

ARCHAEOLOGICAL
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DURHAM UNIVERSITY

on behalf of
Durham County Council

Great Chilton
County Durham

archaeological excavation and
geophysical survey

report 3078
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1. Summary

The project

- 1.1 This report presents the results of a community archaeological excavation and geophysical survey conducted at Great Chilton, near Ferryhill, County Durham. The works comprised two excavation trenches and a geomagnetic survey.
- 1.2 The works were commissioned by Durham County Council as part of the Limestone Landscapes Partnership Initiative and conducted by Archaeological Services Durham University.

Results

- 1.3 The geomagnetic survey confirmed the presence of features evident as cropmarks on aerial photographs of the site and detected many more, often smaller features. A large, complex, multi-phased settlement site was revealed with ditched enclosures, roundhouses, pits, possible hearths and further ditches.
- 1.4 Trench 1 contained multi-phased settlement remains comprising part of a roundhouse superseded by another roundhouse which contained two phases of occupation, and included post-holes, pits, a probable hearth and floor surface. This structure was adjacent to a ditch which may form part of one of the phases of enclosure on the site.
- 1.5 Four east-west enclosure ditches were excavated in Trench 2, delineating one side of an enclosure visible on the geophysical plot. These were not intercutting within the confines of the excavation and may have been contemporaneous. A further smaller ditch cut through these on a different alignment, which may reflect a later phase of enclosure.
- 1.6 An artefactual and ecofactual assemblage was recovered which is indicative of a later prehistoric date for the enclosures and features. Post-medieval material was also recovered, primarily from ploughsoil and through metal-detecting.
- 1.7 Volunteers from local communities participated and received training in excavation, artefact processing and geophysical survey. Public talks were delivered and a small exhibition designed. Local school children also visited the site, and press output was produced.

Recommendations

- 1.8 Further archaeological works at the site have the potential to successfully engage with local communities, and to elucidate the history of the site in accordance with established research objectives. In the event that no further works are conducted it is recommended that further analysis of the existing data is undertaken and an appropriate publication prepared. This work is likely to include artefactual illustration, radio-carbon dating and synthesis.

2. Project background

Location (Figure 1)

- 2.1 The site is located at Great Chilton, Ferryhill, County Durham (NGR centre: NZ 29317 30847). It covers an area of approximately 13 ha. The site is in a field to the north of Laurel Road and to the west of Lilac Road. The field is arable with further arable land to the north, west and north-east and a residential estate on Lilac Road to the east, with further arable land beyond Laurel Road to the south.

Objectives

- 2.2 The objective of this project was to involve members of local communities in the investigation of their heritage, provide training to the volunteers involved in the techniques of archaeological investigation, survey, recording and interpretation and to elucidate the character and chronology of the archaeological site. Works were completed within the research priorities set out in the *North-East Regional Research Framework* (NERRF). The specific research priorities and questions which this project intended to address include:

Li Chronology

- Dating the settlement evidence within the cropmark site; the cropmark evidence is indicative of a later prehistoric/Roman-British date for the site but this is yet to be demonstrated
- Identifying whether activity at the site exhibits continuity of use and settlement pattern through time

Lii Settlement

- Layout and function of the enclosures and buildings and the immediate vicinity of the site
- Characterise any changes in the layout or use of parts of the site

iv; lvi; lvii; lviii Material culture

Ri. The Iron Age to Roman Transition

- Establish whether any changes can be recognised in the archaeological material that may relate to the Roman conquest

Riv Native and civilian life

- Establish whether the relationship between the Roman military and the native occupants of the site can be seen and any effects; including the native economy, farming practice, and industry

Rv. Material Culture

Economic

- Characterise through the analysis of suitable soil samples an understanding of both the economy that supported the settlement and the environmental conditions in and around the site, diet and climatic conditions

Specification

- 2.3 The works have been undertaken in accordance with a specification provided by Durham County Council Archaeology Section (Appendix 3) and carried out following standard Archaeological Services Durham University procedures.

Dates

- 2.4 Fieldwork was undertaken between 8th and 27th October 2012. This report was prepared for March 2013.

Personnel

- 2.5 The geophysical surveys were undertaken by Duncan Hale, Natalie Swann and Ashley Hayes. Excavation was conducted by a volunteer team, supervised by Catrin Jenkins and Rebecca Watson. This report was prepared by Catrin Jenkins, with illustrations by David Graham and Janine Watson, and editing by Peter Carne. Specialist reporting was conducted by Natalie Swann and Duncan Hale (geophysics), Ann MacSween (prehistoric pottery), Dr Carrie Drew (animal bone and palaeoenvironmental), Helen Drinkall (flint), John Cruse (querns), Fraser Hunter (jet object), Gemma Cruickshanks (metal objects), Jennifer Jones (conservation and other finds). Metal-detecting was by the Dunelm metal-detecting group.

Volunteers

- 2.6 The following volunteers, including participants from the Ferryhill History Society and the Architectural and Archaeological Society of Durham and Northumberland, participated in the fieldwork:
Alaistair Adams, Daniel Adamson, Morris Adamson, Susan Adamson, Ken Bradshaw, Brian Brimm, Sam Brimm, Tim Brown, Michael Cook, Tony Devos, Claire French, Dylan Glenton, Eleanor Glenton, Eliza Glenton, Jonathon Goldberg, Margaret Hudson, Dick Janney, Barbara Metcalfe, Tony Metcalfe, David Mennear, Michelle Morris, Jenny Richards, Gerard Slack, Beverley Stoker, Steven Taylor, Colin Turner, Geoff Wall, Lynn Wall, David Wardle, Lorraine Watkinson, Ben Westwood and Sue Wilson.

Archive/OASIS

- 2.7 The site code is **GCH12**, for **Great Chilton Hill 2012**. The archive is currently held by Archaeological Services Durham University and will be transferred to the Bowes Museum in due course. Archaeological Services Durham University is registered with the **Online Access to the Index of archaeological investigationS project (OASIS)**. The OASIS ID number for this project is **archaeol3-145725**.

3. Landuse, topography and geology

- 3.1 At the time of the works, the investigated area comprised a field of crop stubble in the south and sown cereal crop in the north, and was irregular in plan. It was bordered by wooden fencing and hawthorn hedgerows.
- 3.2 The project area occupies a plateau and gentle south-east facing slope which rises from 107m OD adjacent to Laurel Road to 120m OD on the summit of the hill. The slope forms part of a narrow limestone ridge oriented approximately north-east to south-west, which extends from the centre of County Durham to the coast.
- 3.3 The underlying solid geology of the area comprises Permian dolostone limestone of the Ford Formation, which is overlain by Devensian glaciofluvial deposits of sand and gravel (British Geological Survey 2013).

4. Historical and archaeological background

The prehistoric period (up to AD 70)

- 4.1 The earliest recorded human activity in the surrounding landscape dates to the Mesolithic period when exploitation of the area tended to be confined to the lowland riverine areas with easy access to subsistence (Hewitt 2008, 33-4). Flint and

waste flakes (HER 2136) of Mesolithic date which were indicative of a knapping site were found near Chilton, some 2km to the east of the site. Later prehistoric activity is also suggested in the vicinity by the presence of artefacts of Bronze Age date. In 1995, a rough copper axe (HER 3924) was found at Ferryhill, just to the north of Red Hall Farm, some 3km to the north-west of the site. A bronze spearhead (HER 240) was also found in material taken to Cleveland from Chilton Quarry, approximately 2km to the north-east of Great Chilton.

- 4.2 The later prehistoric periods are better represented in the area in the archaeological record and more sites such as that at Great Chilton site are known from aerial photography. It has been speculated that the settlement at Great Chilton (referred to as East House Chilton) may have been positioned to exploit or control the important resources of the wetlands of the Skerne Valley and its tributaries (Hewitt 2008, 62), but there is no evidence for this.
- 4.3 At least seven cropmark sites are recorded in the surrounding landscape which are of probable later prehistoric and /or Romano-British date. Approximately 1km to the north-west of Great Chilton is a series of pits and a rectangular enclosure, which possibly denote structural remains (NMR 1448057). Near to Bishop Middleham, some 2.5km to the east of the site, a possible Iron Age or Romano-British enclosure has been recorded (NMR 26040). Also just 1km further east and also at Bishop Middleham is a rectilinear cropmark (NMR 1447990). Some 4km to the south-west at Windlestone Park, a possible prehistoric curvilinear ditched enclosure is recorded (NMR 1443567). Another curvilinear ditched enclosure and a Romano-British Iron Age rectilinear enclosure are known at Woodham, approximately 4.5km to the south of Great Chilton (NMR 876850). Some 5km to the south-east of the site at Morden is a rectilinear enclosure with evidence for internal divisions (NMR 25767). Near to Sedgfield, some 5km to the south-east of Great Chilton is an Iron Age and Roman rectangular enclosure, trackway and boundary ditches (NMR 1443329). At Eldon some 6km to the south-west of the site, a rectilinear ditched enclosure is recorded (NMR 1441846). Also near Eldon a further two ditched enclosures are known (NMR 1441871).
- 4.4 The majority of the recorded cropmark sites in County Durham are located on the magnesian limestone of the East Durham plateau. This is probably due to better arable land and conditions for cropmark appearance on these soils than on the clayey soils of the Durham coalfield (Hewitt 2008, 49). The majority of such cropmark remains appear to be enclosed sites. These tend to be ditched enclosures of rectilinear or sub-rectangular form, containing at least one roundhouse and probably comprising small farmsteads (*ibid*, 52).
- 4.5 Petts and Gerrard (2006, 36) suggest that although the archaeological record is dominated by ditched enclosures it may simply be due to the fact that palisaded enclosures do not show up particularly well as cropmarks and so are under-represented. The ditched enclosures of the later prehistoric periods have been seen as defensive structures but may also have been constructed to provide greater shelter, protection from wild animals or perhaps as symbols of status (Hewitt 2008, 52). Associated extensive field systems are relatively rare in County Durham though some are known in Weardale (*ibid*, 61).

- 4.6 The prehistoric enclosure sites of County Durham have been categorised into three sizes: large (0.7ha +); medium (0.3-0.5ha); and small (<0.2ha) (*ibid*, 60). The Great Chilton rectilinear enclosure is 0.8ha in size, falling into the large category, with the smaller sub-rounded enclosure having an area of 0.3ha and being of medium size. Further archaeological research is required to determine the evolution of such sites. Indeed, additional investigation at Great Chilton has the potential to clarify the evolution of the enclosures and also to determine whether they were contemporaneous, or provide evidence for expansion or replacement.
- 4.7 Few of these enclosed sites have been excavated and the majority of known enclosed cropmark sites remain undated. Evidence from excavations in the north-east region has been taken to suggest that in the later Iron Age the area was weakly centralised and rather than possessing a single power base, communities may have been based upon household groupings (Petts and Gerrard 2006, 36). Such sites are well represented in the archaeological record with few larger fortified sites such as hillforts and oppida recognised in the area.
- 4.8 The sites that have been excavated have provided an insight into settlement in the region in the Iron Age and the Romano-British period. A cropmark enclosure at West House in Coxhoe, approximately 6km to the north-east of Great Chilton, was identified in the 1970s. It comprised a sub-rectangular ditched enclosure with a single roundhouse and was excavated in 1979 and 1980. The roundhouse measured 13m in diameter and had been constructed with a ring of postholes. There was also evidence for internal partitioning within the structure. Cattle, sheep and horse bones were recovered from the fills of the enclosure ditch consistent with domestic consumption refuse. The site is probably of early Iron Age date (NMR 25956).
- 4.9 At Thorpe Thewles near Stockton-On-Tees, a cropmark site was identified from aerial photography in the 1970s. The site was first excavated in the 1980s and the earliest phase of occupation recorded dated to the later Iron Age. This early phase comprised a sub-rectangular enclosure containing a large central roundhouse with several smaller subsidiary structures, probably for storage and manufacture. The next phase of activity was still of Iron Age date and comprised an open nucleated settlement supported by a mixed farming economy (Heslop 1987).
- 4.10 An Iron Age settlement was discovered and partially excavated in the 1960s at Catcote near Hartlepool. Further excavations were undertaken between 1998 and 2008. The site dated from around 200BC and included routeways that linked fenced and ditched enclosures, defining possible individual farmsteads. The subsistence economy was mixed pastoral and arable, with evidence for a range of industries also recorded. These included weaving, boneworking and metal working. Further evidence was recorded of Roman trading and the settlement existed well into the Roman period prior to being abandoned (NMR 27142).
- 4.11 A Roman villa was excavated in 2003 at Quarry Farm near Ingleby Barwick. The second phase of activity recorded on the site was a circular structure or possible roundhouse, which contained a south-east facing entrance. The structure was smaller than average sizes for such structures, though it was comparable to some of the smaller structures excavated at Thorpe Thewles. Although no dating material was associated with the structure it was tentatively dated to the later Iron Age, and maybe associated with a series of enclosures (Archaeological Services 2013).

- 4.12 In 2004 excavations were carried out at Street House, near Saltburn in North Yorkshire, in order to examine two cropmarks in a field next to a Neolithic long cairn and mortuary structure. One of the sites was an Iron Age enclosure dating to 380-160 cal BC which contained several roundhouses. The other cropmark was a later Romano-British enclosure. A seventh century Anglo-Saxon cemetery had been constructed above these sites (Sherlock and Simmons 2008).
- 4.13 Several sites have also been excavated in recent years to the north of Great Chilton in Tyne and Wear and Northumberland. At Great Park in Newcastle, the excavation at West Brunton Farm recorded an early phase of open settlement in the later Iron Age with numerous dwellings. The following phase of activity recorded was later Iron Age to Roman date and comprised a rectilinear enclosure with a single dwelling and features external to the enclosure. Another enclosure with a single dwelling was recorded just to the north. An excavation at East Brunton Farm recorded activity from late Bronze Age to earlier Iron Age, including a palisade and enclosure. This was succeeded by a phase of open settlement with the final phase of occupation comprising a later Iron Age rectilinear enclosure with a central dwelling (Proctor 2009, 94).
- 4.14 On the Blagdon Hall estate, excavations in 2005 exposed a series of features including: a pit alignment and palisaded circular enclosure and large roundhouse of possible later Bronze Age or earlier Iron Age date; a probable unenclosed settlement of four roundhouses, industrial activity and an animal enclosure of Iron Age date; and two roundhouses which may have been enclosed and associated with a field system of Iron Age date (Jenkins 12, 2006). Some 500m to the north-east further excavation recorded over 40 roundhouses some of which were associated with an unenclosed farmstead, succeeded by a ditched enclosure, though it is possible that only one or two structures existed at any one time. A subsequent enclosed settlement of two concentric ditched enclosures was probably contemporary (*ibid*).
- 4.15 Pegswood in Northumberland is located on the heavy clay soil of the coal measures, however cropmarks indicated the presence of a prehistoric settlement. Excavations at the site recorded a multi-phased Iron Age to Romano-British settlement. The first phase of settlement comprised an unenclosed farmstead and was dated to the 4th to 2nd centuries BC. This phase was followed by an enclosed settlement dating to the 2nd century BC to the 1st century AD. The final phase of settlement comprised an enclosure and boundary ditches dating to the late 1st to early 2nd century AD (Proctor 2009).

The Roman period (AD 70 to 5th century)

- 4.16 There are no known Roman sites in the immediate vicinity of the site but in the wider area there have been finds which indicate a possible Roman presence. On Strawberry Lane, just 3km to the north of the site, sherds of Roman pottery have been found (HER 3923). At Thinford, some 3.5km to the north of Great Chilton, further pottery of Roman date has been recorded (HER 412).
- 4.17 At Sedgefield there is a small Roman town which was identified in the 1990s from aerial photography. Several seasons of excavations have been undertaken on the site which probably dates from the 2nd century AD. It comprises a complex of ditched enclosures either side of the Roman Cades Road, with evidence for both

domestic and industrial activity (Mason 2010). The line of Cades Road has also possibly been identified some 3.8km to the north-east of Great Chilton (HER 3326).

- 4.18 Despite the Roman presence in the region, it is likely that elements of the later prehistoric enclosure pattern survived into the Roman period.

The medieval period (5th century to 1540)

- 4.19 The Chilton place-name is recorded in 1091 as *ciltona* and later in the 14th century as *Chiltona*. Watts (2002, 25) suggests that the meaning derives from the Old English *cild* and *tun*, which would have been an estate whose revenue supported a child's education. Alternatively Robinson (1998, 24) suggests that the place-name originated from the Saxon meaning 'Child's farmstead' and that this may have referred to a young man who was not yet a knight.
- 4.20 Several settlements of medieval date have been recorded in the near vicinity. Little Chilton was first recorded in 1271 when a license was granted for a private chapel (HER 1343) within the manor house. This building still stands, though it has been much modified. Some 600m to the north of the site are the earthworks of the deserted medieval village of Little Chilton. They comprise banks and ditches dividing land into plots with smaller enclosures which may be steadings or buildings; undressed stone is also visible in places (NMR 24195). Great Chilton was recorded in Bishop Hatfield's survey of 1377-1385. Later in 1388, it was part of the penalties of Michael de la Pole when King Richard II granted Bishop Skirlaw custody of the lands (Hutchinson 1823, 396). In the fields just to the south of the site are the earthwork remains of the deserted medieval village of Great Chilton. The earthworks comprise banks dividing land into plots, ridge and furrow, possible building platforms, and possible steadings. These are all visible as earthworks on aerial photographs (NMR 24173).
- 4.21 Ferryhill to the north of the site is recorded in a collection of charters written in 1256. Prior to the reformation it was probably the property of Durham Priory before being given to the Dean and Chapter of the Cathedral (Keys to the Past 2013). The medieval village at Thrislington, to the north-east of the site, was recorded in 1262. It was excavated in 1973, though the site has now been lost to quarrying (NMR 26005).

The post-medieval period (1541 to 1899)

- 4.22 The area is depicted on post-medieval mapping. Christopher Saxton's map of 1576 depicts the two settlements of '*Chilton p:*' (Chilton Parva-Little Chilton) and *Chilton Mag* (Chilton Magna-Great Chilton). *Ferye Sup mont* (Ferryhill) is also shown. All of the sites are denoted with manor houses.
- 4.23 The economy of the area was mainly agriculturally based until the increasing industrialisation of the 18th century. Chilton was formed by joining the three hamlets of Dene Bridge, Chilton Buildings and Windlestone. This was in response to the construction of two collieries and associated waggonways. The shafts were sunk by Christopher Mason in 1833 at Great Chilton Colliery and Chilton Buildings. In the 19th century, due to the increasing population generated by the coal industry, Chilton became a parish (HER 6762). The population of the parish increased fivefold in the ten years between 1841 and 1851, from 189 to 977 (Fordyce 1855, 442).

- 4.24 A plan of the Chilton estate dating to 1838 records the field names in the area. The site is divided into three fields: the main west field is called Old Pasture; to the north-east is East Wheel Hill; and Low Pasture is to the south-east. The 1st edition Ordnance Survey map of 1857 depicts the site now divided into two fields. By the 2nd edition Ordnance Survey map of 1898, an old coal shaft is illustrated at the top north edge of the field. By the end of the 19th century the Chilton Collieries were disused.

The modern period (1900 to present)

- 4.25 The Chilton collieries reopened in 1902 and 1916 and the population of Chilton grew to over 6000 by 1911 (Turner 1999, 72).
- 4.26 The 4th edition Ordnance Survey map of 1939 depicts the same old coal shaft as the 2nd edition map. A residential estate and road, Lilac Road, is recorded on the south part of the east field.

5. The geophysical survey Standards

- 5.1 The surveys and reporting were conducted in accordance with English Heritage guidelines, *Geophysical survey in archaeological field evaluation* (David, Linford & Linford 2008); the Institute for Archaeologists (IfA) *Standard and Guidance for archaeological geophysical survey* (2011); the IfA Technical Paper No.6, *The use of geophysical techniques in archaeological evaluations* (Gaffney, Gater & Ovenden 2002); and the Archaeology Data Service *Guide to Good Practice: Geophysical Data in Archaeology* (Schmidt & Ernenwein 2011).

