Land Off Staveley Lane, Eckington,

Derbyshire

Archaeological Evaluation Report

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SUMMARY

This report presents the results of a programme of archaeological evaluation, on a *c* 4ha parcel of land, off Staveley Lane, Eckington, Derbyshire (NGR SK 4292 7874; Fig 1). This was undertaken between 5th August and 9th August 2013 by Oxford Archaeology North, in accordance with a Written Scheme of Investigation produced by CgMs Ltd (Mortimer 2013a). A Heritage Statement produced by CgMs Ltd (Mortimer 2013b), incorporating the results of a geophysical survey (Gater 2013) had been previously undertaken for the site and submitted to the Local Planning Authority).

The works comprised trial trenching to evaluate 'probable' and 'possible' geophysical anomalies, as well as the interiors of enclosures and a sample of 'blank' areas. They were carried out at the request of Steve Baker, Development Control Archaeologist for Derby and Derbyshire, in advance of the submission of an Outline planning application for residential development of the site.

In total, 18 trenches were excavated within the development area; these confirmed the veracity of the geophysical survey results. The enclosure that was identified as an anomaly in the north-western part of the site, covering 2635m², was exposed within the trenches. A dumped deposit, in the upper part of one excavated segment of the enclosure ditch, contained a concentration of iron working debris, indicating the presence of a smelting site nearby. Within the interior of the enclosure, a concentration of features, comprising several pits and postholes and a curvilinear ditch, may indicate that settlement features survive within it, these features are difficult to identify geophysically and were not apparent in the survey results. The features found in the trenches sampling the remainder of the site comprised relict post-medieval field boundaries or were related to low-intensity activity within the post-medieval or modern fields and were of no archaeological interest.

Simon Mortimer (CgMs) and Steve Baker, Development Control Archaeologist for Derby and Derbyshire, discussed and agreed on site that a 0.42ha rectangular area, including the enclosure (Fig 2), will require further post-determination mitigation work.

ACKNOWLEDGEMENTS

The fieldwork investigation was undertaken by Helen Stocks-Morgan, aided by Nick Cox, Vickie Jamieson and Stephen Morgan. The report was written by Helen Stocks-Morgan. Mark Tidmarsh produced the illustrations. The finds reports were written by Peter Boardman. The palaeoenvironmental samples were assessed by Rachel Fosberry. The project was managed by Simon Mortimer of CgMs and managed, on behalf of OA North, by Fraser Brown, who also edited this report.

1 BACKGROUND

1.1 Circumstances of The Project

1.1.1 An Outline Planning Application is being prepared for residential development of *c* 4ha of land off Staveley Lane, Eckington (Fig 1). A programme of archaeological works has been conducted in advance of the submission of a planning application for this development. The archaeological programme aims to assess the archaeological potential of the development site. On the basis of a heritage statement (Mortimer 2013b), Steve Baker, Development Control Archaeologist for Derbyshire and Derby, confirmed the requirement for trial trenching to evaluate the anomalies revealed during the geophysical survey, as well as the interiors of enclosures and a sample of 'blank' areas. Oxford Archaeology North (OA North) were commissioned to undertake the trial trenching and this report details the results.

1.2 Site Location, Geology and Topography

1.2.1 The site is located on land west of Staveley Lane, to the south of Eckington Village, Derbyshire (Fig 1). It is centred on NGR SK 4292 7874, on a steep, north-facing slope, with an average height of 110m OD. The site's eastern boundary is formed by Staveley Lane and a public footpath running north off Staveley Lane. The northern boundary is formed by allotments and pigeon lofts, as is the northern half of the western boundary. The southern half of the western boundary and the southern boundary itself are hedged, with arable fields behind.

1.2.2 The underlying geology in the vicinity of Eckington comprises Pennine Middle Coal Measures. The superficial geology within the site is 'not recorded' (BGS, 1998). The overlying soils are recorded as belonging to the Bardsey Association (713a), which are loamy over clayey and fine silty soils (Soil Survey of England and Wales 1983).

1.3 Archaeological Background

1.3.1 A Heritage Statement has been prepared for the site by CgMs (Mortimer 2013b). This incorporates the results of a geophysical survey of the site, undertaken in 2013 by GSB Prospection (Gater 2013). The following archaeological and historical background summarises the findings of the Heritage Statement.

1.3.2 There are no Designated Heritage Assets (Listed Buildings, Scheduled Monuments, Registered Battlefields or Parks and Gardens) within the site. These do occur in the wider study area, and the Grade II* Listed Registered Parkand Garden of Renishaw Hall is adjacent to the eastern boundary of the site.

Prehistoric	
Palaeolithic	450,000 BC to 12,000 BC
Mesolithic	12,000 BC to 4000 BC
Neolithic	4000 BC to 2000 BC
Bronze Age	2000 BC to 700 BC
Iron Age	700 to AD 43
Historic	
Romano-British	AD 43 to AD 410
Anglo-Saxon	AD 410 to AD 1066
Medieval	AD 1066 to AD 1500
Post-Medieval	AD 1500 to 1900
Modern	AD 1900 to present

Table 1: Chronology used in this report

1.3.3 ***Prehistoric and Romano-British:*** there is no definite evidence for prehistoric activity within Eckington or the wider study area. However, two enclosures, which have the potential to be pre-Roman, have been revealed within the site's vicinity. One lies within the site itself, and was revealed during the geophysical survey (Gater 2013). The second, which lies *c* 950m to the south-east, was shown on earlier aerial photographs (HER 4943). Both these enclosures are undated at present; however, on morphological grounds they are likely to be prehistoric or Romano-British in date. An enclosure of similar morphology, excavated at Sherwood Lodge, Bolsover (Jones 1995) has been securely dated to the Roman period and produced evidence indicative of *in situ* iron smelting/working. To the south of the site a north-east/south-west linear feature (HER 4944) has been recorded on aerial photographs, this has been interpreted as a Roman road. A single find of a Roman coin (HER 4907), recovered 0.5km to the north-west of the site, suggests a Roman presence within the surrounding landscape.

1.3.4 ***Anglo-Saxon and Medieval:*** Eckington had known origins in the Anglo-Saxon period, when the Domesday Survey of AD 1086 recorded a church within the parish. The exact location of this church is unknown, but it is thought to occupy the site of the existing St Peter and St Paul church (HER 4906). No direct archaeological evidence for settlement within the parish has been recovered but the village's Anglo-Saxon origin can be inferred by the place name, which is thought to derive from Ecca's or Ecci's farm. The evidence for Medieval settlement within the village is sparse, with the only recorded Medieval remains being the twelfth-century church of St Peter and St Paul and the Eckington deer park (HER 4928), which is thought to date to the thirteenth century.

1.3.5 ***Post-Medieval and Modern:*** the site lies to the west of Renishaw Hall and Gardens, which was built in *c* 1625 by George Sitwell. Between 1795 and 1882 the gardens were extended and the route of Staveley lane was diverted to the north and west to follow its current route. The enclosure map of 1795 shows the site was divided into four fields, separated by north/south boundaries. During the nineteenth century, the westernmost field boundary was removed. The site was then established as a single field with the removal of the interior boundaries in 1956 (personal communication from the present-day farmer).

