GEOPHYSICAL SURVEY OF LAND AT WOOD FARM, MARSHAM, NORFOLK

GEOPHYSICAL SURVEY REPORT

CP. NO: 851/09

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26/02/2009

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Quality Assurance

This report covers works as outlined in the brief for the above-named project as issued by the relevant authority, and as outlined in the agreed programme of works. Any deviation to the programme of works has been agreed by all parties. The works have been carried out according to the guidelines set out in the Institute for Archaeologists (IfA) Standards, Policy Statements and Codes of Conduct. The report has been prepared in keeping with the guidance set out by North Pennines Archaeology Ltd on the preparation of reports.

REVISION SCHEDULE			
	01	**02**	**03**
PREPARED BY: **POSITION:** **DATE:**	Martin Railton Project Manager 19/02/09		
EDITED BY: **POSITION:** **DATE:**	Matthew Town Project Manager 19/02/09		
APPROVED BY: **POSITION:** **DATE:**			

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SUMMARY

In February 2009, North Pennines Archaeology Ltd, comissioned by NAU Archaeology, undertook a geophysical survey of land at Wood Farm, Marsham, Norfolk (centred on Ordnance Survey grid reference TG 1844 2318), prior to the construction of a proposed new composting facility by Norfolk Environmental Waste Services (NEWS) Ltd. It was believed that archaeological remains could survive within the site, including the possible remains of a Roman road.

The objective of the geophysical surveys was to determine the presence/absence, nature and extent of any archaeological anomalies within the study area, and the presence/absence of any known modern features within the survey area, which may affect the results. The results of the geophysical survey were to be used to inform the locations of trenches in the subsequent trial trench evaluation of the site.

A geomagnetic survey covering c.0.5ha of land was conducted within a single arable field to the north of a former piggery at Wood Farm, covering the proposed location of the new composting facility, and an area to the north. Strong magnetic anomalies were detected on the south side of the survey area, due to the present of an iron shelter, farm trailer and machinery, which could potentially have masked weaker magnetic anomalies in this area.

The geomagnetic survey detected a number of potential archaeological features, including possible soil-filled ditches on the north side of the survey area, which could potentially relate to a larger field system or enclosures, given the evidence of crop marks seen on air photographs of the surrounding area. A number of possible soil-filled pits were also detected.

Although the projected route of a Roman road is further north than the present survey area, it is nevertheless possible that one or more of the linear features are roadside ditches. However, it is worth noting that these features are further north than the proposed development area, and so may not be impacted by the development.

It is recommended, that a sample of the features detected, including the linear features on the north side of the survey area, are evaluated further given the strong possibility of prehistoric or Roman features in the vicinity.

ACKNOWLEDGEMENTS

North Pennines Archaeology Ltd would like to thank David Whitmore, Archaeology Manager of NAU Archaeology, for commissioning the project, and Richard Varver of Norfolk Environmental Waste Services Ltd for all assistance throughout the project.

The geophysical surveys were undertaken by Angus Clark and Kevin Mounsey. The report was written and illustrated by Martin Railton. The project was managed by Martin Railton, Project Manager of North Pennines Archaeology Ltd.

1 INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT (FIGURE 1)

1.1.1 In February 2009 North Pennines Archaeology Ltd undertook a geophysical survey of land at Wood Farm, Marsham, Norfolk, at the request of NAU Archaeology. This followed a proposal by Norfolk Environmental Waste Services (NEWS) Ltd for a new composting facility at the site of a former piggery. The archaeological work was undertaken in accordance with a Norfolk Landscape Archaeology (NLA) brief (Hamilton 2007), and a NAU Archaeology project design (NAU Archaeology 2009), which was submitted to, and approved by NLA. This was in line with government advice as set out in the DoE Planning Policy Guidance on Archaeology and Planning (PPG 16).

1.1.2 The study area comprised the southern part of a single field of arable land to the north of the former piggery, measuring c.0.3ha in total. It was bounded by farm buildings and fences to the south, with open land to the north, east and west (Figure 1). The site is centred on Ordnance Survey grid reference TG 1844 2318.

1.1.3 It was believed that archaeological remains could survive within the site, including the possible remains of a Roman road (NHER 2796). The Fen's Causeway Roman road runs from a junction with Ermine Street and King Street near Peterborough, across the Cambridgeshire and Nofolk fens. It runs between Upwell and Denver in Norfolk, and is believed to then divide in two, with one part heading east to the Roman town at Caistor St Edmund (*Venta Icenorum*), and the other heading northeast towards the Roman town at Brampton. The latter part was believed to run through the site of the proposed new composting facility.

