We need a hetter appy of this for SMR.

John Samuels Archaeological Consultants

The Manor, South Street, Normanton-on-Trent, Newark, Nottinghamshire NG23 6RQ Telephone 01636 821727 Fax 01636 822080



FAX MESSAGE

To : Jim Bonnor

From: Nansi Rosenberg

Fax: 01522 530724

Date: 11 February 1998

Pages: 29

Time: 3:45PM

Dear Jim,

Re : Manor Pit, Baston

Following is the report on the fieldwork at the above site. I'd be grateful if you could let me know your feelings on our recommendations as soon as possible as our clients are hoping to circulate the documents prior to the planning committee meeting on March 11th (I think).

I've recommended a small evaluation to check the nature of the anomalies and the results of the geophysics but no further work on the Car Dyke as it has been evaluated fairly recently just to the north of the site.

Obviously this only a draft copy, and references will be included in the final version, but I'm in a tearing hurry this morning and am already late for a meeting.

Thankyou for your comments on the Home Farm, Baston site - I'm sorry the report was so bad and I'm making the amendments this and next week. I have a feeling I was probably in a tearing hurry when I wrote that one as well - let's hope I've got better at it.

Best wishes,

5. Cook

Nansi Rosenberg for John Samuels Archaeological Consultants

Lincolnshire County Council Archaeology Section

1 2. FEB 98

12 Friars Lane LINCOLN LN2 5AL Tol: 01522 575292 Fax: 01522 530724 We need a hetter copy of this for SMR.

John Samuels Archaeological Consultants

The Manor, South Street, Normanton on Trent, Newark, Nottinghamshire NG23 6RQ Telephone 01636 821727 Fax 01636 822080



An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

NGR TF 122 134

undertaken by

John Samuels Archaeological Consultants and Geophysical Surveys of Bradford

on behalf of

Greenwoods Solicitors 30 Priestgate Peterborough PE1 1JE

98/35 200pes EVAL PEPT Supt 98/20

Site Code: MPB97 Accession No.: 174.97 JSAC 229/98/02 February 1998

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshtre

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

NGR TF 122 134

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An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

Summary

F. B. Gibbons propose to extend their Baston quarry to the west, incorporating an area of approximately 21,87ha of land centred on NGR TF 122 134. Greenwoods Solicitors commissioned John Samuels Archaeological Consultants on Gibbons' behalf to undertake a deskbased assessment of the potential for archaeological remains to be affected by the proposed development.

This desk-based assessment identified evidence of Roman activity in the surrounding area, including the Car Dyke waterway which forms the eastern boundary of the site. No archaeological remains were identified within the proposed development site but, due to the extensive remains in the vicinity, the County Archaeological Office requested that a programme of fieldwork be undertaken to assess the potential for as yet unidentified remains.

John Samuels Archaeological Consultants were commissioned to undertake a field walking survey and Geophysical Surveys of Bradford were sub-contracted to undertake a magnetometer survey. The results of these two evaluation techniques are presented in this document.

The fieldwalking produced a general scatter of late medieval and post-medieval pottery sherds which are interpreted as the result of manuring. The geophysical survey identified a number of anomalies that may have archaeological origins. These include a linear feature and a number of possible pits and areas of possible spreads of burnt or fired material. In order to fully assess the nature, condition and extent of these features, it is recommended that a programme of trial trenching be implemented both to investigate the anomalies and in areas currently without evidence for potential archaeology, in order to verify the results of the geophysical survey.

3

An Archaeological Field Survey of land known as Manor Plt, Baston, Lincolnshire

1.0 Introduction

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- The study area is situated in the southern part of Baston parish, bordered to the south by the boundary with Langtoft parish. To the east the boundary of the proposed development site is formed by the Car Dyke, a Roman waterway, and to the north and west by field drains. The site is centred on NGR TF 1220 1330 and comprises approximately 21.87ha of land currently in use for arable farming. The underlying geology is river terrace and lacustrine gravel (Soil Surveys of England Wales, 1983). The land is level and low-lying at approximately 6m above Ordnance Datum.
- 1.2 Greenwoods Solicitors, acting on behalf of F. B. Gibbons & Sons Limited, commissioned John Samuels Archaeological Consultants to undertake a desk-based assessment to identify any archaeological remains in advance of the development of the site for gravel extraction. The desk-based assessment (JSAC 214/97/01) identified no remains within the limits of the site but identified numerous remains of probable Iron Age to Medieval date in the vicinity. These included the Car Dyke to the east, a medieval moat just beyond the southeastern corner of the site and numerous undated but probably late prehistoric-Romano-British cropmarks to the north, northeast, south and southwest.
- 1.3 Although no archaeological remains were identified within the limits of the site, the extensive remans in the vicinity were considered to increase the potential for archaeology to remains undetected in the study area. This could be because of localised geological differences or agricultural regimes not conducive to the production of cropmarks. The County Archaeology Office requested a programme of non-intrusive fieldwork to determine the likelihood of archaeological remains existing.
- 1.4 John Samuels Archaeological Consultants were further commissioned to undertake this fieldwork which comprised fieldwalking and geophysical survey. Geophysical Surveys of Bradford were sub-contracted to undertake the geophysical survey and their report is included as Section 3.0 of this document.