1.4 OXFORD ARCHAEOLOGY NORTH

1.4.1 Oxford Archaeology North (OA North) has considerable experience of the archaeological investigation of sites of all periods, having undertaken a great number of small and large scale projects throughout northern England, including Derbyshire, during the past 30 years. OA North is an Institute of Field Archaeologists (IfA) registered organisation, number 17, and all its members of staff operate subject to the IfA Code of Conduct. A rigorous approach is taken towards health and safety and our staff are CSCS accredited. OA North are insured for third party liability and carry Public, Employers' and Professional indemnity.

2 METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 Following submission of a Heritage Statement to the Local Planning Authority, a Written Scheme of Investigation (WSI; Mortimer 2013a) for a programme of archaeological evaluation was agreed by CgMs with the Development Control Archaeologist for Derby and Derbyshire. This document sets out a detailed methodology for the archaeological investigations. The evaluation were conducted in a manner that was consistent with the WSI and in accordance with the Institute for Archaeologists' *Code of Conduct*, *Standard and Guidance for Field Evaluation* (IfA 2008). Evaluation techniques were selected to cause the minimum amount of destruction and complied with all relevant health and safety regulations. All of those working on site were made aware of the significance and history of the site.

2.1.2 The objectives of the programme of archaeological investigation, as set out in the WSI were:

- to locate, identify and assess the state of preservation of any archaeological remains within the proposed development area;
- to evaluate the 'probable' and 'possible' anomalies identified during the geophysical survey;
- to evaluate the interiors of enclosures and a sample of 'blank' areas;
- to ensure the appropriate investigation and recording of any archaeological remains encountered;
- to disseminate the results of the archaeological investigation, and advance understanding of the site's archaeology as appropriate;
- to produce a site archive for deposition with an appropriate museum.

2.2 EVALUATION TRENCHING

2.2.1 A programme of trial trenching was carried out to investigate a 3.5% sample of the site, in accordance with the stipulations of the Development Control Archaeologist (DCA) for Derby and Derbyshire. Sixteen trenches were originally proposed (Fig 2). All of these trenches were excavated and, following discussions with the DCA, two extra trenches (17 and 18) were also excavated and Trench 9 was extended (Fig 2). The stratigraphic assessment is presented in *Section 3*.

2.2.2 Topsoil and subsoil removal was undertaken by machine until the first significant archaeological resource or undisturbed natural deposit was encountered. All subsequent

cleaning and investigation was undertaken by hand, unless approved beforehand by the DCA. The excavations employed a 360º tracked excavator, fitted with a 2m wide, toothless ditching bucket, with the work supervised by a suitably experienced archaeologist. Spoil was stored adjacent to the trenches; subsoil being kept separate from topsoil.

2.2.3 All archaeological contexts identified in the course of the site works were recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology Service of English Heritage, with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. All contexts were recorded using *pro-forma* sheets, which comprise a written detailed description and interpretation of each structure and deposit encountered and details incorporated into a Harris matrix. Similar object record and photographic record *pro-formas* were used. Written records of survey data, contexts, photographs, artefacts and ecofacts were cross-referenced from *pro-forma* record sheets using sequential numbering.

2.2.4 A full and detailed photographic record of individual contexts was maintained and similarly general views, from standard view points, of the overall site at all stages of the evaluation were generated. Photography was undertaken using 35mm cameras on archivable black and white print film, and all frames included a visible, graduated metric scale. Extensive digital photography was also undertaken throughout the course of the fieldwork for interpretative and presentation purposes.

2.3 ARTEFACTS

2.3.1 Finds recovery and sampling programmes were carried out in accordance with best practice (following current Institute for Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. All artefacts recovered from the evaluation trenches were retained. The materials represented were pottery, clay tobacco pipe, metalwork and metalworking debris. The results of the assessment of these material types is presented in *Sections 4.1-5*.

2.4 PALAEOENVIRONMENTAL EVIDENCE

2.4.1 A limited programme of palaeoenvironmental sampling was carried out in accordance with the guidelines provided by English Heritage (Campbell, Moffett and Straker 2011). Samples were collected for palaeoenvironmental and chronological assessment, with the results presented in *Section 4.6*.

2.4.2 The bulk samples were processed in their entirety by water flotation (using a modified Siraf three-tank system) for the recovery of charred plant remains, dating evidence, industrial residues and any other artefactual evidence that might be present. The floating component (flots) were collected in a 500 micron mesh sieve and allowed to dry prior to being scanned under a binocular microscope, at up to 16 times magnifications. Nomenclature within the tables follows Stace (1997). For the purpose of this initial assessment, items such as seeds, cereal grains and small animal bones have been scanned and recorded qualitatively according to the following categories # = 1-10, ## = 11-50, ### = 51+, #### = 100+ specimens. Items that cannot be easily quantified such as charcoal has

been scored for abundance according to the following criteria: + = rare, ++ = moderate, +++ = abundant.

2.5 ARCHIVE

2.5.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage (Brown 2011) guidelines. Following completion of fieldwork, an estimate of the size of the archive and programme for deposition will be forwarded to the Development Control Archaeologist and relevant museum curator. The archive will be prepared in accordance with the museum guidelines and the Development Control Archaeologist will be informed in writing of final deposition of the archive.

2.5.2 Following acceptance of the report by the Local Planning Authority, an ordered archive of both object and paper elements will be prepared according to the recommendations in Procedures for the Transfer of Archaeological Archives (Derby Museum and Art Gallery 2003) and Archaeological Archives A guide to best practice in creation, compilation, transfer and curation (Brown 2011). All documentation and correspondence created as part of this project will clearly quote the Derby Museum and Art Gallery accession number (**DBYMU 2013-59**).

2.5.3 The Arts and Humanities Data Service (AHDS) online database Online Access to index of Archaeological Investigations (OASIS) will be completed as part of the archiving phase of the project

3 STRATIGRAPHIC RESULTS

3.1 INTRODUCTION

3.1.1 In total, 18 trenches were excavated during the evaluation (Fig 2). The trenches were predominantly targeted upon anomalies detected by the geophysical survey (Gater 2013), although only Trenches 9, 10, 12, 13, 14, 17 and 18 detected archaeological features corresponding to the anomalies; in all other cases, these appeared to relate to differences within the geology. Of archaeological interest, was a sub-circular geophysical anomaly covering 2635m² within the site, which corresponds to a ditch traced between Trenches 9 and 10 (*Sections 3.2.1-6*). The remaining trenches were either devoid of archaeology or contained only evidence for post-medieval or modern agricultural activity within contemporary fields (*Sections 3.2.7-22*); the latter beingof no archaeological interest,.

3.1.2 The stratigraphy revealed in all trenches comprised topsoil, sealing a relict agricultural/colluvial subsoil, which overlay naturally deposited geological deposits or archaeological deposits, unless otherwise stated within the individual trench descriptions. A full stratigraphic inventory of features and deposits is included in *Appendix 1*.

3.2 EVALUATION TRENCHES

3.2.1 ***Sub-circular Enclosure (Trenches 9, 10 and 13):*** this was indicated by an anomaly recorded by the geophysical survey (Gater 2013), and was revealed to correspond to a ditch detected in Trenches 9 and 10 (Fig 2). The geophysical survey suggested that a causeway may have been present in the enclosure ditch, within Trench 10. However, this instead appears to be due to a dump of metal working debris (*Section 4.2*) in a continuous ditch. The anomaly also extended into Trench 13, but no corresponding ditch was revealed within this trench.