1.1.4 The objective of the geophysical surveys was to determine the possible presence/absence, nature and extent of any archaeological features within the survey area, and the presence/absence of any known modern features within the survey area, which may affect the results. The results of the project were to be used to inform the need for further archaeological work, or mitigation measures, should potential significant archaeological remains be identified during the project.

1.1.5 This report outlines the results of the geophysical surveys undertaken, and includes an interpretation of the geophysical survey results, in light of the archaeological and historical background of the site, with recommendations for further work where necessary.

2 METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design (Appendix I) was submitted by NAU Archaeology in response to a request by NEWS, for a geophysical survey of the study area. Following acceptance of the project design by Norfolk Landscape Archaeology, North Pennines Archaeology Ltd was commissioned by the client to undertake the work. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute for Archaeologists (IfA 2002), and English Heritage Guidelines (English Heritage 2008).

2.2 GEOPHYSICAL SURVEYS

2.2.1 ***Technique Selection:*** geomagnetic survey was selected as the most appropriate technique, given the non-igneous environment, and the expected presence of cut archaeological features at depths of no more than 1.5m. This technique involves the use of hand-held gradiometers, which measure variations in the vertical component of the earth's magnetic field. These variations can be due to the presence of sub-surface archaeological features. Data are recorded by the instruments and downloaded into a laptop computer for initial data processing in the field using specialist software.

2.2.2 ***Field Methods:*** the geophysical study area measured c.0.3ha. A 30m grid was established, and tied-in to known Ordnance Survey points using a Trimble 3605DR Geodimeter total station with datalogger.

2.2.3 Geomagnetic measurements were determined using a Bartington Grad601-2 dual gradiometer system, with twin sensors set 1m apart. It was expected that significant archaeological features at a depth of up to 1.5m would be detected using this arrangement. The survey was undertaken using a zig-zag traverse scheme, with data being logged in 30m grid units. A sample interval of 0.25m was used, with a traverse interval of 1m, providing 3600 sample measurements per grid unit. The data were downloaded on site into a laptop computer for processing and storage.

2.2.4 ***Data Processing:*** geophysical survey data were processed using ArchaeoSurveyor II software, which was used to produce 'grey-scale' images of the raw data. Positive magnetic anomalies are displayed as dark grey, and negative magnetic anomalies are displayed as light grey. A palette bar shows the relationship between the grey shades and geomagnetic values in nT.

2.2.5 Raw data were processed in order to further define and highlight the potential archaeological features detected. The following basic data processing functions were used:

Despike: to locate and suppress random iron spikes in the gradiometer data.

Clip: to clip data to specified maximum and minimum values, in order to limit large noise spikes in the geophysical data.

Destagger: to reduce the effect of staggered gradiometer data, sometimes caused by difficult working conditions, topography, or operator error.

Interpolate: to match the traverse and sample intervals in the gradiometer data.

2.2.6 ***Interpretation:*** Two types of geophysical anomaly were detected in the gradiometer data:

positive magnetic: regions of anomalously high or positive magnetic data, which may be associated with the presence of high magnetic susceptibility soil-filled features, such as pits or ditches.

dipolar magnetic: regions of paired positive and negative magnetic anomalies, which typically reflect ferrous or fired materials, including fired/ferrous debris in the topsoil, modern services, metallic structures, or fired structures, such as kilns or hearths.

2.2.7 ***Presentation:*** the grey-scale image was combined with site survey data and Ordnance Survey data to produce the geophysical survey plan. A colour-coded geophysical interpretation diagram is provided, showing the locations and extent of positive, negative, and dipolar geomagnetic anomalies.

2.2.8 An archaeological interpretation diagram is provided, which is based on the interpretation of the geophysical survey results, in light of the archaeological and historical background of the site.

2.3 ARCHIVE

2.3.1 The data archive for the geophysical survey has been created in accordance with the recommendations of the Archaeology Data Service (ADS 2001). This archive is currently held at the company offices at Nenthead, Cumbria.

2.3.2 One copy of the final report will be deposited with the Norfolk Historic Environment Record, where viewing will be available on request.

2.3.3 The project is also registered with the **O**nline **A**cces**S** to the **I**ndex of archaeological investigation**S** (**OASIS**). The OASIS reference for this project is **northpen3-55427**.

3 BACKGROUND

3.1 LOCATION AND GEOLOGICAL CONTEXT

3.1.1 Marsham lies within the rural landscape of Central Norfolk, situated approximately 20km north of Norwich. The area comprises undulating farmland, used for a mixture of arable cultivation and pasture, with some small areas of woodland (Countryside Commission 1999, 39). The study area is situated c.1km southwest of Marsham, at an elevation of c.35m AOD.