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

2.0 Fieldwalking

- 2.1 The fieldwalking was undertaken on the 25th October 1997 by four staff members of John Samuels Archaeological Consultants.
- 2.2 Visibility was very good with the weather being dry, sunny and bright. A cereal crop had been planted in the two fields walked and stood between 1cm and 5cm high. The third, southernmost field had been harvested but not ploughed and was not walked.
- 2.3 Transects were walked at 20m intervals, aligned against extant field boundaries. Finds were placed into marked bags at 20m intervals along these transects (see Figure 2). All material pre-dating the 18th century was collected for analysis within a 2m wide strip along the transects. A total of 13.03ha was walked in this way.
- 2.4 The material was returned to the office for washing, marking and analysis. Spot-dating of the material was undertaken by John Samuels BA, PhD, FSA, MIFA (see Table 1); the material was not considered to warrant further analysis.
- 2.5 A total of 53 sherds were collected from the two fields; 1 Romano-British, 24 medieval, 27 post-medieval and 1 modern. There were no obvious concentrations of finds and although the pottery is not particularly abraded it seems likely that its distribution is the result of manuring.

Location	No. of sherds	Period	Comments
Field 1			
C12	1	Roman	Greyware
D10	1	Medieval	Orange gritty
D 11	3	Post-medieval	Slipped wares
E1	1	Post-medieval	Midlands Purple
E10	1	Medieval	Orange gritty
E11	1	Medieval Post-medieval	Orange gritty Slipped ware
E12	1	Post-medieval	Midlands Purple
G2	1	Medieval	Orange sandy
G10	1	Medieval	Orange gritty

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

		CONTRACTOR OF THE PROPERTY OF	
H3	1	Post-medieval	Midlands Purple
H12	1	Medieval	Orange sandy
J1	1	Medieval	Orange gritty
J12	1	Medieval	Shell gritted
K4	1	Medieval	Stone ware
L1	1	Post-medieval	Stone ware
Field 2			
B4	1	Post-medieval	Slipped
Cl	2	Post-medieval	1 Midlands Purple, 1 Slipped ware
C3	1	Post-medieval	Midlands Purple
C6	1	Post-medieval	Slipped ware
D1	1	Medieval	Green glaze, ?16th century
D2	1	Modern	China
D5	1	Medieval	Orange gritty fabric
E4	1 1	Medieval Post-medieval	Orange fabric Slipped ware
E5	2	Medieval	Orange gritty
F1	1	Medieval	Green glaze
F4	1	Post-medieval	Slipped ware
H1	1	Post-medieval	Midlands Purple
Н5	1	Medieval	Orange gritty
H7	2	Post-medieval	1 slipped ware, 1 stoneware
15	2	Post-medieval	1 slipped ware, 1 Midlands Purple
J2	1	Post-medieval	Slipped ware
К3	1	Medieval	Orange gritty
K6	1	Medieval	Orange gritty
K9	1	Medieval	Orange sandy
L3	1	Post-medieval	Slipped

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

M2	1	Medieval	Orange sandy
M4	2	Post-medieval	1 Midlands Purple, 1 Slipped ware
N5	1	Medieval	Cream gritty
O2	1	Medieval Post-medieval	Orange sandy Slipped ware

Table 1: Fieldwalking finds record

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

3.0 Geophysical Survey

SITE SUMMARY SHEET

97 / 67 Manor Pit, Baston

NGR: TF 122 134 approximate centre

Location, topography and geology

The evaluation area occupies three arable fields situated to the east of the A15 between Baston and Langtoft, approximately 3km north-west of Market Deeping, Lincolnshire. The land was generally flat, and under stubble at the time of survey. The soils of the site are typical brown calcareous earths comprising well drained calcareous fine loamy soils, formed over a parent of river terrace and lacustrine gravels.

Archaeology

There is no known archaeology within the application area but aerial photographs (APs) indicate a series of enclosures to the southwest and a ditched trackway to the northeast. In addition, an old Roman canal, the Carr Dyke, forms the eastern boundary of the site and a later moat lies immediately south of the evaluation area.

Aims of Survey

Gradiometry was undertaken in both scanning and detailed survey modes with the aim of locating any anomalies of archaeological interest. The work forms part of a wider evaluation carried out by John Samuels Archaeological Consultants, in advance of proposed mineral extraction.

