excavated to around 0.3m-0.6m in depth which was filled presumably with layers of fuel (coal or wood) and limestone. This was then fired, most likely from a pit at one end (mainly to the south or west of the kiln) and then the lime would have been cleared out and the kiln used again, which would account for the compacted limestone and ash in the centre of the which may be the remnants of previous firings. One of the kilns at Strancliffe Hall had a stoke pit from which modern pottery was recovered.

### **Methodology**

All work will follow the *Chartered Institute for Archaeologists (IFA) Code of Conduct* and adhere to their *Standard and Guidance for Archaeological Excavations*.

Staffing, Recording systems, Health and Safety provisions and Insurance details were provided.

Initially, six kilns were identified for further investigation, through the examination of a trial trench over each, followed by limited investigation designed to reveal deposits suitable for archaeomagnetic dating. If the kilns proved to be recent, it was proposed that the project be terminated at that point. If, however the kilns prove to relate to the Roman, medieval or early post-medieval lime burning industry in Barrow, further work would have been proposed.

Six trenches were excavated over areas containing kilns located using a Topcon Hiper V GPS+ RTK System attached to a Topcon FC-236 controller. Once kilns have been located, the trenches were widened as appropriate to reveal deposits suitable for scientific dating.

Modern overburden was removed carefully in level spits, under continuous archaeological supervision by a large tracked excavator using a toothless ditching bucket of 2m width. The trenches were excavated down to the top of archaeological deposits or natural undisturbed ground (subject to health and safety considerations), whichever was reached first.

Two of the proposed trenches were moved as they had been placed over a public footpath, which diverted from the course shown on the maps. In the case of all six trenches a kiln was located (Figure 4). The trenches were then cleaned by hand, photographed and planned.

The context numbers for this work continued on from the previous evaluation and started with cut number [18] and fill number (16). The former museum accession code of X.A178.2013 was also retained.



