

HERITAGE ASSESSMENT REPORT:

LAND OFF PHOENIX PARKWAY, SCUNTHORPE, NORTH LINCOLNSHIRE

Planning Reference: Pre-planning
NGR: SE 8838 1290
AAL Site Code: SCPP 15
OASIS Reference Number: allenarc1-200438



Report prepared for North Lincolnshire Council

By
Allen Archaeology Limited
Report Number AAL2015008

January 2015



Allenarchaeology



Contents

| | |
|--|----|
| Executive Summary..... | 1 |
| 1.0 Introduction | 2 |
| 2.0 Site Location and Description | 2 |
| 3.0 Planning Background | 2 |
| 4.0 Methodology..... | 3 |
| Desk-based assessment | 3 |
| Geophysical survey | 4 |
| 5.0 Archaeological and Historical Background | 6 |
| 6.0 Cartographic Information | 8 |
| 7.0 Aerial Photographs..... | 8 |
| 8.0 Site Visit..... | 8 |
| 9.0 Constraints | 9 |
| 10.0 Significance of Impacts | 9 |
| 11.0 Geophysical Survey Results..... | 11 |
| 12.0 Discussion and Conclusions | 12 |
| 13.0 Effectiveness of Methodology | 13 |
| 14.0 Acknowledgements..... | 13 |
| 15.0 References | 13 |
| Cartographic Sources | 14 |

List of Tables

| | |
|---------------------------------------|----|
| Table 1: Receptor sensitivity | 10 |
| Table 2: Magnitude of impact..... | 10 |
| Table 3: Significance of impact | 10 |
| Table 4: Summary of impacts | 11 |

List of Plates

| | |
|--|----|
| Plate 1: View of the site, looking southwest..... | 16 |
| Plate 2: View of the site showing the eastern field boundary, looking south..... | 16 |
| Plate 3: View of the site showing removed hedging, looking north..... | 16 |
| Plate 4: View of the site showing electricity pylons, looking northwest | 17 |

List of Appendices

| | |
|---|----|
| Appendix 1: List of NLHER Entries within a 500m search area | 15 |
| Appendix 2: Colour Plates..... | 16 |
| Appendix 3: Figures..... | 18 |

List of Figures

| | |
|--|----|
| Figure 1: Site location outlined in red..... | 18 |
| Figure 2: Location of proposed development area showing direction and location of photographs in Appendix 2 (base plan provided by the client) | 19 |
| Figure 3: Map showing location of all North Lincolnshire HER entries within a 500m search radius.. | 20 |
| Figure 4: 1886 First Edition Ordnance Survey map with the site outlined in red..... | 21 |
| Figure 5: 1907 Second Edition Ordnance Survey map with the site outlined in red..... | 22 |
| Figure 6: 1964–1966 Ordnance Survey map with the site outlined in red..... | 23 |
| Figure 7: Greyscale raw data and processed trace plot..... | 24 |
| Figure 8: Processed greyscale plot and interpretation..... | 25 |
| Figure 9: Location of processed greyscale | 26 |
| Figure 10: Location of geophysical interpretation..... | 27 |

Document Control

| Element: | Name: | Date: |
|----------------------------|-------------------------------------|------------|
| Report prepared by: | Aisling Mulcahy and Robert Evershed | 23/01/2015 |
| Illustrations prepared by: | Aisling Mulcahy and Robert Evershed | 23/01/2015 |
| Report edited by: | Natasha Powers BSc MSc CMIFA MCMI | 26/01/2015 |
| Report produced by: | AAL2015008 | 26/01/2015 |

Allen Archaeology reports are printed double sided on 100% recycled paper to reduce our carbon footprint.

Executive Summary

- A heritage assessment was carried out for North Lincolnshire Council in order to assess the archaeological potential and impact of development of land off Phoenix Parkway, Scunthorpe, North Lincolnshire.
- The assessment comprised desk-based research and a geophysical survey by magnetometry of the proposed development area.
- For the desk-based research, data was gathered from a range of primary and secondary sources including a search of the North Lincolnshire Historic Environment Record, historic maps and online resources.
- There are no designated heritage assets within the site or search area and the site is not within a Conservation Area.
- There is significant evidence recorded for prehistoric activity in the search area, with scattered artefacts and cropmark features, including some flint finds from near the site. Archaeological work to the east of the site identified Bronze Age cremations, as well as Iron Age ditches and later linear features. The geophysical survey suggested that these features did not continue into the site, although a small number of other linear features of potential archaeological interest were recorded.
- The archaeological potential for all other periods is considered to be negligible as there is little or no physical evidence for other periods and the site is likely to have been either agricultural land or woodland since at least the medieval period.

1.0 Introduction

- 1.1 Allen Archaeology Limited (hereafter AAL) was commissioned by North Lincolnshire Council to prepare a heritage impact assessment to assess the archaeological potential of land off Phoenix Parkway, Scunthorpe, North Lincolnshire, in advance of the submission of a planning application for a residential development.
- 1.2 The site works and reporting conform to current national guidelines, as set out in '*Geophysical Survey in Archaeological Field Evaluation*' (English Heritage 2008), '*The Use of Geophysical Techniques in Archaeological Evaluations*' (Gaffney *et al.* 2002), the Institute for Archaeologists '*Standard and guidance for archaeological geophysical survey*' (IfA 2010), '*Standard and guidance for archaeological desk-based assessments*' (IfA 1994, revised 2001 and 2008) and the English Heritage document '*Management of Research Projects in the Historic Environment*' (English Heritage 2006).

2.0 Site Location and Description

- 2.1 Scunthorpe is situated approximately 13km south-west of the River Humber, in the unitary authority of North Lincolnshire Council. The development site is approximately 2km north of the modern centre of the town, to the north of Skippingdale Road and directly south of Phoenix Parkway (A1077). The site comprises c.8 hectares of agricultural land that is flanked to the west by forestry, to the east by the access for the Hilltop Care Centre and to the south by agricultural land. The site centres on NGR SE 8838 1290.
- 2.2 The site is located on the crest of a limestone escarpment overlooking the River Trent to the west. The local bedrock geology comprises Scunthorpe Mudstone Formation (Mudstone and Limestone) overlain by superficial deposits of drift deposits of blown sand at the south (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).

3.0 Planning Background

- 3.1 A planning application is to be submitted for a residential development off Phoenix Parkway, Scunthorpe. A heritage assessment, comprising a desk-based assessment and a geophysical survey, has been requested to accompany the planning application. Although construction techniques have not yet been decided, they are likely to include site levelling prior to excavation of strip footings, with topsoil stripping for the access roads and landscaping.
- 3.2 This non-intrusive assessment is the first stage of archaeological investigation, intended to provide detailed information that will allow the planning authority to make an informed decision as to whether further archaeological investigations will be required prior to, or following, the determination of a planning application for the proposed development.
- 3.3 The relevant planning policy which applies to the effect of development with regard to cultural heritage is Chapter 12: Conserving and Enhancing the Historic Environment of the National Planning Policy Framework (NPPF) (Department for Communities and Local Government 2012).
- 3.4 NPPF Chapter 12, paragraph 128 states that '*Local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their*

significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment...’.

- 3.5 The North Lincolnshire Local Plan was adopted in 2003 (North Lincolnshire Council 2003) and is gradually being replaced by the Local Development Framework. Saved Local Plan Policy HE9 states that the Council require that:

Where development proposals affect sites of known or suspected archaeological importance, an archaeological assessment to be submitted prior to the determination of a planning application.

Planning permission will not be granted without adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed development is likely to affect them.

In some cases, an archaeological assessment will be required which may comprise a desk-based study, or fieldwork, including geophysical survey and limited trial trenching.

- 3.6 North Lincolnshire Council adopted its Core Strategy Document in 2011 in the Local Development Framework (North Lincolnshire Council 2011). The historic environment policy, CS6, states that the Council will:

Protect, conserve and enhance the north Lincolnshire’s historic environment, as well as the character and setting of areas of acknowledged importance including historic buildings, conservations areas, listed buildings (both statutory and locally listed), registered parks and gardens, scheduled ancient monuments and archaeological remains.

Preserving and enhancing the rich archaeological heritage of North Lincolnshire.

Safeguard and enhance North Lincolnshire’s varied landscapes including important prehistoric, historic medieval landscapes and archaeological remains (where appropriate) where development is proposed.

Development proposals should provide archaeological assessments where appropriate.

Protect the historic environment remains from harmful change.

Keep an up to date record of historic assets and a list of locally listed buildings.

4.0 Methodology

Desk-based assessment

- 4.1 A full range of primary and secondary archaeological and historical sources were consulted in the preparation of this document. The sources consulted were as follows:

- North Lincolnshire Historic Environment Record (NLHER) – a database of archaeological sites and artefacts, listed buildings and Scheduled Monuments. A search for records on the NLHER extending 500m from the site boundary was undertaken.
- National Mapping Programme (NMP) – a programme for mapping and recording archaeological sites and landscapes from aerial photographs and other remote sensing datasets. A search of these resources was undertaken in order to identify cropmarks within the site boundary but the area in which the study area lies is not covered by the NMP.
- Lincolnshire Archives – holds a range of historic maps, for example enclosure maps, Tithe maps, estate plans, and former editions of Ordnance Survey maps of the development area. Online historic mapping sources were also consulted.
- Allen Archaeology’s own reference library – secondary sources pertaining to the archaeology and history of the region.
- Heritage Gateway Website – searchable online resource allowing access to the National Monuments Record (NMR) and Archaeology Data Service (ADS), online national databases of archaeological sites and artefacts. Also includes information pertaining to Scheduled Monuments and Listed Buildings, as well as data from the Defence of Britain project, which has mapped surviving monuments relating to 20th century military sites. A search was conducted of these resources to identify any significant buildings, sites or findspots not covered by the NLHER search, and to highlight other major sites within a wider study area.
- A site visit was carried out on Friday 9th January 2015 in order to assess the present situation of the development area, to identify any areas where the potential archaeological resource may be particularly well preserved or damaged by recent development, and to observe the site in its landscape context.