Summary of Results *

The survey has provided little evidence for archaeological remains within the application area. A linear anomaly has been identified which could reflect a ditch or former field boundary. Several pit type responses have been noted which could be archaeological; however, given the lack of a clear archaeological context, a natural origin is equally plausible.

^{*} It is essential that this summary is read in conjunction with the detailed results of the survey,

Manor Pit, Baston: geophysical survey

1

SURVEY RESULTS

97 / 67 Manor Pile Baston

1. Survey Area

- 1.1 The entire evaluation area was investigated with gradiometers in scanning mode and six areas, (A to F) totalling 1.36ha were selected for detailed survey. The location of the survey areas is given in Figure 1 at a scale of 1:5000.
- 1.2. The survey grid was set out by GSB Prospection and tied in to existing field boundaries. This tie in information has been lodged with the client. In addition, a number of stakes and canes have been left in situ to facilitate relocation of the grid.

2. Display

- 2.1 Summary greyscale plots of all the detailed survey data are presented in Figure 2 at 1:1000, with a summary interpretation, Figure 3, provided at the same scale. The results for each survey area are displayed as X-Y traces and dot density plots at a scale of 1:500 together with digitised interpretations at the same scale (Figures A1 to F1).
- 2.2 The display formats referred to above are discussed in the Technical Information section, at the end of the text and a complete list of figures precedes the diagram section of the report.

3. General Considerations - Complicating factors

- 3.1 Conditions for survey were good, the ground being level and free from obstructions. A small strip of land at the southwestern corner of the site was not suitable for survey due to the presence of a mature sugar beet crop.
- 3.2 Owing to their calcareous nature and the high water table, the soils at the site should yield quiet magnetic responses with many anomalies being close to the limits of detectability and instrument noise.
- 3.3 All the detailed survey data contain small scale ferrous responses "iron spikes". These are characteristic of small pieces of ferrous debris, of presumed modern origin, scattered in the topsoil. These anomalies are shown in the interpretation diagrams, but, unless they have any significant bearing on the analysis of the results, they are not referred to in the text below.

4. Results of Scanning

- 4.1 The evaluation area was scanned along traverses spaced approximately 10m apart and fluctuations in magnetic field strength were observed on the instruments LCD panel. Any significant variations were scanned more closely and those considered to have archaeological potential were marked with cases for detailed survey.
- 4.2 Scanning indicated a generally low level of background magnetic response across the site. Several potential archaeological targets were identified, including a possible linear anomaly.

Results of Detailed Survey

- Area A. Several strong anomalies were noted in this area and these could reflect archaeological pits with strong magnetically enhanced fill, possibly burnt/fired material. However, modern burnt/ fired debris (e.g. pieces of brick) or more deeply buried ferrous material would produce comparable responses. Given the lack of a wider archaeological context for these anomalies, a modern origin should not be ruled out. A number of weaker pit type anoamlies have been detected, but again an archaeological interpretation is tentative. A series of parallel trends in the data is attributed to modern ploughing.
- 5.2 Area B. A few pit type anomalies have been detected in this block. While an archaeological origin is possible, they could equally reflect natural variations in the soil or, in some cases, more deeply buried ferrous debris. The effects of modern cultivation are apparent as faint parallel trends in the data.
- 5.3 Area C. Several incoherent anomalies are noted in the western half of this survey grid. While an archaeological origin for some is possible, it seems more likely that the reponses have been produced by pockets of magnetic gravels.
- 5.4 Area D. A linear anomaly crosses this survey area, aligned approximately northwest southeast and scanning in the vicinity suggests that it continues without turning, for some distance. It could reflect an archaeological ditch, possibly part of a former field system, but it could equally indicate the line of a more recent boundary or former drain.
- 5.5 Area E. A short linear anomaly is thought to reflect the continuation of the linear feature noted in Section 5.4 above. A few strong anomalies have been detected in the east of the survey grid; as with those in Section 5.1 above, an archaeological origin is possible, but a modern origin is equally likely. A few weak pit type responses are highlighted as possibly archaeological.
- 5.6 Area F. Three possible pits have been identified in this sample, although an archaeological interpretation remains inconclusive.

Manor Pit, Baston: geophysical survey

3

Conclusions

- 6.1 Scanning indicated that the site was generally magnetically quiet, with only a few target anomalies identified.
- 6.2 Detailed survey confirms the observations made during scanning. A linear anomaly has been located, which probably indicates the line of a former field boundary or drain. Elsewhere, several pit type anomalies have been identified, including some relatively strong responses. However, given the lack of any clear archaeological context for the detected anomalies, an archaeological interpretation remains cautious, with natural and/or modern origins equally likely.