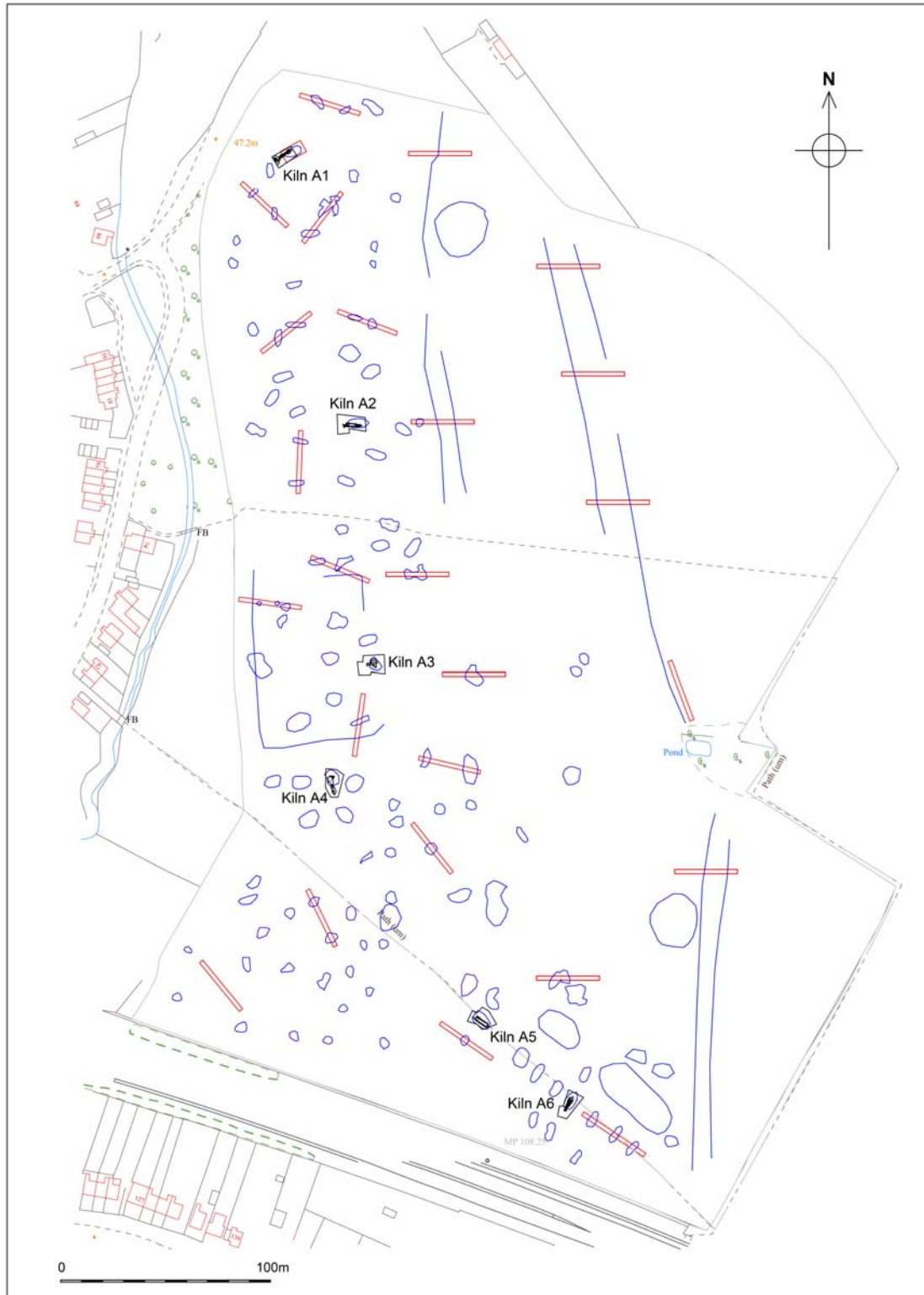


Figure 4: Plan of sampled kiln locations.  
Geophysical anomalies in blue. Previous trenches in red

## Results

### *Kiln A1*

An area measuring *c.*6.5m x 10m was excavated until the kiln was exposed (Plate 1). The kiln was oriented north-east to south-west and consisted of an area measuring

around 6.62m, which could be split into two components (as if the kiln was in two halves). The north-eastern part was 2.61m long and 0.86m wide and 0.12m deep, with a halo of burnt clay and siltstone around 0.5m wide (Figure 5). There appeared to be a cut [20], which was very irregular and shallow and contained a fill (21) of pinkish-grey silty clay with occasional limestone fragments and a small section of thin modern glass (Figure 5c).