3.2.2 **TRENCH 9:** this was sited *c* 30m to the east of Trench 8, towards the north-west of the site, and was aligned north-east/south-west. It targeted a geophysical anomaly, which had been interpreted as indicating an enclosure ditch. The trench was 50m long and was excavated to a maximum depth of 0.62m. In two places, the trench was extended by boxing it out to west in order to clarify the archaeological remains encountered (Fig 3).

3.2.3 Towards the centre of the trench, a *c* east-to-west aligned ditch (***1***) was recorded, corresponding to the geophysical anomaly. A 2m wide intervention through the ditch, was machine excavated to a depth of 0.5m and a further 0.2m-deep step was excavated by hand (Fig 4; Plate 1). The ditch had steep sides and a concave base, and measured 2.5m wide and 0.7m deep. It was filled by two secondary deposits (***2*** and ***3***) which contained no finds. This ditch forms part of the enclosure indicated by the geophysical survey.

3.2.4 Several other features were identified, in the northern part of Trench 9, within the interior of the enclosure (Fig 3). Two postholes (***4*** and ***6***) lay adjacent to each other, approximately 6m to the north of ditch ***1***. Posthole ***6*** was circular in shape with a stepped profile, and

measured 0.25m in diameter and 0.15m deep (Fig 4). Posthole ***4*** was also circular in shape, with steep sides and a concave base, and measured 0.35m in diameter and 0.25m deep (Fig 4; Plate 2). Neither posthole contained any finds, and both were filled with a similar grey-coloured sandy silt (***5*** filled ***4*** and ***7*** filled ***6***) and posthole ***6*** also contained stone packing. Some 5m to the north-east of the postholes was a curvilinear ditch (***31***), which was broadly aligned north-north-east/south-south-west (Plate 3). The ditch had shallow sides and a flat base, and measured 0.6m wide and 0.1m deep (Fig 4). This was filled with a light-grey sandy silt (***32***) and contained no finds, but did contain moderate amounts of charcoal and a small number of charred cereal grains (*Section 4.6*). A small pit (***40***), measuring 0.9m in diameter was visible in plan as a bulge within the line of the curvilinear ditch, and was left unexcavated. A further small pit (***33***), approximately 0.4m in diameter, was located adjacent and to the south of ditch ***31***. It was left unexcavated but was observed to be filled with charcoal-rich oxidised deposits, which may indicate *in situ* burning. The interior features are of a size that are not typically identified by geophysical survey and these are not apparent in the survey data.

3.2.5 **Trench 10:** this was sited approximately 40m to the east of Trench 9 and measured 10m by 10m. It was targeted on the same geophysical anomaly as Trench 9, and was specifically positioned in order to investigate an apparent entranceway into the enclosure. However, no such entranceway was revealed within the trench, although the east/west aligned enclosure ditch (***10***) was encountered at its the centre. This ditch had steep sides and a flattish base, measuring 2.2m wide and 1m deep (Fig 4; Plate 4). The primary fill (***21***) comprised a 0.2m thick blue-grey sand, with stone inclusions and moderate amounts of charcoal derived from hedgerow species (*Section 4.6*). It was later filled with a series of secondary deposits (***11***, ***22*** and ***23***), some of which also contained moderate amounts of charcoal. The ditch was finally filled by a dumped deposit of dark-grey sandy silt (***12***), which contained 22.64kg of iron working debris, the product of iron smelting/forging activity (*Section 4.2*), associated with abundant charcoal and a small number of charred cereal grains (*Section 4.6*).

3.2.6 **Trench 13:** this was sited in the northern extent of the site and was aligned east-north-east/west-south-west. It targeted the same geophysical anomaly as Trenches 9 and 10, which, in these latter trenches, corresponded to an enclosure ditch (***1*** and ***10***), although the enclosure ditch was not found in Trench 13. Trench 13 measured 50m long and was excavated to a maximum depth of 0.52m. A probable tree-throw (***8***), which measured 0.95m wide and 0.3m deep, lay in the same central part of the trench where the geophysical anomaly had been detected. The tree-throw was irregular in shape and profile and contained a single fill (***9***).

3.2.7 ***Drain (Trenches 12, 17 and 18):***a linear feature was detected in Trench 12, corresponding to a geophysical anomaly. The drain was also detected in two trenches (17 and 18) that were added to the evaluation to further characterise it. These revealed it to be a post-medieval/modern drain.

3.2.8 **Trench 12:** this was sited approximately 25m to the north-east of Trench 11 and was aligned north-west/south-east. The trench was 50m long and was excavated to a maximum depth of 0.46m. Towards the western end of the trench, was an east/west aligned linear feature (***19***), which was irregular in shape and profile. It was filled with a single subsoil-derived fill (***20***)

and is likely to be of natural origin. A drain (***17***) was revealed on a north-east/south-west orientation across the centre of the trench, corresponding to a geophysical anomaly. This feature had steep sides and a concave base, measuring 0.95m wide and 0.29m deep, with a single very stony fill (***18***). This feature was also detected continuing into Trenches 17 and 18.

3.2.9 **Trench 17:** this was sited directly to the north of Trench 12, on a north-west/south-east alignment, to further characterise drain ***17***. It measured 4m in length and was excavated to a maximum depth of 0.4m. Ditch ***36***, the continuation of ***17***, was cut through the subsoil, on a north-east/south-west alignment, indicating that it was of fairly recent origin. The ditch had steep sides and a concave base, measured 1.2m wide and 0.5m deep, and contained a single fill (***35***), but no finds.

3.2.10 **Trench 18:** this was sited directly to the south of Trench 12, on a north-west/south-east alignment, to further characterise drain ***17***. It measured 4m in length and was excavated to a maximum depth of 0.45m. The ditch (***17***), revealed within Trenches 12 and 17, was observed to continue on a north-east/south-west alignment into this trench.

3.2.11 ***Other Trenches (1-8, 11, 14-16):*** the remaining trenches were either devoid of archaeology or contained post-medieval or modern pits or boundary features deriving from agricultural activity.

3.2.12 **Trench 1:** this was sited in the east of the site and was aligned north-west/south-east. The trench was 25m long, and was excavated to a maximum depth of 1.1m. The topsoil, which was 0.35m thick, overlay a colluvial subsoil deposit that became progressively deeper towards the southern end of the trench, where it lay within a natural trough. No archaeological deposits, finds or features were present within this trench.

3.2.13 **Trench 2:** this was sited in the south-east of the site and was aligned east-north-east/west-north-west. The trench was 25m long and was, at its maximum, 0.5m deep. No archaeological deposits, finds or features were present within this trench.

3.2.14 **Trench 3:** was sited 5m to the west of Trench 2 and was aligned east-north-east/west-south-west. The trench measured 25m long and and was, at its maximum, 0.47m deep. In the centre of the trench was a pit (***24***), which was 0.4m wide and 0.6m deep. It was oval in shape with near vertical sides and a concave base. The initial infilling was of subsoil-derived sediment (***25***), sealing this was a dark brown sandy silt (***26***) containing a sherd of seventeenth-century pottery (*Section 4.3*) and undiagnostic ceramic building material (*Section 4.4*). To the north of pit ***24***, was a small sub-circular pit (***27***), which was partially exposed within the trench. This had concave sides and a flat base, and measured 0.85m wide and 0.23m deep. It contained a single fill (***28***), within which was a sherd of seventeenth-century pottery (*Section 4.3*), undiagnostic ceramic building material (*Section 4.4*) and a horseshoe fragment (*Section 4.5*). Truncating this pit, was a further pit (***29***) seen in section, with concave sides and a flat base. It measured 0.95m wide and 0.14m deep. The pit was filled by a single dark brown sandy silt (***30***). In the the western part of the trench, a void was encountered upon machining, it was circular in plan, measuring 0.5m in diameter and 0.6m deep and is thought to be geological in origin.