4.2 Each archaeological and historic site and Listed Building identified in the study area has been allocated a one or two digit ‘Site’ number and described in the Archaeological and Historical Background section (See Section 5.0 below). Further details are provided for each site in Appendix 1, and where applicable the sites are depicted on Figure 3.

Geophysical survey

- 4.1 The geophysical survey consisted of a detailed gradiometer survey of the area to be affected by the proposed development, totalling approximately 7.1 hectares. The survey was undertaken in a series of 30m grids across the site.
- 4.2 The fieldwork was carried out by a team of two experienced geophysicists from AAL over a period of three working day, Wednesday 7th to Friday 9th January 2015. The survey area was located using a Leica GS08 RTK NetRover GPS. This accurately 3D plotted the area of investigation and tied it into the National Grid.

- 4.3 The survey was carried out using a Bartington Grad601-2 Dual Fluxgate Gradiometer with an on-board automatic DL601 data logger. This instrument is a highly stable magnetometer which utilises two vertically aligned fluxgates, one positioned 1m above the other. This arrangement is then duplicated and separated by a 1m cross bar. The 1m vertical spacing of the fluxgates provides for deeper anomaly detection capabilities than 0.5m spaced fluxgates. The dual arrangement allows for rapid assessment of the archaeological potential of the site. Data storage from the two fluxgate pairs is automatically combined into one file and stored using the on-board data logger.
- 4.4 Data collection was undertaken in a zig-zag traverse pattern, using a sample interval of 0.25m and a traverse interval of 1m.
- 4.5 The fieldwork and reporting was carried out in accordance with the procedures in 'Geophysical Survey in Archaeological Field Evaluation' (English Heritage 2008) and 'The Use of Geophysical Techniques in Archaeological Evaluations: IfA Paper 6' (Gaffney et al. 2002).
- 4.6 Summary of Survey Parameters:

Fluxgate Magnetometers

| | |
|----------------------|---|
| Instrument: | Bartington Grad601-2 Dual Fluxgate Gradiometer |
| Sample interval: | 0.25m |
| Traverse interval: | 1.00m |
| Traverse separation: | 1.00m |
| Traverse method: | Zigzag |
| Resolution: | 0.01 nT |
| Processing software: | Terrasurveyor 3.0.25.1 |
| Surface conditions: | Short grass |
| Area surveyed: | 7.1 ha |
| Date surveyed: | Wednesday 7 th – Friday 9 th January 2015 |
| Surveyor: | Robert Evershed |
| Survey assistants: | Alice Beasley |
| Data interpretation: | Robert Evershed |

- 4.7 The grids were marked out using pre-programmed coordinates on the Leica GS08 Net rover. The collection of magnetic data using a north-south traverse pattern is preferable as the fluxgate gradiometer is set up and balanced with respect to the cardinal points. Since the data is plotted as north-south traverses there is considerable merit sampling the north-south response of a magnetic anomaly with as many data points as is possible, this is accomplished as the density collected along the traverse line is greater than that between traverses (Aspinall et al. 2008). On this occasion magnetic data was collected on a north-south alignment, due to the orientation of the development area.
- 4.8 The data collected from the survey has been analysed using the current version of Terrasurveyor 3.0.25.1. The resulting data set plots are presented with positive nT/m values and high resistance as black and negative nT/m values and low resistance as white.

The data sets have been subjected to processing using the following filters:

- De-stripe
 - Clipping
 - De-staggering
- 4.9 The de-stripe process is used to equalise underlying differences between grids or traverses. Differences are most often caused by directional effects inherent to magnetic surveying instruments, instrument drift, instrument orientation (for example off-axis surveying or heading errors) and delays between surveying adjacent grids. The de-stripe process is used with care however as it can sometimes have an adverse effect on linear features that run parallel to the orientation of the process.
- 4.10 The clipping process is used to remove extreme data point values which can mask fine detail in the data set. Excluding these values allows the details to show through.
- 4.11 The de-staggering process compensates for data correction errors caused by the operator commencing the recording of each traverse too soon or too late. It shifts each traverse forward or backwards by a specified number of intervals.
- 4.12 Plots of the data are presented in processed linear greyscale (smoothed) with any corrections to the measured values or filtering processes noted (Figure 7), and as separate simplified graphical interpretations of the main anomalies detected.

5.0 Archaeological and Historical Background

- 5.1 A search of the NLHER and other sources has revealed evidence for activity dating from the Mesolithic to the post-medieval periods within the defined study area, although none from the site itself.
- 5.2 Prehistoric activity is well represented in the study area, in the form of isolated finds dating from the Early Mesolithic to the Late Bronze Age (Sites 1–6) including several microliths; cores, scrapers, arrowheads and a polished axe. The nearest of these finds were found less than 100m from the site boundary (Sites 4 and 5), and a Neolithic polished stone axe was found in the Crosby Allotments, just over 200m east of the site (Site 6).
- 5.3 There are a number of cropmark features (Site 7) identified from aerial photographs to the north of the site, where two large circular features overlay a smaller third ring. Although the cropmark features are currently undated, they lie within the area of prehistoric finds in Old Park Farm (Site 3) and may be contemporary.
- 5.4 Archaeological investigations in advance of construction of the Hilltop Care Centre, immediately southeast of the proposed development site identified evidence for later prehistoric activity (Sites 8 and 9; Baker 2008; Trott and Allen 2009) which exposed two cremations, possibly surrounded by a fenced enclosure (Site 8). A small number of early Bronze Age Collared Urn pottery fragments were recovered from across the site in addition to a flint assemblage dating from the Mesolithic to the Bronze Age in date.
- 5.5 The site at the Hilltop Care Centre also exposed ditches and postholes of Iron Age date (Site 9). The mid-late Iron Age series of ditches all had different alignments indicating that they were not contemporary but may represent several re-alignments of boundaries during this period.

- 5.6 Although there was a small amount of Roman pottery found in the postholes and pits recorded on the adjacent site, the site was not likely to have been settled during the Roman period, but perhaps used for agriculture. Although there is no other evidence for Roman activity in the study area, Iron Age and later Romano-British activity around Scunthorpe is well attested through the excavations at Dragonby (May 1996) and slightly further northwards around Winterton (Todd 1991). Closer to the site, excavations within Flixborough sand quarry located Iron Age settlement remains (NLHER 19690), and a Romano-British adult cremation, contained within an inverted pottery vessel (NLHER 19693). Archaeological investigations c.4km to the southwest of the site at Burringham Road in Scunthorpe located a late Iron Age settlement with occupation continuing throughout the Romano-British period (Boyer et al 2009).
- 5.7 There is no known evidence for Anglo-Saxon settlement within the study area, although the important Saxon settlement at Flixborough lies just over 1km away. A single coin (Site 10), a silver *sceatta* (plumed bird type) which is dated to no later than the first quarter of the 8th century, was found 240m east-northeast of the proposed development site, within the Foxhills Plantation, and represents the only physical evidence of Saxon activity in the study area.
- 5.8 There are no entries of medieval date recorded in the study area. The western portion of the site lay within the parish of Flixborough, which was recorded as *Flichesburg*, within the Manley Hundred and owned by Norman d'Arcy at the time of the Domesday Book of 1086 (Morgan and Thorn 1986). The etymology of the name shows a Scandinavian influence as it means 'Flik's fortified place' from the Old Norse personal name *Flik* and the Old English *burh* (Cameron 1998).
- 5.9 The site also lay within the catchment of Crosby, one of the settlements amalgamated into modern day Scunthorpe. Crosby existed from at least the late Saxon period and is referred to in the Domesday Survey of 1086 as *Cropesbi*, from the Old Norse *kross* and the Old Danish *by* meaning 'the village with a cross' (Cameron 1998). At the time of the survey the parish was under the ownership of two major landowners, Earl Hugh and Norman of Arcy, and recorded within two separate hundreds, 'Hill' Wapentake and Yarborough Wapentake (Morgan and Thorn 1986).
- 5.10 There is little evidence for post-medieval activity in the study area. South Lodge, a former estate cottage (Site 11) was demolished in 1983 and Old Park Farm (Site 12), shown on 19th century mapping, is no longer extant, having been subsumed by industrial development. A possible decoy is visible on historical mapping and aerial photographs to the east of the site (Site 13). Although much of the study area is built up in modern times, there is some open space remaining and the site is likely to have been agricultural land or woodland at this time.
- 5.11 Undated earthworks (Site 14) within Foxhills Plantation, 150m northwest of the proposed development site were identified from a LiDAR survey. A rectangular enclosure and a slightly curved linear bank, orientated west-northwest to east-southeast and visible for a distance of 100m with a gap in the bank, were noted. The enclosure measures 82m north-south and 70m east-west and the northern and southern sides are defined by straight ditches, c.2.5m wide, and by internal and external banks. A rectangular depression to the west, measuring 90m by 50m, may be related to the enclosure but was not well-defined. The date and function of this feature is unclear.
- 5.12 Historic Landscape Characterisation data (HLC) defines the study area as a mixture of civic and commercial, fields and enclosed land, industry, orchards and allotments, recreational open space, settlement and woodland. The site itself is defined as 'fields and enclosed land' and formed part of a parliamentary Planned Enclosure.