Technique selection

- 5.2 Geophysical survey enables the relatively rapid and non-invasive identification of sub-surface features of potential archaeological significance and can involve a suite of complementary techniques such as magnetometry, earth electrical resistance, ground-penetrating radar, electromagnetic survey and topsoil magnetic susceptibility survey. Some techniques are more suitable than others in particular situations, depending on site-specific factors including the nature of likely targets; depth of likely targets; ground conditions; proximity of buildings, fences or services and the local geology and drift.
- 5.3 In this instance, based on aerial photographic cropmark evidence, it was considered likely that cut features such as ditches and pits would be present on the site, and that other types of feature such as trackways, wall foundations and fired structures (for example kilns and hearths) might also be present.
- 5.4 Given the anticipated shallowness of targets and the non-igneous geological environment of the study area a geomagnetic technique, fluxgate gradiometry, was considered appropriate for detecting the types of feature mentioned above. This technique involves the use of hand-held magnetometers to detect and record anomalies in the vertical component of the Earth's magnetic field caused by variations in soil magnetic susceptibility or permanent magnetisation; such anomalies can reflect archaeological features.

- 5.5 Approximately 0.5ha of earth electrical resistance survey was also conducted at the site so that the volunteers and schoolchildren could gain ‘hands-on’ experience of this type of survey. In certain conditions, earth resistance survey can be particularly useful for mapping stone and brick features, however, the sandy nature of the soils at the site did not yield useful resistance data and those results have been omitted from this report.

Field methods

- 5.6 A 20m grid was established across the survey area and related to known, mapped Ordnance Survey points and the National Grid using a Leica GS15 global navigation satellite system (GNSS) with real-time kinematic (RTK) corrections typically providing 10mm accuracy.
- 5.7 Measurements of vertical geomagnetic field gradient were determined using Bartington Grad601-2 dual fluxgate gradiometers. A zig-zag traverse scheme was employed and data were logged in 20m grid units. The instrument sensitivity was nominally 0.03nT, the sample interval was 0.25m and the traverse interval was 1m, thus providing 1,600 sample measurements per 20m grid unit.
- 5.8 Initially the geomagnetic survey was undertaken on the southern part of the field and the results of this survey used to select areas for excavation. Whilst the excavations were in progress the geomagnetic survey of the remainder of the site was completed.
- 5.9 Data were downloaded on site into a laptop computer for initial processing and storage and subsequently transferred to a desktop computer for processing, interpretation and archiving.

Data processing

- 5.10 Geoplot v.3 software was used to process the geophysical data and to produce a continuous tone greyscale image and a trace plot of the raw (minimally processed) data. The greyscale image and interpretations are presented in Figures 2-4; the trace plot is provided in Figure 5. In the greyscale image, positive magnetic anomalies are displayed as dark grey and negative magnetic anomalies as light grey. A palette bar relates the greyscale intensities to anomaly values in nanoTesla.
- 5.11 The following basic processing functions have been applied to the geomagnetic data:

<i>clip</i>	clips data to specified maximum or minimum values; to eliminate large noise spikes; also generally makes statistical calculations more realistic
<i>zero mean traverse</i>	sets the background mean of each traverse within a grid to zero; for removing striping effects in the traverse direction and removing grid edge discontinuities
<i>de-stagger</i>	corrects for displacement of geomagnetic anomalies caused by alternate zig-zag traverses

interpolate increases the number of data points in a survey to match sample and traverse intervals; in this instance the data have been interpolated to 0.25m x 0.25m intervals

Interpretation: anomaly types

- 5.12 A colour-coded geophysical interpretation plans is provided. Two types of geomagnetic anomaly have been distinguished in the data:

positive magnetic regions of anomalously high or positive magnetic field gradient, which may be associated with high magnetic susceptibility soil-filled structures such as pits and ditches

dipolar magnetic paired positive-negative magnetic anomalies, which typically reflect ferrous or fired materials (including fences and service pipes) and/or fired structures such as kilns or hearths

Interpretation: features

- 5.13 A colour-coded archaeological interpretation plan is provided.
- 5.14 Several intense linear positive magnetic anomalies have been detected across the central part of the survey area. These anomalies reflect relative increases in high magnetic susceptibility materials and represent the remains of soil-filled ditches. These ditches form two enclosures totalling 100m in width. The smaller eastern enclosure is divided from the western part by two parallel and possibly intercutting ditches.
- 5.15 The two parts of the enclosure appear to have separate entrances, clearly visible on both the west and east sides. Just within the eastern entrance and possibly overlying the terminus of the boundary ditch, a large circular positive magnetic anomaly has been detected which may reflect a soil-filled pit approximately 10m in diameter. This feature is evident on the ground as a shallow depression and may be associated with relatively recent mining activities.
- 5.16 Less intense linear positive magnetic anomalies have also been detected which appear to form another rectangular ditched enclosure, on a slightly different alignment to the others, with its long axis aligned approximately north-west/south-east. On the south-east corner of this enclosure an intense magnetic anomaly has been detected which may reflect a ferrous object.
- 5.17 Several curvilinear positive magnetic anomalies have been detected within the enclosures which almost certainly reflect the remains of soil-filled ditches. These ditches may reflect ring-ditches associated with roundhouses. The most intense and circular anomaly in the north of the largest enclosure probably reflects a ring-ditch approximately 18m in diameter with a causewayed entrance facing south-east. There may be an opposing entrance also. There are discrete magnetic anomalies within the roundhouse which are likely to reflect internal features such as hearths, postholes and pits.
- 5.18 Clusters of discrete positive magnetic anomalies have been detected within the enclosures that could represent pits or postholes, possibly indicating the presence of further timber structures.

- 5.19 There are several less intense linear positive magnetic anomalies that cross the enclosures and continue outside them, which are again likely to reflect soil-filled ditches. Some of these features may be internal divisions contemporary with the enclosures, but they may reflect a different phase of enclosure and /or field system.
- 5.20 An intense linear positive magnetic anomaly detected north of the enclosures and aligned in the same direction, approximately north-west/south-east, may reflect an outer boundary to the enclosed settlement. This may continue to the south, aligned with the west side of the enclosure, perhaps forming an outer enclosure.
- 5.21 South of the enclosures and east of a linear ditch are two circular positive magnetic anomalies which measure approximately 7m in diameter; these almost certainly reflect further ring-ditches associated with roundhouses.
- 5.22 On the east edge of the survey area, east of the enclosures, are a number of large, intense, irregularly-shaped positive magnetic anomalies which may reflect large soil-filled features, possibly containing large quantities of settlement debris such as burnt material and domestic waste. These anomalies could also be the result of ground disturbance from historic mining, however, they appear to respect the boundaries of the enclosure suggesting that they could be contemporary. Two similarly intense positive magnetic anomalies were detected towards the north of the survey area, though these are more circular and may reflect more recent mineshafts.
- 5.23 North of these anomalies are further linear and curvilinear positive magnetic anomalies, which are again likely to reflect soil-filled ditches.
- 5.24 Across the survey area a large number of discrete positive magnetic anomalies have been detected ranging in size from less than a metre in diameter to over 5m. These anomalies are likely to reflect soil-filled pits and postholes. A cluster of relatively large, strong anomalies north of the enclosures could be associated with more recent mining activities, but their function and date remains uncertain.
- 5.25 Two series of intense dipolar magnetic anomalies detected across the survey area reflect two existing lines of pylons. Small, discrete dipolar magnetic anomalies have been detected across the survey area. These almost certainly reflect items of near-surface ferrous and/or fired debris, such as horseshoes and brick fragments, and in most cases have little or no archaeological significance. However, given the complexity of the site, it is possible that some of these dipolar anomalies could reflect small hearths. A sample of these is shown on the geophysical interpretation plan, however, they have been omitted from the archaeological interpretation plan.
- 5.26 The dipolar magnetic anomalies along the east edge of the survey area reflect modern litter and fences.

6. The excavation

Introduction

- 6.1 The two trenches were located to examine features identified by the geophysical survey. Trench 1 was sited over a circular geomagnetic anomaly and a linear geomagnetic anomaly. The trench measured approximately 15m by 15m (Figure 6).

Trench 2 was positioned across three linear positive geomagnetic anomalies. It measured 10m by 5 metres and was oriented approximately north to south. The features in Trench 2 also appeared as cropmarks on aerial photography.

Trench 1 (Figures 7-9)

- 6.2 The natural subsoil [35] comprised mottled brown yellow sand with gravel bands along the southern edge of the trench. Extensive floral and faunal activity was observed in the trench which created mottling in the very soft natural subsoil. In the northern corner of the trench the natural subsoil was overlain by a deposit of dark brown sandy silt [34: 0.12m thick], which was probably disturbed natural subsoil.

Phase 1

- 6.3 Some 5m to the south of the northern corner of the trench a short length of gully [F58: 0.13m wide, 0.24m deep] was recorded cutting the natural subsoil. The gully was filled with mixed yellow brown sandy silt [57] and was cut by a curvilinear gully [F15=F48: 5.6m long by 0.63m wide, 0.5m deep] (Figure 11). Gully F15 extended from the eastern trench edge and was filled with mottled yellow brown sandy silt [16=49], which contained probable later Iron Age pottery. The gully is probably part of an early circular structure, possibly originally defined by gully F58, and visible on the geophysical survey.

Phase 2

- 6.4 Gully F15 was cut by a ring gully [F1 = F17 / F20 / F30 / F22 / F24 / F26 / F46 / F61 / F39 / F32: 0.5 to 0.95m wide, 0.13m to 0.46m deep] interpreted as the wall construction trench for a circular structure (roundhouse) (Figure 12). The gully generally had a flared U-shaped profile and flat base. The excavated segments (F61, F32) on the north-western side of the gully were the shallowest with the segments (F30, F26) on the northern side of the gully being the deepest. The gully terminated [F20] at the south end of the trench and the opposing gully terminal (F17), which was less clear, was located some 6m to the north-east. It may be that the gully would have extended beyond this point and had been truncated by ploughing. The entrance would have faced to the east or south-east. The gully contained a single fill [2 = 33 / 40 / 62 / 47 / 27 / 23 / 25 / 31 / 21 / 18] which ranged in colour from grey brown to yellow brown to red brown and varied in composition between sand, silty sand and sandy silt. The roundhouse diameter was approximately 10m and the gully enclosed an area of around 60.13m². Almost a third of the pottery assemblage from the site was recovered from the ring gully, the assemblage including both rim and body sherds of probable later Iron Age date. Some of these sherds were probably from cooking vessels as sooting was present on some of the material. Industrial residue was also present in context [2] which comprised cinder, fuel ash slag and burnt shaley coal which is consistent with domestic use. A small amount of animal bone was recovered from the gully including cattle bone and sheep/goat bones. Fragments of two quern stones were also recovered from the ring gully. One was part of the upperstone of a developed beehive quern [SF2] typical of the 1st or 2nd century AD, though it could be of Iron Age or Romano-British date. The other was a fragment of a saddle quern [SF9] which may have been slightly earlier in date than the beehive quern. A fragment of flint blade was recovered from deposit [47] which contained retouch indicative of a Neolithic date.
- 6.5 Several features were recorded cutting the natural subsoil within the structure. On the far northern side of the roundhouse was a linear gully [F73: 3.2m long by 0.25m

wide, 0.17m deep] which had a V-shaped profile and was approximately east to west aligned (Figure 13). It was filled with mottled grey brown sandy silt [72]. To the south of the gully was an oval double posthole [F85: 0.45 long by 0.3m wide, 0.17m deep], which was filled with dark grey sandy silt with moderate charcoal inclusions (Figure 14). Two sub-rounded postholes were located in the south-eastern quadrant of the structure. The north posthole [F76: 0.25m diameter, 0.25m deep] was V-shaped in profile and filled with dark grey brown silty sand (Figure 15). It contained stone post-packing within which was a fragment of a quern stone. The south posthole [F78: 0.3m diameter, 0.17m deep] had a U-shaped profile and was filled with dark grey brown silty sand [77]. A fragment of a probable rubber stone [SF5] was reused as post-packing within the posthole. On the far south side of the structure was a small pit [F79: 0.88m long by 0.81m wide, 0.20m deep], which had an irregular profile and was filled with dark grey brown silty sand [80]. The fill contained frequent sub-rounded stone inclusions (180mm by 200mm, 120mm by 70mm, 30mm by 40mm), which may have been collapsed or displaced post-packing. Directly to the west of the pit was a small posthole [F81: 0.23m diameter, 0.17m deep] which contained sub-angular stone post-packing (170mm by 30mm in size). Some 2m to the north-west of posthole F81 on the west side of the structure was a further pit [F83: 0.75m long by 0.44m wide, 0.12m deep]. It was filled with grey brown silty sand [84], which contained frequent inclusions of sub-rounded stones (100mm by 70mm, 60mm by 50mm, 30mm by 20mm). These postholes may have provided support for the roof of the circular structure.

- 6.6 In the centre of the roundhouse was a shallow pit [F94: 1.24m long by 0.8m wide, 0.12m deep], filled with fired clay, charcoal and sand [74] (Figure 16). This feature has been interpreted as a possible hearth. A layer of grey brown silty sand [71: 0.1m thick] sealed the structure's internal features. A fragment of a flint blade was recovered from this deposit.
- 6.7 On the western side of the trench and respecting the roundhouse gully was a ditch [F13=F50: 1.25m+ wide, 0.48m deep] (Figure 18). It was approximately north-west to south-east aligned and contained two fills. The primary fill comprised yellow brown silty sand [36: 1.43m wide, 0.25m thick] and was sealed by the upper fill of dark brown sandy silt [14=51: 2.8m, 0.23m thick]. The upper fill contained one sherd of Iron Age pottery and a small fragment of 19th-century clay pipe (which is assumed to be intrusive). This ditch corresponds with a geophysical anomaly heading to the north, and forming part of a series of linear ditches which may relate to a system of enclosure which appears distinct from the main two enclosures (Figure 2).

Phase 2A

- 6.8 Layer 71 was overlain in the southern half of the roundhouse by a possible surface [F66: 7.79m long by 5.55m wide, 0.1m thick], which comprised brown sandy silt with frequent (50%) sub-angular and sub-rounded stones (50mm in size) (Figure 17). This may have levelled-up the area, as the natural subsoil sloped away to the south. The deposit contained industrial residues of cinder, fuel ash slag and burnt shaley coal and also a rolled flint flake. This layer was contained within the roundhouse and was cut by a linear gully and a sub-circular pit. The gully [F42: 0.30m wide, 0.06m deep] was filled with dark brown sand [42] and extended on a north-south orientation. The northern terminal of this was unclear, the gully petering out to 0.01m deep. The pit [F70: 1.2m long by 1m wide, 0.1m deep] was in the centre of the structure. It was

filled with mixed blue and yellow clay [65], which contained occasional sandstone fragments and sub-rounded stones (<50mm in size). A discrete deposit of red brown silty sand [69: 0.7m long by 0.4m wide, 0.01m thick] with fired clay inclusions also overlay F66. It was located close to the western side of the structure.

- 6.9 In the northern half of the roundhouse was a layer of dark grey brown sandy silt [10: 0.05m thick] which contained frequent lenses of fired clay and sub-rounded stones (<50mm). This deposit contained several finds including a possible Neolithic flint blade fragment, part of a jet ring or bangle of Iron Age or Roman date, pottery of later Iron Age, cattle bone, part of a 19th-century slate pencil and 2 sherds of medieval pottery (assumed to be intrusive). Layer [10] partially overlay layer F66 and was also contained within the structure. Above this layer on the western side of the roundhouse was a deposit of heat affected stones [67: 1.10m long by 0.8m wide, 0.2m thick]. The stones (300mm by 220mm by 70mm; 200mm by 180mm by 80mm in size) may have been associated with the demolition of the structure rather than having a specific purpose. Adjacent to the eastern side of the structure above layer 10 was a deposit of fired clay [64: 1.38m long by 0.8m wide, 0.1m thick].

Phase 3

- 6.10 A layer of ploughsoil [9=11/19/28: 0.23m thick] sealed deposits 67, 64 and the upper fill of ditch F13. The ditch had been truncated by ploughing towards the southern corner of the trench. Medieval pottery was recovered from this.
- 6.11 Dark brown sandy silt topsoil [29: 0.27m thick] overlay the ploughsoil and was recorded throughout the trench.

Trench 2 (Figure 10)

- 6.12 The natural subsoil [56] in Trench 2 comprised soft light yellow sand with a gravel band at the northern end of the trench. The natural subsoil was cut by four east-west aligned enclosure ditches.

Phase 1

- 6.13 At the south end of the trench ditch F7 [3.6m wide, 1.12m deep] cut the natural subsoil (Figure 19). It had a V-shaped profile and was filled with light yellow brown silty sand [41: 0.85m]. This fill was truncated by a recut [F90] of the ditch, which had a wider, shallower profile. The recut contained three fills. The primary fill [91: 0.82m wide, 0.27m thick] comprised mid-brown silty sand with occasional inclusions of sub-rounded stones (<50mm). It was overlain by the secondary fill of light yellow brown silty sand [92: 0.78m wide, 0.21m thick] which had occasional sub-rounded stone inclusions (<50mm). The secondary fill was sealed by the upper fill which comprised dark brown loamy sand [8: 3.6m wide, 0.45m thick] with occasional sub-rounded stone inclusions (<50mm in size). A sherd of Iron Age pottery with pie-crust rim decoration was recovered from the fill. Building material possibly suggestive of burnt and crushed wattle and daub was recovered from the fill and also animal bone of sheep/goat. The ditch terminated approximately 1m from the western trench edge.
- 6.14 Between 0.6m and 0.4m to the west of the terminal of ditch F7, ditch F52 [Figure 20: 2.08m wide, 0.55m deep] cut the natural subsoil and continued the line of ditch F7. It had an irregular profile and was filled with yellow brown silty sand [53] that had occasional inclusions of sub-rounded stones (<100mm). This fill also contained cattle bone and building material, possibly wattle and daub.

- 6.15 To the north of ditches F7 and F52 was ditch F5 [4.2m wide, 1.4m deep], which was V-shaped and contained three fills (Figure 21). The primary fill [68: 1.35m wide, 0.30m thick] of brownish yellow sand was overlain by the secondary fill of mottled brown yellow silty sand [12: 4.2m wide, 1.5m thick]. The secondary fill contained industrial residues of cinder, fuel ash slag and burnt shaley coal and was sealed by the upper fill which comprised dark brown sandy silt [6: 2.3m wide, 0.27m thick]. A fragment of glass was recovered from fill [6].
- 6.16 At the north end of the trench was ditch F87 [0.34m+ wide, 0.26m+ deep]. The ditch fill was light brown sand [89], which had been cut by a ditch recut [F3: 2.70m wide, 0.75m deep] (Figure 22). The recut had a wide profile and contained three fills. The primary fill consisted of a mixed brown sandy loam with black and yellow mottling [63: 1.35m wide, 0.2m thick], which had some coal inclusions. It was overlain on the south side of the ditch by a deposit of black coal [88: 0.16m wide, 0.11m thick] which was likely to have been displaced from the natural subsoil when the ditch was excavated. The layer was sealed by the ditch's upper fill which comprised dark brown loamy sand [4: 2.70m wide, 0.55m thick] with frequent inclusions of small to large stones (50mm to 200mm in size).

Phase 2

- 6.17 Northern ditches F5 and F7 were cut by a north-east to south-west ditch [F37: 1.2m wide, 0.9m deep] (Figure 23). This ditch was U-shaped in profile and terminated approximately 2m from the northern trench edge. It was filled with dark brown sandy loam [38] that contained frequent sub-rounded stone inclusions (50mm to 100mm in size). Pig bone was recovered from the ditch fill.

Phase 3

- 6.18 A layer of subsoil [55: 0.40m thick] was identified over the ditch fill 38 and the fills of southern ditches F7 and F52. It comprised dark reddish brown sandy silt with occasional sub-rounded stone inclusions (<50mm). The subsoil was overlain by a thick ploughsoil layer [54: 0.60m thick] which comprised dark brown sandy loam with occasional sub-rounded stone inclusions (<50mm).
- 6.19 The ploughsoil was sealed by dark grey sandy silt topsoil [93: 0.39m thick], which was observed throughout the trench.

7. The artefacts

Pottery analysis

Summary

- 7.1 The assemblage comprises 69 sherds representing 39 vessels and is consistent with a date in the first millennium BC and early first millennium AD. A summary of the pottery from each context is provided below and a full catalogue can be seen in Table 1.2.

Results

- 7.2 A third of the sherds were recovered from the fill of the roundhouse gully [F22]. Other contexts with sherds included a shallow pit, context [2], and the fill of ditch [F7].

- 7.3 The sherds are from handmade, coil-constructed vessels with diagonal coil junctions. Most are undecorated, thick-walled body sherds, sometimes with sooting on one or both sides. Apart from a few sherds in a finer fabric, including untempered sherds (V8, V10, V14), all have some rock tempering with 30-50% of crushed rock fragments being common. Surface finish is restricted to a wet-hand smoothing and only one vessel is decorated, V16, which has a pie-crust wavy pinched detail around the exterior of the rim. A variety of vessel shapes is indicated, from large thick-walled barrel-shaped vessels such as V11 to thinner-walled vessels with everted or inverted rims such as V16 and V20 (everted) and V9 and V10 (inverted).