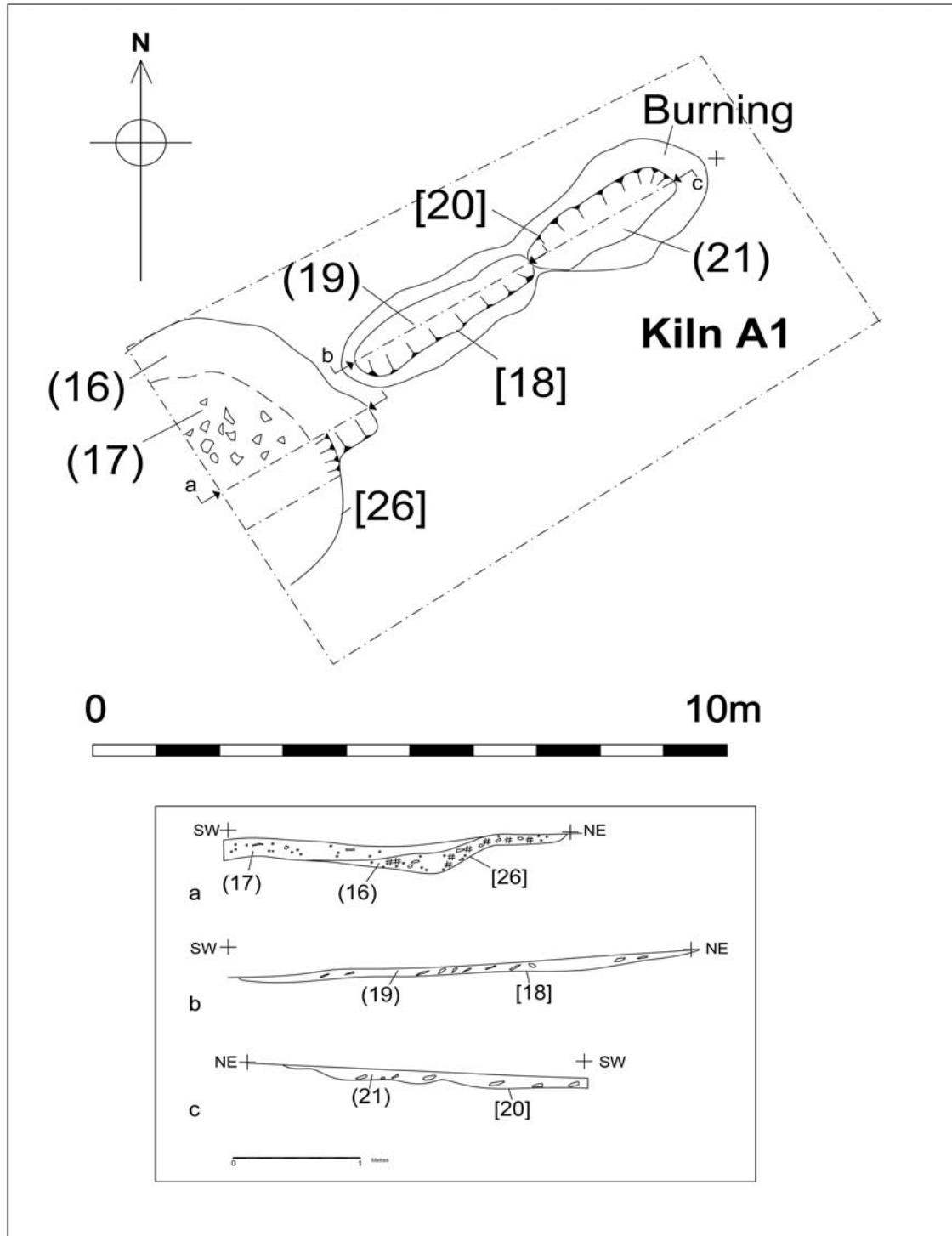


Figure 5: Plan and sections of Kiln A1



Plate 1: Kiln A1 pre-excavation. Looking north-east



Plate 2: South-east facing section across Kiln A1 at south-west end [18]

The south-western part of the kiln was a shallow cut [18] measuring 3.23m by 0.75m by 0.12m with a fill (19) of the same material as (21). This also had a halo of burnt clay 0.34m wide (Figure 5b: Plate 2).

To the south-west of this was a large pit or spread measuring at least 4.3m wide and 2.7m long. The pit cut [26] was 0.22m deep with a very shallow north-eastern end gradually deepening with a flat base. The lower fill (16) was a mottled yellowish-brown and pinkish-brown silt with large amounts of crushed limestone within the matrix. The upper fill (17) was brownish-grey clayey silt with larger pieces of limestone and siltstone (Figure 5a: Plate 3).

Following detailed discussion with a specialist in archaeomagnetic dating (Dr Cathy Batt, University of Bradford) it was not felt that the burnt clay areas were firm or stable enough to be sampled for dating by this method. In addition, there were no primary carbonised deposits relating to the firing of the kiln which could be sampled for C14 dating.



Plate 3: South-east facing section of pit/working area [26], looking north-west

### ***Kiln A2***

An area c. 12m by 9m was stripped to expose the kiln (Figure 6: Plate 4).

The second kiln consisted of a narrow pit measuring 7.24m long and 1.26m wide, with a halo of burnt clay 0.24m wide oriented north-west to south-east. This feature was half-sectioned at each end. At the north-western end the cut [22] was 0.12m deep with irregular sides and base. The fill (23) was mottled pinkish grey with yellow and black patches and consisted of silty clay with charcoal flecks and limestone pieces (Figure 6a).

At the south-eastern end the cut [24] was much deeper and well-defined of 0.32m depth (Figure 6b: Plate 4). The fill (25) was identical to (23).

The sides of the kiln cut at the south-eastern end seemed to have been partially constructed of rough angular limestone pieces giving the kiln a kind of structure. Just to the south-east of the kiln was a large flat piece of limestone, which may have been used to stand on. A thin spread of ash and soil lay nearby. There was no evidence for a pit or working area at this end.

Again, the burnt clay areas were not firm or stable enough to be sampled for archaeomagnetic dating and there were no primary charcoal deposits for C14 dating.