3.1.2 The proposed development area lies within a single field, which is currently used as arable land, situated immediately to the north of a former piggery.

3.1.3 The solid geology of the area comprises sedimentary rocks including Norwich Crag, Red Crag and Chillesford Clay, overlain by glacial sand and gravel (BGS 2001). The soils in the vicinity are free-draining, slightly acidic coarse loamy soils, known as Wick 2 soils (SSEW 1980).

3.2 HISTORICAL CONTEXT

3.2.1 *Introduction:* this historical background is compiled mostly from secondary sources, and is intended only as a brief summary of historical developments specific to the study area. References to the Norfolk Historic Environment Record (NHER) are given where known.

3.2.2 *Prehistoric:* there is good evidence that the area was occupied during the Bronze Age period. Several possible Bronze Age round barrows have been identified close to the study area, including two in Burnt Plantation to the west of the site (NHER 7490 and NHER 7491), one near Wood Farm situated c.200m to the south of the study area (NHER5700), and further possible barrows in a small wood c.500m to the south of Wood Farm (NHER 7516).

3.2.3 Possible prehistoric cropmarks, including a ring-ditches, enclosures and linear features, have also been identified c.1km to the south of the study area (NHER 36071).

3.2.4 *Roman:* The Fen Causeway Roman road runs from a junction with Ermine Street and King Street near Peterborough, across the Cambridgeshire and Nofolk fens. In places this feature can be identified as a cropmark on air photographs, and in others it survives as a landscape feature. It runs between Upwell and Denver in Norfolk, and is believed to then divide in two, with one part heading east to the Roman town at Caistor St Edmund (*Venta Icenorum*), and the other heading northeast towards the Roman town at Brampton. The latter part is believed to run through the site of the proposed new composting facility (NHER 2796). The projected course of this road is immediately to the north of the present study area (Figure 1).

Elsewhere, sections of the Roman road have been excavated, revealing a cambered metalled surface and side ditches.

3.2.5 *Medieval:* Marsham is recorded in the Domesday Book as 'Marsam', meaning 'homestead or village by the marsh' in Old English (Mills 1998). All Saints' Church in Marsham is dated to the 13th century and later periods (NHER 7524).

3.2.6 Medieval pottery and other finds have been recovered from the surrounding area during fieldwalking, including sherds of medieval pottery close to Shepherd's Lane, to the northeast of the study area (NHER 7494).

3.2.7 *Post-medieval and Modern:* Historic Ordnance Survey maps indicate that the study area has remained agricultural land into the modern period.

3.3 PREVIOUS ARCHAEOLOGICAL WORK

3.3.1 In 1954 an archaeological excavation revealed the site of Roman pottery kilns, situated approximately 450m to the southeast of the present study area (NHER 7498). In total 4 kilns were excavated, which were believed to be used to fire coarse pottery and *mortaria* (www.heritage.norfolk.gov.uk).

3.3.2 No other known archaeological investigations have taken place within the immediate vicinity of the study area.

4 THE GEOPHYSICAL SURVEY

4.1 INTRODUCTION (FIGURE 1)

4.1.1 The geophysical survey was undertaken on 17th February 2009. Geomagnetic survey was undertaken over c.0.5ha of land to cover the extent of the proposed new composting facility (Figure 1). This area was bounded by farm buildings, including a redundant iron shelter to the south (Plate 1).

4.1.2 A compost heap was present on the south side of the survey area, which could not be surveyed. Farm machinery was also present at the southwest corner of the study area, and so was avoided during the survey (Plate 2).

Plate 1: The geophysical survey area, looking west towards Wood Farm

Plate 2: The south side of the geophysical survey area, looking southwest

4.2 GEOMAGNETIC SURVEY (FIGURES 2-4)

4.2.1 A farm trailer, machinery, and iron shelter on the southwest side of the survey area produced very strong geomagnetic anomalies in the survey data (Figure 2). These anomalies could potentially have masked weaker geomagnetic anomalies in this area.

4.2.2 Small discrete dipolar magnetic anomalies were detected across the whole of the survey area. These are almost certainly caused by fired/ferrous litter in the topsoil, which is typical for modern agricultural land. These anomalies are indicated on the geophysical interpretation drawing (Figure 3), but not referred to again in the subsequent interpretation (Figure 4).

4.2.3 Three weak linear positive magnetic anomalies were detected on the north side of the survey area, aligned approximately east to west and northeast to southwest. On the west side of the survey area two of these features run parallel to each other, being spaced c.6m apart. It is possible that these anomalies mark the locations of soil-filled ditches.