Summary of the pottery by context

7.4 *Context [2] ring gully fill*

Four sherds from four vessels. Two of the vessels (V9 and V10) are represented by rims, both inverted. V9 and one of the body sherds (V11) are from thick-walled vessels, V10 is medium-walled and V12 is thin-walled. The fabrics are sandy clay with rock fragments and grey with red margins. Sooting was noted on some sherds.

Context [8] fill of ditch [F7]

Two sherds from the same vessel, flat-rimmed and probably shouldered, and decorated with wavy pie-crust decoration just below the lip on the exterior. The sherds are medium thickness and rock-tempered, slightly abraded and sooted.

Context [10] layer

14 sherds from 8 vessels. The fabrics are mainly sandy clays with crushed rock fragments. The sherds are thick (up to 15mm) and most are grey with red or buff-coloured margins. Many of the sherds have split along their coil junctions.

Context [14] upper fill of ditch cut [13]

One abraded body sherd with rock temper, one small fragment of clay and a larger fragment of clay with industrial waste adhering (see 1.2).

Context [16] fill of gully cut [F15]

One body sherd from a medium-walled, rock-tempered vessel. Slightly abraded.

Context [19]

One body sherd from a medium-walled, rock-tempered vessel. Slightly abraded.

Context [21] fill of cut of roundhouse gully, same as contexts [23, 25, 33]

One body sherd, rock-tempered.

Context [23] fill of cut of roundhouse gully, same as contexts [21, 25, 33]

Twenty sherds from three vessels. Twelve of the sherds including two rims are from the same vessel (V13), a thick-walled vessel with a flat rim and c.50% of angular rock fragments. V14, represented by a flat base with angled walls and a fragment, is from a well-made, medium-walled vessel with very smoothed walls, both internally and externally. It is made from an untempered sandy fabric. The final sherd is from a medium-walled vessel with c.40% of rock fragments.

Context [25] fill of cut of roundhouse gully, same as contexts [21, 23, 33]

Two body sherds and an exterior fragment from three vessels, one from a thick-walled vessel and two from medium-walled vessels. All have c.10-20% of rock temper. Abraded.

Context [33] fill of cut of roundhouse gully, same as contexts [21, 23, 25]

One basal sherd from a flat-based vessel with angled walls. Rock-tempered. Fresh condition. Light sooting on the exterior.

Context [45] fill of ditch [F44]

One small fragment.

Context [66] cobble surface

One rim sherd, four body sherds and four fragments from five vessels. The sherds are rock-tempered and from medium walled vessels and are abraded. One vessel is represented by an everted rim (V20).

Selected sherds

7.5 *V9 context [2] Find 2A*

Inverted rim. The exterior surface is smoothed. The fabric is sandy clay with c.10% of angular fragments which has fired hard and is grey with red margins. Slightly abraded. Residue on the exterior surface.

V10 context [2] Find 2B

Slightly inverted rim. The exterior surface is smoothed. The fabric is coarse sandy clay which has fired hard and is grey with red surfaces. Slightly abraded. Sooting on the exterior surface.

V13 context [23] Find 23A

Two rim sherds and 10 body sherds from a thick-walled vessel. The rim has a flattened lip. The fabric is sandy clay with c.50% angular rock fragments which has fired hard and is grey with red margins. Slightly abraded. There is sooting on both surfaces of some sherds.

V14 context [23] Find 23B

Basal sherd from a flat-based vessel with angled walls, and a fragment. Both surfaces are well-smoothed. The fabric is sandy clay which has fired hard and is grey with buff margins. Slight sooting on the exterior. Fresh breaks.

V16 context [8] Find 8A (rim and body sherd); u/s (2 body sherds)

Rim sherd and three body sherds from a vessel with an everted rim and a flat lip. The rim is decorated just below the lip on the exterior with a thick wavy 'pie-crust edge' type of decoration, formed from rolling over the edge of the rim and pinching it along the edge. The profile of the sherd indicates that below the rim the vessel diameter increases to a rounded shoulder. The surfaces of the vessel are smoothed and there are horizontal striations from the potter's fingers in the interior. The fabric is fine sandy clay with c.30% of angular rock fragments which has fired hard and is grey with a buff interior. The exterior surface is sooted.

V18 context [33] Find 33A

One basal sherd, flat-based with angled walls. Exterior surface smoothed. The fabric is fine sandy clay with c.40% of angular rock fragments which has fired hard and is grey with a brown exterior surface and a red exterior surface. Fresh condition.

V20 context [66] Find 66B

Everted rim. The fabric is fine sandy clay with c.50% of angular rock fragments which has fired hard and is grey with a buff exterior surface. The interior surface is sooted. Abraded.

V11 context u/s (also body sherd from context [2])

Flat-rimmed sherd from a large, medium-walled vessel, possibly barrel-shaped. Both surfaces are smoothed. Coil-built with N-shaped junctions. The fabric is sandy clay with c.40% of angular rock fragments which has fired hard and is grey with buff surfaces. Exterior surface sooted.

V31 context u/s (also exterior fragment from context [25])

Flat-rimmed sherd from a necked vessel, coil-constructed with N-shaped junctions. The exterior surface is smoothed. The fabric is fine clay with c.10% of angular rock fragments which has fired hard and is grey with red surfaces.

Discussion

- 7.6 There is little variation in the character of the assemblage from context to context, giving the overall impression that it is all of the same tradition of pottery making. The handmade pottery of the later Iron Age in north-east England and south-east Scotland is a continuation of a tradition of pottery manufacture that had changed little since the later Bronze Age. The assemblages are characterised by large undecorated bucket and barrel-shaped vessels, often heavily tempered and sooted, suggesting functional vessels in everyday use. A variety of rim types is found including flat rims, inverted rims and everted rims, presumably varying depending on their function, for example storage or cooking and pouring of liquids, or covered storage of foods.
- 7.7 In reporting on the assemblage from Thorpe Thewles, a settlement in use from the first millennium BC to the first century AD, Swain (1987) noted that the pottery was the product of one technological tradition that varied little. A range of vessel types and sizes were represented in the assemblage including large barrels and buckets and medium-sized barrel or shouldered vessels with simple or everted rims. In terms of its wider context he concluded that “Northern pottery must be seen within a tradition that allows for the long currency of simple forms and rim types. Within this general background we see the adoption, use and discard of slight variations and amendments in pattern at a local level, but as yet it is impossible to subdivide the region into ceramically distinctive units.” (*ibid*, 65).
- 7.8 In south-east Scotland, one of the larger assemblages is that from Phantassie, East Lothian, where a settlement spanning the last two centuries BC and the first two or three centuries AD was excavated in advance of road-building (Lelong and MacGregor 2008, 150). Again, the pottery assemblage of 350 sherds representing 192 vessels indicated little chronological division, with bucket-and barrel-shaped vessels as well as a range of smaller vessels being used throughout the life of the site (MacSween, 2008). Other sites, such as Broxmouth (Cool, 1982) seem to show some chronological variation, in this case from heavily tempered vessels to vessels with much less temper, but how far this can be applied beyond this site has yet to be defined.
- 7.9 There is currently no detailed chronological framework for the later prehistoric pottery of south-east Scotland and north-east England, although the recent increase in the number of assemblages available for study may now make this worthwhile (Petts and Gerrard, 2006). As noted above however, if this is functional pottery being used in a domestic context, any site to site variations may be dependent as much on the activities being carried out as on chronology.

Medieval and later pottery analysis

Results

- 7.10 The small assemblage of later pottery (14 sherds, 84g wt.) was found in two contexts and u/s (Table 1.3). Seven sherds were identified as medieval and included pieces of splash glazed reduced greenware, oxidised sandy ware and Humber type ware, all dating to between the late 13th and the 15th century.
- 7.11 The seven 19th/20th century sherds were all unstratified and included pieces of white glazed earthenware, colour glazed earthenware, stoneware and blue banded ware.

Discussion

- 7.12 The medieval sherds are all small and abraded with no rim or base pieces. The small size of the medieval assemblage and the lack of associated contemporary features does not suggest occupation at the site during this period. The medieval pottery most probably arrived on site as a result of field manuring practices.

Animal bone analysis

Results

- 7.13 The animal bone assemblage comprises a small number of very fragmentary pieces, with many exhibiting surface degradation. The assemblage was recovered from features associated with a substantial Iron Age settlement. Due to the extremely fragmentary nature of the material very few of the bones from the assemblage contained discrete diagnostic features, so in order to allow any quantification of the assemblage all fragments were counted, inevitably introducing the possibility that there may be multiple recording of fragments from the same bone. A single unburnt cattle metacarpal from context [9] could be identified to both species and element, but over 64% of the assemblage was unidentifiable. The assemblage comprised both hand-recovered material and an additional small amount of material recovered from the bulk soil samples. The results are presented in Table 1.4.
- 7.14 Many of the bone fragments recovered from the soil samples were in particularly poor condition, only two could be identified to species size, and only one of these was identifiable to element. These consisted of a sheep/goat-sized rib fragment from context [18] sample <5>, and a piece of cattle-sized tooth enamel from context [10] sample <13>. A small percentage of the assemblage showed signs of burning, although there was no indication of burning on the bone fragments recovered from the potential hearth context, context [74].

Discussion

- 7.15 The recovery of bone, albeit poorly preserved, demonstrates the potential for further bone to be recovered from the site. The poor surface condition of the fragments precludes any assessment of the presence of butchery marks. Few of the pieces were identifiable to element, although the bone from context [9] comprised two fragments of a refitting cattle metacarpal, consisting of a part of the fused proximal articular end and part of the diaphysis. The break between the fragments appears modern. The proximal end of the metacarpal fuses *in utero* (Silver 1970), and so this element provides no further aging information. No measurements could be taken.

- 7.16 A higher proportion of tooth enamel fragments were identifiable to species, unsurprising considering that tooth enamel is more durable than bone (Reitz & Wing 2008). Context [8] contained two sheep/goat molar fragments, and contexts [10] and [21] included a number of tooth fragments likely to derive from cattle. Two of the enamel fragments from context [21] can be positively identified as cattle molar fragments, with three other fragments comprising molar fragments of cattle-size. Context [53] contained two mandibular molar fragments from the right side of a cattle jaw, with both fragments probably deriving from the same tooth. The tooth was not in wear and may not have been fully erupted, indicating the animal was not fully mature. Context [10] similarly comprised six indeterminate cattle-sized tooth enamel fragments. Two of these fragments were refitting, and are likely to have been broken recently. The context also contained four cattle-sized tooth root fragments. It is probable that all the tooth fragments from context [10] represent the remains of a single degraded cattle-sized tooth which has fractured into a number of pieces due to taphonomic processes. Context [38] contained five fragments of unerupted pig molar enamel, which again are likely to derive from the same tooth. The pieces are too fragmentary to determine which molar is represented, however the unerupted nature of the tooth indicates that the animal has not reached full maturity.
- 7.17 The deposition of low-quantities of animal bone, some showing evidence of having been burnt, in a range of features such as ditches and gullies suggests that the assemblage derives from the deposition of refuse from domestic consumption. A range of domesticated animals is present including cattle, sheep/goat and pig, with cattle and cattle-sized fragments predominating. While the assemblage is likely to have been influenced by variable preservation, with the large and robust bones of cattle more likely to preserve, such a range of animals would be expected for this period. Despite the inherent preservational bias against smaller species, sheep and pig are represented proportionally to cattle in ratios that are not unusual for the type of settlement.

Clay tobacco pipe analysis

- 7.18 A single fragment of clay pipe bowl came from context [14], the upper fill of ditch [F13]. The small fragment has no decoration or maker's stamp, but what little survives of its form suggests a late 18th or 19th century date.

Glass analysis

- 7.19 Five pieces of 19th or 20th century glass were recovered unstratified and from a sampled context. The u/s material includes a base corner from a rectangular blue-green bottle in translucent, unweathered glass. Two small raised dots on one side are all that remains of the name of the manufacturer or the bottle's contents. Though this particular container could not be identified, bottles of this colour and shape were often used for medicines, and might be re-used several times. Evidence of such recycling can be seen in the abraded edge of the bottle base.
- 7.20 The remainder of the u/s glass comprises a rim fragment in clear unweathered glass, probably from a food jar, a base sherd from a clear circular vessel (perhaps a small vase), c.34mm diameter, with moulded external 'basketwork' decoration, and a piece of melted blue-green translucent glass. A very small (<3mm) sliver of clear modern glass came from environmental samples <1> from context [6], a fill of ditch [F5].

Slate pencil analysis

- 7.21 A short length of slate pencil (SF3) was hand recovered from context [10], a layer of silt within the roundhouse. It is 28mm long and circular in section 5.5mm diameter. Such pencils were used in schools in the 19th century for practising handwriting on slate boards.

Building materials analysis

- 7.22 Very little building material was recovered. A small piece of a flat, unglazed earthenware roof tile was found unstratified. It is handmade, 49mm x 31mm x 15-16mm thick, with one sanded face. Its intact thickness measurement puts it within the range of comparative medieval material, but too little survives for positive identification or dating.
- 7.23 A total of 176g of visually similar material was hand recovered from context [8], a fill of ditch [F7] and from context [53], a fill of gully [F52]. The irregularly shaped pieces, which have no original surfaces, are made up of compacted earth mixed with very small fragments of clay and charcoal. These may be the decayed remains of burnt and crushed wattle and daub, deposited either by disposal (ditch fill) or in a location possibly close to the site of its original use (gully fill).
- 7.24 Very small quantities (3.5g) of fired clay fragments came from environmental samples from three contexts – context [8] sample <2>, [10] <14> and [18] <5>. The fragment from sample <2> has no original surfaces but is very hard fired and probably of 19th or 20th century date. The other fragments are very small and cannot be identified or dated.

Flint analysis

Summary

- 7.25 The flint assemblage comprises six pieces, four of which are blade fragments. Of these, two exhibit retouch, and one shows signs of burning. There are also two flakes, one with retouch. An additional two pieces were of natural origin.

Results

- 7.26 A burnt blade fragment comes from context [71], displaying fine fracture lines resulting from exposure to heat. There is a break at the distal end and the butt has also been removed. There are three flake scars visible on the dorsal surface. The artifact is dark grey in colour with a white centre, again a product of modification processes due to heating. The piece exhibits a straight edge on the left side and abrupt steep retouch on the right dorsal edge. (Dimensions: L=27.99mm, W=17.90mm, Th=5.07mm).
- 7.27 Another broken blade fragment is from context [47], but in this case it is missing the proximal end and right dorsal edge. A cortical surface (25-50%) is present on the left dorsal side, although its thin pitted nature suggests derivation from a pebble or river cobble origin. Furthermore, there is greater patination shown on the dorsal surface and part of the break which suggests that these are older surfaces. The piece is manufactured on good quality dark grey flint. (Dimensions: L = 35.85mm, W = 12.22mm, Th = 3.53mm).
- 7.28 A long [u/s] blade fragment exhibits breaks at both the distal and proximal ends. The piece has likely been subject to plough damage as one of the dorsal surfaces is

battered and damaged. The artefact is made on a light grey flint with cream inclusions (Dimensions: L=65.20mm, W=16.23mm, Th=8.40mm).

- 7.29 The final blade fragment is a retouched example from context [10] similar to the burnt example above [71]. There are breaks at both the proximal and distal ends, and the piece is once again manufactured on good quality light grey flint. There is retouch present along both edges, although on the right it manifests as a steep, invasive scalar pattern compared to the steep semi-invasive, sub-parallel retouch demonstrated on the left. (Dimensions: L=18.08mm, W=15.06mm, Th=5.22mm).
- 7.30 The rolled flake from context [66] was very likely manufactured on a pebble. The dorsal surface is cortical but very battered and rolled, with damage to the distal end and left ventral. The point of percussion is just visible on the ventral and the piece exhibits a cortical butt. The raw material is a rougher quality brown flint. (Dimensions: L=15.18mm, W=21.29mm, Th=5.15mm).
- 7.31 The other flake fragment is a retouched example found u/s in Trench 1. The distal end only is present, and whilst the piece exhibits a feather termination, there is a slight break to the distal tip. The raw material is of good quality grey flint with cream inclusions. There are two main scars on the dorsal surface from the proximal and right sides. Furthermore the piece demonstrates use-wear or fine retouch along the right dorsal edge and more obvious retouch on the left dorsal side creating a slight hook effect at the bottom edge. The retouch is non-invasive, steep and parallel. (Dimensions: L=13.69mm, W=19.15mm, Th=2.61mm).

Discussion

- 7.32 The assemblage is unusual in that half of the artefacts exhibit some form of retouch, suggesting that processing activities may have been carried out in the vicinity of the site. There is no evidence of *in situ* working however, as no cores were recovered, but the assemblage does appear to be quite homogeneous in character when considering the raw material. There is only one artefact on brown flint, which stands out from the rest as being much more rolled. The remaining pieces are on light grey or grey material of good quality.
- 7.33 An interesting aspect is the similarities between the burnt retouched blade [71] and the artefact from [10]. Whilst the former only displays retouch along its right edge, and the latter has retouch down both edges, their dimensions - especially the width - and the presence of three main scar removals, two either side and one forming a flat surface on the dorsal, suggest similarities in manufacture and raw material. Whilst the two pieces cannot be refitted directly, it cannot be ruled out that they represent part of the same piece. The form of these two retouched pieces suggests a Neolithic date.

Quern analysis

Summary

- 7.34 Five pieces of stone were examined. Two were positively identified as quern fragments, one (SF2) the upper stone of a 'developed beehive' quern and the other a fragment of a rubber (SF5). A third piece (SF9) was tentatively identified as a saddle quern fragment. The other two pieces were found to have no worked surfaces.

Results and discussion

7.35 SF2 context [23], fill of roundhouse gully [F22]

Upper stone of developed beehive quern

Description: 15% fragment broken radially through handle holes, with 100% removal of the grinding surface (G/S). Upper surface is peck-dressed into a domed profile, and the hopper has a smoothly rounded rim and a bi-concave shape with no feed-pipe remaining. The G/S is worn smooth and is slightly concave (8mm max). Portions of two handle holes survive: they are both apparently conical and used sequentially: the lower hole is presumed to be the earlier, as the fracture surface associated with its removal was abraded by handling, prior to the fresher fractures associated with the removal of the higher hole. Grey/ brown, fine to medium grained stone, with quartz pebbles up to 5mm across: perhaps from local Coal Measures.

Dimensions: Diam >380mm: Max Height 90mm: Hopper Width 140mm, Depth >90mm, Feedpipe diam c.40mm: Handle B, Diam >20mm, Depth >45mm: Handle C, Diam >15mm, Depth >35mm: Exterior angle 40°: Weight 2870g (estimated intact weight c.19000g). YQS 5287.

Comment: Its wide diameter, low exterior angle (Heslop 2008, 9), broad hopper and slightly concave G/S all suggest that this is a 'developed beehive' quern upper, which Elizabeth Wright (1996, 367) considered to be "common on military sites [in northern Britain] in the 1st and 2nd centuries AD, but also occurs on Iron Age and Romano-British settlements". She also notes that the 'developed beehive' profile of querns in North Lincolnshire is very similar to that of the Puddingstone querns of East Anglia, which Hilary Major (2004, 2-4) has recently dated mainly to the period AD 40-160 and which are therefore contemporary. SF2 is thus of interest as it extends the range of this quern type from North Yorkshire further up the East Coast.

Quern SF2 was clearly very well worn, as both handle holes had penetrated into the G/S. In addition, the lower, more vertical portion of the skirt and all of the feedpipe had completely worn away. If these elements are restored, the original quern would have been more substantial, with a likely diameter of c.420mm, a max height of >130mm and a weight of around 30000g.

The evidence for successive handle-holes suggests that, despite having one handle removed (presumably intended to put the stone out of action), the quern was reactivated and used in its damaged state. When it was completely exhausted, it was finally immobilised by the removal of its G/S edge and then by division into quarters. Such decommissioning behaviour is frequently recorded on querns from 'native' Roman settlements, as a continuation of later prehistoric traditions (Heslop 2006, 68-72). However, this activity is usually followed by deposition. SF2 is noteworthy in that it was apparently subsequently reactivated for re-use, which raises the possibility that the stone was recovered from its initial deposition site, some time later, to enable this second phase of use.