6.0 Cartographic Information

- 6.1 The proposed development site lies within two parishes. The majority is within Flixborough parish and the small eastern portion within Crosby. The 1807 Enclosure map for Crosby shows this small area of the site within a large field with Ferry Road crossing to the south of the site and Crosby to the southeast (Russell and Russell 1982). There is no Enclosure map for Flixborough. The 1840 Tithe Award map for Flixborough and Normanby does not show the site in great detail and so is not depicted, and Crosby does not appear to have the equivalent Award map surviving.
- 6.2 The 1886 First Edition 6" scale Ordnance Survey (Figure 4) shows the site within three fields in an agricultural landscape with the southern boundary being a path into Skippingdale Plantation as well as the parish boundary between Flixborough and Crosby. Skippingdale Plantation is shown immediately to the west of the site.
- 6.3 The 1907 25" Ordnance Survey map shows no changes to the site itself (Figure 5), although the parish boundary is not marked at this scale. The site and its surroundings remain as agricultural land and woodland.
- 6.4 During the middle of the 20th century, Scunthorpe began to expand its urban area towards the site and the 1:2,500 Ordnance Survey map of 1964–66 (Figure 6) shows housing to the southeast of the site. Phoenix Parkway has been built to the north of the site, bounding it to the north, and there is an electricity line shown along the northern edge. The portion of the site within Crosby parish is now shown as being partially within allotment gardens. The southern boundary of the western field has been formalised, with a full field boundary separating it from the field to the south rather than the former path.
- 6.5 Post-1960s Ordnance Survey mapping is not reproduced as it shows no relevant changes to the site. Beyond the site boundaries the modern mapping shows further housing to the southwest; the development of the Foxhills Industrial Estate north of Phoenix Parkway; and the recent construction of the Hilltop Care Centre to the east of the site.

7.0 Aerial Photographs

- 7.1 Aerial photographs held by English Heritage were consulted, with two found to show the site (EH Reference OS/73079/1 and OS/95621/275). Both were vertical images, the former taken on 15th April 1973 and the on 7th July 1995. No features of note were visible within the development area or the immediate vicinity.

8.0 Site Visit

- 8.1 The site was visited by Robert Evershed of AAL on Friday 9th January 2015. Selected photographic images are shown in Appendix 2 and the location and direction of these is indicated on Figure 2.
- 8.2 The site measures approximately 8ha and has a coverage of recently cut pasture (Plate 1). It is accessible via the access for the Hilltop Care Centre to the east, with Phoenix Parkway to the north, woodland to the west and an agricultural field to the south. The site boundaries consist of mature trees and hedging (Plate 2).

- 8.3 The site is fairly flat with very slight natural undulations and the western field has a very slight slope down from east to west. The recently cut grass gave good visibility but no sign of earthworks of archaeological interest were recorded within the field.
- 8.4 The remains of hedging, mown to ground level, was noted along the western boundaries (Plate 3) and the field next to the eastern boundaries were overgrown and contained frequent modern rubbish.
- 8.5 Electricity pylons traversed the site along the northern boundary from east to west (Plate 4) and there is likely to be disturbance to below ground deposits in the immediate vicinity of these.

9.0 Constraints

- 9.1 There are no Scheduled Monuments, Designated Parks or Gardens or Registered Battlefields within the study area and the site is not within a Conservation Area.
- 9.2 There are no Listed Buildings within the study area, with the closest one outside of the study area being the Grade II Listed, 45 and 47 Old Crosby (Ref. 1083615) which lies 850m southeast of the site, and is too distant to be affected by the proposed development, either physically or in terms of its setting.

10.0 Significance of Impacts

- 10.1 This section will be used to assess the archaeological potential of the proposed development area on a period by period basis, and the likely impact of the proposed development on each aspect of the identified archaeological resource. The tool used for this purpose is the significance of impact table, which combines the receptor sensitivity and magnitude of impact, summarised in Tables 1 to 3. Table 4 summarises the results on a period-by-period basis.

| Receptor sensitivity | Examples |
|----------------------|--|
| High | <p>A legally protected site, including:</p> <ul style="list-style-type: none"> • Listed Buildings (I, II* and II) • Scheduled Monuments • World Heritage Sites <p>Internationally and nationally significant sites that are not currently legally protected:</p> <ul style="list-style-type: none"> • Grade I and II* Registered Parks and Gardens • Registered Battlefields • Major Settlements (e.g. Villas, Deserted Medieval Villages) • Burial Grounds • Standing Historic Buildings (non-listed) |
| Moderate | <p>Regionally significant site:</p> <ul style="list-style-type: none"> • Grade II Registered Parks and Gardens • Some settlements • Find Scatters and find spots • Roman Roads • Sites of significant historic buildings |
| Low | <p>Locally significant site:</p> |

| Receptor sensitivity | Examples |
|----------------------|--|
| | <ul style="list-style-type: none"> • Field systems • Ridge and furrow earthworks • Trackways • Wells • Non-archaeological sites held by data source e.g. natural mound or palaeochannel |
| Negligible | Site of limited significance: <ul style="list-style-type: none"> • Finds or features of a type common or abundant in the local area • Locally important features significantly damaged or altered |

Table 1: Receptor sensitivity

| Magnitude | Examples |
|------------|---|
| High | Total or near total destruction of the remains or sufficient change to result in a fundamental and irreparable reduction in the ability to understand the archaeological resource, its context and setting. |
| Moderate | Substantial destruction of the remains resulting in an appreciable reduction in the ability to understand the archaeological resource, its context and setting. |
| Low | Small-scale destruction of the remains resulting in a slight reduction in the ability to understand the archaeological resource, its context and setting. |
| Negligible | Very little or no substantive change to the remains with marginal reduction in the ability to understand the archaeological resource, its context and setting. |

Table 2: Magnitude of impact

| | | Receptor sensitivity | | | |
|---------------------|------------|----------------------|------------|------------|------------|
| | | Negligible | Low | Moderate | High |
| Magnitude of impact | Negligible | Negligible | Negligible | Negligible | Negligible |
| | Low | Negligible | Negligible | Low | Moderate |
| | Moderate | Negligible | Low | Moderate | High |
| | High | Negligible | Moderate | High | High |

Table 3: Significance of impact

| Period | Description | Receptor sensitivity | Magnitude of impact | Significance of impact |
|----------------------------------|--|----------------------|---------------------|------------------------|
| Prehistoric (c.500,000 BC–AD 43) | There is substantial evidence for prehistoric activity in the study area with cropmark features and numerous lithic scatters, including some from near the site itself. Bronze Age cremations and Iron Age ditch features were excavated immediately to the east of the site although there is no evidence suggest this activity extends into the current site | High | Low | Moderate |
| Romano-British (AD 43–c.AD 410) | There is no evidence for Roman activity within the study area with the only finds from this period being scattered residual finds. | Negligible | Negligible | Negligible |
| Anglo-Saxon (c.AD 410–1066) | There is little evidence for Anglo-Saxon activity in the study area with only a single coin found from this period. | Negligible | Negligible | Negligible |
| Medieval (1066–1485) | Settlement in the area is likely to have been focussed on the historic core of the village of Crosby at some distance from the site. Some evidence for ridge and furrow agriculture may be encountered. | Negligible | Negligible | Negligible |
| Post-medieval (1485–1800) | The site is likely to have remained agricultural land in the post-medieval period. | Negligible | Negligible | Negligible |
| Early modern (1801–2014) | The area persisted as agricultural land despite housing and industrial estates being built nearby as it was subsumed into Scunthorpe. | Negligible | Negligible | Negligible |

Table 4: Summary of impacts

11.0 Geophysical Survey Results

- 11.1 For the purposes of interpreting the anomalies, the survey data has been processed to the values of -3 to 3 nT/m (Figure 8). This enhances faint anomalies that may otherwise not be noted in the data. The survey results revealed a number of anomalies across the data set, and these are discussed in turn and noted as numbers in square brackets.
- 11.2 The easternmost field is entirely covered by an area of magnetic noise [1], with readings of -100 to 100nT/m. it is highly likely this represents modern waste and detritus relating to the construction of the adjacent Care Village.
- 11.3 The areas of dipolar noise, [2] and [3], -20 to 100nT/m, represent large electricity pylons. Anomaly [2] relates to a pylon within the surveyed area, whereas [3] relates to a pylon just outside the surveyed area.
- 11.4 The areas of dipolar noise [4], [5] and [6] relate to telegraph poles supporting electricity cables across the field: [4], -100 to 100nT/m, has some additional metal support wires attached to the ground which greatly increase its magnetic signal; [5] and [6] produced readings of -8 to 8nT/m.
- 11.5 Running between [4] and [5] and from [4] to the northern boundary of the site there is a linear dipolar feature [7], producing readings of -1 to 1nT/m. This relates to the electricity cables

supported by the telegraph poles. This feature is not seen continuing towards [6] as the cables are slightly higher above the ground.