4.2.4 A number of shorter weak linear positive magnetic anomalies have also been detected to the south, but the nature of these anomalies is less certain. These may be agricultural features.

4.2.5 Several discrete positive magnetic anomalies have been detected, which are interpreted as possible soil-filled features.

4.4 DISCUSSION

4.4.1 Interpretation of the geophysical anomalies detected during the survey is difficult given the small size of the survey area. However, it is possible that the linear features detected on the north side of the survey area are archaeological in nature, and relate to a wider system of fields or enclosures. This would not be unexpected given the widespread evidence for prehistoric and later features on air photographs of the area.

4.4.2 It is possible that the two parallel linear features form part of a track way, as similar features are also present on air photographs of the area. The projected course of the Roman road is further north than the present survey area. Nevertheless the possibility exists that these features are related to the Roman road, and this evidence needs to be evaluated further.

4.4.3 The nature of the smaller features detected is less certain, and some may be agricultural in nature. It is possible that some of the discrete positive magnetic anomalies are soil-filled pits.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

5.1.1 Geomagnetic survey covering *c*.0.5ha of land has been conducted within a single arable field to the north of a former piggery at Wood Farm, Marsham, covering the proposed location of a new compositing facility, and an area to the north. Strong magnetic anomalies were detected on the south side of the survey area, due to the present of an iron shelter, farm trailed and machinery.

5.1.2 The geomagnetic survey detected a number of potential archaeological features, including possible soil-filled ditches on the north side of the survey area, which could potentially relate to a larger field system or enclosures, given the evidence of crop marks on air photographs of the surrounding area. A number of possible soil-filled pits were also detected.

5.1.3 Although the projected route of a Roman road is further north than the present survey area, it is nevertheless possible that one or more of the linear features are roadside ditches. However, it is worth noting that these features are further north than the proposed development area, and so may not be impacted by the development.

5.2 RECOMMENDATIONS

5.2.1 It is recommended that the results of the geophysical surveys are tested through the excavation of a series of trial trenches at the site. In particular it is recommended, that the linear features on the north side of the survey area are evaluated further, given the possibility of prehistoric or Roman features in the vicinity.

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APPENDIX 1: PROJECT DESIGN

NAU ARCHAEOLOGY

Wood Farm
Marsham
Norfolk

PROJECT DESIGN

FOR

GEOPHYSICAL SURVEY

Prepared for

Norfolk Environmental Waste Services Ltd (NEWS Ltd)
51 Norwich Road
Horsham St. Faith
Norwich
Norfolk
NR10 3HH

by

NAU Archaeology
Scandic House
85 Mountergate
Norwich
NR1 1PY

January 2009

Reference No: BAU2057

1. Introduction

1.1 A programme of archaeological work resulting from proposals for the construction of a new composting plant at Wood Farm, Marsham, Norfolk (TG 1844 2318), has been requested by Norfolk Landscape Archaeology. This work involves archaeological evaluation of the site through geophysical survey and the subsequent production of a report detailing the results. The relevant Norfolk Landscape Archaeology document stipulating that these works take place is the Brief for Archaeological Evaluation by Geophysical Survey (Ken Hamilton, 23 October 2007).

1.2 The results of the survey will allow Norfolk Landscape Archaeology to make an informed decision regarding further archaeological mitigation that may be required once the results of the geophysical survey are known.

1.3 This Project Design has been prepared in response to an invitation from Richard Varvel of Norfolk Environmental Waste Services Ltd (NEWS Ltd) to provide a Project Design and costings for the archaeological works. It details how NAU Archaeology proposes to implement the requirements of the archaeological brief.

2. Background

2.1 The Fen Causeway is a Roman road that runs from a junction with Ermine Street and King Street near Peterborough across the Cambridgeshire and Norfolk fens. In Norfolk, the Fen Causeway runs between Upwell and Denver and then is thought to divide in two with one part heading east to the Roman town at Caistor St Edmund (*Venta Icenorum*) and the other heading north-east towards the Roman town at Brampton. The part of the road running to Brampton is known to run through the site of the new composting facility.

3. Aims

3.1 The archaeological evaluation is required to recover, by geophysical survey, information relating to the extent, date, phasing, character, function, status and significance of the site. A determination of the state of preservation of any features, deposits and structures is also required.