3.2.15 **TRENCH 4:** this was sited in the south of the site and was aligned east-north-east/west-south-west. The trench was 25m long and was excavated to a maximum depth of 0.36m. No archaeological deposits, finds or features were present within this trench.

3.2.16 **TRENCH 5:** this was sited *c* 25m to the north-west of Trench 4 and was aligned on a north-east/south-west. The trench was 50m long and it was excavated to a maximum depth of 0.46m. No archaeological deposits, finds or features were present within this trench.

3.2.17 **TRENCH 6:** this was sited towards the westernmost extent of the site, and was aligned north-north-west/south-south-east. It was 50m long and was excavated to a maximum depth of 0.35m. No archaeological deposits, finds or features were present within this trench.

3.2.18 **TRENCH 7:** this was sited *c* 30m to the west of Trench 6, and was aligned north-north-west/south-south-east. The trench was 50m long and was excavated to a maximum depth of 0.44m. No archaeological deposits, finds or features were present within this trench.

3.2.19 **TRENCH 8:** this was sited directly to the north of Trench 7, towards the north-western corner of the site, and was aligned north-north-west/south-south-east. The trench was 50m long, and was excavated to a maximum depth of 1.3m. No archaeological deposits, finds or features were present within this trench.

3.2.20 **TRENCH 11:** this was sited towards the centre of the site and was aligned north-east/south-west. The trench was 50m long and was excavated to a maximum depth of 0.34m. No archaeological deposits, finds or features were present within this trench.

3.2.21 **TRENCH 14:** this was sited in the north-east of the site and was aligned east-north-east/west-south-west. The trench was 50m long and excavated to a maximum depth of 0.84m. A ditch (***15***) was recorded on a north/south alignment running through the trench, towards its western end. This ditch measured 3.85m wide and 0.54m deep, had concave sides and a flattish base, and was filled with a topsoil derived deposit (***16***). This ditch was cut through the subsoil and corresponds to the line of a defunct field boundary recorded on the 1795 enclosure map, and is, therefore, of probable post-medieval date. The geophysicists had also interpreted this as a field boundary, from the results of their survey (Gater 2013).

3.2.22 **TRENCH 15:** this was sited to the south of Trench 14 and was on a north-north-west/south-south-east alignment. The trench was 50m long and was excavated to a maximum depth of 0.42m. No archaeological deposits, finds or features were present within this trench.

3.2.23 **TRENCH 16:** this was sited in the far eastern part of the site and was aligned north-east/south-west. The trench was 50m long and was excavated to a maximum depth of 0.48m. In the southern part of the trench, was a north-west/south-east aligned ditch (***13***). This had vertical sides and a flat base, and measured 0.4m wide and 0.55m deep. The ditch terminated at its the north-western extent within the trench. It was filled with a dark-brown sandy silt (***14***), but contained no finds. Upon excavation a void within the natural geology was revealed, measuring 0.3m wide and 0.6m deep; this is likely to be due to geological causes.

4 ARTEFACTUAL AND PALAEOENVIRONMENTAL ASSESSMENT

4.1 INTRODUCTION

4.1.1 In total, 55 artefacts were recovered during the evaluation, including an assemblage of iron working debris. These have been assessed in related groups, with the results presented below, and with an outline catalogue presented in *Appendix 2*.

4.2 IRON WORKING DEBRIS

4.2.1 ***Quantification:*** in total, 22.99kg of iron working residues were recovered. These comprise tap slag (6.4kg), vitrified clay (0.184kg), roasted iron ore (0.06kg) and internal furnace slag (15.95kg). All materials were recovered from an upper fill (***12***) of ditch ***10*** (Trench 10).

4.2.2 ***Results:*** **TAP SLAG:** the fragments of tap slag recovered have a rough lower surface and smooth upper surface. They have a multitude of large vesicles, as a result of a quick extraction from the smelting furnace, via a tap just above the smelt base. This would have caused a rapid decrease in temperature and air to become trapped within the structure. The tap slag also contains some examples of 'runs', formed of thin tubular-shaped slag fragments. Some are individual fragments and others are attachments on larger, more irregularly-formed slag conglomerations, all of which are typical of bloomery smelting.

4.2.3 Many of the fragments of tap slag recovered also have impressions and/or remnants of un-combusted fuel attached. Two fragments carry impressions of other formations, possibly a stone or gravel surface, perhaps suggesting a deliberately-laid working area surrounding the smelt.

4.2.4 **FURNACE SLAG:** this material is more densely structured than the tap slag, with smaller and more tightly-formed vesicles, suggesting a slower cooling of the material. Its flat sides and almost brick-like formation also suggests that these fragments were formed on the inside of the smelt, remaining there until the furnace was dismantled. The largest piece of slag recovered, which appears to have been formed within the furnace, has a convex side and a plano-convex base, suggesting that it formed in the very base of the furnace.

4.2.5 **IRON ORE:** one fragment of low-grade iron ore was recovered. This shows signs that the ore was deliberately roasted prior to it being smelted. This process is conducted in order to break up the ore into smaller fragments. This reduction in surface area means that the smelting process is speeded up and increases the efficiency of the iron extraction.

4.2.6 **VITRIFIED CLAY:** one large fragment of vitrified clay, with a small layer of slag conglomeration on one side, was recovered. This is probably part of the original super-structure of the furnace. The thin layer of slag evident on it could mean that it was from high up within the structure, which suggests that the material recovered here may be from a final phase of smelting prior to dismantling.

4.2.7 **HAMMER SCALE:** this was recovered from the sediment sample from deposit ***12*** (*Section 4.6*), with both magnetic flakes and spheroids present in small quantities.

4.2.8 ***Discussion:*** the combined evidence from the dump of recovered material suggests a fairly large-scale, multi-use smelting site. Much of the slag recovered has a high ferrous content, which points to an inefficient smelting technique. The presence of hammer scale is suggestive that iron was also forged, to some extent, at the smelting site. The occurrence of the metal working debris, including furnace fabric, as a dump within a settlement boundary ditch, strongly suggests that the settlement was the locus for iron production.

4.2.9 ***Potential:*** if closely dated, the assemblage has good potential for further research. The size, nature and context of the artefacts recovered from a relatively small area suggest a fairly large-scale, multi-use, possibly Romano-British, iron smelting site. There is also potential for smithing activity associated with the smelting. If further excavation work is carried out, then features and surrounding ground levels should be sampled to assess for further evidence for ore reduction, hammer scale distribution and any potential variations in the fuel types used.

4.3 POTTERY

4.3.1 ***Quantification:*** two sherds of pottery were recovered from two pits in Trench 3 (***24*** and ***27***). These were examined for the purpose of this assessment and an outline catalogue created (*Appendix 2*).