- 11.6 Close to the southern border of the site in the southeast corner of the most westerly field are a pair of parallel, positive, linear features [8], 1nT/m, running roughly north northeast – south southwest. These features run for approximately 30m, where the eastern one may turn sharply to the east and continue to the field boundary, whereas the western one appears to terminate. Approximately 65m to the north there is another short positive linear feature [9], 1nT/m, which could potentially be a continuation of [8]. These likely represent former ditches, tracks or boundaries.
- 11.7 Close to the northwest corner of the site are two, short, positive features [10], 1 to 2nT/m, which cross each other in an 'x' shape. These may represent short sections of boundary ditches, but geological variation is equally likely.
- 11.8 Close to the southwest corner of the site there are a number of faint curvilinear positive anomalies [11], with readings up to 1nT/m. Due to the irregular nature of these features it is likely they represent geological variation.
- 11.9 In the middle field there are a number of parallel and perpendicular linear positive features [12], 0.5 to 1nT/m. Due to the regularity and spacing of these features it is highly likely these relate to modern field drains.
- 11.10 The parallel linear negative features [13], -2 to -1nT/m, orientated roughly east-west in the most westerly field are likely to represent modern tractor tracks.
- 11.11 The long linear negative features [14], -3 to -2nT/m, that run along the northern and western site boundaries are likely to relate to paths or tracks around the field, most probably modern.
- 11.12 There are a number of cultivation trends across the two larger fields. The linear features [15] and [16], orientated roughly east-southeast to west-northwest likely represent the most recent cultivation trend, whereas [17] orientated roughly east-west may represent an earlier trend. It is possible that [17] could represent the remnants of ploughed out ridge and furrow agriculture.
- 11.13 Scattered randomly throughout the site are a number of pairs of positive and negative 'spikes', examples of which are highlighted as [18]. The characteristic dipolar response suggests near-surface ferrous metals or other highly fired material.

12.0 Discussion and Conclusions

- 12.1 The desk-based assessment has revealed evidence within the study area from the prehistoric period to the present day, although none within the site itself.
- 12.2 There is significant evidence recorded for prehistoric activity in the search area, with scattered artefacts and cropmark features, including some flint finds from near the site. Archaeological work to the east of the site identified two Bronze Age cremations, as well as Iron Age ditches and postholes and later linear features. The potential to encounter activity of this date in the study area is considered to be moderate, and it is likely that further isolated flint finds and associated features may be found. The linear features recorded on the adjacent site did not appear to extend into the current site, and this was confirmed by the geophysical survey.

However, a small number of linear anomalies in the western field may be of potential archaeological interest.

- 12.3 There is no evidence for Roman activity within the study area and the only evidence of an Anglo-Saxon presence is a single isolated coin find.
- 12.4 There is also no evidence from the medieval period within the study area and the site is likely to have been agricultural land or woodland, supporting nearby settlements such as Crosby. This is likely to have continued to the present day. Some possible ridge and furrow was recorded on the site to the east, and the geophysics identified further possible ridge and furrow on the current site.

13.0 Effectiveness of Methodology

- 13.1 The non-intrusive assessment methodology employed was appropriate to the scale and nature of the site. Magnetometry was the prospection technique best suited to the identification of archaeological remains. Other techniques would have required further justification and may have proved too time consuming or cost-prohibitive.

14.0 Acknowledgements

- 14.1 Allen Archaeology Limited would like to thank North Lincolnshire Council for this commission. Alison Williams and Mike Hemblade at the North Lincolnshire Historic Environment Record are thanked for their help in undertaking the background research.

15.0 References

Aspinall, A, Gaffney, C, and Schmidt, A, 2008, *Magnetometry for Archaeologists*, Altamira Press

Baker, S, 2008, *An Archaeological Evaluation on Land off Phoenix Parkway, Scunthorpe, North Lincolnshire SE 886 127*, University of Leicester Archaeological Services, Unpublished Report

Boyer, P, Proctor, J, and Taylor-Wilson, R, 2009, *On the Boundaries of Occupation, Excavations at Burringham Road, Scunthorpe and Baldwin Avenue, Bottesford, North Lincolnshire*, Pre-Construct Archaeology Monograph Series No. 9

Cameron, K, 1998, *A Dictionary of Lincolnshire Place-Names*. The English Place-Name Society, Nottingham

Department for Communities and Local Government, 2012, *National Planning Policy Framework*. London, Department for Communities and Local Government

English Heritage, 2008, *Geophysical Survey in Archaeological Field Evaluation*, English Heritage

English Heritage, 2006, *Management of Research Projects in the Historic Environment*, Historic Buildings and Monuments Commission for England, London

IfA, 2010, *Standard and Guidance for Archaeological Geophysical Survey*, Institute for Archaeologists, Reading

IfA, 1994 (revised 2001 and 2008), *Standard and Guidance for Archaeological Desk-Based Assessments*, Institute for Archaeologists, Reading

Gaffney, C., Gater, J., and Ovenden, S., 2002, *The Use of Geophysical Techniques in Archaeological Evaluations. IFA Paper No. 6*. The Institute for Archaeologists

May, J, 1996, *Dragonby, Report on Excavations at an Iron Age and Romano-British Settlement in North Lincolnshire*, Oxbow Monograph Series No. 61

Morgan, P and Thorn, C, (eds), 1986, *Domesday Book: vol.31: Lincolnshire*, Phillimore & Co. Ltd, Chichester

North Lincolnshire Council, 2011, *Core Strategy*, Local Development Framework

North Lincolnshire Council, 2003, *Local Plan*, Local Development Framework

Russell E, and Russell, R C, 1982, *Landscape Changes in South Humberside: The Enclosures of Thirty-seven Parishes*, Humberside Leisure Services, Hull

Todd, M, 1991, *Peoples of Roman Britain: The Coritani*, Alan Sutton Publishing Ltd. Stroud

Trott, K, and Allen, M, 2009, *Archaeological Scheme of Works Assessment Report: Land off Phoenix Parkway, Scunthorpe, North Lincolnshire*, Allen Archaeology Ltd, Unpublished Report

Cartographic Sources

1807 Crosby Enclosure Award map (Russell and Russell 1982)

1840 Flixborough and Normanby Tithe Award map (Lincolnshire Archives)

1886 First Edition 6" scale Ordnance Survey map (www.promap.co.uk)

1907 25" Scale Ordnance Survey map (www.promap.co.uk)

1964–66 1:2,500 Scale Ordnance Survey map (www.promap.co.uk)

Appendix 1: List of NLHER Entries within a 500m search area

| Fig 3 Site Number | HER number | Eastings | Northings | Description | Date |
|-------------------|------------|----------|-----------|--|---------------|
| 1 | 1918 | 487800 | 413300 | Several microliths, cores, flakes, scrapers and two arrowheads were recovered in 1953 | Prehistoric |
| 2 | 22844 | 488069 | 413199 | A single flint bladelike flake was found in 2014. | Prehistoric |
| 3 | 4651 | 488700 | 413400 | Microliths, retouched flakes, scrapers, leaf shaped arrowhead, core fragments and a polished flint axe were recovered. | Prehistoric |
| 4 | 1939 | 488200 | 412730 | Various flints, flakes, scrapers, leaf shaped arrowhead, flint knife, and a stone axe were found in 1949 | Prehistoric |
| 5 | 1940 | 488450 | 412750 | Microliths, Scrapers, leaf arrowheads were found in 1935 | Prehistoric |
| 6 | 22399 | 488853 | 412801 | Group VI Neolithic polished stone axe was donated to North Lincolnshire Museum in 1996 | Prehistoric |
| 7 | 1878 | 488500 | 413200 | Two large ring features seen overlying a smaller 3rd ring. Seen on aerial photographs | Prehistoric |
| 8 | 21264 | 488677 | 412743 | Site of a possible Bronze Age cremation cemetery possibly surrounded by a posted fence | Prehistoric |
| 9 | 21265 | 488698 | 412750 | Excavation revealed ditches and post holes of Iron Age date. The post hole scatters did not seem to form a pattern | Prehistoric |
| 10 | 1864 | 487910 | 413040 | Coin find, silver sceatta plumed bird type | Anglo-Saxon |
| 11 | 5847 | 487900 | 412450 | South Lodge, estate cottage which was a former listed building demolished by Scunthorpe Borough Council in 1983 | Post-medieval |
| 12 | 18487 | 488670 | 413420 | Old Park farm visible on the 1824 OS map which is no longer extant | Post-medieval |
| 13 | 20982 | 488757 | 413232 | Site of a possible decoy. Ovoid pond visible on 1st and 2nd edition OS maps and visible on aerial photographs | Post-medieval |
| 14 | 22821 | 488068 | 413270 | Earthworks revealed by LiDAR survey - a curved linear bank and a rectangular enclosure | Undated |