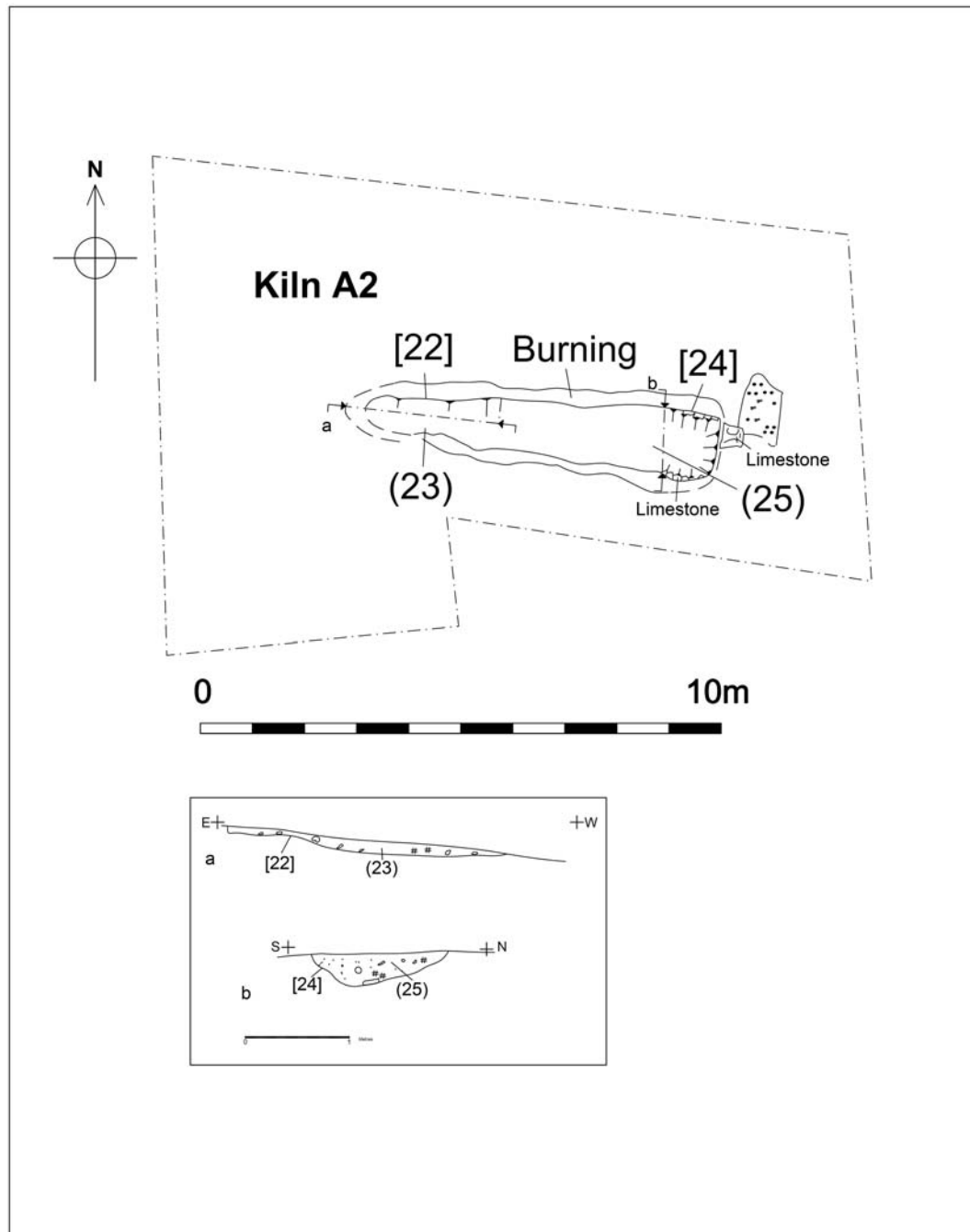


Figure 6: Plan and sections of Kiln A2



Plate 4: Kiln A2 pre-excitation, looking north-west



Plate 5: East facing section of south-eastern end of Kiln A2, looking west

### ***Kiln A3***

An area 13m by 8.5m was stripped to reveal a kiln structure oriented south-west to north-east (Figure 7: Plate 6).

Kiln A3 was not excavated. The main part of the kiln consisted of a well-defined rectangular pit, partially lined with limestone, which measured 3.9m by 0.72m, which was truncated by quarrying along the eastern side.

At the eastern end the surrounding soil had been burnt red and black and there was a large amount of ash within the soil. At the western end the kiln petered out into an area of burnt lime and ash, which suggested that the kiln had been raked out here.

Again, there were no deposits suitable for scientific dating.