3.2 Period resource assessments set out in the document Research and Archaeology: A Framework for the Eastern Counties (Glazebrook 1997; Brown and Glazebrook 2000) pose specific research questions for periods ranging from the palaeolithic to the modern period. Existing information indicates that the proposed site has the potential to contain archaeological remains of Roman date. The aims of the archaeological work may therefore be summarised as follows:

i. To establish the presence or absence of archaeological remains within the proposed area.

ii. To determine the extent, condition, nature, quality and date of any archaeological remains occurring within the site and the possible impacts of the proposed development on them.

iii. To disseminate the archaeological data recovered by the geophysical survey in the form of a formal report which will provide the basis for decisions regarding further archaeological intervention and mitigation proposals.

4. Method Statement

4.1 Introduction

4.1.1 A three-stage evaluation strategy will be undertaken to assess the archaeological potential of the proposed development site. The stages of this strategy may be summarised as follows.

i. Background Research: A rapid review of existing data sources concerning archaeological and historical information for the site.

ii. Geophysical Survey: Magnetometer survey will be undertaken in order to detect potentially archaeologically significant sub-surface features. The results of the magnetometer survey will be used to determine the location and number of trial trenches that will be excavated.

v. Report and Archive: One report will be prepared. The report will describe the results of the geophysical survey with data presented in tabular, graphic and appendix form. The results of the background research will also be incorporated into the report. Copies of the report will be submitted to the client and to Norfolk Landscape Archaeology.

4.1.2 The procedures and methodology for each of the stages outlined above are described in detail below.

4.2 **Background Research**

4.2.1 A rapid review of readily available source materials will be undertaken to place the results of the work within its local archaeological and historical contexts. Guidelines set out in the documents *Standard and Guidance for Archaeological Desk-Based Assessments* (Institute of Field Archaeologists 1994, revised 2001) and *Standards for Field Archaeology in the East of England* (Gurney 2003) will be followed.

4.2.2 Data sources for the rapid review will be those held in the Norfolk Historic Environment Record (NHER) and published and unpublished archaeological reports. A search will be made of the NHER for information on known archaeological sites in the area, in order to place the site within its local archaeological context.

4.2.4 Relevant oblique and vertical aerial photographs held by the Norfolk Air Photography Library will be assessed to identify archaeological sites and features within the proposed development area and its immediate surroundings. The procedures set out in the Council for British Archaeology Aerial Archaeology Committee's Aerial Guidance Note will be followed. If appropriate a plot of any sites and features occurring within the area of the proposed development site will be prepared at a scale of 1:2,500.

4.2.5 A separate background research report will not be produced. The results will be presented as part of the report on the results of the geophysical survey.

4.3 **Geophysical Survey**

4.3.1 The survey methodology, report and any recommendations will comply with guidelines outlined by *English Heritage* (*Geophysical Survey in Archaeological Field Evaluation*, Research and Professional Services Guidelines No 1, compiled by A David, April 2008) and by the *Institute of Field Archaeologists* (*The Use of Geophysical Techniques in Archaeological Evaluations*, IFA Paper No 6, C Gaffney, J Gater and S Ovenden, 2002).

4.3.2 Magnetometry data will be collected with hand-held gradiometers using 1m traverse intervals and 0.25m sample intervals across the area of the site designated for geophysical survey in the Brief (approximately 3,150m²)

4.4 **Report and Archive**

4.4.1 The results of the geophysical survey will be presented in the form of a report that will detail the methodologies used and discuss the results. The recovered data will be presented in graphic form. The results of the background research will be presented as part of the report.

4.4.2 A list of archive components generated by the work will also be included in the report. Copyright of the report will be retained by NAU Archaeology.

4.4.3 Multiple copies of the report will be produced as appropriate and presented to NEWS Ltd. and three copies will be sent to Norfolk Landscape Archaeology. One copy of the report will also be sent to the English Heritage Regional Advisor for Archaeological Science. An HER form will accompany the Geophysical Survey Report and will include a reference to the archive and the intended place of archive deposition. The report will be submitted to Norfolk Landscape Archaeology within eight weeks of the completion of the work. The OASIS online record will be completed when the report is submitted to Norfolk Landscape Archaeology.

4.4.4 NAU Archaeology supports the OASIS project. An online record will be initiated immediately prior to the start of fieldwork and completed when the final report is submitted to Norfolk Landscape Archaeology. This will include a pdf version of the final report.

4.4.5 A single integrated archive for all elements of the work will be prepared according to the recommendations set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC, Conservation Guidelines 3, 1984) and *Guidelines for the preparation of excavation archives for long-term storage* (Walker 1990), and in accordance with the Norfolk Museums and Archaeology Service's own requirements for archive preparation, storage and conservation.