Project Co-ordinator:

C Stephens

Project Assistants:

Dr C F Gaffney, L Harvey, J Nicholls, A Shields & D Weston

Date of Survey:

11th August and 18th September 1997

Date of Report:

26th September 1997

Manor Pit, Baston: geophysical survey

	List of Pigures	
Figure 1	Location of Survey Areas	1:5000
Figure 2	Summary Greyscale Plot	1:1000
Figure 3	Summary Interpretation	1:1000
Figure A1	X-Y trace, dot density plot & interpretation - Area A	1:500
Figure B1	X-Y trace, dot density plot & interpretation - Area B	1:500
Figure C1	X-Y trace, dot density plot & interpretation - Area C	1:500
Figure D1	X-Y trace, dot density plot & interpretation - Area D	1:500
Figure E1	X-Y trace, dot density plot & interpretation - Area E	1:500
Figure F1	X-Y trace, dot density plot & interpretation - Area F	1:500

TECHNICAL INFORMATION

The following is a description of the equipment and display formats used in GEOPHYSICAL SURVEYS OF BRADFORD (GSB) reports. It should be emphasised that whilst all of the display options are regularly used, the diagrams produced in the final reports are the most suitable to illustrate the data from each site. The choice of diagrams results from the experience and knowledge of the staff of GSB.

All survey reports are prepared and submitted on the basis that whilst they are based on a thorough survey of the site, no responsibility is accepted for any errors or omissions.

Magnetic readings are logged at 0.5m intervals along one axis in 1m traverses giving 800 readings per 20m x 20m grid, unless otherwise stated. Resistance readings are logged at 1m intervals giving 400 readings per 20m x 20m grid. The data are then transferred to portable computers and stored on 3.5" floppy discs.

Instrumentation

(a) Fluxgate Gradiometer - Geoscan FM36

This instrument comprises of two fluxgates mounted vertically apart, at a distance of 500mm. The gradiometer is carried by hand, with the bottom sensor approximately 100-300mm from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT) or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. Generally features up to one metre deep may be detected by this method.

(b) Resistance Meter - Geoscan RM4 or RM15

This measures the electrical resistance of the earth, using a system of four electrodes (two current and two potential.) Depending on the arrangement of these electrodes an exact measurement of a specific volume of earth may be acquired. This resistance value may then be used to calculate the earth resistivity. The "Twin Probe" arrangement involves the paring of electrodes (one current and one potential) with one pair remaining in a fixed position, whilst the other measures the resistance variations across a fixed grid. The resistance is measured in Ohms and the calculated resistivity is in Ohm-metres. The resistance method as used for area survey has a depth resolution of approximately 0.75m, although the nature of the overburden and underlying geology will cause variations in this generality. The technique can be adapted to sample greater depths of earth and can therefore be used to produce vertical "pseudo sections".

(c) Magnetic Susceptibility

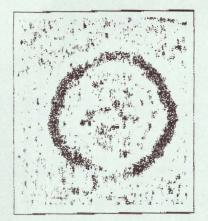
Variations in the magnetic susceptibility of subsoils and topsoils occur naturally, but greater enhanced susceptibility can also be a product of increased human/anthropogenic activity. This phenomenon of susceptibility enhancement can therefore be used to provide information about the "level of archaeological activity" associated with a site. It can also be used in a predictive manner to ascertain the suitability of a site for a magnetic survey. The instrument employed for measuring this phenomenon is either a field coil or a laboratory based susceptibility bridge. For the latter 50g soil samples are collected in the field.

Display Options

The following is a description of the display options used. Unless specifically mentioned in the text, it may be assumed that no filtering or smoothing has been used to enhance the data. For any particular report a limited number of display modes may be used.

(a) Dot-Density

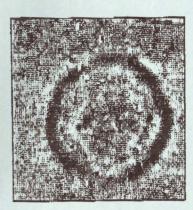
In this display, minimum and maximum cut-off levels are chosen. Any value that is below the minimum cut-off value will appear white, whilst any value above the maximum cut-off value will appear black. Any value that lies between these two cut-off levels will have a specified number of dots depending on the relative position between the two levels. The focus of the display may be changed using different levels and a contrast factor (C.F.). Usually the C.F. = 1, producing a linear scale between the cut-off levels. Assessing a lower than normal reading involves the use of an inverse plot. This plot simply reverses the minimum and maximum values, resulting in the lower values being presented by more dots. In either representation, each reading is allocated a unique area dependent on its position on the survey grid, within which numbers of dots are randomly placed. The main limitation of this display method is that multiple plots have to be produced in order to view the whole range of the data. It is also difficult to gauge the true strength of any anomaly without looking at the raw data values. This display is much favoured for producing plans of sites, where positioning of the anomalies and features is important.



(b) X-Y Plot

This involves a line representation of the data. Each successive row of data is equally incremented in the Y axis, to produce a stacked profile effect. This display may incorporate a hidden-line removal algorithm, which blocks out lines behind the major peaks and can aid interpretation. Advantages of this type of display are that it allows the full range of the data to be viewed and shows the shape of the individual anomalies. Results are produced on a flatbed plotter.