Appendix 2: Colour Plates



Plate 1: View of the site, looking southwest



Plate 2: View of the site showing the eastern field boundary, looking south



Plate 3: View of the site showing removed hedging, looking north



Plate 4: View of the site showing electricity pylons, looking northwest

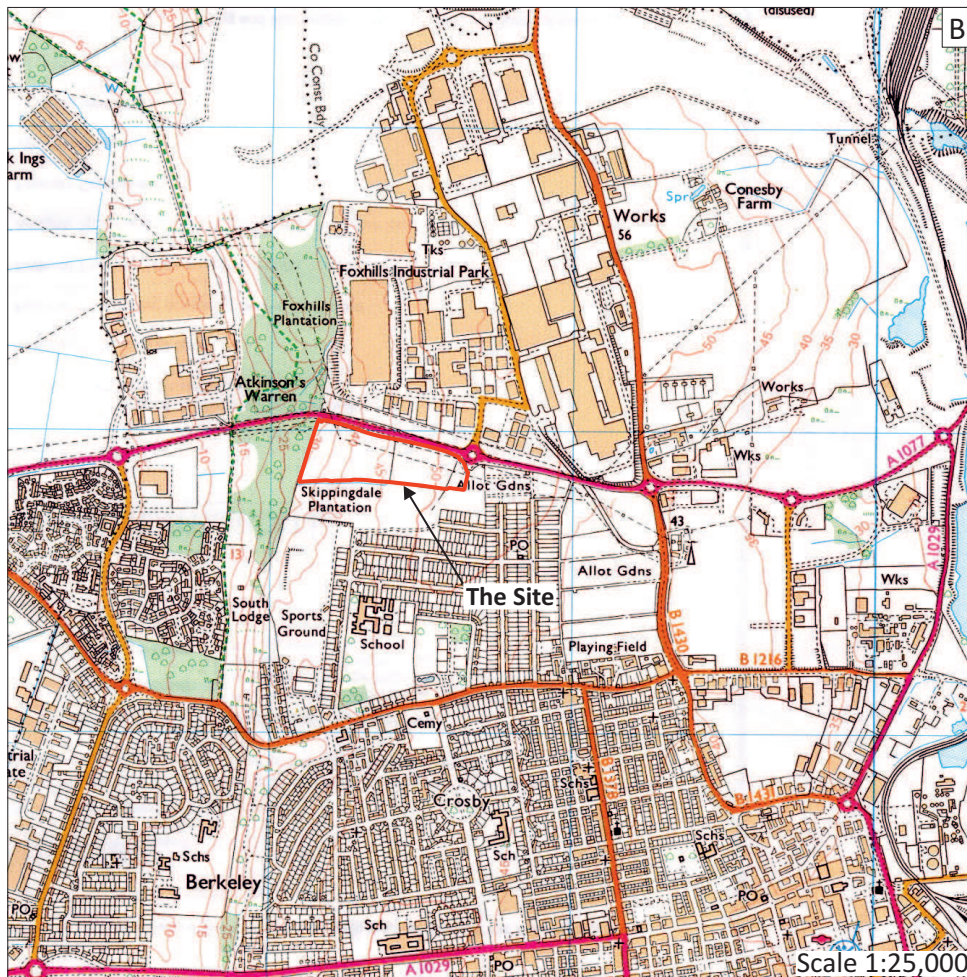
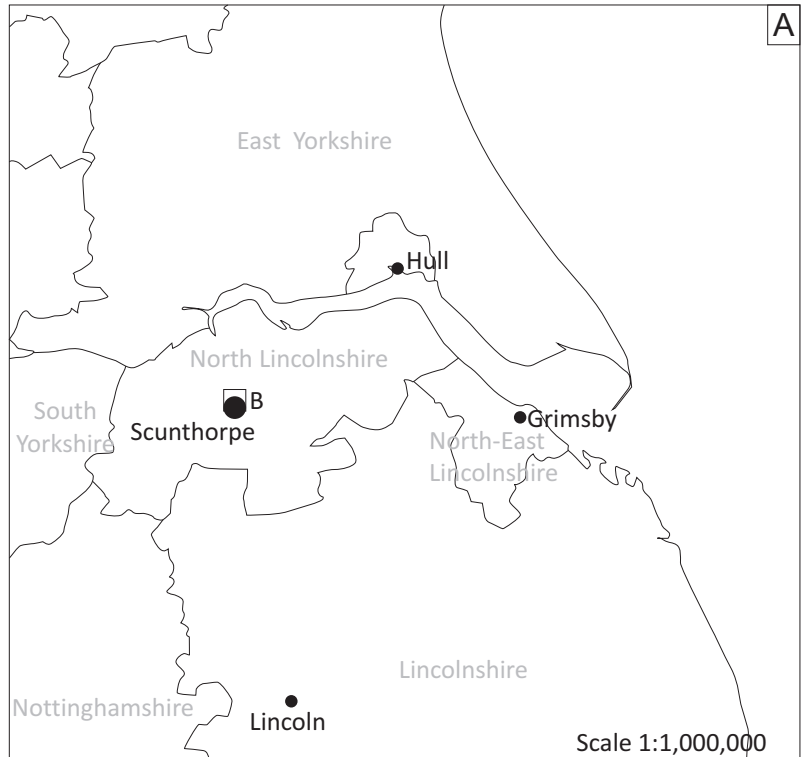
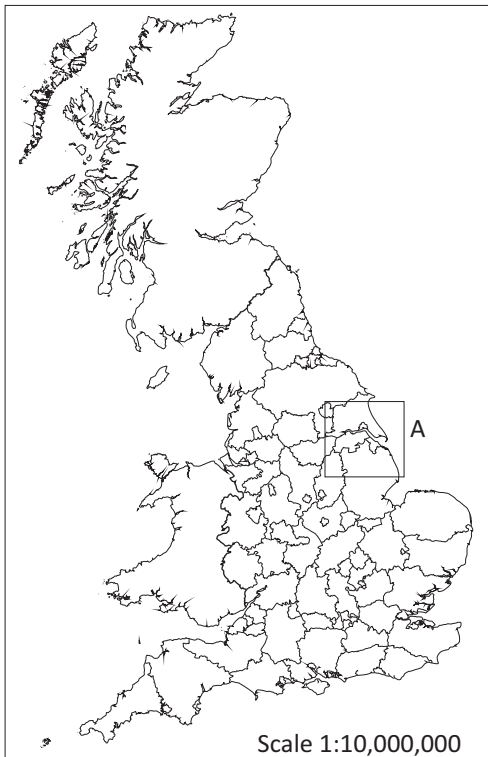


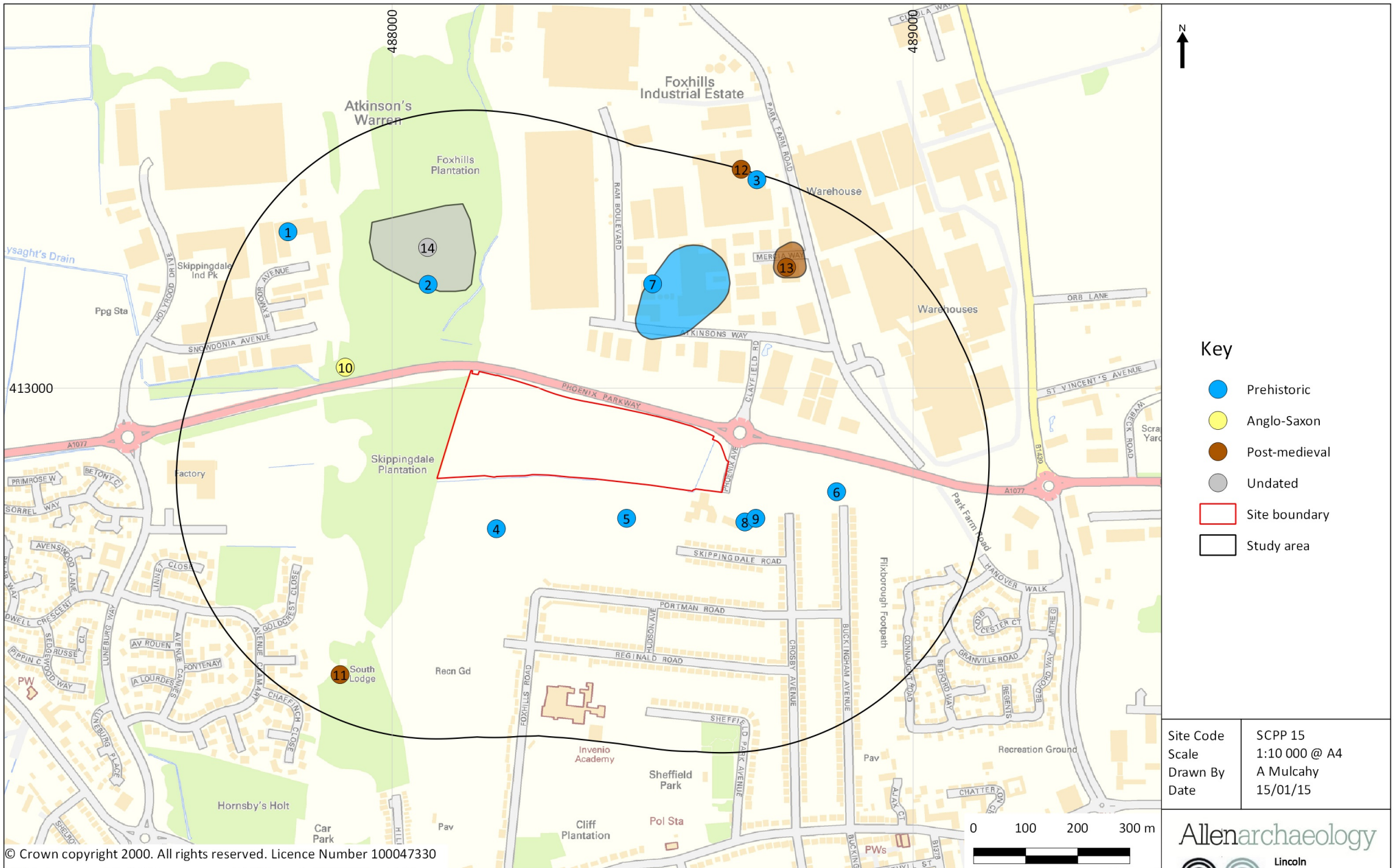
Figure 1: Site location outlined in red
 © Crown copyright 2000. All rights reserved. Licence Number 100047330

| | |
|-----------|--|
| Site Code | SCPP 15 |
| Scales | 1:10,000,000 1:1,000,000 1:25,000 @ A4 |
| Drawn by | R Evershed |
| Date | 23/01/2015 |