7.36 SF5 context [77], fill of posthole [78]

Rubber stone

Description: about 30% fragment of a linear bar-shaped rubber, fragmented across its width and also lengthwise. Upper surface has a curved profile with signs of possible re-use as a hone. G/S is smoothly worn flat. The outer surfaces retain a covering of a fine, carbonaceous material. Made in dark-grey, fine to medium grain sandstone.

Dimensions: Length >120mm, width > 80mm, max height 80mm. Weight 1900g (Estimated intact c.6000g). YQS 5289.

Comment: with a symmetrical profile, this would be c.140mm wide. The flat G/S profile suggests this probable rubber was used in a two-handed operation, implying its length was at least 250mm and thus suitable to work a saddle quern, which commonly are around this width.

7.37 *SF9 context [18], fill of round house gully [F1]*

Possible saddle quern fragment. Slab of fine grained sandstone (perhaps local Coal Measures), which is 110mm high, with a 135mm x 140mm flat, smooth face, with no obvious signs of grinding, but reddened by heat.

Unworked fragments

7.38 *Context [8]*

Rounded, rectangular slab, 140mm x 170mm x 55mm, wt. 1600g, of very fine grained, yellow, compacted sand, which would be completely unsuitable for any grinding and has no worked surface.

Context [14]

Curved stone flake, 80mm x 70mm, 10-13mm thick, wt. 120g, with no worked surfaces.

Stone object analysis

- 7.39 A water-worn pebble (SF10) which has been used as a whetstone came from context [21], a fill of the roundhouse gully. The stone is a moderately fine micaceous sandstone 90mm long x 30mm wide x 20-31mm thick. Its natural elongated pear shape fits well into the hand, and sparse, narrow (<3mm) striations on the surface suggest it has been used to sharpen points rather than blade edges. Such fortuitously shaped, re-used objects cannot be dated, other than by their association with other material.

Jet object analysis

7.40 *SF1 context [10] layer within roundhouse*

Small, broken and reworked fragment of a jet ornament, either a ring-pendant or small bangle, 17mm long, 7.5mm wide, 6mm high. The size and degree of damage make identification tricky, but it seems that the faces have flaked off, leaving a near-rectangular, highly incomplete section, externally rounded, internally slightly angled. Slight inconsistencies in the extrapolated diameter (external c.35-40mm, internal c.30-35mm) suggest it was hand-carved rather than lathe-cut and perhaps had a slightly off-centre perforation. One end is broken, the other snapped square; this may arise from attempts to repair or re-use it, as there are abrasion scars on the outside surface at this point and remains of a conical hollow on one fracture surface close to the end. This was probably intended as a perforation to repair two broken fragments or re-use it as a pendant. The internal diameter is very much at the lowest end for bangles, and could only be for a child, but it may be a ring-pendant, an Iron Age type which persisted into the Roman period. The material was not analysed scientifically, but the cross-checked cracking suggests it is jet. This implies it has been brought from the North Yorkshire coast, some 70 km to the ESE.

Metal objects analysis

Summary

- 7.41 Fifteen metal objects were recovered during excavation; nine iron, four copper alloy, one lead and one zinc alloy. All are certainly or most plausibly post-medieval or modern.

Results and discussion

- 7.42 The fifteen metal objects from Great Chilton are summarised in Table 1.5. The small assemblage comprises a typical range of ploughsoil finds including horseshoes, nails and fittings which could have been casually lost over time. All were unstratified, mostly found during metal-detecting and all are either modern or chronologically undiagnostic. The full catalogue can be seen below (Table 1.5).

Metalwork catalogue

- 7.43 Measurements in mm. L length; W width; T thickness; D diameter.

Iron

SF6

Horseshoe fragment tapering to a rounded terminal, broken at other end, with three rectangular nail holes. L 86, W 8-15, T 6; holes 5 x 3 (11mm apart). [2], Unstratified. X-ray 6516.

SF7

Rivet. Short, circular-sectioned shank with blunt tip and large flat trapezoidal head, both sides broken. Shank D 8, L 10; head L 43, W 19-39, T 4. [2], Unstratified. X-ray 6516/17.

SF8

Large nail. Rectangular-sectioned shank is slightly curved, suggesting removal prior to deposition; tip is missing. Head is partly broken but appears to have been sub-rectangular and domed. L 122.5; shank T 6-10; head L 14, W 10, T 5.5. Tr.2, Unstratified, metal-detecting find. X-ray 6516.

SF12

Intact nail with rectangular-sectioned shank and sub-rectangular, slightly domed, head. Tip is curved, indicating the nail had been removed prior to deposition. L 58; Shank T 2-6.5; head W 23, T 4. Unstratified, metal-detecting find. X-ray 6517.

SF13A

Nail shank. Rectangular-sectioned shank is bent, indicating removal prior to deposition. L 45, T 1.5-5. [2], Unstratified. X-ray 6516.

SF13B

Nail shank. Rectangular-sectioned shank slightly curved, suggesting removal prior to deposition. L 53, T 2-4. [2], Unstratified. X-ray 6516.

SF14

Intact nail with slightly domed, circular head. Shank is slightly curved, suggesting removal prior to deposition. Shank section is unclear. L 39; Shank T 2-4; Head W 8, T 4. [1], Unstratified. X-ray 6516.

SF15

Wire. Bent fragment of modern circular-sectioned wire. L 200, D 4. Unstratified, metal-detecting find. X-ray 6516.

SF22

Horseshoe fragment with two rectangular nail holes, broken at both ends. L 50, W 12.5, T 5; holes 5 x 4 (12mm apart). [1], Unstratified, metal-detecting find. X-ray 6517.

Copper Alloy

SF16

Three small, unidentifiable fragments of copper alloy. Largest: L 5, W 5, T 3. (11) Ploughsoil.

SF19

Button. Disc-shaped post-medieval button with attachment loop missing. D 17, T 1. Unstratified. X-ray 6517.

SF20

Strip. Curved end with off-centre circular perforation. Other end is broken and slightly folded. L 24, W 12, T 0.5, hole D 2. Unstratified. X-ray 6517.

SF21

Decorative hooked mount. Cast copper alloy mount with two rivets; one intact in centre and the other broken on one of the four 'arms', which is squared off. Two of the other arms are hooked, one smaller than the other, while the fourth is a raised tear-drop shape. The larger hook is probably functional suggesting this is some form of fastening device. L 27, W 25, T 3.5; rivet L 5.5, D 3. Unstratified. X-ray 6517.

Zinc Alloy?

SF17

Tag. Modern, flat oval tag with impressed '92' on one side. L 37, W 25, T 1, Perforation D 6. Unstratified.

Lead

SF18

Working debris. Melted lead fragment with cut-marks around two sides. L 24, W 11, T 4. [1]. Unstratified.

Industrial residues analysis

- 7.44 Single pieces of cinder, fuel ash slag and burnt shaley coal (17g wt. total) came from three contexts, [2], [12], [66] and u/s. The cinder and fuel ash slag – which occurs when the non-organic components of fuels react with silicates present in earth, stone or ceramic – are likely to be domestic in origin, and the burnt shaley coal fragment was found u/s. These are extremely small quantities of material and do not suggest industrial activity was taking place on site.

Conservation

Results

- 7.45 At assessment all metalwork was X-radiographed to determine which objects should be selected for further conservation work. Eight finds were chosen for investigative conservation to assist with specialist reporting. These comprised four iron, three copper alloy and one jet object.
- 7.46 The iron objects were selectively air abraded to remove obscuring corrosion products and define diagnostic areas and terminals of the objects, and to reveal surface detail.
- 7.47 Loose soil and surface corrosion products were removed from the copper alloy using hand tools. Following corrosion removal, the metalwork was de-greased using industrial methylated spirits (IMS) and surface coated/consolidated with a 6% solution of Paraloid B72 (an ethyl methacrylate co-polymer) in acetone.

- 7.48 The jet object was surface cleaned using a mix of water/IMS and conservation detergent and consolidated as above.
- 7.49 All conservation work was carried out under X16 magnification. The conserved objects were packed for medium to long term storage, and photographed before and after conservation. Conservation records were produced for each object.

8. The palaeoenvironmental evidence

Summary

- 8.1 Charred plant remains including wheat and barley grains, hazel nutshell fragments and a limited suite of weed seeds were identified. These reflect general background waste associated with habitation and provide some evidence of diet. Low quantities of charred tuber/rhizomes were noted in some of the features, likely to have originated from burnt turves potentially used as a form of fuel.

Methods

- 8.2 A palaeoenvironmental assessment was carried out on 20 bulk samples, taken from a number of features associated with a substantial Iron Age settlement. The samples were manually floated and sieved through a 500 μ m mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification using a Leica MZ6 stereomicroscope for waterlogged and charred botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classifications follow Preston *et al.* (2002).
- 8.3 Where possible, charcoal fragments were identified, in order to provide material suitable for radiocarbon dating. The transverse, radial and tangential sections were examined at up to x600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990) and Hather (2000), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University.

Results

- 8.4 Low numbers of charred plant remains were present in 19 of the 20 soil samples examined. Context [63], the primary fill of a ditch recut, contained no charred remains. Charred heather twigs were recovered from several features within both trenches [contexts 10, 12, 18, 43, 53 and 64]. In addition to botanical remains, the samples comprised small fragments of calcined bone, charcoal, coal/coal shale and clinker/cinder. Small fragments of fired clay were identified in contexts [8], [10] and [18]. From Trench 2 a fragment of glass was noted in ditch fill [6]. Low quantities of uncharred seeds, insect remains and earthworm egg cases were noted in a number of the fills, but the well-drained nature of the site and the presence of modern roots suggests that these are later intrusive material. Pre-Quaternary fossils (trilete megasporangia), which derive from the local geology, were also occasionally recorded.

Trench 1- Roundhouse features

- 8.5 The charred cereal grain assemblage from Trench 1 included wheat and/or barley grains in most of the contexts, excluding context [21]. Fragments of hazel nutshell were identified from six of the Trench 1 features associated with the roundhouse [contexts 10, 18, 21, 64, 69 and 74], with earlier features and those external to the roundhouse not containing any hazel nutshell. Low numbers of charred indeterminate tubers/rhizomes were noted in five of the contexts [10, 18, 43, 64, 74]. From layer [10] and gully [43] false oat-grass tubers were identified, and a pignut tuber was also noted in gully [21]. A small number of charred weed seeds were noted. These included arable species such as brome-grass and corn spurrey, and ruderals such as hemp-nettles and cleavers. Charred heath-grass caryopses were identified from contexts overlying the possible roundhouse surface [10] and [64], and other large-seeded grasses were also noted. Small quantities of charcoal from several tree/shrub taxa were noted, including ash, hazel, oak and Maloideae (hawthorn, whitebeams, apple).

Trench 2- Enclosure ditches

- 8.6 Charred plant macrofossils were generally few in number from the ditch features considered in Trench 2. There are no clear differences in composition between the various ditch fills. The charred cereal grain assemblage included wheat and/or barley grains in many of the contexts, similarly to the Trench 1 samples. Only context [63] contained no cereal grains. Hazel nutshell fragments were present in four of the eight ditch fills [contexts 4, 6, 38, and 41]. Low numbers of charred indeterminate tubers/rhizomes were also noted from four of the ditch contexts [6], [8], [38] and [53]. Identifiable tubers included false oat-grass tubers from context [38], and pignut tubers in contexts [38] and [53]. A number of charred weed seeds such as grasses, docks, vetches and members of the pea family were also present in the ditch fills. These included the arable weed brome-grass in contexts [4] and [12], and heath-grass caryopses were noted from contexts [41] and [53]. Low quantities of charcoal were also identified from the fills of three of the ditches, with tree/shrub taxa including hazel, alder and oak.
- 8.7 The results are presented in Tables 1.6 and 1.7. Material suitable for radiocarbon dating is present in 19 of the 20 samples, although there may be an insufficient weight of carbon for six of these samples.

Discussion

- 8.8 There was a very similar suite of charred plant remains in the features from both trenches. The presence of charred edible plant remains alongside other waste material indicate that the samples comprise background levels of domestic waste. The low levels of charred plant remains present are typical of Iron Age domestic assemblages. While the small assemblages generally comprised grains in poor condition, with many of them exhibiting puffing and pitting, possibly as a result of intense heat (Boardman & Jones 1990), wheat and barley were the dominant crops throughout the samples and are likely to have formed part of the Iron Age diet at the site. The poor condition of the grains and the absence of diagnostic chaff prevented further differentiation of the species present in many cases, however a single hulled barley grain was identified in context [10].
- 8.9 The presence of a few charred hazel nutshell fragments indicates the use of wild-gathered food sources alongside the cultivated crops. The low levels of charcoal

identified from the samples may derive from fuelwood used for domestic activities, or burnt building materials, such as timbers or wattling.

- 8.10 Charred tubers of false oat grass and pignuts were present in low quantities from several of the contexts associated with the roundhouse in Trench 1. These tubers are often recorded on prehistoric sites, and such tubers have been identified recently at several sites of Iron Age origin in the North-East, such as Hilltop Farm Pittington (Archaeological Services 2012a) and Haswell (Archaeological Services 2012b). Their presence may reflect the burning of some form of turf structure or building material (Hall 2003), or the use of turves as a source of fuel. This interpretation is supported by the presence of charred heather twigs, low numbers of other indeterminate tuber/rhizomes and grasses such as heath-grass which may also have derived from turves. The presence of grass seeds such as heath-grass could also suggest some of the charred material represents the remains of gathered hay for fodder or bedding. Similarly, many of the charred weed seeds present, such as sedges, grasses and docks, may also have derived from hay or dung, or from weeds growing amongst the cereal crops or on nearby disturbed land. Brome grass was present in several of the contexts, which is an arable weed frequently associated with spelt wheat.

Recommendations

- 8.11 No further analysis is required for the plant macrofossils due to their relatively low numbers and poor preservation. However, in their review of the macrofossil plant remains from archaeological deposits in northern England, Hall & Huntley (2007) indicate that the Iron Age is one of the periods in need of further archaeobotanical investigation and in her review of charcoal and wood recovered from excavations in northern England, Huntley (2010) similarly highlights a lack of charcoal investigations from prehistoric sites. If additional work is undertaken at the site, any further soil filled features with the potential to contain charred plant remains should be sampled and assessed. The results of this assessment should be added to any further palaeoenvironmental data produced.

9. The archaeological resource

- 9.1 The geomagnetic survey confirmed the presence of features evident as cropmarks on aerial photographs of the site and detected many more, often smaller features. A large, complex, multi-phased settlement site was revealed with ditched enclosures and boundary features as well as roundhouses, pits, and possible hearths.
- 9.2 Excavations in Trench 1 confirmed the presence of the remains of two roundhouses, one of which was later than the other. The most complete one investigated had evidence for internal wooden structures, a hearth, pits and a floor surface. Spatially associated with the roundhouse was a ditch which may be part of a wider complex of ditches which are of a different phase of activity to the main enclosures on the site.
- 9.3 Four enclosure ditches were identified in Trench 2 which may be considered contemporary as they did not intercut. Recutting of some of these ditches indicates some longevity of occupation. The two southern ditches terminated in the trench, and this may be indicative of a closed entrance. The ditches formed part of the main

eastern enclosure. A thinner ditch cut through these on a north-south alignment (this is visible on the geophysical plot) indicating a later phase of activity.

- 9.4 The resource on the site includes a significant palaeoenvironmental assemblage, typical of the later prehistoric / Roman periods and originating as domestic waste. A significant finds assemblage is also present, including later prehistoric pottery, quern fragments, a jet object, flints as well as post-medieval finds. No Roman pottery was found, which may indicate that the site did not continue in use into the Roman period.

10. Conclusions and recommendations

- 10.1 The project was successful in involving members of local communities in the investigation of this heritage asset. Volunteers conducted excavation, artefact processing and geophysical survey, and received training in these techniques. Following the excavation, public talks were delivered and a small exhibition designed, which is being adapted for use in local schools. Local school children also visited the site, and guided tours of the excavations were given to all visitors. Press output was also produced via Durham County Council Archaeology Section.
- 10.2 The geophysical survey which was undertaken prior to and during the excavation confirmed the presence of features identified from aerial photography as well as detecting many further features. The survey has added to the understanding and complexity of the site as well as defining areas of settlement and extents of activity. The survey also enabled targeting of the excavation areas, which concentrated on some of the main enclosure ditches as well as a further ditch and roundhouses external to this. The works confirmed that a significant archaeological resource of later prehistoric date was present.
- 10.3 The presence of later finds within some of the upper layers on the site may have been caused by ploughing. The soft sandy subsoil may accentuate future plough damage to the archaeological resource.
- 10.4 Further archaeological works at the site have the potential to successfully engage with local communities, and to elucidate the history of the site in accordance with established research objectives. In the event that no further works are conducted it is recommended that further analysis of the data created to date is undertaken and an appropriate publication prepared. This work is likely to include artefactual illustration, radio-carbon dating and synthesis.

11. Sources

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Maps

- Christopher Saxton 1576 Map of Durham
- Untitled estate plan of 1838
- 1st edition Ordnance Survey map of 1857
- 2nd edition Ordnance Survey map of 1898
- 4th edition Ordnance Survey map of 1939

Websites

- British Geological Survey 2013 -
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
- Keys to the Past 2013 - <http://www.keystothepast.info/Pages/home.asp>

Appendix 1: Data tables

Table 1.1: Context data

The • symbols in the columns at the right indicate the presence of finds of the following types: P pottery, B bone, F flint, I industrial residues, BM building material, O other materials.

No	Trench	Description	P	B	F	I	BM	O
F1	1	Roundhouse gully						
2	1	Fill of gully F1	•			•		
F3	2	Ditch cut						
4	2	Fill of ditch F3						
F5	2	Ditch cut						
6	2	Fill of ditch F5	•	•				
F7	2	Ditch cut						
8	1	Fill of ditch F7	•				•	•
9	1	Ploughsoil	•	•				
10	1	Layer	•	•	•			•
11	1	Ploughsoil						
12	2	Fill of ditch F5				•		
13	1	Ditch cut						
14	1	Upper fill of ditch F13	•					•
F15	1	Gully cut						
16	1	Fill of F15	•	•				
F17	1	Cut of roundhouse gully same as F1						
18	1	Fill of F1		•				•
19	1	Ploughsoil	•					
F20	1	Cut of roundhouse gully same as F1						
21	1	Fill of F20	•	•				•
F22	1	Cut of roundhouse gully same as F1						
23	1	Fill of F22	•					•
F24	1	Cut of roundhouse gully same as F1						
25	1	Fill of F24	•	•				
F26	1	Cut of roundhouse gully same as F1						
27	1	Fill of F26	•					
28	1	Ploughsoil	•					
29	1	Topsoil						
F30	1	Cut of roundhouse gully same as F1						
31	1	Fill of F31						
F32	1	Cut of roundhouse gully same as F1						
33	1	Fill of f32	•					
34	1	Subsoil						
35	1	Natural subsoil						
36	1	Lower fill of ditch F13						
F37	2	Ditch cut						
38	2	Fill of ditch F37		•				
F39	1	Cut of roundhouse gully same as F1						
40	1	Fill of F39						
41	2	Fill of ditch F7						
F42	1	Cut of gully						
43	1	Fill of F42						
F44	1	Cut of ditch same as F13						
45	1	Fill of ditch F44	•					
46	1	Cut of roundhouse gully same as F1						
47	1	Fill of F46			•			
F48	1	Cut of gully						
49	1	Fill of F48						
F50	1	Cut of ditch same as F13						
51	1	Fill of F50						
F52	2	Cut of gully						
53	3	Fill of gully F52		•			•	
54	2	Ploughsoil						
55	2	Subsoil		•				

No	Trench	Description	P	B	F	I	BM	O
56	2	Natural subsoil						
57	1	Fill of F58						
F58	1	Cut of gully same as F15						
F59	1	Cut of roundhouse gully same as F1						
60	1	Fill of F59						
F61	1	Cut of roundhouse gully same as F1						
62	1	Fill of F61						
63	2	Fill of ditch F3						
64	1	Deposit of fired clay		•				
65	1	Fill of pit F70						
66	1	Cobble surface	•	•	•	•		
67	1	Heat affected stone deposit						
68	2	Fill of ditch F5						
69	1	Deposit of fired clay		•				
F70	1	Cut of pit						
71	1	Deposit	•		•			
72	1	Fill of F73						
F73	1	Curvilinear gully						
74	1	Deposit of fired clay and charcoal		•				
75	1	Fill of posthole F76						
F76	1	Cut of posthole						
77	1	Fill of posthole F78						•
F78	1	Cut of posthole						
F79	1	Cut of posthole						
80	1	Fill of posthole F79						
F81	1	Cut of posthole						
82	1	Fill of posthole F81						
F83	1	Cut of posthole						
84	1	Fill of posthole F83						
F85	1	Cut of posthole						
86	1	Fill of posthole F85						
F87	2	Cut of ditch						
88	2	Fill of F3						
89	2	Fill of F87						
F90	2	Recut of ditch F7						
91	2	Fill of ditch recut F90						
92	2	Fill of ditch recut F90						
93	2	Topsoil in trench 2						
F94	1	Cut of pit						