Display Options cont'd



(c) Grey-Scale

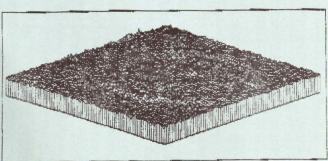
This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots or shade of grey, the intensity increasing with value. This gives an appearance of a toned or grey scale.

Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. While colour plots can look impressive and can be used to highlight certain anomalies, grey-scales tend to be more informative.



(d) Contour

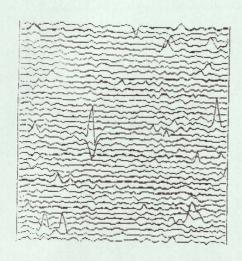
This display format is commonly used in cartographic displays. Data points of equal value are joined by a contour line. Closely packed contours indicate a sharp gradient. The contours therefore highlight an anomalous region. The range of contours and contour interval are selected manually and the display is then generated on the computer screen or plotted directly on a flat bed plotter / inkjet printer.



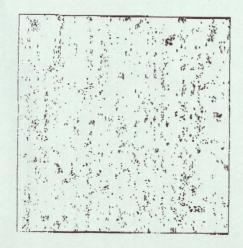
(e) 3-D Mesh

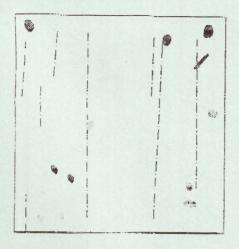
This display joins the data values in both the X and Y axis. The display may be changed by altering the horizontal viewing angle and the angle above the plane. The output may be either colour or black and white. A hidden line option is occasionally used (see (b) above).

MANOR PIT, Baston Area B



I 15 nT





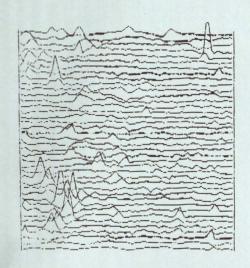
?Archaeology

Ploughing Trend

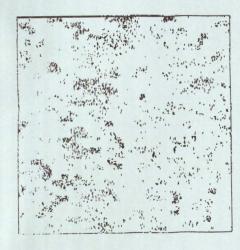
Ferrous

20

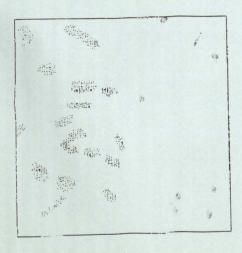
MANOR PIT, Baston Area C



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2,0 nT



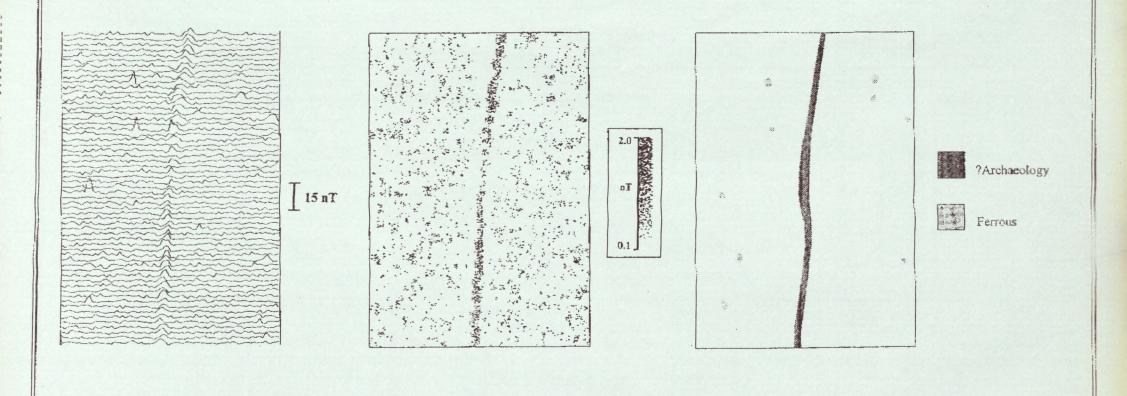


?Natural

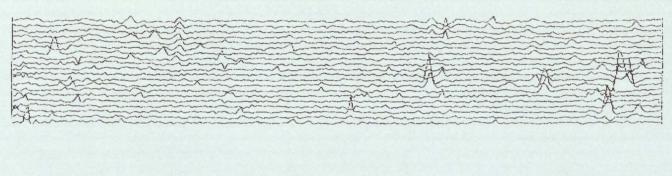


Ferrous

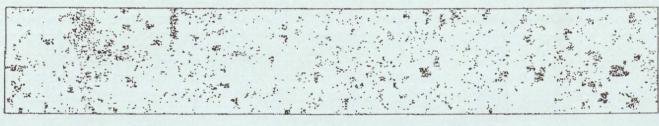
MANOR PIT, Baston Area D

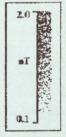


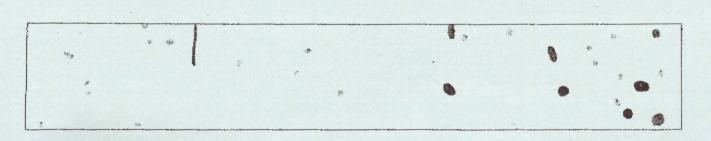
MANOR PIT, Baston Area E

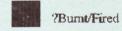


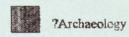
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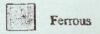