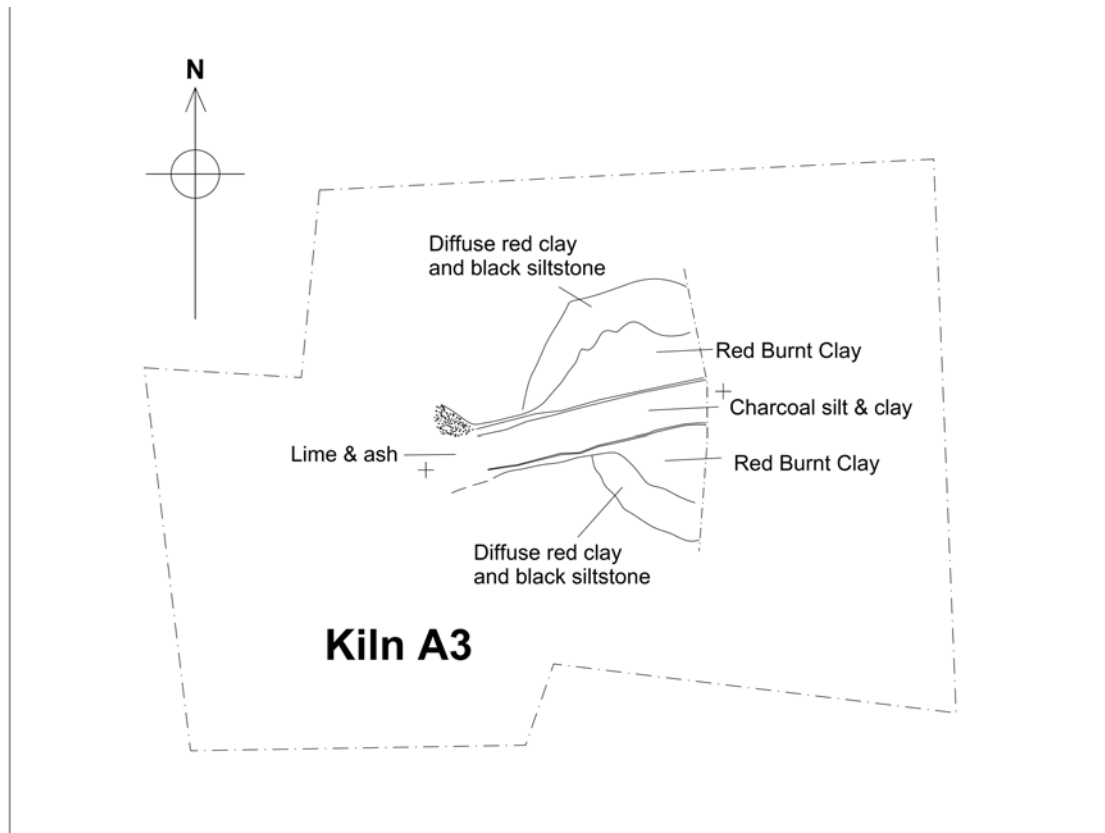


Figure 7: Plan of Kiln A3



Plate 6: Kiln A3, looking north-east

#### ***Kiln A4***

An area measuring 13.5m by 8.5m was excavated to expose a kiln orientated north-west to south-east (Figure 8).

This kiln was less well-defined than the others and mainly consisted of a halo of burnt clay measuring 5m by 1.7m, with small patches of silty infill *in situ*. To the north-west was a large area of silt, crushed limestone and ash.

Again, there were no deposits suitable for scientific dating.