Table 1.2: Pottery catalogue (key below)

Ves	Cont	Find	NR	Nby	NBs	NF	R	By	Bs	Th	Dia	Wt	Sur	Dec	Col	Fab	Ab	ES	IS	Notes
V1	10	10A	0	1	0	0	0	0	0	16	0	111	1	0	6	1B	1	1	0	N-shaped coil junctions, light-coloured coating ext
V10	2	2B	1	0	0	0	4	0	0	11	220	26	1	0	6	4	2	1	0	
V11	2	2C	0	1	0	0	0	0	0	13	0	54	1	0	6	1C	1	0	0	N-shaped coil junctions
V11	US	USC	1	0	0	0	0	0	0	15	0	182	1	0	6	1C	1	0	0	N-shaped coil junctions
V12	2	2D	0	1	0	0	0	0	0	7	0	5	1	0	6	1B	2	0	0	N-shaped coil junctions
V13	23	23A	2	10	0	0	2	0	0	23	0	349	0	0	6	1C	2	1	1	Diameter not determined
V13	US	USB	0	4	0	0	0	0	0	22	0	172	0	0	6	1C	0	0	1	
V14	23	23B	0	0	1	1	0	0	2	9	100	57	1	0	6	1	1	1	0	
V15	23	23C	0	1	0	0	0	0	0	10	0	14	1	0	6	1C	1	0	0	
V16	8	8A	1	1	0	0	3	0	0	11	c240	117	1	3	6	2B	2	2	1	
V16	US	USE	0	2	0	0	3	0	0	10	0	27	1	3	6	2B	2	2	1	
V17	21	21A	0	1	0	0	0	0	0	13	0	13	0	0	6	2A	2	0	0	N-shaped coil junctions
V18	33	33A	0	0	1	0	0	0	2	15	0	50	1	0	6	2C	1	0	1	
V19	66	66A	0	1	0	0	0	0	0	11	0	8	0	0	3	1C	0	0	2	
V2	10	10B	0	1	0	0	0	0	0	18	0	22	0	0	6	1C	1	1	0	
V20	66	66B	1	0	0	0	3	0	0	10	0	10	0	0	6	2C	0	1	3	Diameter not determined
V21	66	66C	0	1	0	1	0	0	0	13	0	11	0	0	6	1B	0	1	3	N-shaped coil junctions
V22	66	66D	0	2	0	2	0	0	0	11	0	21	1	0	6	2A	0	0	2	
V23	66	66E	0	0	0	1	0	0	0	0	0	2	0	0	6	2A	0	0	3	
V24	6	6A	0	0	0	1	0	0	0	0	0	1	0	0	6	2A	0	0	3	
V25	28	28A	0	1	0	0	0	0	0	10	0	8	1	0	6	2B	1	0	2	
V26	27	27A	0	1	0	0	0	0	0	12	0	12	0	0	6	2B	0	0	2	
V27	14	14A	0	1	0	0	0	0	0	10	0	5	0	0	6	1B	0	0	2	
V28	14	14B										2								possible burnt clay
V29	14	14C										9								burnt clay with industrial residue

Ves	Cont	Find	NR	Nby	NBs	NF	R	By	Bs	Th	Dia	Wt	Sur	Dec	Col	Fab	Ab	ES	IS	Notes
V3	10	10C	0	3	0	0	0	0	0	10	0	26	0	0	6	2A	2	0	0	N-shaped coil junctions
V30	25	25A	0	1	0	0	0	0	0	23	0	41	0	0	6	1B	0	0	2	
V31	25	25B	0	0	0	1	0	0	0	0	0	13	0	0	6	3A	0	0	3	
V31	US	USD	1	0	0	0	3	0	0	11	0	14	0	0	6	3A	0	0	2	
V32	25	25C	0	1	0	0	0	0	0	10	0	6	0	0	6	1B	0	1	3	
V33	19	19A	0	1	0	0	0	0	0	12	0	14	0	0	6	2C	0	0	2	
V34	45	45A	0	0	0	1	0	0	0	0	0	2	0	0	6	1A	0	0	3	
V35	16	16A	0	1	0	0	0	0	0	8	0	5	0	0	6	2C	0	0	2	
V36	71	71A	0	0	0	1	0	0	0	0	0	1	0	0	6	3B	0	0	3	
V37	US	USA	0	1	0	0	0	0	0	10	0	5	0	0	1	3B	0	0	2	
V38	US	USF	0	1	0	0	0	0	0	13	0	22	1	0	6	1B	1	2	2	
V39	US	USG	0	0	0	1	0	0	0	0	0	15	0	0	6	2C	0	0	3	
V4	10	10D	0	4	0	0	0	0	0	16	0	206	1	0	6	2A	2	0	0	N-shaped coil junctions
V5	10	10E	0	1	0	0	0	0	0	11	0	17	1	0	6	2C	2	0	1	
V6	10	10F	0	2	0	0	0	0	0	13	0	76	1	0	6	2B	2	0	0	N-shaped coil junctions
V7	10	10G	0	1	0	1	0	0	0	10	0	11	0	0	6	2C	2	0	0	N-shaped coil junctions
V8	10	10H	0	1	0	0	0	0	0	6	0	1	0	0	6	1	2	0	1	
V9	2	2A	1	0	0	0	4	0	0	12	>250	59	1	0	6	1A	2	2	0	

POTTERY CATALOGUE KEY

Ves : designated vessel number, Cont : context, NR : Number of rim sherds, NBy : Number of body sherds,

NBs :Number of basal sherds

NF : Number of fragments

R : Rim type - 1 plain; 2 flat; 3 everted; 4 inverted; 5 interior bevel; 6 beaded; 7 rolled; 8 exterior bevel; 9 rounded; 10 tapered; 11 splayed

By : Body type - 1 necked; 2 shouldered; 3 neck + shoulder

Bs : Basal type - 1 flat part only; 2 flat, angled sides; 3 flat, straight sides; 4 footed

Th :Sherd thickness (av) in mm; 0 = not possible to measure

Dia : Diameter (external) in mm

Wt : Weight in g

Sur : Surface : 1 smoothed; 2 burnished; 3 polished; 4 slipped; 5 wiped; 6 combed (A ext, B int, C both surfaces)

Dec : Decoration - 1 incised; 2 impressed; 3 applied; 4 combination; 5 painted

Col : Colour - 1 oxidised; 2 reduced; 3 incompletely oxidised; 4 incompletely reduced; 5 oxidised with reduced surfaces; 6 reduced with oxidised surfaces

Fab : Fabric - 1 sandy clay; 2 fine sandy clay; 3 fine clay; 4 coarse sand; A up to 10% rock frags; B up to 30% rock frags; C up to 50% rock frags; D up to 70% rock frags; E more than 70% rock frags; F organics; G organics + rock frags; H pitted; J pitted + rock frags

ES : Exterior sooting - 1 sooting; 2 residue 0 none 3 surface missing

IS : Interior sooting - 1 sooting; 2 residue 0 none 3 surface missing

Ab : Abrasion - 1 fresh; 2 abraded; 3 badly abraded

Table 1.3: Medieval and later sherd numbers by context

Context	Medieval	19th/20th century
u/s	4	7
9	1	
10	2	
Totals	7	7

Table 1.4: Data from animal bone analysis

Trench	-	-	1										2							
Context	u/s	T1 u/s	9	10	16	18	21	25	64	66	69	74	6	8	38	53	55			
Feature	-	-	plough soil	layer	gully	gully	gully	gully	layer	cobble surface	layer	possible hearth	ditch	ditch	ditch	gully	subsoil			
<i>Hand-recovered bone</i>																				
Bone (burnt / calcined)	indet. frags	-	-	-	-	-	-	1	-	-	1	-	-	-	5	-	-	-		
Bone (burnt / calcined)	sheep/goat-sized	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
Bone (unburnt)	cattle-sized frags	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-		
Bone (unburnt)	indet. frags	1	1	-	-	-	-	4	5	-	-	-	4	-	1	1	-	-		
Bone (unburnt metacarpal)	cattle	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Tooth enamel (unburnt)	cattle	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	-		
Tooth enamel (unburnt)	cattle-sized	3	-	-	6	-	-	16	-	-	-	-	-	-	-	-	-	-		
Tooth enamel (unburnt)	indet. frags	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	9	-		
Tooth enamel (unburnt)	pig	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-		
Tooth enamel	sheep/goat	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-		
Tooth root fragments	cattle-sized	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-		
<i>Soil sample contents</i>																				
Sample		-	-	-	13	14	8	5	-	-	19	21	-	18	20	1	2	10	-	-
Bone (burnt / calcined)	indet. frags	-	-	-	-	-	11	-	-	-	3	-	-	2	1	-	-	-	-	-
Bone (unburnt)	indet. frags	-	-	-	2	10	-	5	-	-	5	-	-	-	3	4	8	-	-	-
Bone (unburnt rib frag.)	sheep / goat-sized	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Tooth enamel (burnt)	indet. frags	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tooth enamel (unburnt)	cattle-sized	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tooth enamel (unburnt)	indet. frags	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-

Table 1.5: Metal objects

Material	Object Type	SF numbers
Iron	Nails/ rivets	7, 8, 12, 13A, 13B, 14
	Horse shoes	6, 22
	Wire	15
Copper Alloy	Button	19
	Fittings	20, 21
	Unidentified	16
Lead	Working debris	17
?Zinc-alloy	Tag	18

Table 1.6: Data from palaeoenvironmental assessment - Trench 1

Context	16	18	21	74	69	10	10	64	64	43	14	86
Sample	8	5	9	20	18	13	14	19	21	12	6	22
Feature	Gully	Gully	Gully	Pit	Layer	Layer	Layer	Layer	Layer	Gully	Ditch	Posthole
Feature number	F15	F1	F1	F94	-	-	-	-	-	F42	F13	F85
Material available for radiocarbon dating	(✓)	✓	(✓)	(✓)	(✓)	✓	✓	(✓)	✓	✓	✓	✓
Volume processed (l)	15	13.5	14	10	19	43	40	15	18	18	38	8
Volume of flot (ml)	95	220	75	80	90	350	200	100	220	125	2250	40
<i>Residue contents</i>												
Bone (calcined) indet. frags	(+)	+	(+)	(+)	(+)	+	(+)	+	(+)	-	-	-
Bone (unburnt) indet. frags	-	-	-	-	-	+	-	-	-	-	-	-
Coal / coal shale	-	+	-	-	-	-	-	-	-	-	+	(+)
Fired clay	-	(+)	-	-	-	-	+	-	-	-	-	-
Tooth (number of fragments) animal enamel	-	-	-	-	-	1	-	-	-	-	-	-
<i>Flot matrix</i>												
Bone (calcined)	-	-	-	-	-	(+)	-	-	-	-	-	-
Bone (unburnt)	-	-	-	+	-	(+)	+	(+)	-	-	-	-
Charcoal	(+)	+++	(+)	-	+	-	-	-	+	++	-	++
Clinker / cinder	+	+	+	+	+	-	+	+	+	+	+	+
Coal / coal shale	+	-	++	++	-	++	+	++	+	++	++++	+
Earthworm egg case	+	-	+	++	+	+	+	+	+	+	-	++
Heather twigs (charred)	-	+	-	-	-	+	+	+	-	+	-	-
Insect / beetle	-	-	-	-	+	-	+	-	+	-	-	+
Pre-Quaternary megasporangium	+	+	-	-	-	-	-	-	+	-	+	-
Roots (modern)	(+)	-	+	++	-	++	++	+	++	+	-	-
Tuber / rhizome (charred)	-	+	-	+	-	(+)	+	-	(+)	+	-	-
Uncharred seeds	+	+	++	+	+	+	++	+	+	+	++	+
Uncharred vegetative material	-	-	-	-	-	-	(+)	-	-	-	-	-
<i>Charred remains (total count)</i>												
(a) <i>Bromus</i> sp (Brome) caryopsis	-	-	-	-	-	1	-	-	1	1	-	-
(a) cf. <i>Spergula arvensis</i> (cf. Corn Spurrey) seed	2	-	-	-	-	-	-	-	-	-	-	-
(c) <i>Cerealia</i> indeterminate grain	1	2	-	4	-	7	3	-	6	1	2	-
(c) <i>Hordeum</i> sp (Barley species) grain	-	2	-	1	1	2	2	-	-	2	-	1
(c) <i>Hordeum</i> sp (Barley species) hulled grain	-	-	-	-	-	-	1	-	-	-	-	-
(c) <i>Triticum</i> sp (Wheat species) grain	3	2	-	2	-	2	1	2	2	2	1	-
(g) <i>Arrhenatherum elatius</i> ssp <i>bulbosum</i> (False Oat-grass) tuber	-	-	-	-	-	-	2	-	-	1	-	-
(g) <i>Conopodium majus</i> (Pignut) tuber	-	-	1	-	-	-	-	-	-	-	-	-
(h) <i>Danthonia decumbens</i> (Heath-grass) caryopsis	-	-	-	-	-	1	-	1	-	-	1	-
(r) <i>Galeopsis</i> sp (Hemp-nettles) nutlet	-	1	-	-	-	-	-	-	-	-	-	-
(r) <i>Galium aparine</i> (Cleavers) seed	-	-	-	-	-	1	-	-	-	-	-	-
(t) <i>Corylus avellana</i> (Hazel) nutshell frag.	-	1	3	1	1	2	-	-	3	-	-	-
(w) <i>Carex</i> sp (Sedges) trigonous nutlet	-	-	-	-	-	-	1	-	-	-	-	-
(x) Poaceae undiff. <1mm (Grass family) caryopsis	-	-	-	-	-	-	1	-	-	-	-	-
(x) Poaceae undiff. >1mm (Grass family) caryopsis	-	9	-	-	-	1	-	2	-	3	-	-

[a-arable; c-cultivated; g-grassland; h-heathland; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche. (+): trace; +: rare; ++: occasional; +++: common; ++++: abundant. (✓) there may be insufficient weight of carbon available for radiocarbon dating]

Table 1.7: Data from palaeoenvironmental assessment - Trench 2

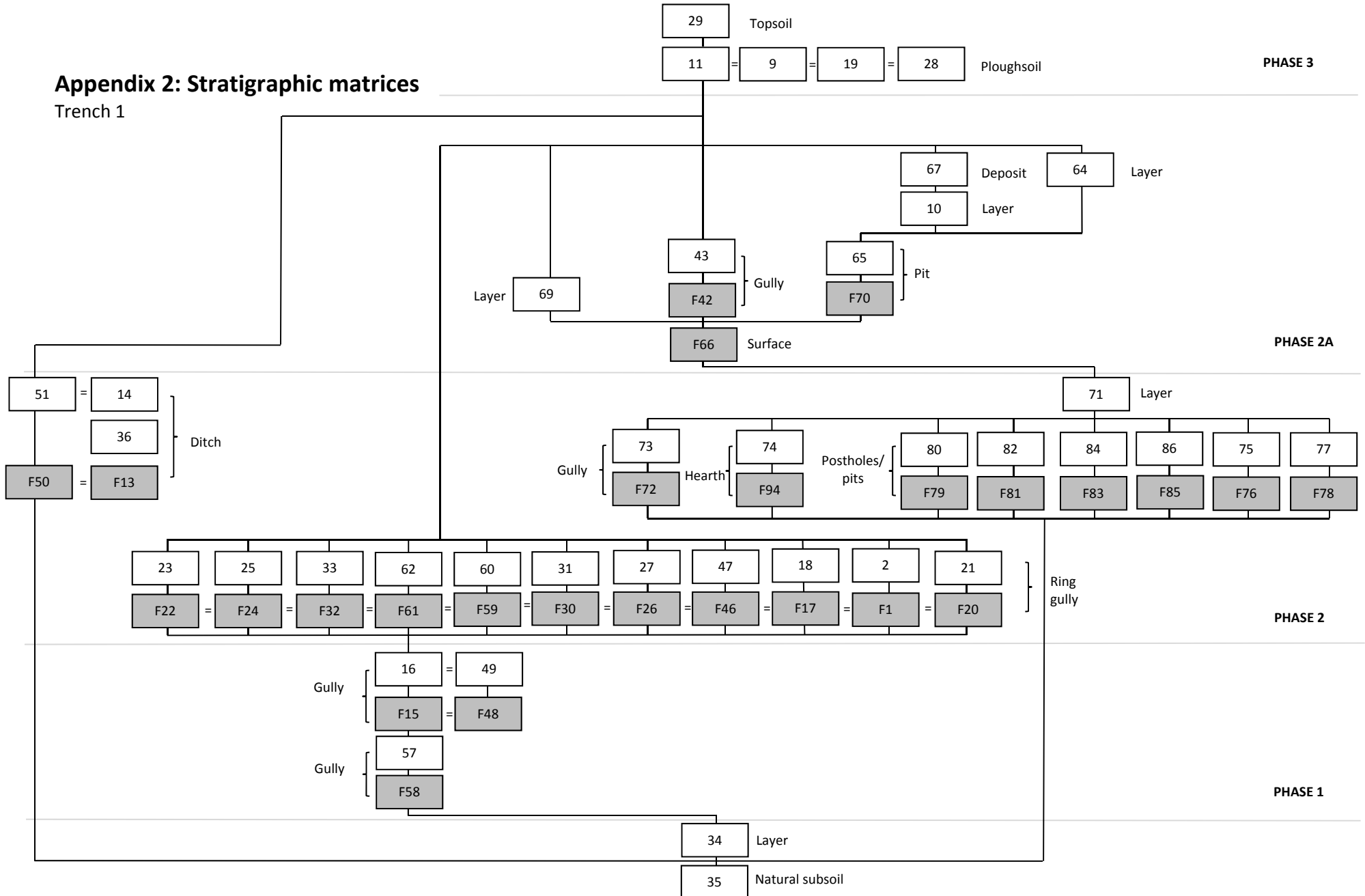
Context	63	4	12	6	41	8	53	38
Sample	15	7	3	1	11	2	16	10
Feature	Ditch	Ditch	Ditch	Ditch	Ditch	Ditch	Ditch	Ditch
Feature number	F3	F3	F5	F5	F7	F90	F52	F37
Material available for radiocarbon dating	-	✓	✓	✓	(✓)	✓	✓	✓
Volume processed (l)	7	36	7	15.5	15	15	18	16
Volume of flot (ml)	90	285	55	140	45	130	35	110
<i>Residue contents</i>								
Bone (calcined)	-	(+)	-	(+)	-	(+)	-	+
Charcoal	(+)	-	-	-	-	-	-	-
Coal / coal shale	++	-	-	(+)	-	-	-	-
Glass	-	-	-	1	-	-	-	-
Fired clay	-	-	-	-	-	+	-	-
<i>Flot matrix</i>								
Bone (unburnt)	-	-	-	(+)	-	-	-	-
Charcoal	-	-	+	+	(+)	-	++	(+)
Clinker / cinder	+	-	+	+	+	+	-	-
Coal / coal shale	++	++	+	+++	-	-	-	++
Earthworm egg case	-	(+)	-	+	-	+	-	-
Heather twigs (charred)	-	-	+	-	-	-	+	-
Pre-Quaternary megasporangium	+	+	+	(+)	-	-	-	-
Roots (modern)	++	-	-	-	-	(+)	-	-
Tuber / rhizome (charred)	-	-	-	+	-	+	+	++
Uncharred seeds	(+)	+	(+)	+	++	++	+	++
<i>Charred remains (total count)</i>								
(a) <i>Bromus</i> sp (Bromes)	caryopsis	-	2	1	-	-	-	-
(c) <i>Cerealia</i> indeterminate	grain	-	3	3	4	1	2	4
(c) <i>Hordeum</i> sp (Barley species)	grain	-	1	-	3	1	1	-
(c) <i>Triticum</i> sp (Wheat species)	glume base	-	-	-	1	-	-	-
(c) <i>Triticum</i> sp (Wheat species)	grain	-	3	-	3	-	4	2
(g) <i>Arrhenatherum elatius</i> ssp <i>bulbosum</i> (False Oat-grass)	tuber	-	-	-	-	-	-	3
(g) <i>Conopodium majus</i> (Pignut)	tuber	-	-	-	-	-	1	1
(h) <i>Danthonia decumbens</i> (Heath-grass)	caryopsis	-	-	-	-	2	-	2
(r) <i>Galium aparine</i> (Cleavers)	seed	-	-	-	-	1	-	-
(t) <i>Corylus avellana</i> (Hazel)	nutshell frag.	-	1	-	1	2	-	1
(w) <i>Carex</i> sp (Sedges)	biconvex nutlet	-	-	-	-	1	-	-
(w) <i>Carex</i> sp (Sedges)	trigonous nutlet	-	-	-	1	-	-	-
(x) Fabaceae undiff. (Pea family)	seed	-	-	-	1	-	-	-
(x) Poaceae undiff. >1mm (Grass family)	caryopsis	-	2	2	1	1	-	-
(x) <i>Rumex</i> sp (Docks)	nutlet	-	-	-	-	-	1	-
(x) <i>Vicia</i> sp (Vetches)	seed	-	-	-	3	-	-	-

[a-arable; c-cultivated; g-grassland; h-heathland; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche.