4.3.2 ***Assemblage:*** both sherds are post-medieval black-glazed ware, which dates to the seventeenth century. The sherd from fill ***26***, from pit ***24***, is a basal sherd, possibly from a drinking vessel. The sherd from fill ***28***, from pit ***27***, is from the body of a bowl.

4.3.3 ***Potential:*** the sherds will contribute to dating the features from which they was recovered.

4.4 CERAMIC BUILDING MATERIAL

4.4.1 ***Quantification:*** five fragments of ceramic building material were recovered from two pits in Trench 3 (deposit ***26*** in pit ***24***, and deposit ***28*** in pit ***27***). These were examined for the purpose of this assessment and an outline catalogue created (*Appendix 2*).

4.4.2 ***Assemblage:*** the fragments recovered are too small to be diagnostic, although they are most likely to be brick.

4.4.3 ***Potential:*** the assemblage is too small to permit meaningful analysis.

4.5 METALWORK

4.5.1 ***Quantification:*** a horseshoe was recovered from fill ***26*** of pit ***24***. This was examined for the purpose of this assessment and an outline catalogue created (*Appendix 2*).

4.5.2 ***Assemblage:*** the horseshoe, is likely to have shod a large horse and the style may suggest

an eighteenth-century date.

4.5.3 ***Potential:*** the object will contribute to dating the feature from which it was recovered, but will sustain no further analysis.

4.6 Charred Plant Remains

4.6.1 ***Introduction:*** four bulk samples were taken for palaenvironmental assessment from three fills, within two, presently, not closely-dated features (ditch ***10*** and ring ditch ***31***; Table 2). The samples were taken to provide datable material, to establish which the fuel wood types were used, to test for the presence of industrial residues and to inform any future programme of works.

Context No.	Sample No	Feature type	Comments	Volume of sample (litres)	Volume processed (litres)
12	***1***	Enclosure ditch ***10***	Contains slag	40	40
21	***2***	Enclosure ditch ***10***	Basal fill containing charcoal	20	18
21	***7***	Enclosure ditch ***10***	Taken for C14 dating	20	18
32	***6***	Ditch ***31***	Possible ring ditch	20	20

Table 2: Volume of samples from each feature type

4.6.2 ***Results:*** the results of the assessment are shown in Table 3. Charred plant remains were recorded in all of the samples along with charcoal. Ditch fill ***12*** contains occasional charred cereal grains identified as oats (*Avena*) and wheat (*Triticum sp.).* The wheat grains have a compact, rounded morphology and are most likely to be the hexaploid free-threshing variety of bread wheat (*T. aestivum*). The charcoal content of this sample is relatively high. Hammer scale was recovered from the residue of this sample, with both magnetic flakes and spheroids being present in small quantities. Two samples taken from ditch fill ***21*** differ slightly in content. Sample 2 was taken during the excavation of a 1m slot through the ditch, while Sample 7 was taken out of the section baulk. Sample 2 produced a smaller flot that contains occasional fragments of charred hazelnut (*Corylus avellana*) shell and a single charred elderberry (*Sambucus nigra*) seed. Sample 7 produced a larger flot that contains slightly more elderberry seeds and hazelnut fragments, in addition to charred bramble (*Rubus* sp.) and sloe/cherry (*Prunus* sp.) seeds. Both samples contain numerous charred sub-spherical objects that could possibly be fungal sporophytes. Sample 7 has a higher charcoal content that includes occasional charred twigs. Sample 6, fill ***32*** contains a single, abraded charred cereal grain and vitrified charcoal.

Sample No	Context No	Feature	Flot volume ml.	Flot description	Plant remains	Potential
1	***12***	Ditch	70	Charcoal >2mm +++ <2mm +++	CPR: Cereal grains #	Low
2	***21***	Ditch	10	Charcoal >2mm + <2mm +	CPR: hazelnut (Corylus avellana) ##, elderberry (*Sambucus nigra*) #	Low
7	***21***	Ditch	25	Charcoal >2mm + <2mm ++	CPR: hazelnut (Corylus avellana) ##, elderberry (*Sambucus nigra*) #, bramble (Rubus sp.) #, sloe/chery (Prunus sp.) #	Low
6	***32***	Ditch	40	Vitrified charcoal >2mm ++	CPR: Cereal grains #	Low

CPR=charred plant remains; # = 1-10, ## = 11-50, ### = 51+, #### = 100+ specimens; + = rare, ++ = moderate, +++ = abundant.

Table 3 :Assessment of charred plant remains from Staveley Lane, Eckington

4.6.3 ***Discussion:*** charred plant remains are preserved in all of the samples from the three ditch fills, although diversity and density are low. Cereal grains and the remains of fruits are the only remains represented, as chaff and weed seeds are absent in the samples. The small quantity of charred grain in ditch fill ***12*** indicates consumption of wheat, which has been preserved by burning, possibly accidentally during grain drying/cooking, although other scenarios are also possible. The oats cannot be identified as the cultivated or wild form, without the presence of diagnostic chaff, and could simply be a tolerated crop contaminant. Ditch fill ***21*** contains the burnt remains of a number of shrubs that are traditionally associated with hedgerows (Grieg 1994; Rackham 1986) and may represent the types of wood used as fuel. The slight difference in the content of the two samples from the same deposit indicates that the fill may not be homogeneous throughout the ditch. The single grain from ditch fill ***32*** cannot, by itself, be considered as significant. The presence of vitrified charcoal indicates high-temperature burning, possibly in an industrial hearth.

4.6.4 ***Potential:*** while cereal grains are indicative of site occupation, the absence of chaff and weed seeds preclude any further interpretation regarding cereal cultivation. The presence of slag and hammer scale is indicative of blacksmithing activities taking place either on the site or in the near vicinity, and it may be significant that hedgerow flora are possibly being burnt as fuel. Sample 7, taken from fill ***21***, contains sufficient charred plant remains for radiocarbon dating purposes.

5 DISCUSSION

5.1 CONCLUSIONS

5.1.1 The evaluation confirmed the veracity of the geophysical survey results - that significant archaeological remains are present in the north-western part of the development area, which most likely to date to the Iron Age or Romano-British periods, although a slightly later date is not entirely precluded. The primary interest resides in, what is probably half the total area of, a sub-circular enclosure (Fig 2), measuring approximately 80m in diameter, and containing interior features that possibly relate to settlement. The remainder of this enclosure continues out of the site, into the area of the allotments that border it on the north (Fig 1).

5.1.2 The ditch that defines this enclosure was first identified by the geophysical survey (Gater 2013), and was confirmed to be present by evaluation Trenches 9 and 10 (ditch ***1*** and ***10***; *Section 3.2.11-12*). The sequence of fills observed within the ditch could suggest that the enclosure remained in use for a prolonged period of time before abandonment. Within Trench 10, a significant amount of metal working debris was dumped into the partially backfilled ditch, this act may have marked the end of the enclosure's occupation. The metal working debris comprised kiln lining, bloom slag and hammer scale, suggesting that all processes of iron smelting would have occurred in the immediate vicinity. Charred cereal grain recovered, may provide evidence that agricultural activity also took place.

5.1.3 A curvilinear ditch (***31***; Fig 3), excavated in Trench 9, within the interior of the enclosure, may be the remains of a roundhouse, given its morphology. However, the lack of any domestic artefacts may suggest an alternative function for it, for example, a stock corral. Two postholes (***4*** and ***6***) and two pits (***33*** and ***40***) were also recorded within Trench 9 and are presumably indicative of other activity associated with the roundhouse/corral.