4.4.5 The archive will be fully indexed and cross-referenced and prepared in such a form that it can be microfilmed on behalf of the National Monuments Record (NMR). It will also be integrated with the Norfolk Museums and Archaeology Service's Project accession number and the NHER numbering system. The silver master will be deposited with NMR and a diazo copy with the NHER. Deposition of the archive (by prior agreement with the landowners) will take place within six months of the completion of the final report and confirmed in writing to the Norfolk Museums and Archaeology Service. A full listing of archive contents and finds boxes will accompany the deposition of the archive.

4.4.6 All archaeological materials, excepting those covered by the *Treasure Act, 1996*, will remain the property of the landowners. NAU Archaeology will seek to reach a formal agreement with the landowners for the donation of the finds to the Norfolk Museums Service.

5 Timetable and Resources

5.1 The different stages of archaeological work have different time and staff requirements. The timetable for fieldwork assumes that are no major delays to the work programme caused by factors outside of NAU Archaeology's reasonable control.

5.2 It is anticipated that the geophysical survey will take one day to complete and a report produced 10-15 days after completion of the fieldwork.

6. Project staff

6.1 The project will be co-ordinated on a day-to-day basis by the Project Officer who will be dedicated to the project throughout its duration. The Project Officer will act under the direction of the Project Manager. The Project Manager will assume responsibility for all aspects of the project including finance, logistics, standards, health and safety, and liaison with the client and Local Authority Archaeological Advisors. The geophysical survey will be carried out by North Pennines Archaeology Ltd.

6.2 NAU Archaeology staff associated with the project is as follows:

Senior Management	
Unit Manager	Jayne Bown *BA, MIFA*
Archaeology Manager	David Whitmore *BA, MIFA*
Project Manager	Nigel Page, *BA, AIFA*

Field Staff	
Project Officer	Steve Hickling *BA, AIFA*

6.3 NAU Archaeology reserves the right, because of its developing work programme, to change its nominated personnel at any time. This will be in consultation with the client and Norfolk Landscape Archaeology.

6.5.1 *NAU Archaeology specialist staff*

Specialist*	***Research Field***
Andy Barnett	Numismatic Items
Sarah Bates *BA, MIFA*	Worked Flint
Sarah Percival *BA, MIFA*	Prehistoric and Saxon Pottery
Francesca Boghi *Diploma Universitario in lettre moderne MSc*	Human Skeletal Remains
Julia Huddle *BA, MIFA*	Copper Alloy, Iron, Silver, Antler/Bone artefacts
Fran Green *BSc, PhD*	General Environmental
Julie Curl *AIFA*	Faunal Remains
Kenneth Penn *BEd, FSA, MIFA*	Secondary Source Documentary Material, Archiving

6.5.2 *Nominated external specialists*

External Specialist	***Research Field***
North Pennines Archaeology	Geophysical Survey

7. Quality Standards

7.1 NAU Archaeology is an Institute of Field Archaeologists Registered Archaeological Organisation and fully endorses the *Code of Practice* and the *Code of Practice for the Regulation of Contractual Arrangements in Field Archaeology*. All staff employed or subcontracted by NAU Archaeology will be employed in line with The Institute of Field Archaeologists *Code of Practice*.

7.2 The guidelines set out in the document *Standards for Field Archaeology in the East of England* (Gurney 2003) will be adhered to. Provision will be made for monitoring the work by Norfolk Landscape Archaeology in accordance with the procedures outlined in the document *Management of Archaeological Projects* (English Heritage 1991). Monitoring opportunities for each phase of the project are suggested as follows:

- during geophysical survey
- upon receipt of the geophysical survey report
- upon completion of the archive

7.3 A further monitoring opportunity will be provided at the end of the work upon deposition of the archive with the Norfolk Museums and Archaeology Service.

7.4 NAU Archaeology operates a Project Management System. Most aspects of this project will be co-ordinated by a Project Officer who is responsible for the successful completion of the project. The Project Officer's performance is monitored by the Project Manager. The Unit Manager has the responsibility for all of NAU Archaeology's work and ensures the maintenance of quality standards within the organisation.

8. Health and Safety

8.1 NAU Archaeology will ensure that all work is carried out in accordance with NPS Property Consultants Limited's Health and Safety Policy, to standards defined in *the Health and Safety at Work, etc Act, 1974* and *The Management of Health and Safety Regulations, 1992*, and in accordance with the health and safety manual *Health and Safety in Field Archaeology* (SCAUM 2007).

8.2 A risk assessment will be prepared for the fieldwork. All staff will be briefed on the contents of the risk assessment and required to read it. Protective clothing and equipment will be issued and used as required.