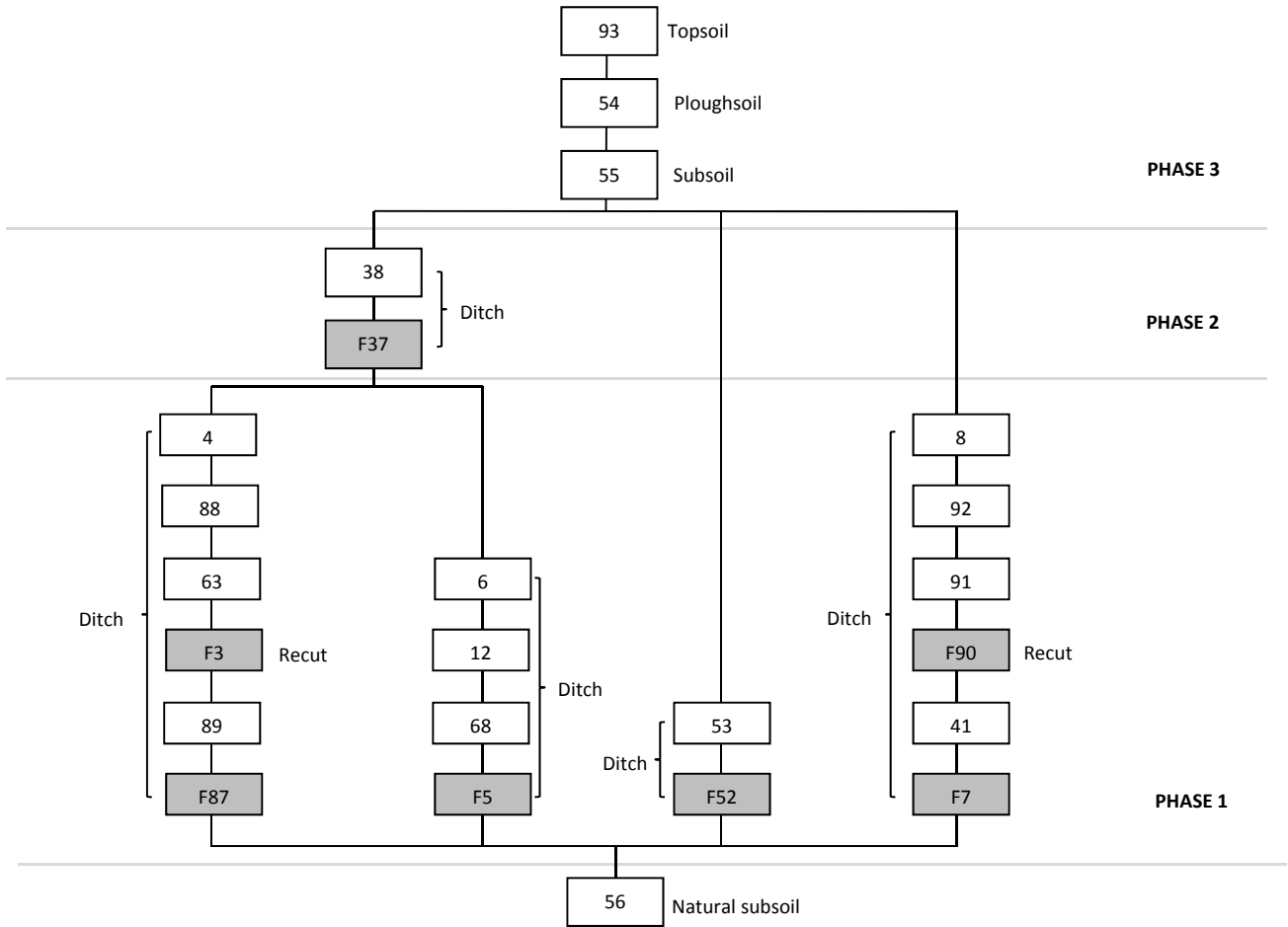
(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant. (✓) there may be insufficient weight of carbon available for radiocarbon dating]

Appendix 2: Stratigraphic matrices

Trench 1



Trench 2



Appendix 3: Project specification

BRIEF FOR COMMUNITY ARCHAEOLOGY PROJECT:

Cropmark Site at Great Chilton, near Ferryhill, Durham, 2012-13

- 1 Site Location and background
 - 1.1 This Brief relates to a community archaeology project focussing on the multi-phase cropmark site near Great Chilton, near Ferryhill, County Durham (NGR 429949530674).
 - 1.2 The site is located on land north of Great Chilton Farm approximately 1km south of Ferryhill (Fig. 1). The field covers approximately 5.4ha of arable land.
 - 1.3 The aims of this project are to involve members of local communities in the investigation of their heritage, provide training to the volunteers involved in the techniques of archaeological investigation, recording and interpretation and to elucidate the character and chronology of the archaeological site.
- 2 The Project
 - 2.1 The client for this project is the Archaeology Section, Durham County Council, and it forms one of a suite of projects being undertaken as part of the Limestone Landscapes Partnership initiative.
 - 2.2 The project will involve the desk-based collection and synthesis of existing information relating to the archaeology of the site and its immediate area. This will be followed by geophysical survey of a significant proportion of the cropmark site and its environs (precise areas to be determined by discussion with client). The results of this will help to inform the choice of one or more areas for investigation by means of excavation. The client will make the final decision on this aspect in discussion with the contractor and the landowner. The results of the assessment and geophysical survey elements of the project to be incorporated into project report.
 - 2.3 The various phases of the project will be undertaken by the appointed contractor's professional staff who will train volunteers recruited from local communities in the techniques of archaeological survey, excavation, recording and interpretation. Obviously the participation of volunteers will feature most prominently in the excavation portion of the project.
 - 2.4 The contractor will be responsible for publicising the project to local groups and enlisting volunteers liaising closely with DCC Archaeology and LLP staff.
 - 2.5 The contractor will be expected to provide guided tours of the excavation (subject to landowner's permission), to give at least one public lecture locally and also at the County Durham Archaeology Day, and to produce an article for inclusion in the annual Archaeology County Durham magazine.
 - 2.6 The fieldwork will take place during the period September-October 2012. Precise timing to be agreed with landowner.
 - 2.7 The contractor will submit a detailed report on the project by 31st March 2013.
 - 2.8 The contractor will reference the client and the LLP in all information disseminated about the project.
 - 2.9 All communication with publication and broadcasting media will be managed by DCC Archaeology staff.
- 3 Historical and Archaeological Background
 - 3.1 Aerial reconnaissance has revealed the existence of a multi-phase enclosure complex on land at East Hill situated to the north of Great Chilton Farm, near Ferryhill (Hewitt *et al* 2011, 55, figs. 2.18 and 2.20 No. 15). This was also seen on a previous iteration of Google Earth (2010) here reproduced as Figure. 2a & the mapped cropmark from the ALSF report in Figure 2b.
 - 3.2 Metal-detectorist activity has yielded a variety of artefacts of different periods including prehistoric flints, Roman coins and medieval pottery. The deserted Medieval Village of Little Chilton lies just under 1 km north of the cropmark site.
- 4 Archaeological brief
 - 4.1 It is expected that the archaeological works will be carried out in general accordance with archaeological best practice as defined in the following publications: Yorkshire, the Humber and the North-East: A Regional Statement of Good Practice for Archaeology in the Development Process (WYAAS 2011) and Standard and Guidance: an archaeological evaluation (IFA 2008).
 - 4.2 This brief sets out the form of the archaeological works required and in general terms how they must be carried out.

- 4.3 In order to determine the character and condition of archaeological remains on the site the initial step will consist of a geophysical survey involving resistivity and magnetometry (it is recognised that arable use of the land and two overhead electricity lines may be an issue). The results of this will help to inform the choice of the area or areas selected for excavation.
- 4.4 The principal aims of the excavation are:
- to provide training in archaeological methods and techniques to local volunteers and to equip them with new skills
 - to define and identify the nature of archaeological deposits on site, and date these where possible;
 - to attempt to characterise the nature of the archaeological sequence and recover as much information as possible about the spatial patterning of features present on the site.
 - to recover a well dated stratigraphic sequence and recover coherent artefact, ecofact and environmental samples, including an assessment of the site's environmental potential.
- 4.5 The appointed archaeological contractor must provide detailed research aims in relation to the North East Regional Research Framework for the Historic Environment (NERRF – Petts and Gerrard 2006)
- 4.6 Following the completion of the trenching, the site must be left in a state as agreed with the landowner. If archaeological remains are found they may require specialist backfilling regimes and a contingency for this must be included in the tender document.
- 4.7 This brief does not constitute the "Project Design". A Project Design must be prepared and submitted by contractors as an essential element of their tender documentation when bidding for the work.
- 5 Recording
- 5.1 Any topsoil and non-significant overburden are to be removed to the top of archaeological deposits or natural, whichever is encountered first. This may be achieved through use of a mechanical excavator with a toothless grading bucket but must be subject to complete and continuous archaeological control. Once archaeological deposits are encountered all excavation must proceed by hand until natural or the maximum safety depth is reached.
- 5.2 All archaeological deposits and features must be subjected to appropriate levels of investigation in order to meet the requirements of the project.
- 5.3 Where excavation is required for the satisfactory assessment of archaeological deposits, a minimum 20% sample of all linear features must be excavated at appropriate intervals and all intersections, overlaps and terminals must be investigated. A minimum 50% sample of all non-linear features must be excavated and 100% of post-holes. All features must be proven to natural/sterile deposits or to the maximum health and safety depth whichever is reached first.
- 5.4 Human remains are not expected to be encountered during the course of this project. However, if they are encountered then DCC Archaeology Team must be informed immediately and investigation of the relevant portion of the site halted until the county council's Principal Archaeologist has decided whether the remains should be excavated or left undisturbed.
- 5.5 If the excavation option is taken then the human remains must be accurately recorded, including in-situ examination by a palaeo-pathologist, before removal from their place of interment.
- 5.6 Horizontal survey control of the site must be by means of a coordinate grid, using metric measurements. The location of the grid must be established, where possible, relative to the National Grid. Vertical survey control must be tied to the Ordnance Survey datum. Details of the method employed must be recorded, including the height of the reference point.
- 5.7 Sections must be recorded by means of a measured drawing at an appropriate scale. The height of a datum on the drawing must be calculated and recorded. Representative drawn sections of all trenches/test-pits must be recorded and presented in the report even if blank/negative. The locations of sections must be recorded on the site plans, relative to the site grid. Cut features must be recorded in profile, planned at an appropriate scale and their location accurately identified on the appropriate trench plan.
- 5.8 All drawn records must be clearly marked with a unique site number, and must be individually identified. The scale and orientation of the plan must be recorded. All drawings must be drawn on dimensionally stable media. All plans must be drawn relative to the site grid and at least two grid references marked on each plan.
- 5.9 Each archaeological context must be recorded separately by means of a written description. The stratigraphic relationships of each context must be recorded. Pro-forma record sheets must be used throughout. An index must be kept of all record types.
- 5.10 A Harris Matrix showing the stratigraphic relationships in each trench must be produced and included in the site report.
- 5.11 All archaeological features must be photographed and recorded at an appropriate scale. Sections must be drawn at 1:10, and plans at 1:20 or 1:50.

- 5.12 Photographic records must use archival quality black & white prints and colour digital images (TIFF format) and include a suitably sized metric photographic scale. Suitable digital images of the site for inclusion on the Keys to the Past website must be included with the report. Digital images must not be relied on as the primary means of record as the collecting museums in Durham are not able to offer stable digital archiving.
- 5.13 Pottery and animal bone must be collected as bulk samples by context. Significant small finds must be three dimensionally located prior to collection. All finds must be processed to MAP2 standards and be subject to preliminary specialist assessment in order to help date archaeological features and contexts. No artefacts must be discarded without the permission of the Durham County Council Archaeology Service. Provision must be made within the tender for appropriate levels of artefact and ecofact conservation.
- 5.14 Palaeo-environmental sampling must be undertaken in accordance with the Centre for Archaeology Guidelines Environmental Archaeology: a guide to the theory and practice of methods from sampling and recording to post-excavation (English Heritage 2002). The English Heritage Regional Scientific Advisor must be informed and given the opportunity to visit the site.
- 5.15 Scientific dating techniques such as the use of high-resolution radiocarbon dating and full analysis of ceramic assemblages (i.e. petrological analysis), including thermoluminescence dating must be applied if the site yields suitable material. X-ray photography of metal objects must be used where appropriate.
- 6 Specialist Services and Reports
- 6.1 The vast majority of sites where excavation takes place will require the input of archaeological specialists for dating, artefact analysis, palaeo-environmental sampling and conservation. The appointed archaeological contractor must identify in the Project Design the names of the specialists who have agreed to undertake analyses for this site. Failure to identify suitably qualified specialists will result in the Project Design being rejected and the bid adjudged ineligible.
- 6.2 If not identified in the initial costings, contingency sums must clearly be set aside for all of the identified specialist areas and clearly indicated in any tender documents so that the client can clearly understand them. In each case the specialist involved must be kept informed of the start date and progress of sites so that sampling and necessary on-site conservation needs can be timetabled if necessary.
- 6.3 Project Designs which fail to indicate that contractors have discussed the environmental potential of the site with the EH Science Advisor will not be approved. The EH Science Advisor will be invited on site if required by either the contractor or the Durham County Council Archaeology Team.
- 6.4 A contingency amount must be identified for the appraisal of the conservation needs of artefactual material excavated on site and for the initial stabilisation of such finds where needed so that they may be studied as part of the post-excavation for the project
- 7 OASIS
- 7.1 The Durham County Council Archaeology Section supports the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork.
- 7.2 The archaeological contractor must therefore complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/> within 3 months of completion of the work. Contractors are advised to ensure that adequate time and costings are built into their tenders to allow the forms to be filled in.
- 7.3 Technical advice must be sought in the first instance from OASIS (oasis@ads.ahds.ac.uk) and not from Durham County Council Archaeology Section.
- 7.4 Once a report has become a public document by submission to or incorporation into the HER, Durham County Council Archaeology Section will validate the OASIS form thus placing the information into the public domain on the OASIS website.
- 7.5 The archaeological consultant or contractor must indicate that they agree to this procedure within the Project design submitted to Durham County Council Archaeology Section for approval
- 8 Health and Safety Policy
- 8.1 Contractors are expected to abide by the 1974 Health and Safety Act and any subsequent amendments. They are also expected to ensure that all projects which fall under the Construction and Design Management Regulations 2007 follow all necessary requirements of said regulations. Appropriate provision of first aid, telephone and safety clothing as described in the SCAUM manual on archaeological health and safety must be followed. Each site must have a nominated safety officer.

- 8.2 Adequate and secure safety fencing must be placed around excavated trenches in order to inhibit access by the public and to ensure adequate security for the excavation. Clear signage regarding deep excavation trenches must be displayed on the fences and site perimeter as necessary. These items must be agreed with the client prior to work commencing and detailed in the Project Design.
- 8.3 Contractors are advised to identify the location of any services or overhead wires which may cross the site and ensure that they are clearly marked before trenching commences so that they can be avoided
- 8.4 The undertaking of a risk assessment prior to the commencement of works is required. A copy of the risk assessment must be circulated to the client and any other sub-contractors working on the site at the same time. Contractors must ensure that all staff working on the site are fully briefed on all health and safety issues relating to the site prior to working there.
- 8.5 The contractor must have the following insurances public liability (£5 million), employers liability (£10 million), professional indemnity and insurance that covers volunteers involved in the project.
- 9 Publication
- 9.1 County Durham Archaeology Section produces an annual publication every March which highlights the archaeological work conducted in the county over the previous 12 months. The appointed contractor must produce as part of the project a detailed synopsis for inclusion in Archaeology County Durham. Where a project runs for more than one year several such summaries may be required.
- 9.2 It is possible that the project may produce results of sufficient importance to warrant more formal publication in the view of the council's Principal Archaeologist. Should this prove to be the case then devising a strategy to achieve this will be the subject of discussions between DCC's Principal Archaeologist and the relevant contractor.
- 10 The Report
- 10.1 Five hard copies of the report and a digital copy must be produced for the client. The report must be written to MAP2 standards (English Heritage 1991) and include the following at the minimum:
- executive summary
 - a site location plan to at least 1:10,000 scale with at least an 10 figure central grid reference
 - OASIS reference number; unique site code
 - contractor's details including date work carried out
 - nature and extent of the proposed development, including developer/client details
 - description of the site location and geology
 - a general trench plan to a suitable scale and tied into the national grid
 - a specific trench plan correctly showing the location and number of all sections in features within each trench
specific discussion of the results by trench and context/feature (i.e. context & feature descriptions)
 - specialist reports, including assessments of each artefact type as well as environmental data
 - general overall discussion of the results pulling together all data
 - features, number and class of artefacts, spot dating & scientific dating of significant finds presented in tabular format
 - Harris matrices for all trenches
 - plans and section drawings of features drawn at a suitable scale with height recorded in metres AOD
 - representative sections of trenches, even if negative results, with height recorded in metres AOD
 - additional plans/map extracts to display noted and recorded archaeological features as appropriate
 - digital images to clarify information, not to be used in lieu of recorded sections/plans
 - suggested recommendations regarding the need for, and scope of, any further archaeological analysis, including publication
 - bibliography/references
- 10.2 The report must be presented in an ordered state and contained within a protective cover/sleeve or bound in some fashion (loose-leaf presentation is unacceptable). The report will contain a title page listing site name and County, together with a general NGR, the name of the archaeological contractor and the developer or commissioning agent. The report will be page numbered and supplemented with sections and paragraph numbering for ease of reference. Photographs of trenches and sections may be included, but must not be used as the sole graphic representation.
- 10.3 The report must seek to identify any deposits on or associated with the site that will remain following the completion of the evaluation.
- 10.4 Durham County Council Archaeology Section will possess joint copyright with the contractor so as to use the report and its contents in furtherance of its function as a publicly accessible Historic Environment Record and/or for educational and outreach purposes, including furthering the aims the of Limestone Landscapes Project.
- 11 The Tender
- 11.1 Tenders for the work must include a Project Design which includes the following information and be set out according the requirements of the DCC "Request for Quotation" document.