5.1.4 Remains of post-medieval activity were present to the south and east of the development area. The 1795 enclosure map shows the site originally comprised four fields, on a north/south alignment, with the interior boundaries being removed during the nineteenth/twentieth century to consolidate the field into one. The ditch (***15***) seen in Trench 14 (*Section 3.2.16*) is in the correct location to have formed one of these boundaries. A further north/south ditch (***17***) was recorded within Trench 12 (*Section 3.2.14*), this is of post-medieval date and likely to have formed an internal drainage ditch within the post-medieval field system. The other features occasionally encountered in the trenches, for example the pits in Trench 3 (*Section 3.2.3*), most likely relate to low-intensity activity within the post-medieval fields.

5.1.5 During the evaluation two voids were recorded, one within Trench 3 and a further one in Trench 16 (*Section 3.2.18*). These are likely to be caused by weakness within the natural geology and are not of archaeological interest.

5.2 SIGNIFICANCE

5.2.1 The enclosure, in the north-western part of the evaluation, is of archaeological interest, particularly if it is Iron Age, Romano-British or early medieval in date, as seems most likely. The presence of potentially domestic features associated with the evidence for crop production/consumption and metal working enhances its research potential. The iron smelting and forging that is likely to have taken place within the enclosure, or very nearby to it, was probably associated with the small scale or episodic tool manufacture or the repair of agricultural implements (McDonnell and Maclean 1995). Such sites are largely absent from Derbyshire, despite the presence of significant iron ore deposits within the county, with only one site being identified so far, at Sherwood Lodge, Bolsover (Jones 1995). The close proximity of the Eckington and Sherwood Lodge sites to the Roman road network may be significant, if they are contemporary with it, as this would have allowed for easy trading of agricultural and industrial produce between such settlements or with others further afield.

5.2.2 The other post-medieval features observed during the evaluation, are noteworthy in that they confirm its non-intensive agricultural use in more recent times. However, beyond this, they are of no significance for further research.

5.3 RECOMMENDATIONS

5.3.1 As was discussed and agreed on site with Simon Mortimer (CgMs) and Steve Baker, Development Control Archaeologist for Derby and Derbyshire, the enclosure, in the north-western part of the site, will require further post-determination mitigation work. All parties agreed that a 0.42ha area, measured to extend 10m from the external edge of the enclosure ditch (Fig 2), will be sufficient to include any features of potential archaeological interest. There is no archaeological interest in the remainder of the site.

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ILLUSTRATIONS

FIGURES

Figure 1: Site location

Figure 2: Excavation features superimposed on the results of the geophysical survey

Figure 2: Plan of features in Trench 9

Figure 4: Sections of features in Trenches 9 and 10

PLATES

Plate 1: Enclosure Ditch ***10***, facing east

Plate 2: Postholes ***4*** and ***6***, facing east

Plate 3: Ditch ***31*** (unexcavated), facing east

Plate 4: Enclosure ditch ***10***, facing west

APPENDIX 1 – CONTEXT INVENTORY

Context	Type	Trench	Interpretation
1	Cut	9	Ditch
2	Fill	9	Lowest fill of ditch ***1***
3	Fill	9	Uppermost fill of ditch ***1***
4	Cut	9	Posthole
5	Fill	9	Fill of posthole ***4***
6	Cut	9	Posthole
7	Fill	9	Fill of posthole ***6***
8	Cut	13	Treethrow
9	Fill	13	Fill of treethrow ***8***
10	Cut	10	Ditch
11	Fill	10	Middle fill of ditch ***10***
12	Fill	10	Uppermost fill of ditch ***10***
13	Cut	16	Ditch
14	Fill	16	Fill of ditch ***13***
15	Cut	14	Ditch
16	Fill	14	Fill of ditch ***15***
17	Cut	12	Ditch
18	fill	12	Fill of ditch ***17***
19	Cut	12	Ditch
20	Fill	12	Fill of ditch ***19***
21	Fill	10	Basal fill of ditch ***10***
22	Fill	10	Lower fill of ditch ***10***
23	Fill	10	Middle fill of ditch ***10***
24	Cut	3	Posthole
25	Fill	3	Lowest fill of posthole ***24***
26	Fill	3	Uppermost fill of posthole ***24***
27	Cut	3	Pit
28	Fill	3	Fill of pit ***27***
29	Cut	3	Pit
30	Fill	3	Fill of pit ***29***
31	Cut	9	Ring ditch
32	Fill	9	Fill of ring ditch ***31***
33	Cut	9	Pit
34	Fill	9	Fill of pit ***33***

35	Fill	17	Fill of ditch ***36***
36	Ditch	17	Ditch
37	Fill	9	Fill of pit ***40***
38	Layer	-	Topsoil
39	Layer	-	Subsoil
40	Cut	9	Pit

APPENDIX 2 – FINDS SUMMARY

Trench	Context	Material	Category	No of fragments	Description	Date
3	***26***	Ceramic	Vessel	1	Small base fragment. Black glazed ware, drinking vessel?	Seventeenth century
3	***26***	Ceramic	Building material	2	Undiagnostic fragments	Not closely datable
3	***28***	Ceramic	Vessel	1	Small body fragment. Black glazed ware	Seventeenth century
3	***28***	Ceramic	Building material	3	Undiagnostic fragments	Not closely datable
3	***28***	Iron	Object	1	Incomplete horseshoe	Eighteenth century
10	***12***	Slag	Industrial residue	45	One fragment plano-convex base, Nine fragmnts furnace slag, fifteen fragments tap slag	Not closely datable
10	***12***	Vitrified Clay	Industrial residue	1	One fragment vitrified clay furnace lining	Not closely datable
10	***12***	Iron Ore	Industrial residue	1	One fragment of roasted iron ore	Not closely datable