Allenarchaeology

Lincoln
Birmingham
Cambridge
Southampton

www.allenarchaeology.co.uk



© Crown copyright 2000. All rights reserved. Licence Number 100047330

| | |
|-----------|---------------|
| Site Code | SCPP 15 |
| Scale | 1:10 000 @ A4 |
| Drawn By | A Mulcahy |
| Date | 15/01/15 |

Allenarchaeology

Lincoln
Birmingham
Cambridge
Southampton

www.allenarchaeology.co.uk

Figure 3: Map showing location of all North Lincolnshire HER entries within a 500m search radius

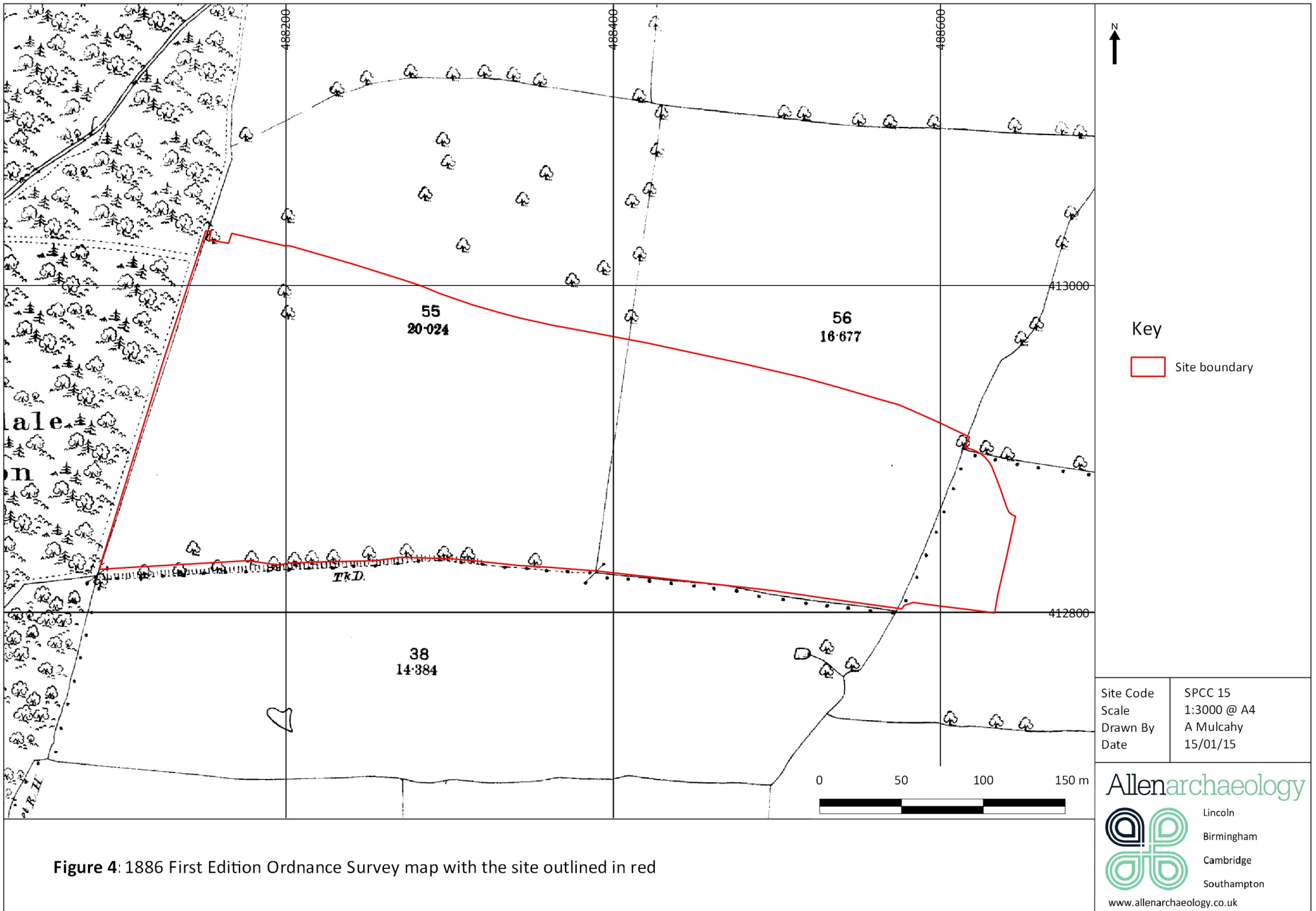
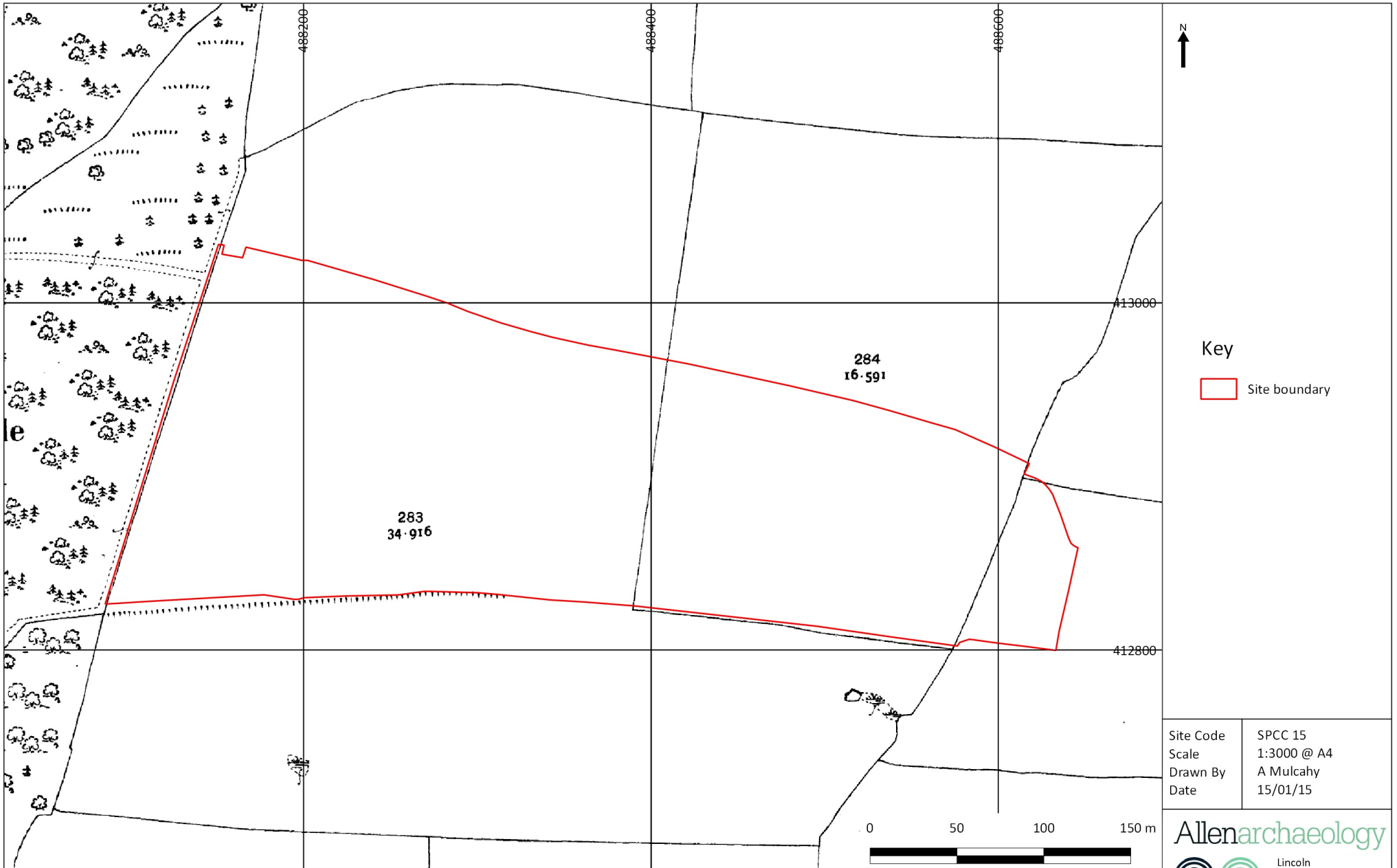