- 11.2 Brief details of the organisation and the number of staff, including specialists, who would be involved including any relevant specialisms or experience (CV's should be available if requested).
- 11.3 Details concerning proposed methods of recording and source material.
- 11.4 Statement agreeing to complete the OASIS forms on completion of the works.
- 11.5 An estimate of how many weeks training would be provided including the maximum number of volunteers on site per day and whether or not weekends would be included. The tender must include a breakdown of costs attributable to:
- travelling and subsistence
 - geophysical survey
 - excavation staff
 - temporary site accommodation
 - mechanical excavator for topsoil removal and reinstatement
 - elevated photography
 - finds analysis (allow basic amount plus significant contingency)
 - environmental sampling
 - report production
 - archiving cost to the Bowes Museum (see section 13.1)
 - administration
 - other
- Contingency sums must be clearly allocated for the following:
- conservation of finds
 - scientific dating
 - general
- 12 Submission of Report
- 12.1 The single season of work at Great Chilton in 2012-13 must be regarded as a stand-alone project even though a second season of fieldwork is planned for 2013-14. Five hard copies of the report along with a digital copy with images (JPEG's) of the site for the Keys To The Past website must be submitted to the client by 31st March 2013 in order to meet HLF requirements.
Archaeology Section
Durham County Council
Heritage, Landscape & Design Team
Regeneration & Economic Development
5th Floor
County Hall
Durham
DH1 5UQ
- 13 The Archive and Submission to a Museum
- 13.1 The site archive comprising the original paper records and plans, photographs, negatives, and finds etc, must be deposited in the appropriate museum (the Bowes Museum, Durham) at the completion of post-excavation. This must be in accordance with both the County Archaeological Archive policy and the Durham County Council Historic Environment Record Revised Charging Scheme (2008-09). Both of these are available from DCC Archaeology if required.
- 13.2 On conclusion of the project, the records generated must be assembled into an indexed and cross-referenced archive in accordance with the guidance of Appendix 6 of Management of Archaeological Projects (English Heritage, 1991) and the Standards and Guidance of the Institute of Field Archaeologists (IFA, 1999).
- 13.3 Archiving must meet the relevant standards set out in Guidelines for the Preparation of Excavation Archives for long-term storage (UKIC 1990) and Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation (AAF 2007). The archive must be deposited with the appropriate museum in accordance with their deposition conditions. Please note that the Bowes Museum do not offer digital archiving capabilities at this time.
- 14 Notice
- 14.1 The Principal Archaeologist of the County Council must be given two weeks notice in writing of the commencement of evaluation works. During such works the Principal Archaeologist or their nominated representative shall be allowed access to the site and excavations at all reasonable times.
- 15 References
- | | | |
|-------------------------------|------|--|
| Archaeological Archives Forum | 2007 | Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation. |
|-------------------------------|------|--|

English Heritage	1991	Management of Archaeological Projects 2 2002 Guidelines for Environmental Archaeology: a guide to the theory and practice of methods from sampling and recording to post-excavation
Institute for Archaeologists (IFA).	1999	Standard and Guidance: Archaeological Evaluation
Petts, D and Gerrard, C	2006	Shared Visions: The North East Regional Research Framework for the Historic Environment
United Kingdom Institute of Conservation	1990	Guidelines for the Preparation of Excavation Archives for long-term storage
West Yorkshire Archaeology Advisory Service (WYAAS)	2011	Yorkshire, The Humber & The North-East: A regional statement of good practice for the development process Archaeological

1st May 2012
David Mason
Principal Archaeologist
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YORKSHIRE, THE HUMBER & THE NORTH EAST: A REGIONAL STATEMENT OF GOOD PRACTICE FOR ARCHAEOLOGY IN THE DEVELOPMENT PROCESS

This document contains general principles on Archaeology in the development process and has been endorsed by the organisations listed below: The intention is to help improve standards of archaeological work in the Yorkshire & the Humber and the North East Regions and to help establish a consistent approach for the benefit of archaeological contractors, consultants, curators and developers who are funding the work, as well as to the historic environment. The historic environment is an encompassing term that includes "all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible or buried, and deliberately planted or managed flora" (English Heritage 2008, Conservation Principles p. 71). It should be noted that there is a presumption within the Region that archaeological interest may apply not only to below ground archaeological remains, but also may apply to upstanding structures / buildings (both listed and unlisted), marine and maritime assets as well as paleoenvironmental deposits.

This document should be read in conjunction with the issued specification/WSI/brief/project design.

The following general principles are expected to pertain to archaeological work carried out as part of the development process in these Regions in accordance with Central Government Guidance and Regional and Local Development Plans and policies:

- 1) Pre-application discussion on the potential archaeological impact of a development is encouraged as is pre-determination evaluation where it is necessary to help define the character, extent and significance of the archaeological remains that may exist in the area of a proposed development prior to a planning decision.
- 2) Archaeological work in the development process should be carried out by a professionally qualified archaeological organisation or archaeologist (PPS 5 Policy HE12.3; PPS 5 HE PPG Para 130.1) and the archaeologists undertaking the work should have "the requisite qualifications, expertise and experience" (IFA Code of Approved Practice).
- 3) In accordance with long-standing professional practice (see footnote below) it is expected that all archaeological specifications/WSIs/ briefs/project designs will have been agreed in advance with the relevant archaeological curator before archaeological work commences. Any variations to the previously established programme of work must be agreed in writing by the archaeological curator acting on behalf of the local planning authority.
- 4) As part of the implementation of the Planning Consent process archaeological work will be monitored on behalf of the LPA by its archaeological curator (who may seek advice where appropriate from the EH Science Advisor). There may be exceptions, but consultants and contractors should expect monitoring to be the norm unless informed otherwise. To allow monitoring to occur, the relevant curatorial archaeologist should be given reasonable notice of intention to commence any fieldwork undertaken as part of the development process and confirmation of the actual start date.
- 5) Archaeological work carried out within the development process is expected to accord with best practice as published in English Heritage guidelines and the IFA's standards and guidance.
- 6) Historic Environment Records (also known as Sites and Monuments Records) are key to understanding and managing the historic environment. Archaeological contractors and consultants should consult the relevant HER / SMR in person prior to producing desk-based assessments or commencing fieldwork (unless otherwise agreed with the relevant curator).
- 7) Archaeological fieldwork carried out as part of the development process should have regard to both national and local published research agenda, and should have an intention of furthering these agenda.

- 8) Archaeological contractors and consultants are expected to discuss any recommendations they make in archaeological reports submitted as part of the development process with the relevant curatorial archaeologist prior to formal submission. If this has not been done, the absence of discussion / agreement should be formally stated in the submitted document. It should be noted that the final decision on the need for and scope of any further works lies with the Archaeological curator acting on behalf of the Local Authority.
- 9) All reports and required data produced following archaeological work as part of the development process should be supplied by the archaeological contractor / consultant directly to the relevant HER / SMR within a reasonable timescale following completion of the fieldwork, in the format agreed with the curatorial body, and in accordance with any issued or agreed specification or project design.
- 10) The curatorial archaeologist will make any comments they wish to make on the report within a reasonable timescale of receipt.
- 11) Where considered appropriate by the archaeological curator, and particularly where supported by the relevant research agenda, it is expected that significant archaeological results will be submitted for publication in a suitable journal or journals.
- 12) The archive produced as a result of archaeological fieldwork is expected to be deposited in an ordered and acceptable fashion with an appropriate public repository within a reasonable timescale following completion of the project. Details of the location of the (intended) repository should be included in the archaeological fieldwork report.
- 13) The historic environment is a shared resource. During the course of archaeological work on site, it is normally expected that arrangements will be made for dissemination of information to the general public, providing intellectual access where physical access is not possible or appropriate.

Organisations that have accepted and agreed these Principles within Yorkshire & the Humber & the North East are listed below:

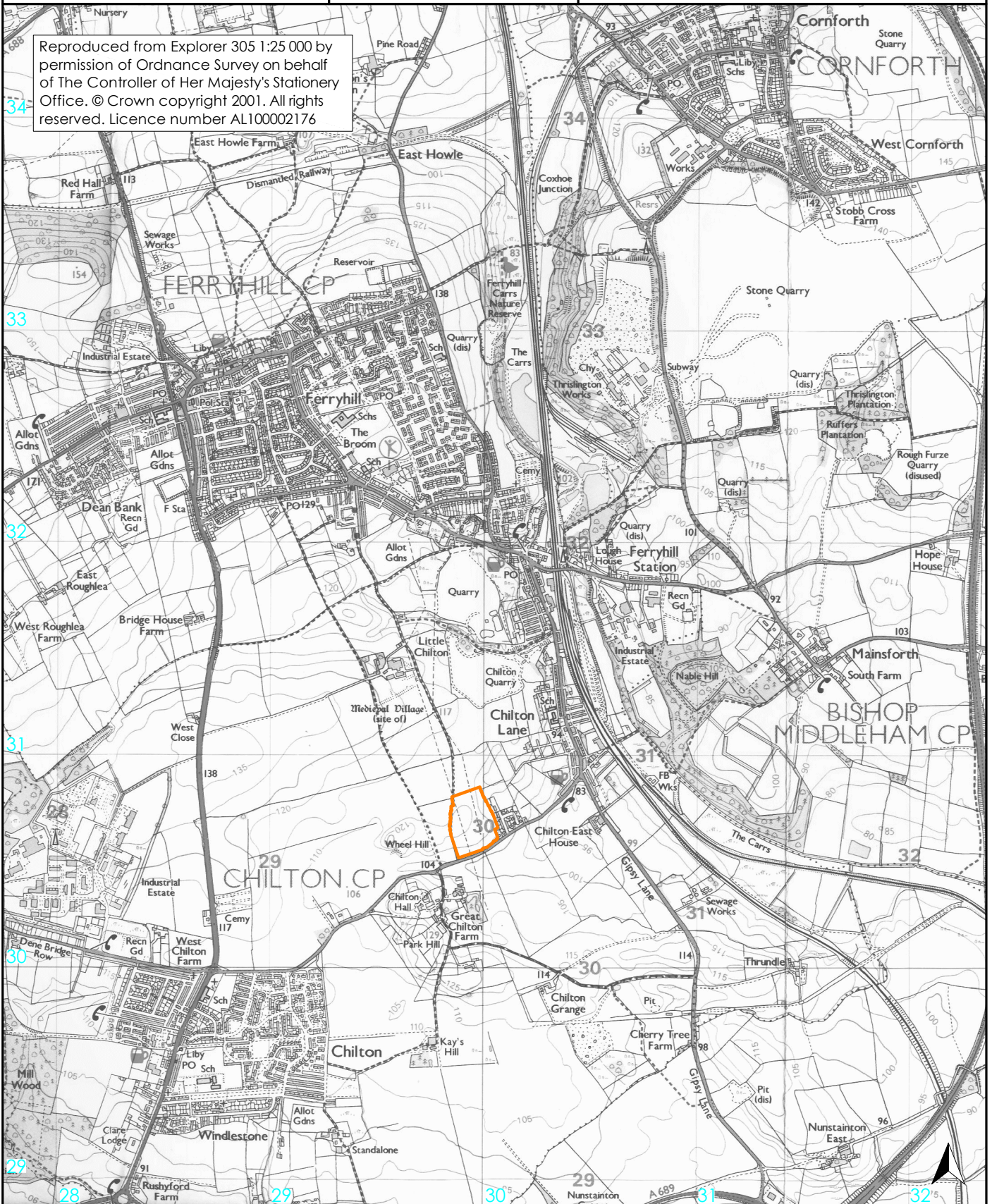
Archaeology Section, Design & Historic Environment Team, Durham County Council
City of York Design, Conservation & Sustainable Development Team
Humber Archaeology Partnership
North East Lincolnshire Archaeology Service
North Lincolnshire Council Historic Environment Record
North York Moors National Park Authority Historic Environment Service
North Yorkshire County Council Historic Environment Team
Northumberland Conservation, Northumberland County Council
South Yorkshire Archaeology Service
Tees Archaeology
Tyne and Wear Specialist Conservation Team
West Yorkshire Archaeology Advisory Service
Yorkshire Dales National Park Authority Historic Environment Service

Footnote: the IFA's Standards and Guidance for archaeological field evaluation para. 3.3.1; the IFA's Standard and Guidance for archaeological desk-based assessment para. 3.2.5; the IFA's Standard and Guidance for an archaeological watching brief para. 3.2.5; ACAO Model Briefs and Specifications for Archaeological Assessments and Field Evaluations, Appendix D iv (b))

Revision 1: March 2011 to reflect the replacement of PPGs 15 & 16 with PSS5.

Figure 1: Site location

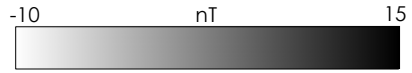
Reproduced from Explorer 305 1:25 000 by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2001. All rights reserved. Licence number AL100002176



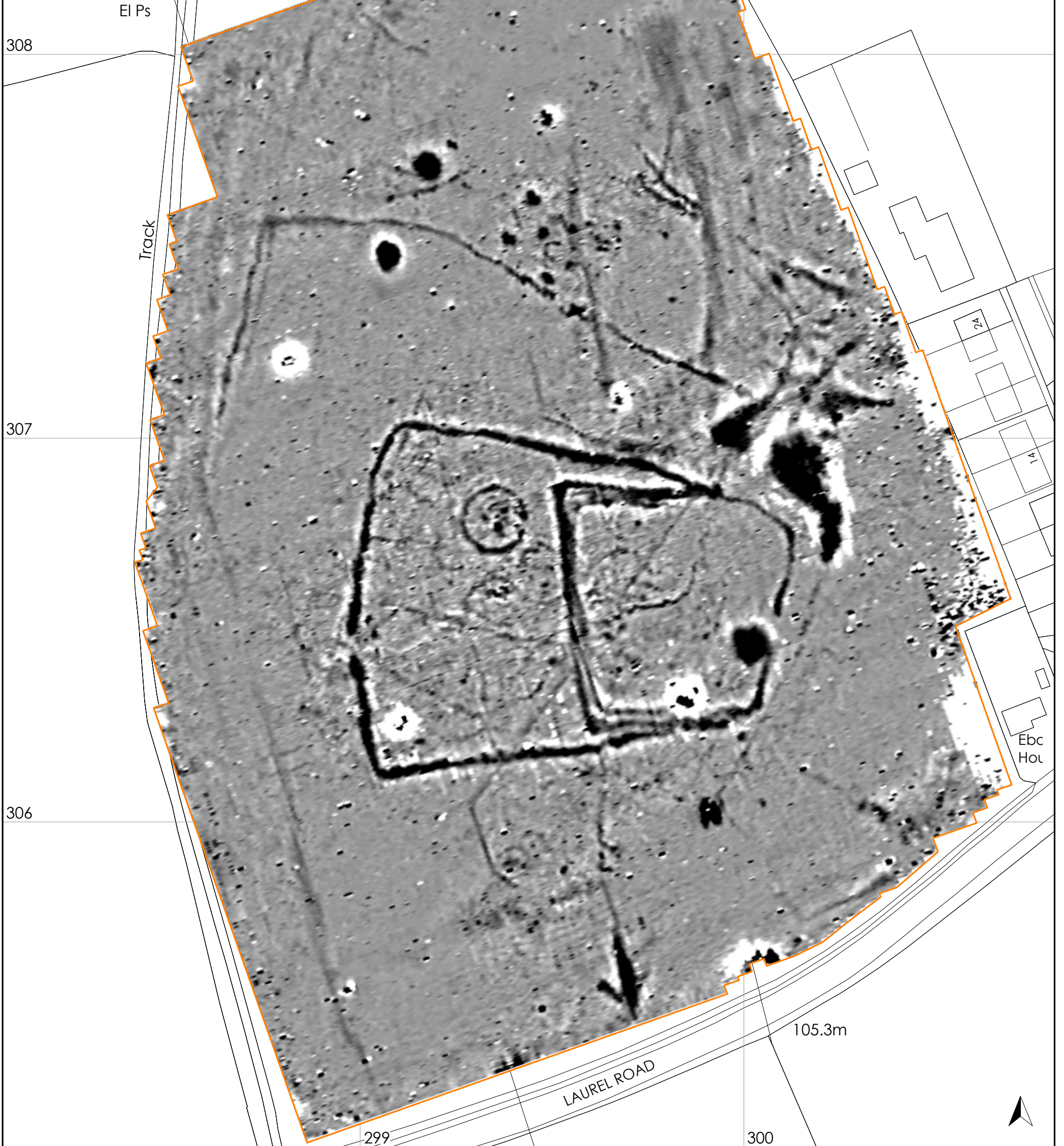
 site location

0 1km
scale 1:25 000 for A4 plot

magnetic survey

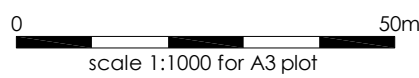


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ARCHAEOLOGICAL SERVICES DURHAM UNIVERSITY

on behalf of Durham County Council

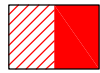


Great Chilton County Durham archaeological excavation and geophysical survey report 3078

Figure 2: Geophysical survey



magnetic survey



dipolar magnetic anomaly



positive magnetic anomaly

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on behalf of
Durham County Council