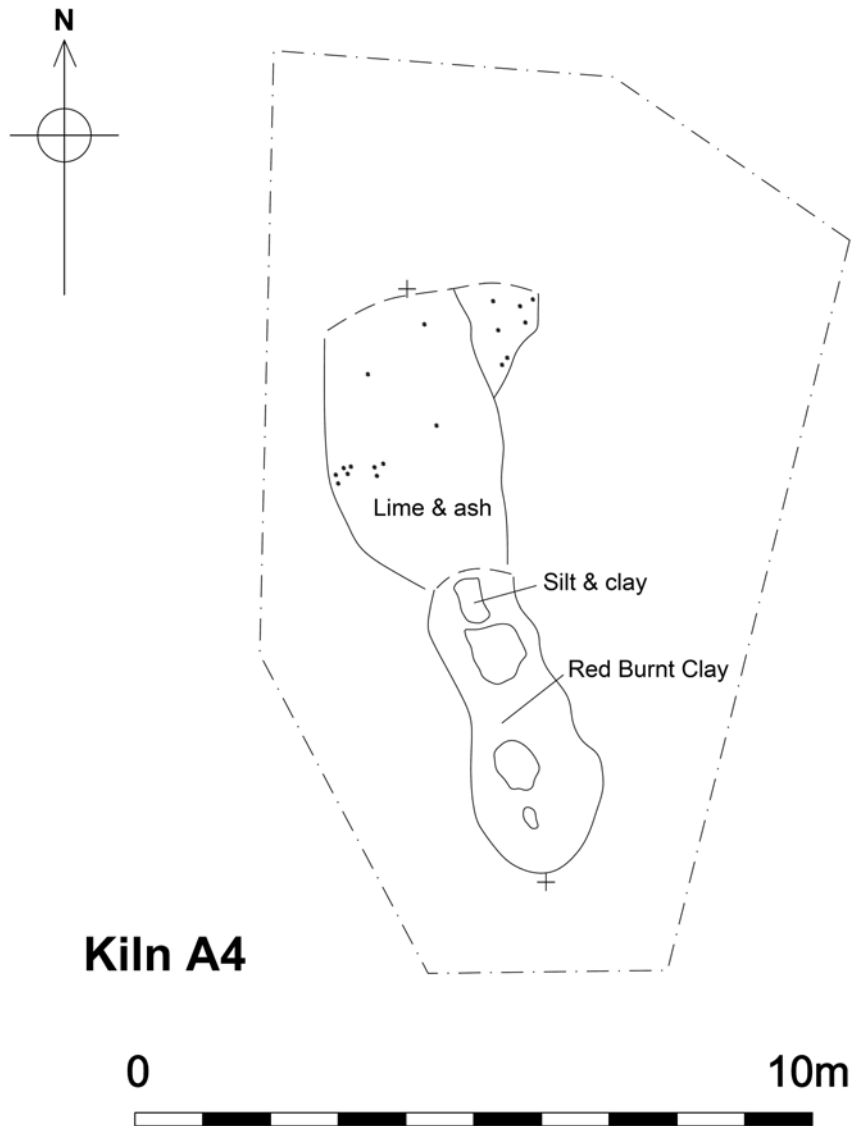


Figure 8: Plan of Kiln A4

### ***Kiln A5***

An area measuring 11m by 8m was excavated to expose the kiln. This kiln structure was fairly well-defined and aligned south-east to north-west. It consisted of a lozenge shaped pit of around 7m length and 1.27m width, with a 0.49m halo of burnt clay of around it (Figure 9: Plate 7).

The kiln was infilled with silt and clay and there appeared to be some structural limestone pieces at the north-western end. There was an accumulation of crushed limestone ash and silt at this end, which suggested the presence of a pit, although this had apparently been truncated and was no longer extant.

Again, there were no deposits suitable for scientific dating.