Figure 4: 1886 First Edition Ordnance Survey map with the site outlined in red



Key
 Site boundary

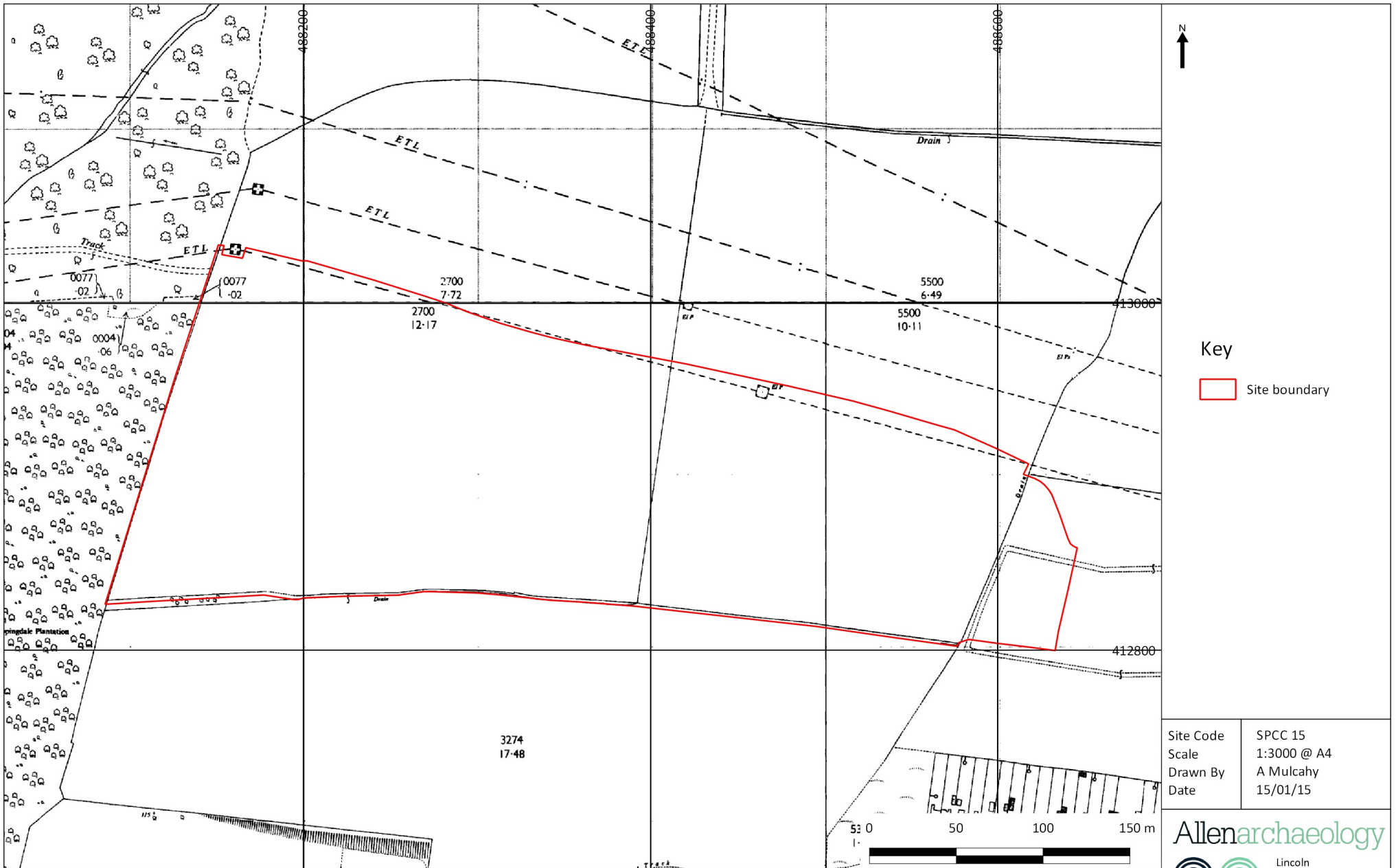
| | |
|-----------|-------------|
| Site Code | SPCC 15 |
| Scale | 1:3000 @ A4 |
| Drawn By | A Mulcahy |
| Date | 15/01/15 |

Allenarchaeology

Lincoln
 Birmingham
 Cambridge
 Southampton

www.allenarchaeology.co.uk

Figure 5: 1907 Second Edition Ordnance Survey map with the site outlined in red



Key
 Site boundary

| | |
|-----------|-------------|
| Site Code | SPCC 15 |
| Scale | 1:3000 @ A4 |
| Drawn By | A Mulcahy |
| Date | 15/01/15 |

Allenarchaeology

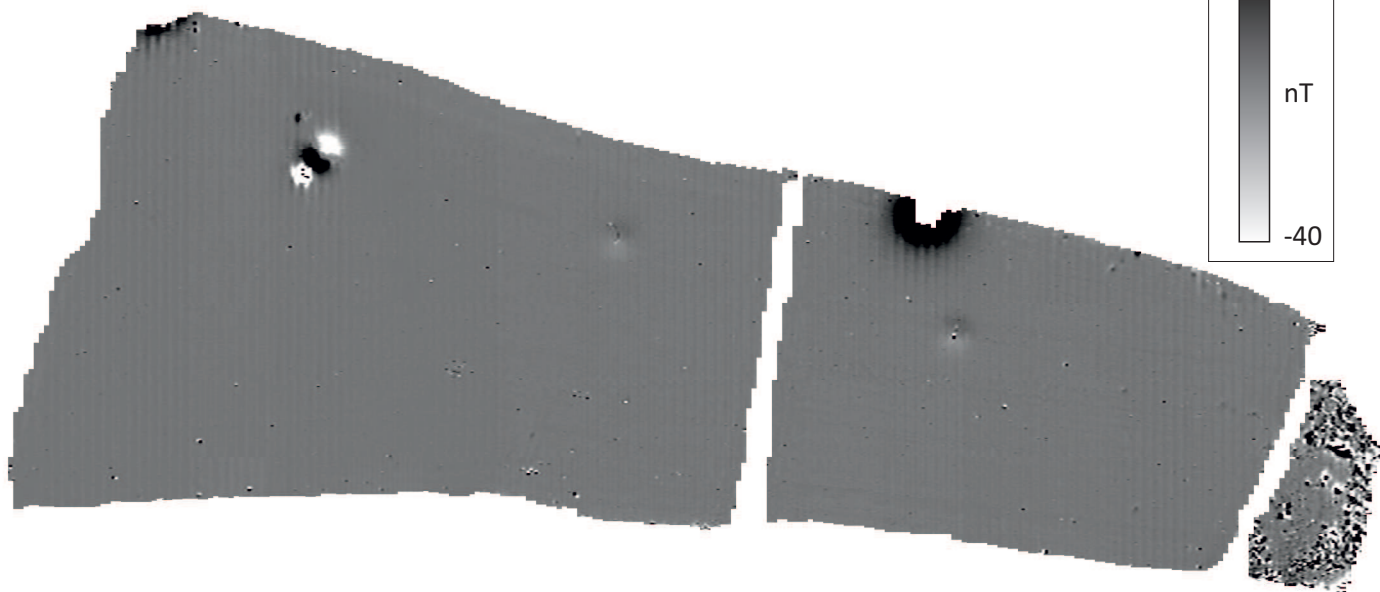
Lincoln
 Birmingham
 Cambridge
 Southampton

www.allenarchaeology.co.uk

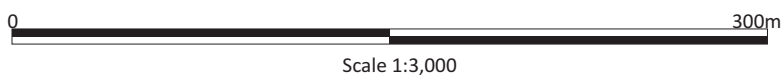
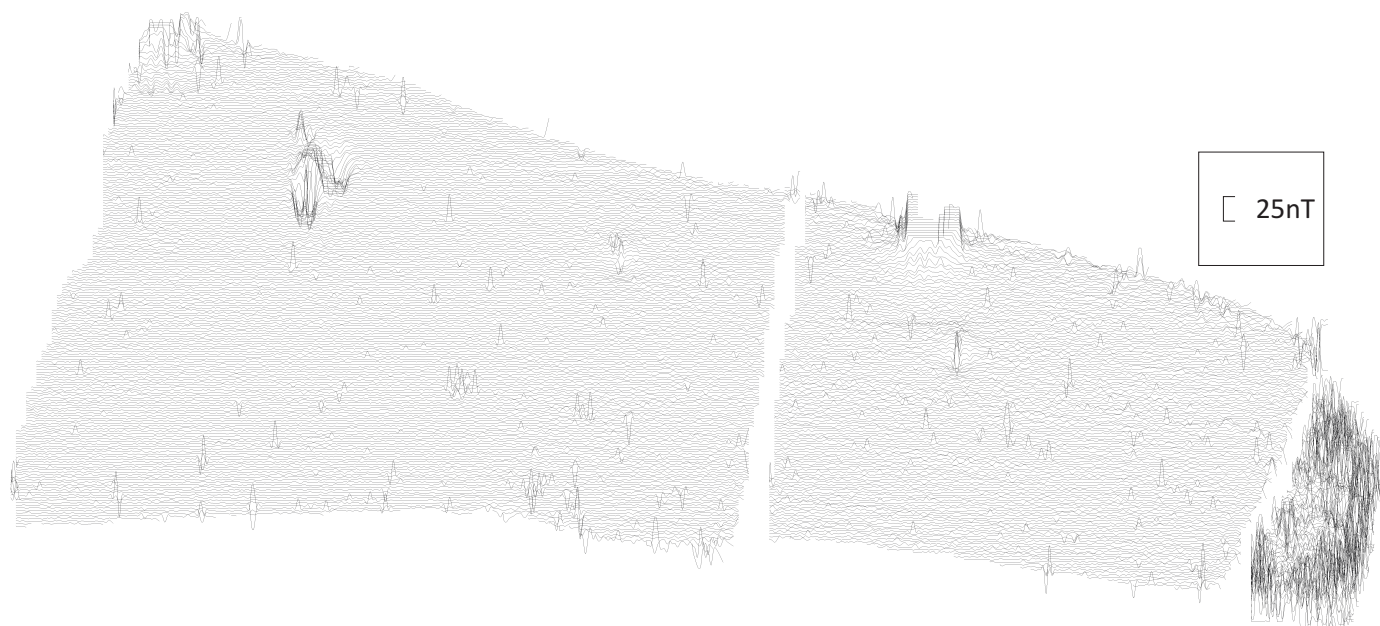
Figure 6: 1964-1966 Ordnance Survey map with the site outlined in red