8.3 NAU Archaeology will provide copies of NPS Property Consultants Limited's Health and Safety policy on request.

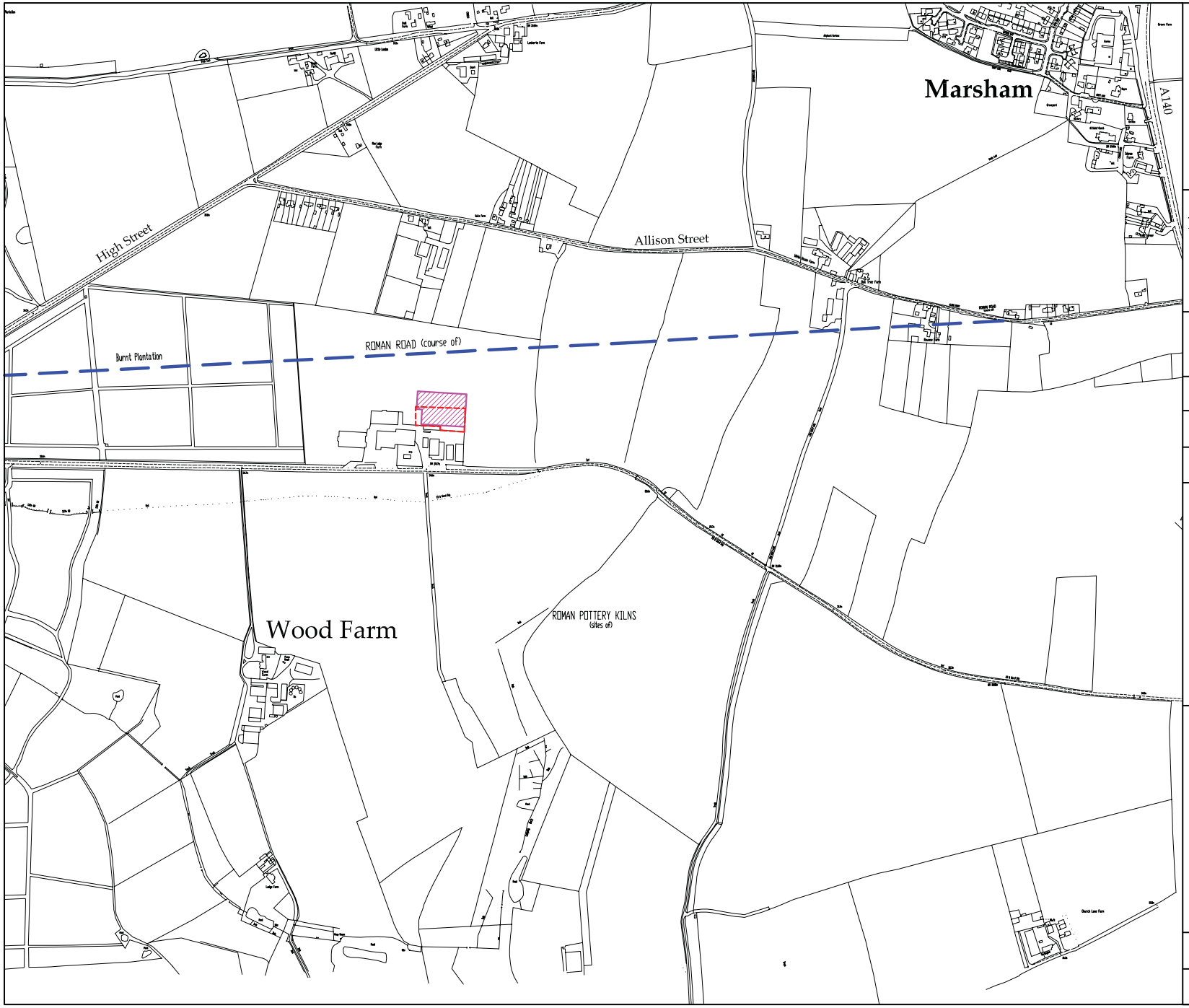
9. Insurance

9.1 NAU Archaeology's Insurance Cover is:

Employers Liability	£50,000,000
Public Liability	£50,000,000
Professional Indemnity	£10,000,000