0 50m
scale 1:1000 for A3 plot

Great Chilton
County Durham

archaeological excavation and
geophysical survey
report 3078

Figure 3: Geophysical interpretation

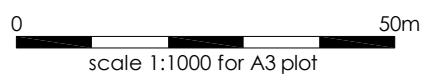


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DURHAM UNIVERSITY

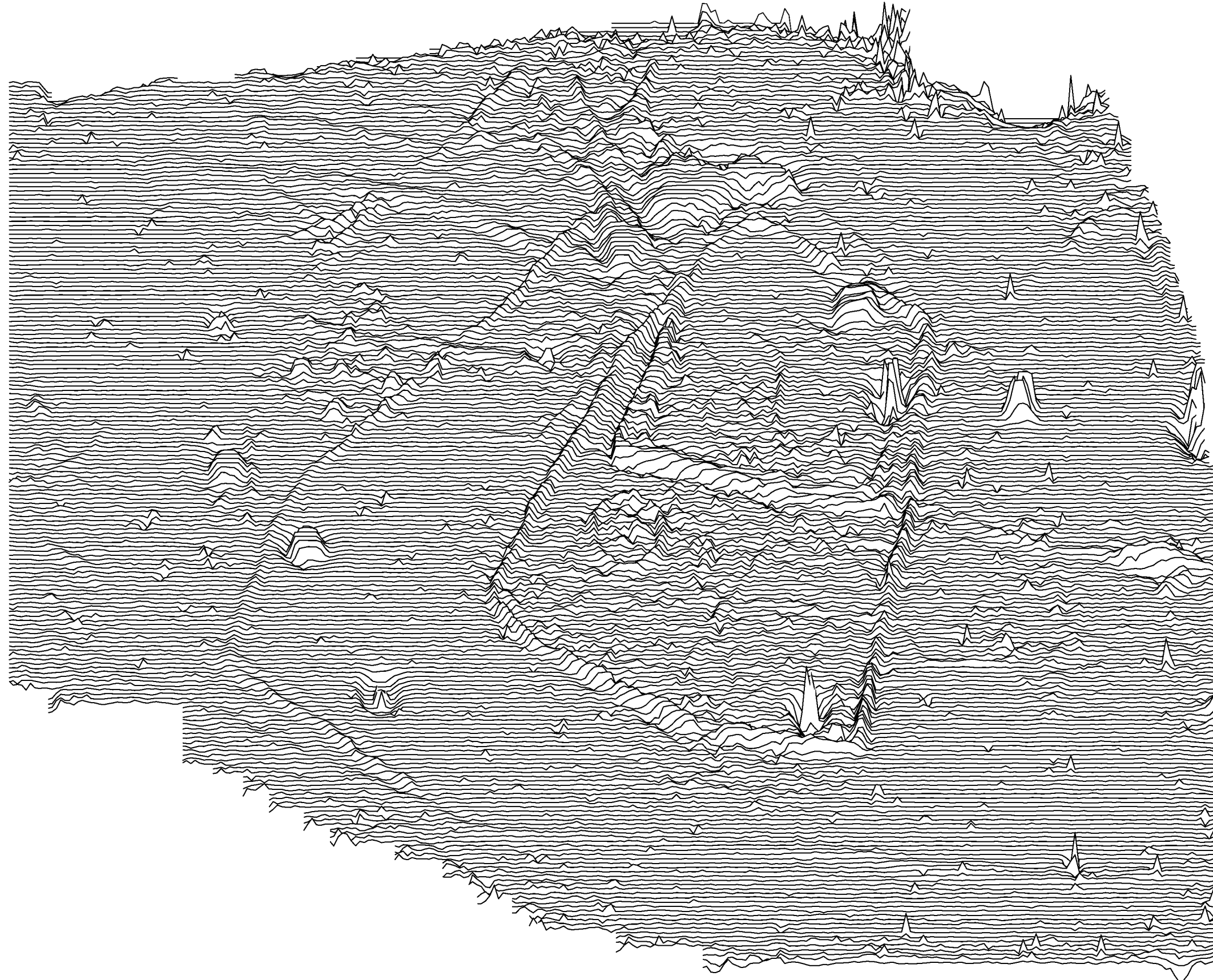
on behalf of
Durham County Council



Great Chilton
County Durham

archaeological excavation and
geophysical survey
report 3078

Figure 4: Archaeological interpretation



85.40nT/cm

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magnetic survey

soil-filled feature

telegraph pole

trench

0 75m
scale 1:1500 for A4 plot

on behalf of
Durham County
Council

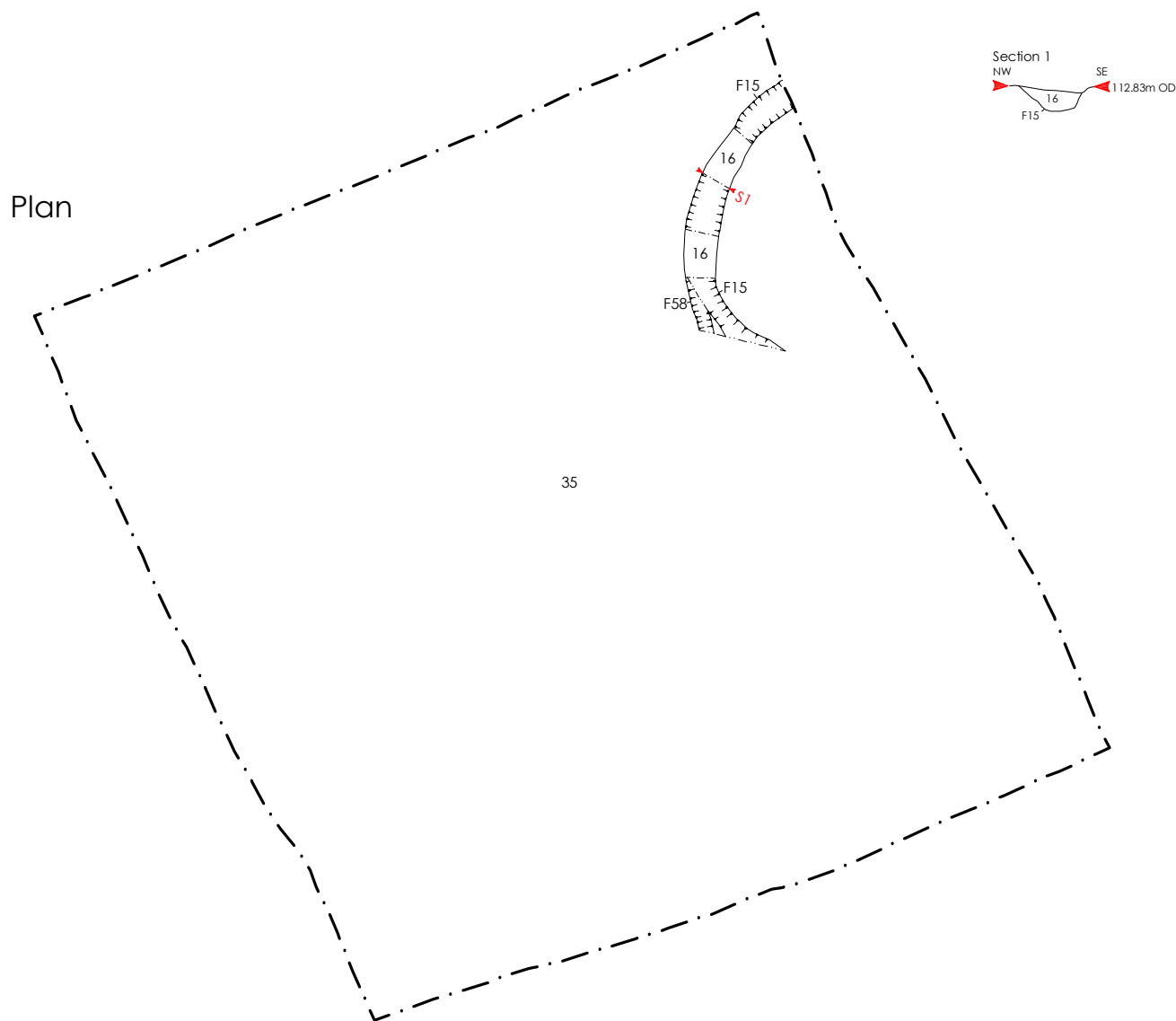
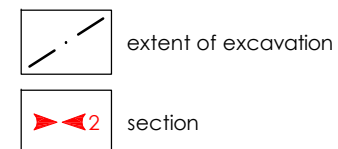
Great Chilton
County Durham

archaeological excavation and
geophysical survey
report 3078

Figure 7: Trench 1, phase 1 plan
and section

0 5m
scale of plan 1:125 for A4 plot

0 2m
scale of section 1:50 for A4 plot



Plan



on behalf of
Durham County Council



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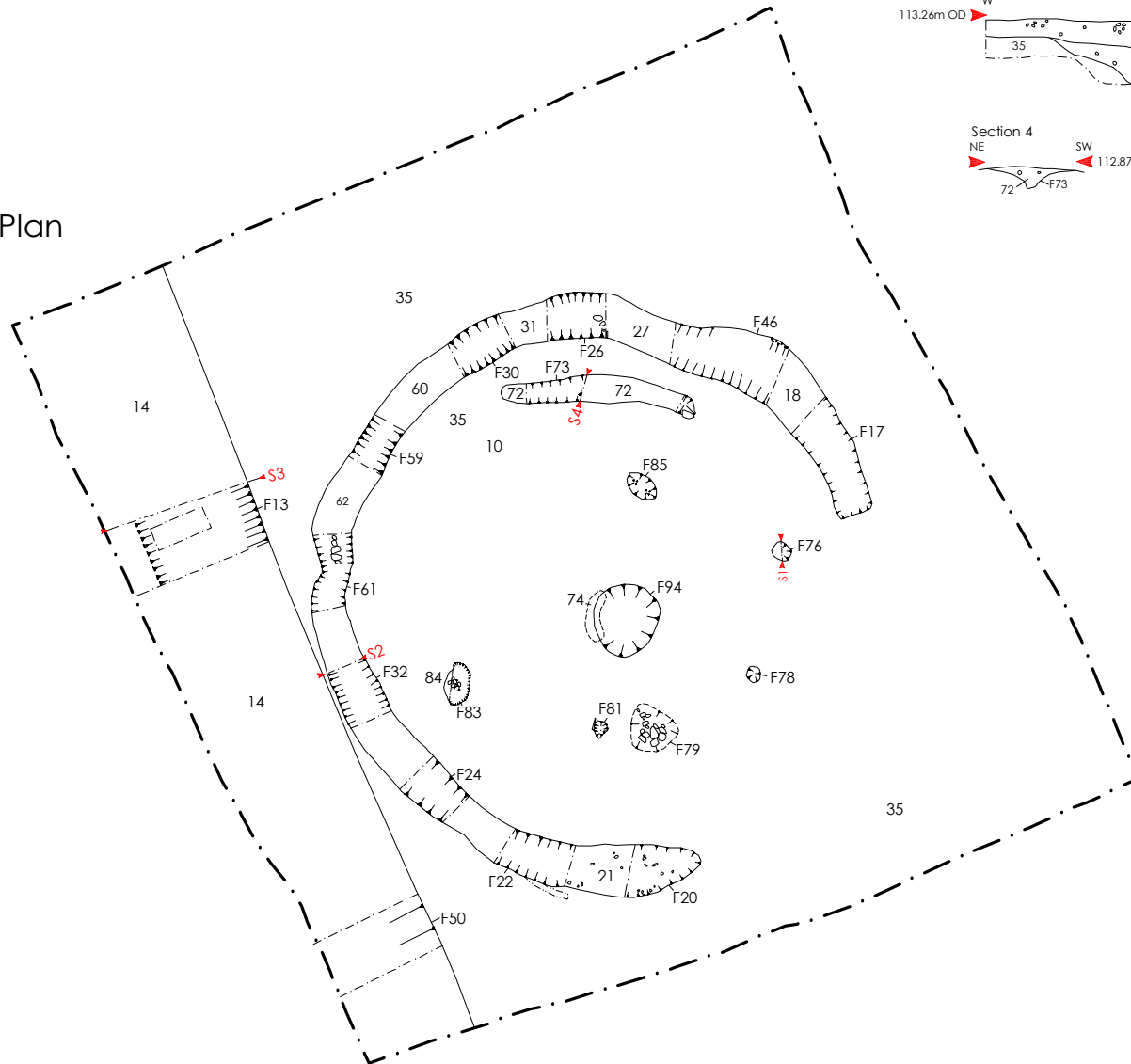
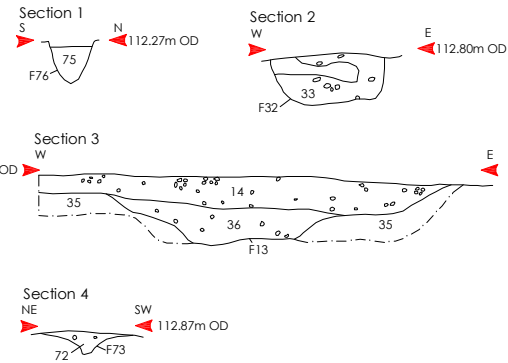
Figure 8: Trench 1, phase 2 plan
and sections

0 5m
scale of plan 1:125 for A4 plot

0 2m
scale of sections 1:50 for A4 plot

-  extent of excavation
-  section

Plan

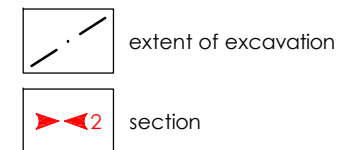
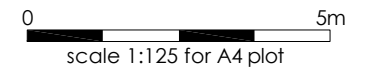


on behalf of
**Durham County
Council**

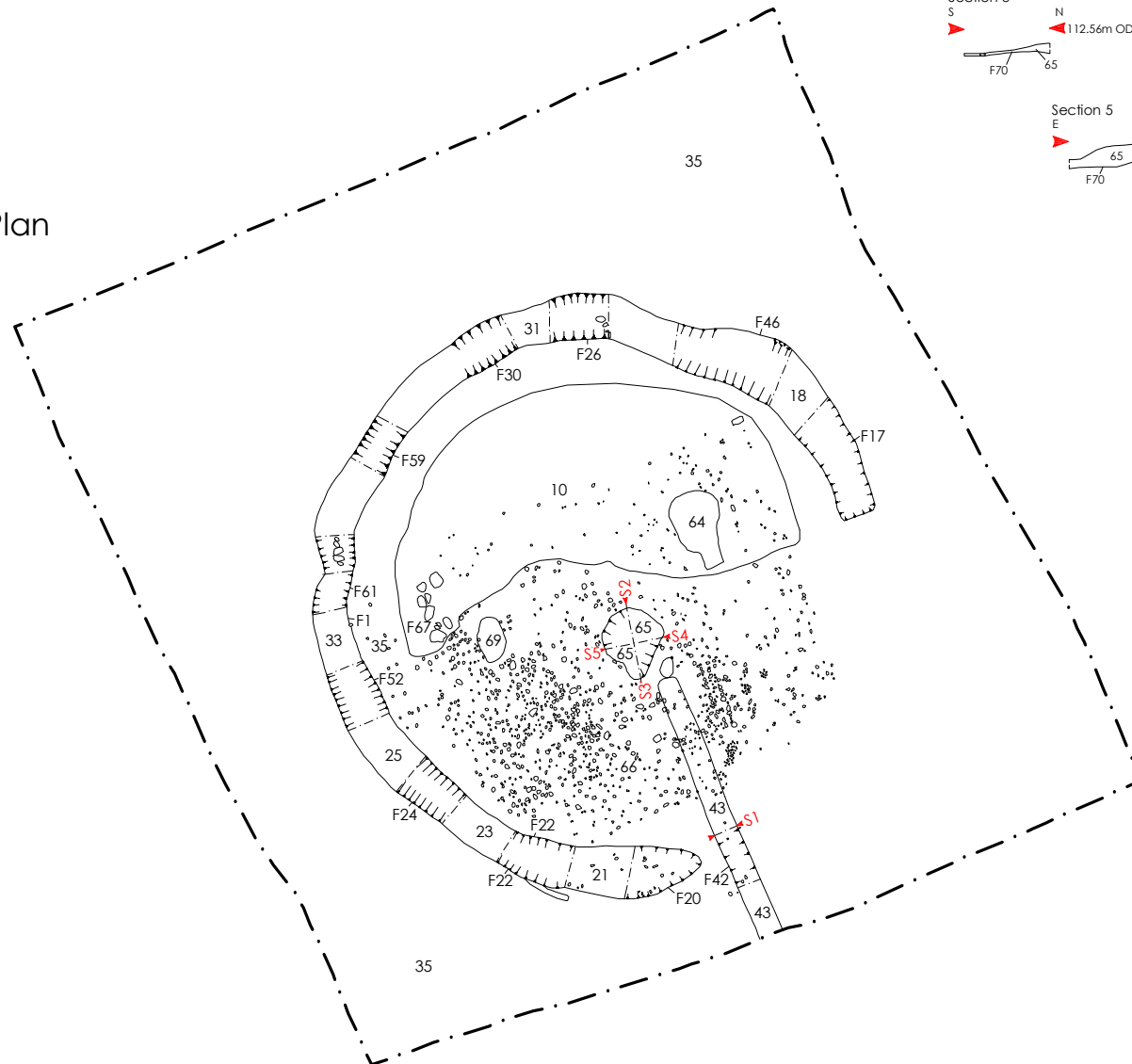
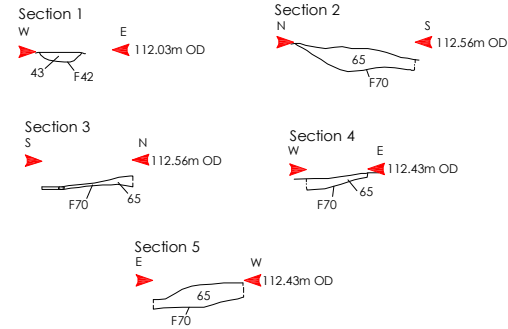
Great Chilton
County Durham

archaeological excavation and
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Figure 9: Trench 1, phase 2a plan
and sections



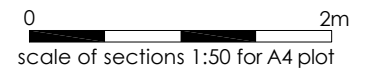
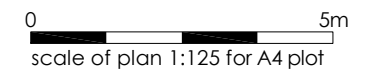
Plan





on behalf of
Durham County Council

Great Chilton
County Durham
archaeological excavation and
geophysical survey
report 3078

Figure 10: Trench 2, plan and sections



-  extent of excavation
-  section

Plan

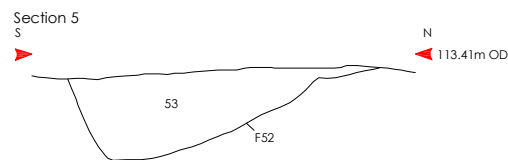
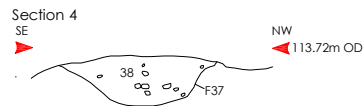
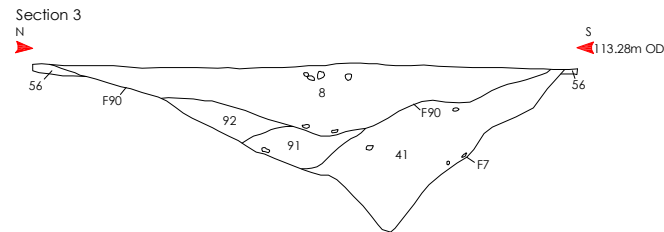
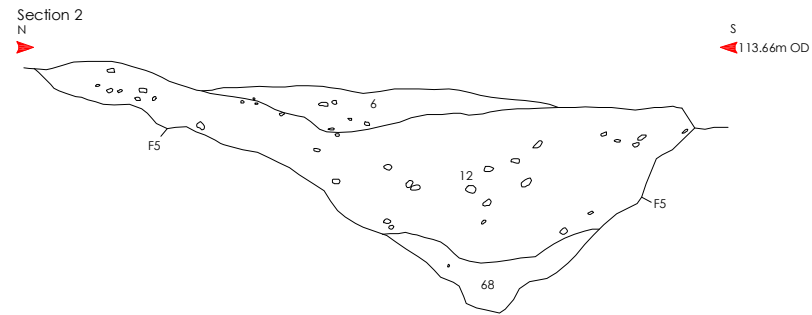
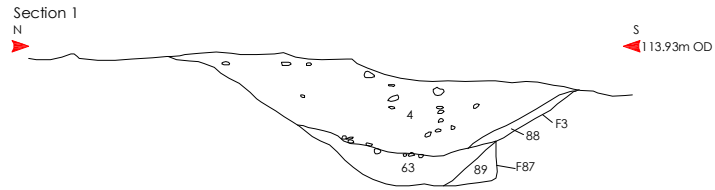
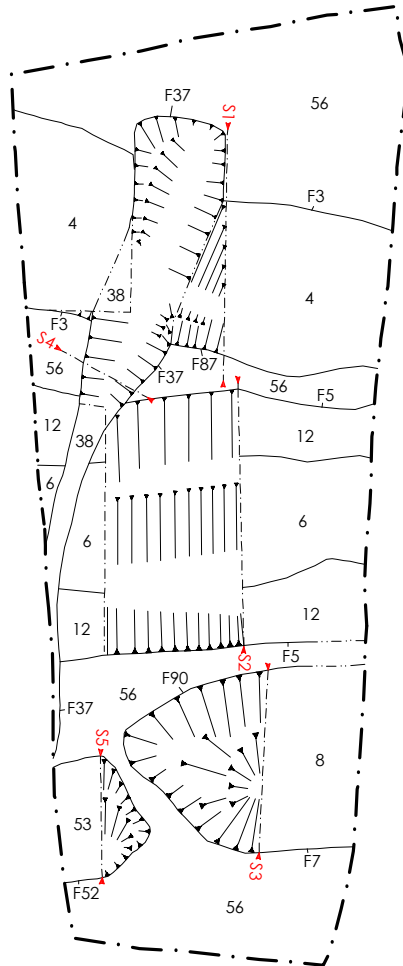




Figure 11: Gully F15,
looking east



Figure 12: Circular
structure in Trench 1,
looking west



Figure 13: Gully F73,
looking north-west



Figure 14: Posthole F85,
looking north-east



Figure 15: Posthole F76,
looking north-west

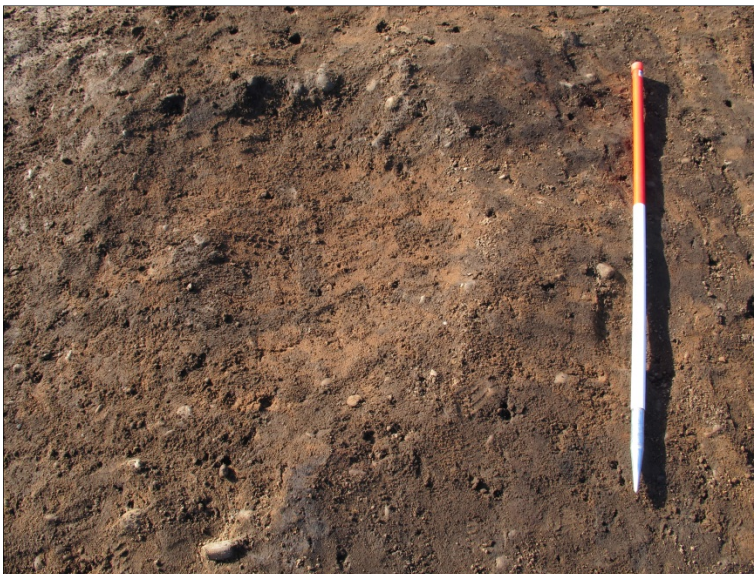


Figure 16: Hearth F94,
looking east



Figure 17: Surface F66, pit F70 and gully F42 pre-excavation, looking west



Figure 18: Ditch F13, looking north

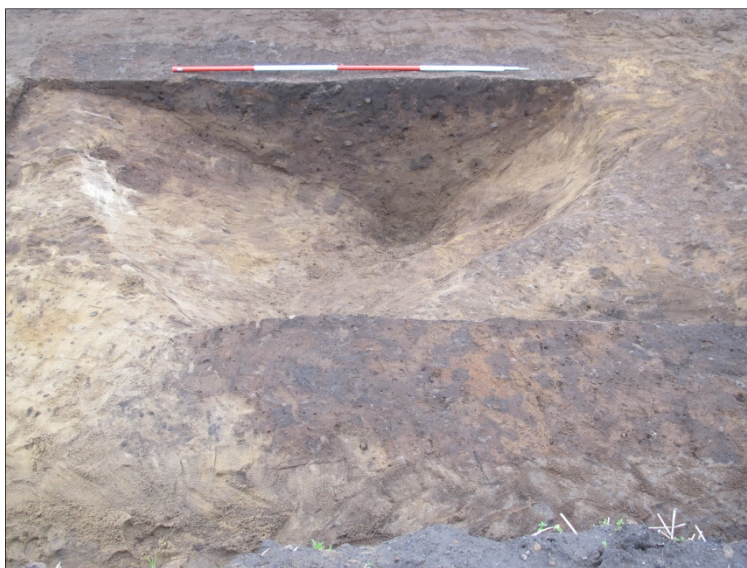


Figure 19: Ditch F7, looking east



Figure 20: Ditch F52,
looking west



Figure 21: Ditch F5,
looking west



Figure 22: Ditch F3,
looking east



Figure 23: Ditch F37,
looking south-west