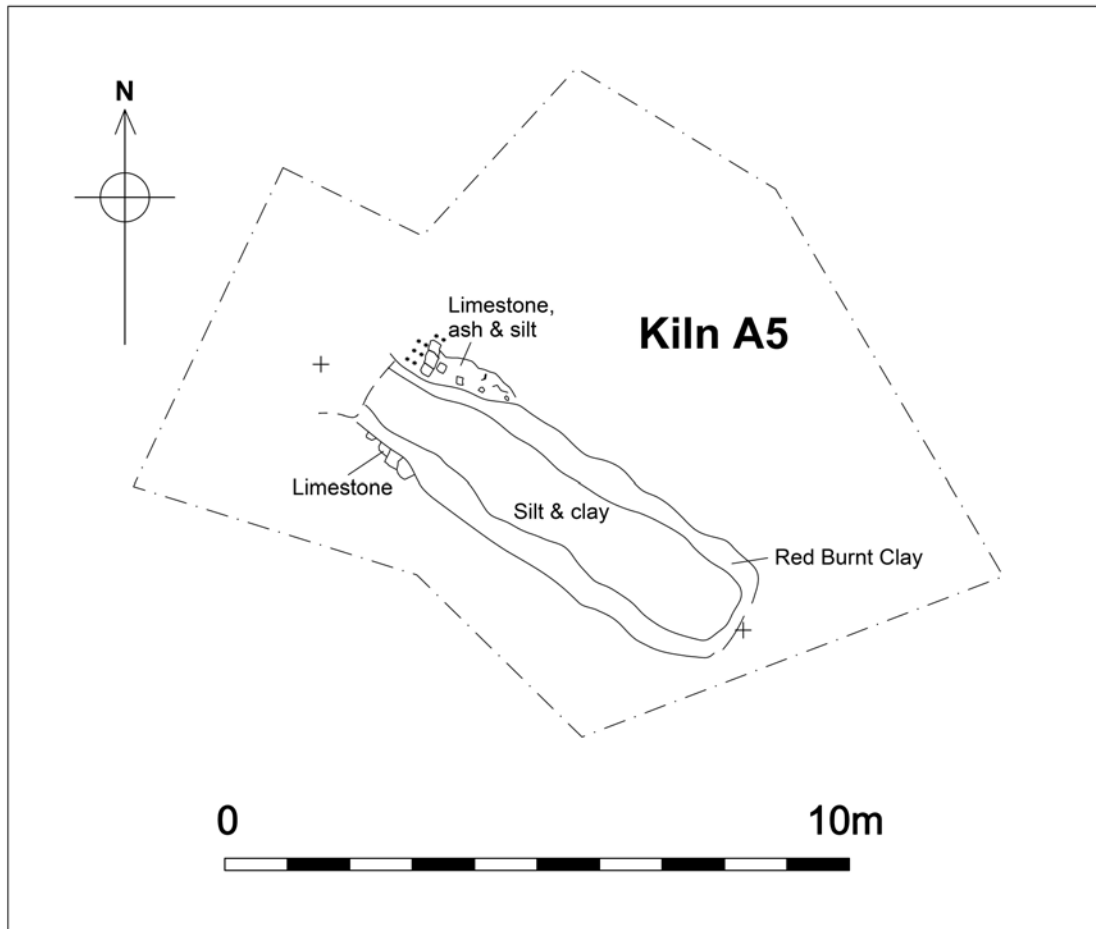


Figure 9: Plan of Kiln A5



Plate 7: View of Kiln A5, looking north-west



Plate 8: View of Kiln A6, looking south-west

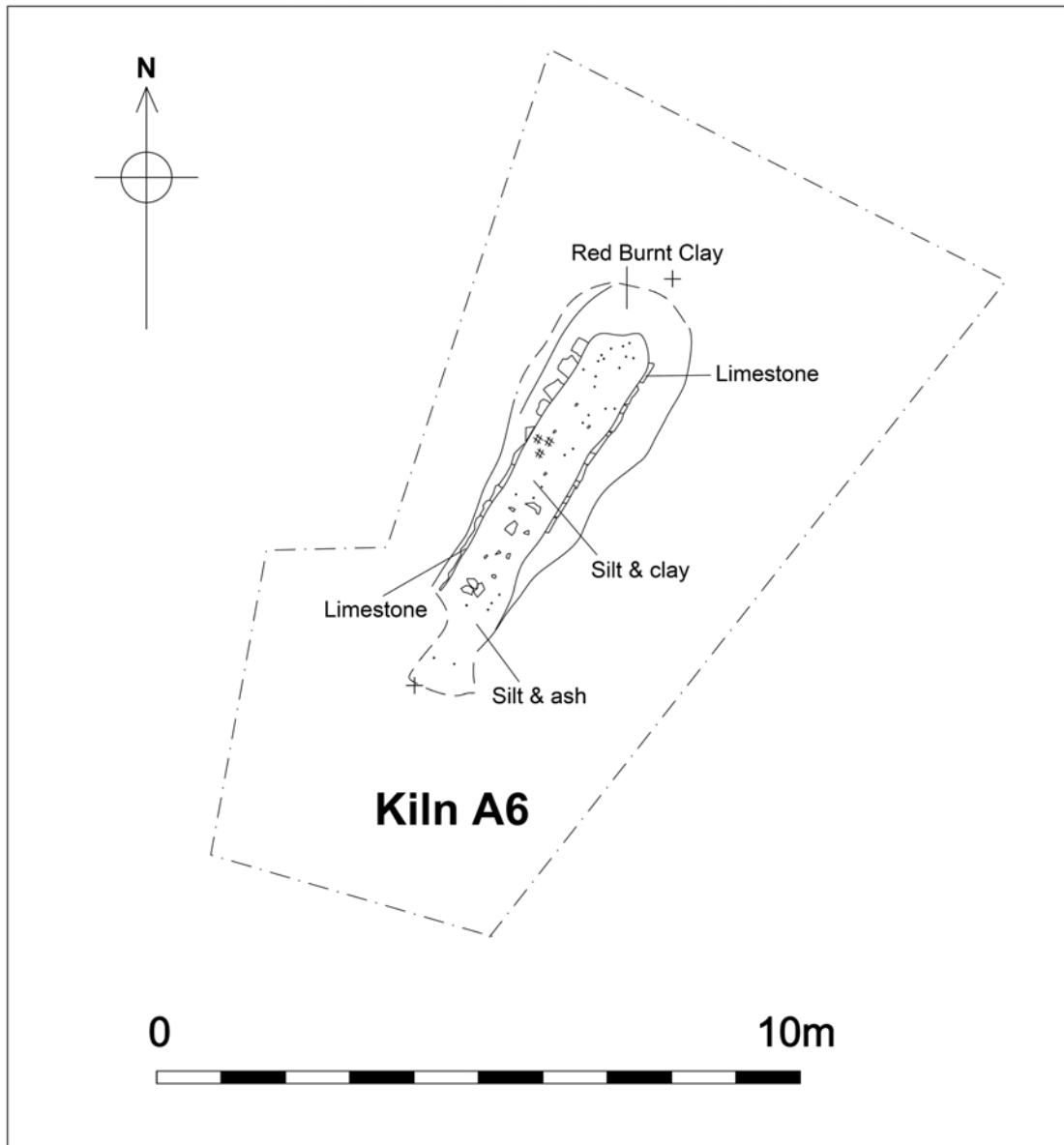


Figure 10: Plan of Kiln A6

### ***Kiln A6***

An area measuring 13.5m by 7.5m was excavated to expose a kiln orientated north-east to south-west.