9.2 Full details of NAU Archaeology's Insurance cover will be supplied on request.

APPENDIX 2: FIGURES



North Pennines Archaeology Ltd
2009
Land at Wood Farm,
Marsham, Norfolk

COMMISSIONED BY:
NAU Archaeology

SCALE: 1:10,000 at A4

DRAWN BY: MDR

DATE: February 2009

outline of proposed development area

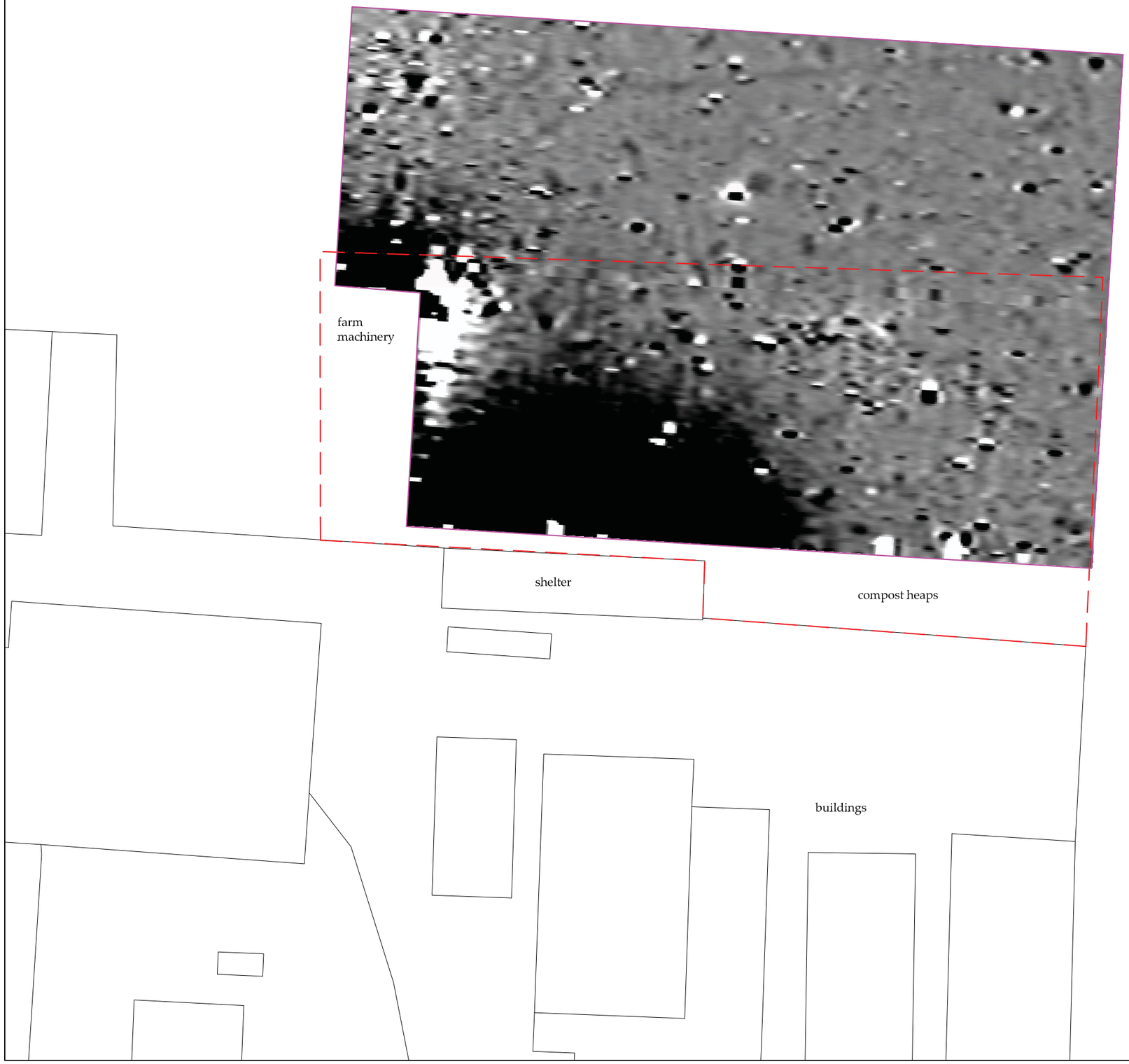
geophysical survey area

course of Roman road

REPORT No: CP 851/09

FIGURE No: 1

Figure 1 : Location of the geophysical survey area



NORTH PENNINES ARCHAEOLOGY LIMITED

North Pennines Archaeology Ltd
2009
Land at Wood Farm,
Marsham, Norfolk

COMMISSIONED BY:
NAU Archaeology

SCALE: 1:500 at A3

DRAWN BY: MDR

DATE: February 2009

outline of proposed development area

outline of geophysical survey area

5 nT
4
3
2
1
0
-1
-2
-3
-4
-5 nT

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Figure No: 2

Figure 2 : Geophysical survey

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outline of proposed development area
outline of geophysical survey area
positive magnetic anomaly
dipolar magnetic anomaly

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Figure No: 3

Figure 3 : Geophysical interpretation

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outline of proposed development area
outline of geophysical survey area
possible soil-filled features

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Figure No: 4

Figure 4 : Archaeological interpretation