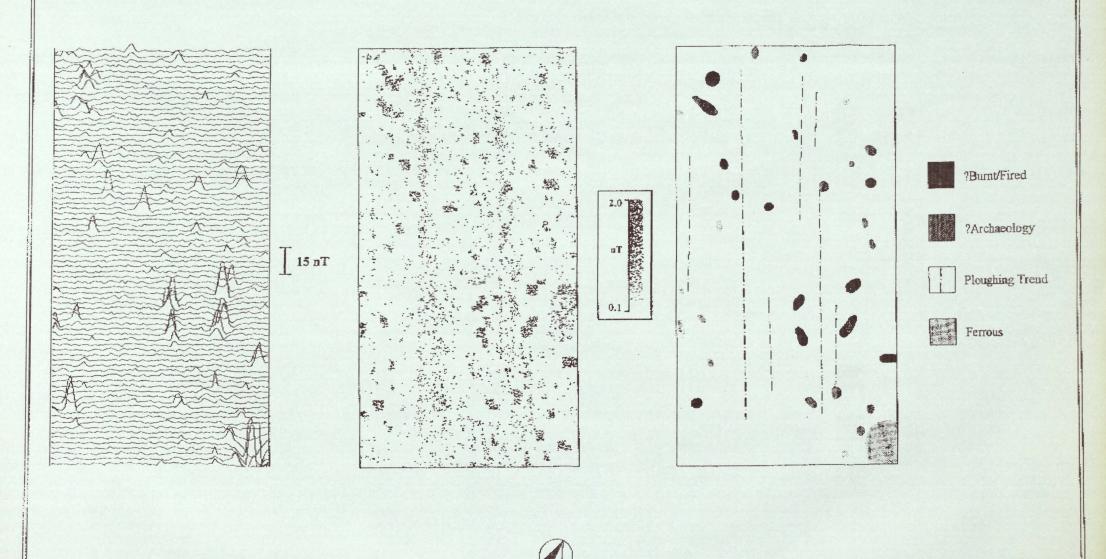




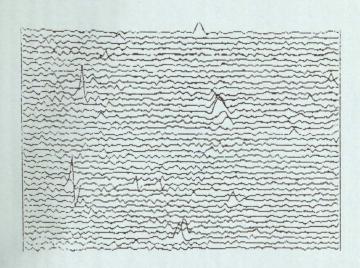


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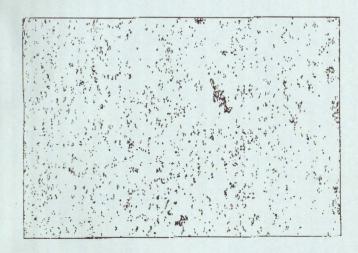
MANOR PIT, Baston Area A