Raw data (clipped to +/- 40 nT)



Trace Plot (ZMT and clipped to +/- 25nT)



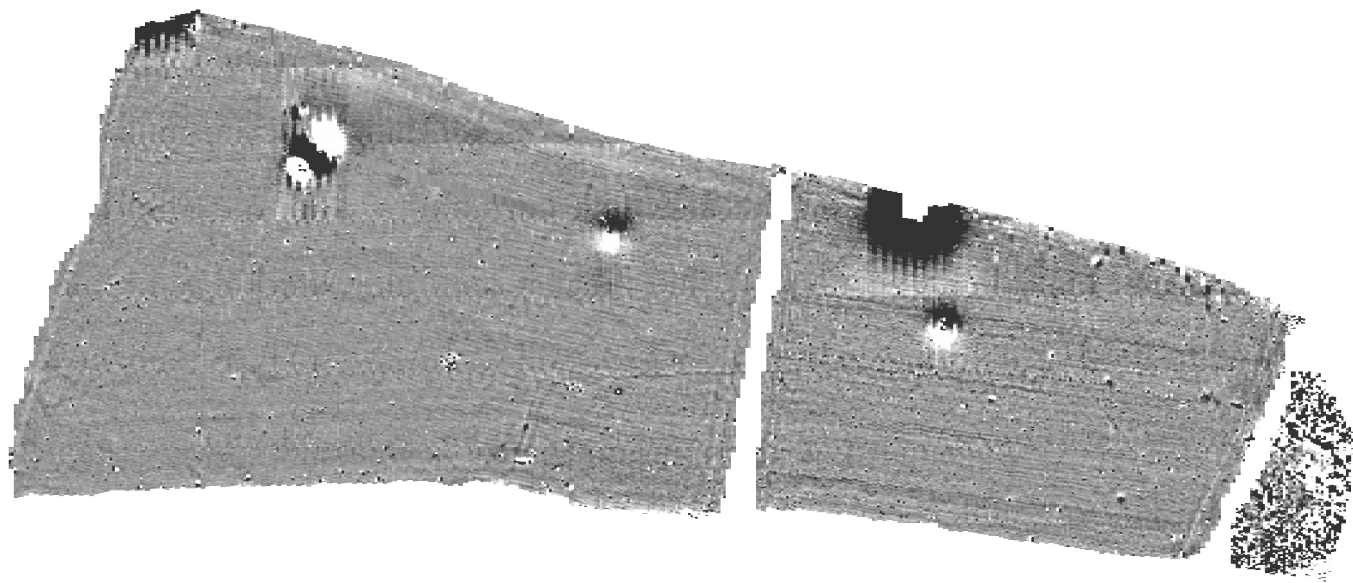
| | |
|-----------|-----------------|
| Site Code | SCPP 15 |
| Scale | 1:3,000 @ A4 |
| Drawn by | Robert Evershed |
| Date | 12/01/15 |

Allenarchaeology

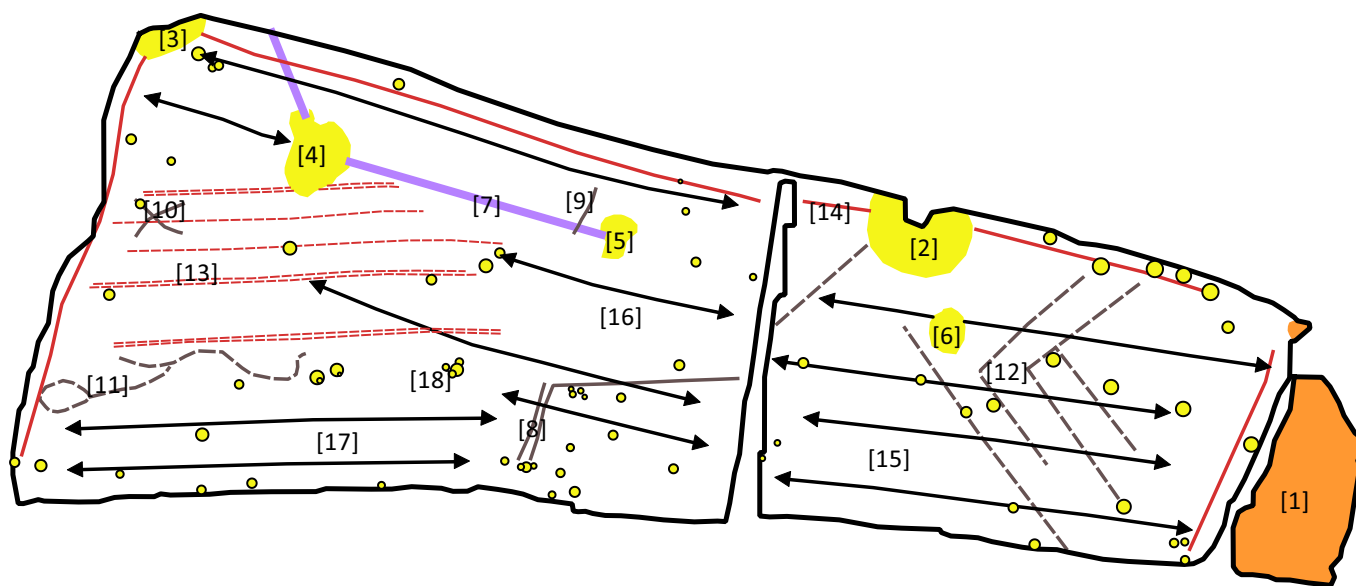
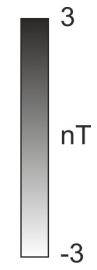


www.allenarchaeology.co.uk

Figure 7: Greyscale raw data and processed trace plot



Key



Key

- Site Boundary
- Positive anomaly
- Dipolar linear anomaly
- Negative anomaly
- ↔ Modern Cultivation Trend
- Dipolar anomaly
- Magnetic noise

| | |
|-----------|-----------------|
| Site Code | SCPP 15 |
| Scale | 1:3,000 @A3 |
| Drawn by | Robert Evershed |
| Date | 14/01/15 |

0 200 m



Figure 8: Processed greyscale plot and interpretation



Figure 9: Location of processed greyscale

| | |
|-----------|-----------------|
| Site Code | SCPP 15 |
| Scale | 1:2,000 @A3 |
| Drawn by | Robert Evershed |
| Date | 14/01/15 |

Allenarchaeology

- Lincoln
- Birmingham
- Cambridge
- Southampton

www.allenarchaeology.co.uk



- Key**
- Site boundary
 - Positive anomaly
 - Negative anomaly
 - Dipolar anomaly
 - Modern Cultivation Trend
 - Dipolar anomaly
 - Magnetic noise

| | |
|-----------|-----------------|
| Site Code | SCPP 15 |
| Scale | 1:2,000 @A3 |
| Drawn by | Robert Evershed |
| Date | 14/01/15 |

Allenarchaeology

Lincoln
Birmingham
Cambridge
Southampton

www.allenarchaeology.co.uk

Figure 10: Location of geophysical interpretation



Allen Archaeology Limited
Website: www.allenarchaeology.co.uk

Company Registered in England and Wales No: 6935529

Lincoln
Unit 1C
Branston Business Park
Lincoln Road
Branston
Lincolnshire LN4 1NT

Birmingham
Arion Business Centre
Harriet House
118 High Street
Birmingham
B23 6BG

Cambridge
Wellington House
East Road
Cambridge
CB1 1BH

Southampton
International House
Southampton International Business Park
George Curl Way
Southampton
SO18 2RZ

Tel/Fax: +44 (0) 1522 794400
Email: info@allenarchaeology.co.uk

Tel/Fax: +44 (0) 800 610 2545
Email: birmingham@allenarchaeology.co.uk

Tel/Fax: +44 (0) 800 610 2550
Email: cambridge@allenarchaeology.co.uk

Tel: +44 (0) 800 610 2555
Email: southampton@allenarchaeology.co.uk