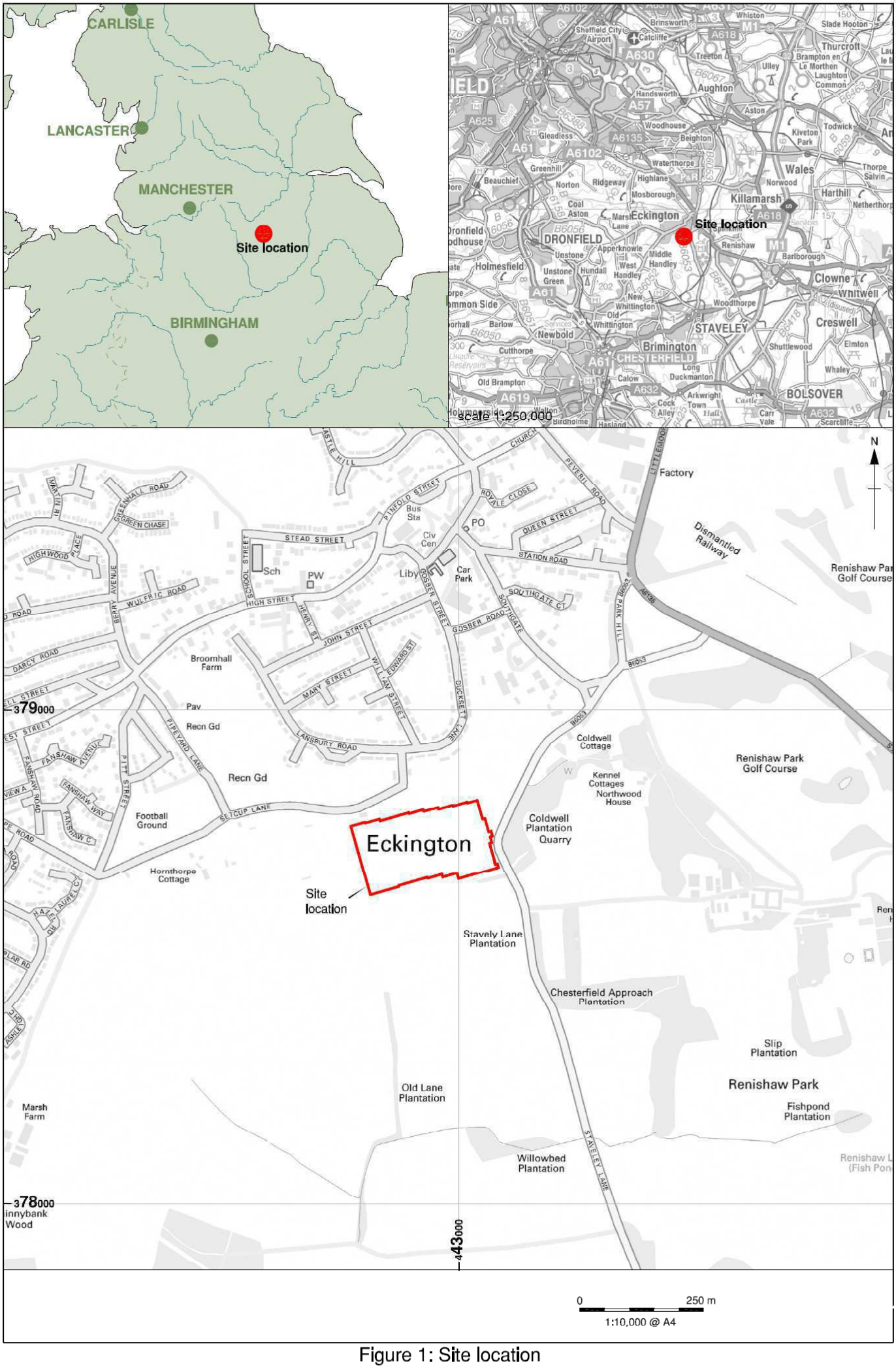

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Figure 1: Site location

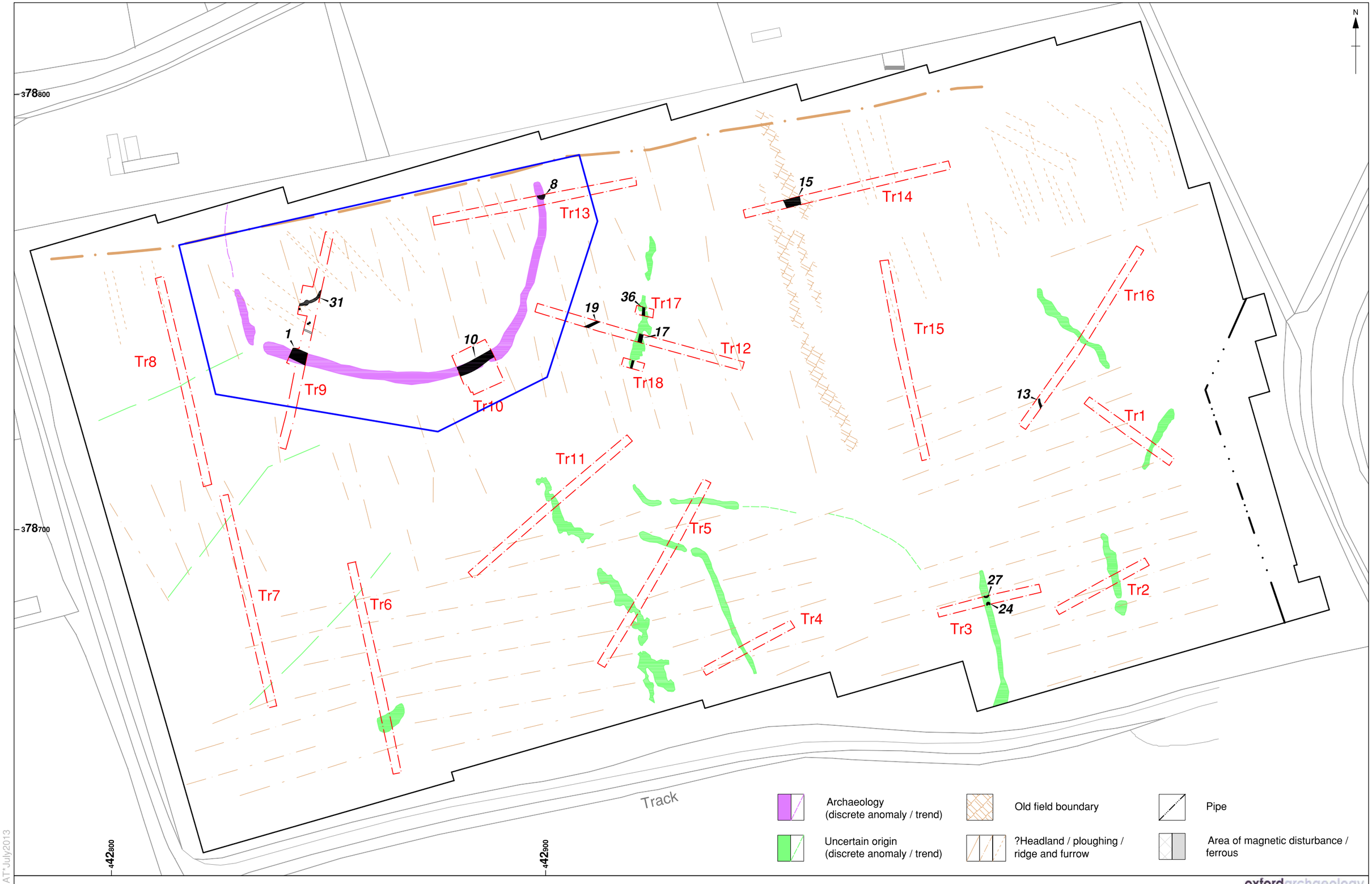

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Figure 2: Evaluation features superimposed on the results of the geophysical survey