This kiln was also fairly well-defined with a kiln structure of around 5.2m length and 0.92m width. The halo of burnt clay was around 0.7m wide and like Kiln A5 there was a partially truncated area of limestone, ash and silt at the south-west end.

The kiln structure appeared to be surrounded by limestone chunks or small blocks. Again, there were no deposits suitable for scientific dating.

A small piece of modern glass was recovered from the fill of the pit.

## **Conclusion**

The six kilns uncovered during this work were of a very similar form to those found in the previous evaluation and the work carried out at Strancliffe Hall to the north-west of the town (Hunt 2014) and on Cotes Road (McAree 2006).

On this site, they consisted mainly of a shallow lozenge-shaped pit, of up to 7m length and 1m width, surrounded by a halo of burnt clay or siltstone. In some cases the pit appeared to have been formed of limestone pieces, although this was neither clear nor consistent.

The pit had normally been infilled with silty subsoil, sometimes with inclusions of ash, charcoal, clay and burnt limestone. In some cases the pit was fairly deep (Kiln A2) but in other the fill was little more than a shallow patchy layer (Kiln A4).

In the case of Kiln A3 the kiln appeared to have fired badly as all the burning was at the north-eastern end of the structure and had coloured the surrounding clay and siltstone over a larger area than normal. It is possible that this kiln represents a slightly different design to the others; it is much narrower than Kilns A1, A2, A5 and A6, but Kiln A4 was also apparently quite short in length.

A large working area and a pit filled with burnt crushed limestone were observed in Kiln A1. All the other kilns showed signs of having a pit or working area at one end, although most had been truncated, either by ploughing or during the machining.

In all cases the burnt areas around the kilns were neither firm nor stable enough to provide an adequate sample for the proposed archaeomagnetic dating procedure and this work was not carried out. Neither were there suitable primary carbonised deposits which might be suitable for C14 dating.

Two pieces of glass were recovered from the surface of the fills of Kiln A1 (21) and the fill of the pit of Kiln A6. These were both identified as being modern and were discarded.

It was not possible to get a firm date for the kilns using scientific techniques although the presence of modern glass in two fills would suggest that the kilns are likely to be relatively modern in date. This would fit with the evidence from the evaluation at Strancliffe Hall where a piece of modern pottery was retrieved from a pit.

## **Acknowledgements**

ULAS would like to thank Jelsons Ltd for their help and co-operation with this project. The project was managed by Richard Buckley and the work carried out by Leon Hunt and Donald Clark. Thanks are due to James Harvey for GPS expertise and to Dr Jim Williams (English Heritage) and Dr Cathy Batt (University of Bradford) for their advice on scientific dating.

The machine was supplied by Meynells and was driven by Perry Campion.

## **Publication**

Since 2004 ULAS has reported the results of all archaeological work through the *Online Access to the Index of Archaeological Investigations* (OASIS) database held by the Archaeological Data Service at the University of York.

A summary of the work will also be submitted for publication in a suitable regional archaeological journal in due course.

## Bibliography

Hunt, L., 2014 *An archaeological excavation on land at Strancliffe Hall, Cotes Road, Barrow-upon-Soar, Leicestershire (SK 572 181)* Unpub ULAS Report 2014-107

McAree, D., 2006 *Archaeological Excavation at Cotes Road, Barrow upon Soar, Leicestershire* (Northamptonshire Archaeology Report No. 07/148)

### OASIS data entry

Project Name	Land at Melton Road, Barrow upon Soar
Project Type	Mitigation excavation
Project Manager	Richard Buckley
Project Supervisor	Leon Hunt
Previous/Future work	Previous geophysical survey/ evaluation
Current Land Use	Arable
Development Type	New Housing
Reason for Investigation	NPPF
Position in the Planning Process	Mitigation strategy
Site Co ordinates	SK 583 173
Start/end dates of field work	31-04-2013
Archive Recipient	Leicestershire Museums
Study Area	13.5ha

### Archive

The archive for this project will be deposited with Leicestershire Museums with accession number X.A178.2013.

The complete archive, including the material from the previous evaluation, consists of the following:

- 1 Unbound copy of desk-based assessment report (ULAS Report No. 2009-155)
- 1 Unbound copy of evaluation report (ULAS Report No. 2013-200)
- 1 Unbound copy of this report (ULAS Report No. 2015-036)
- 26 Trench recording sheets
- 25 Context Sheets
- 8 A3 Sheets of permatrace with primary drawings
- 3 Contact Sheets of digital photographs
- 1 CD digital photographs
- 1 Set B&W contact sheets
- 1 Set B&W negatives

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