MANOR PIT, Baston Area F



I 15 nT







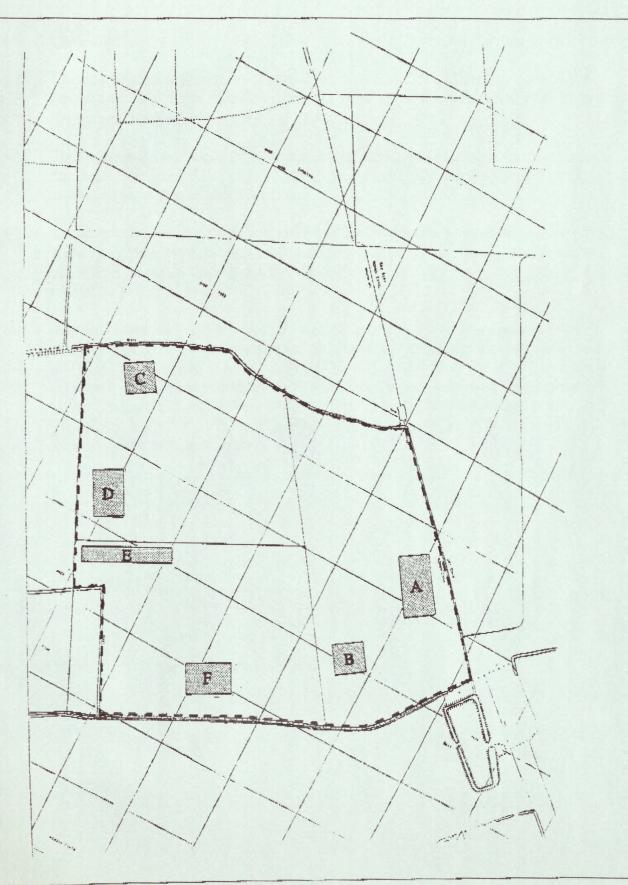


?Archaeology



Ferrous

MANOR PIT, Baston Location of Survey Areas





Area of Scanning





Detailed Gradiometer Survey

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1:5000

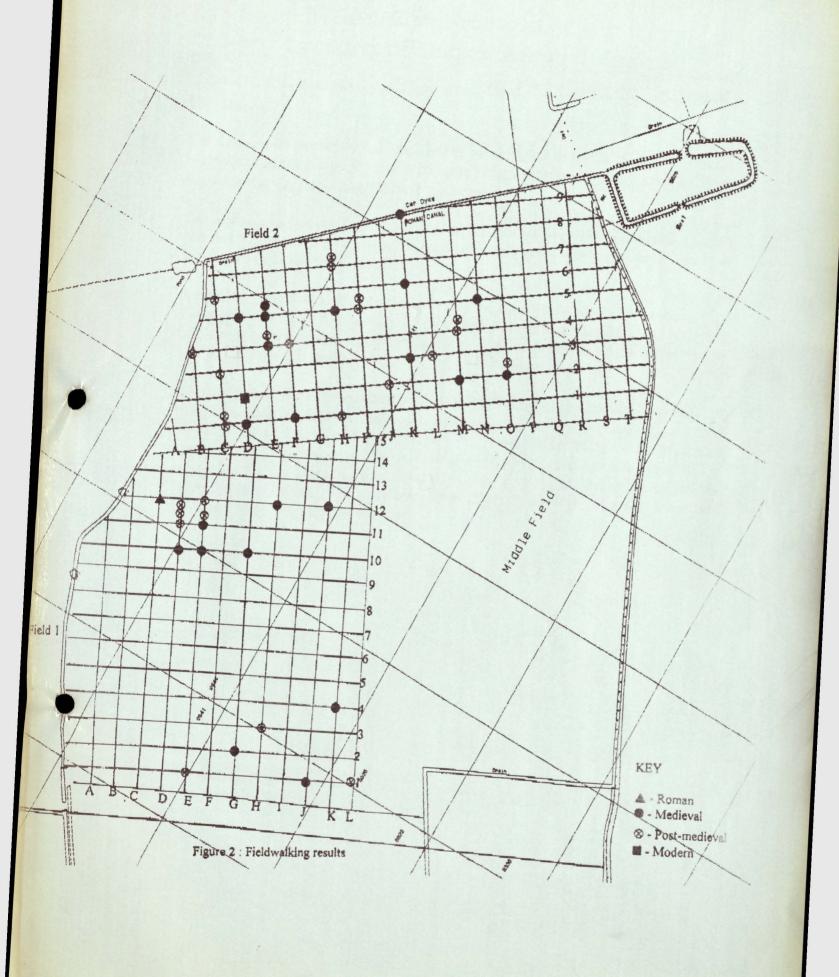
Figure 1

An Archaeological Field Survey of land known as Manor Pit, Baston, Lincolnshire

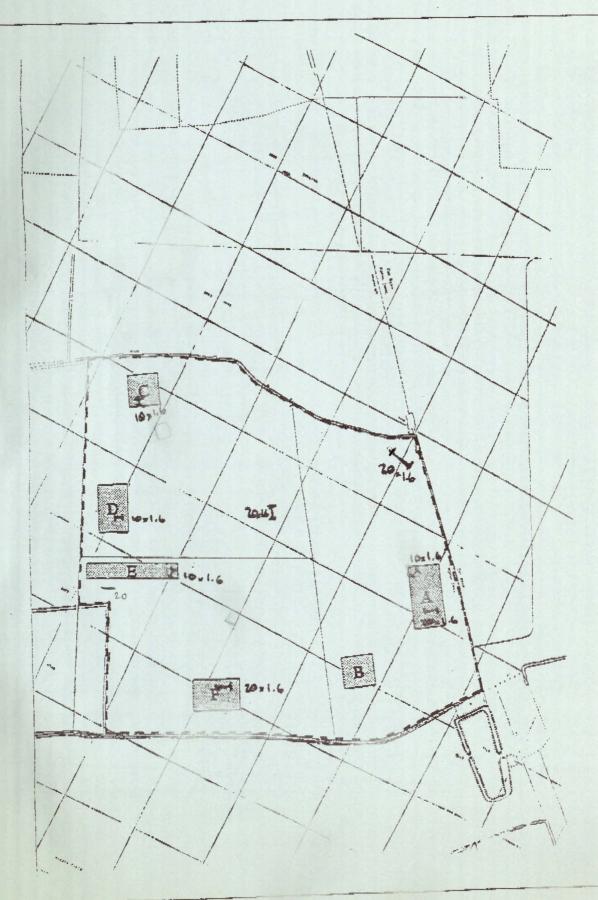
4.0 Conclusion

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- 4.1 The desk-based assessment has identified this area as rich in archaeology. No specific evidence of activity was identified within the limits of the site although the Car Dyke, Roman waterway does form the eastern boundary.
- 4.2 The fieldwalking (see Section 2.0) identified no discrete scatters that might indicate buried remains. The general scatter of mainly late medieval and post-medieval sherds is considered to be the result of manuring.