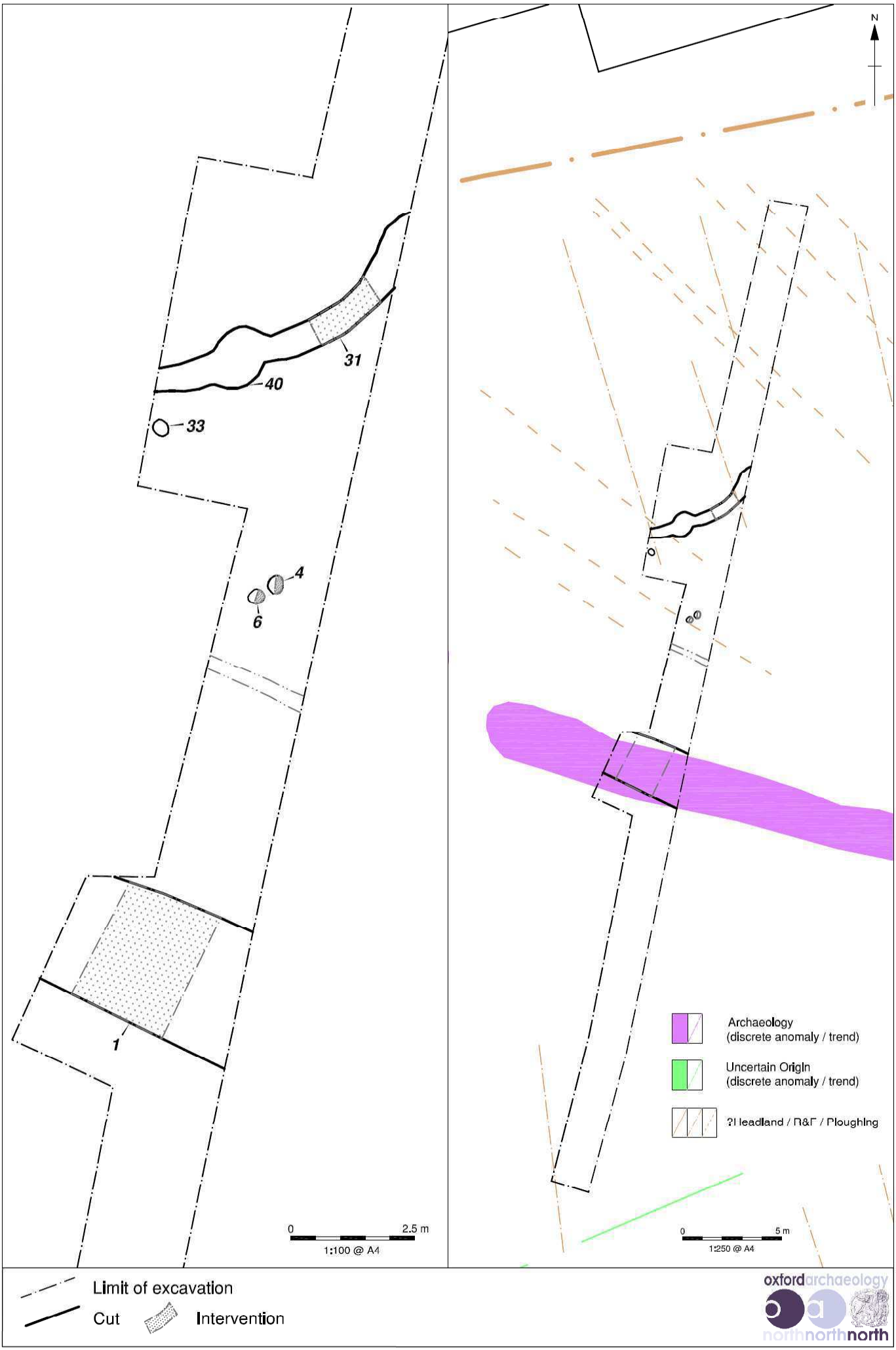

Figure 3: Plan of features in Trench 9

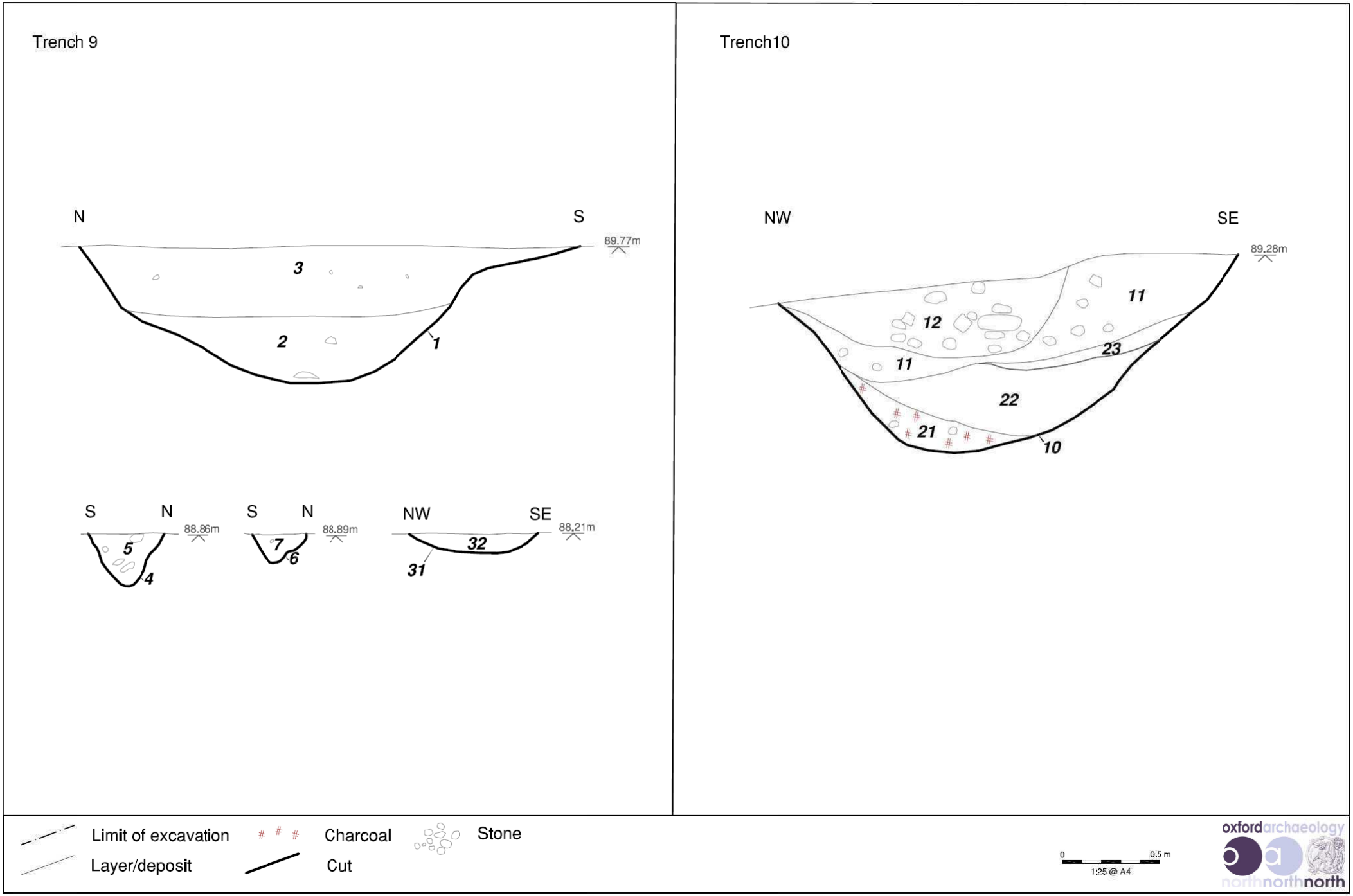

Figure 4: Sections of features in Tenches 9 and 10

Plate 1: Enclosure Ditch ***10***, facing east

Plate 2: Postholes ***4*** and ***6***, facing east

Plate 3: Ditch ***31*** (unexcavated), facing east

Plate 4: Enclosure ditch ***10***, facing west