- A number of anomalies have been identified by the geophysical survey (see section 3.0). 4.3 These comprise a linear feature, possible a former ditch or field boundary, and a number of pit-type responses that may be archaeological although they are equally likely to be modern or natural in origin.
- In order to determine the exact nature, date and extent of the geophysical anomalies, it 4.4 is recommended that they are evaluated by trial trenching. It is recommended that a total of 192m² be excavated as show on Figure 3b. Trenches are designed to investigate apparently blank areas as well as the anomalies to test the results of the geophysical survey. As the Car Dyke has been evaluated both by geophysical survey and excavation (Hazell 1988; Zeffert 1991 as referenced in JSAC 214/97/01), it is not considered necessary to re-evaluate it at this site.



MANOR PIT, Baston Location of Survey Areas





Area of Scanning



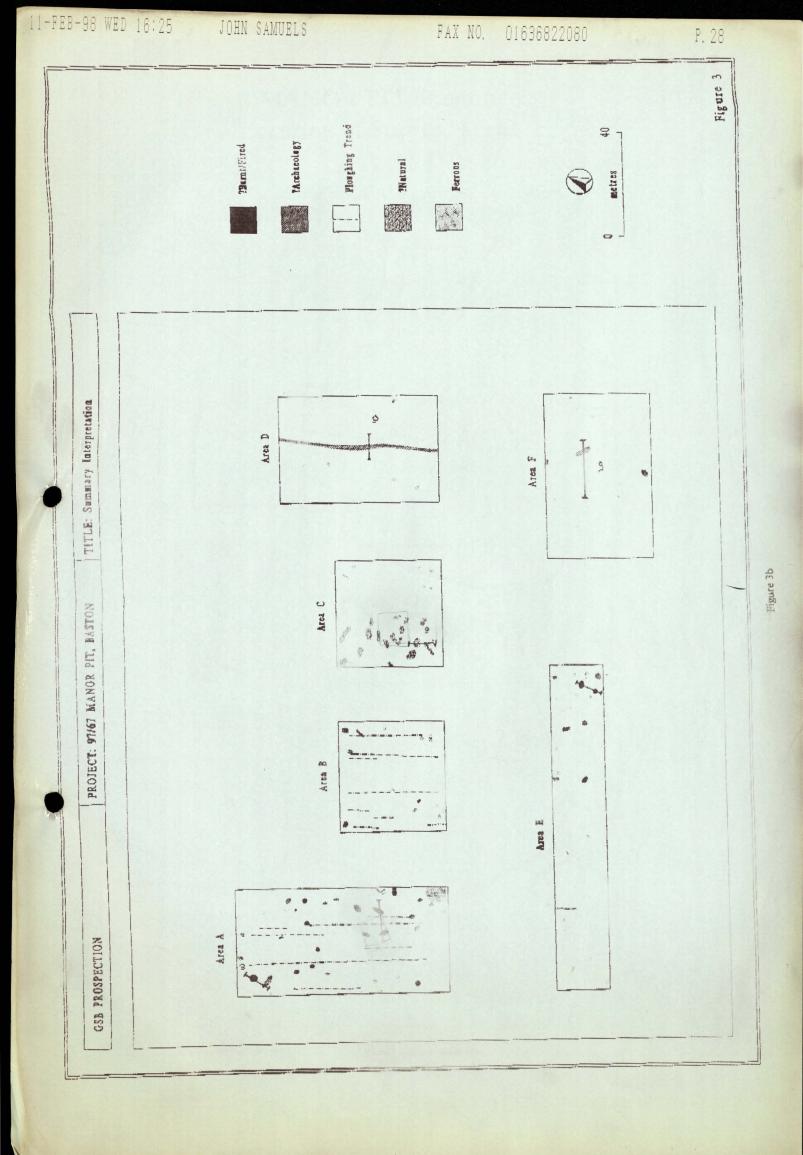


Detailed Gradiometer Survey

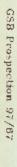
Figure 1

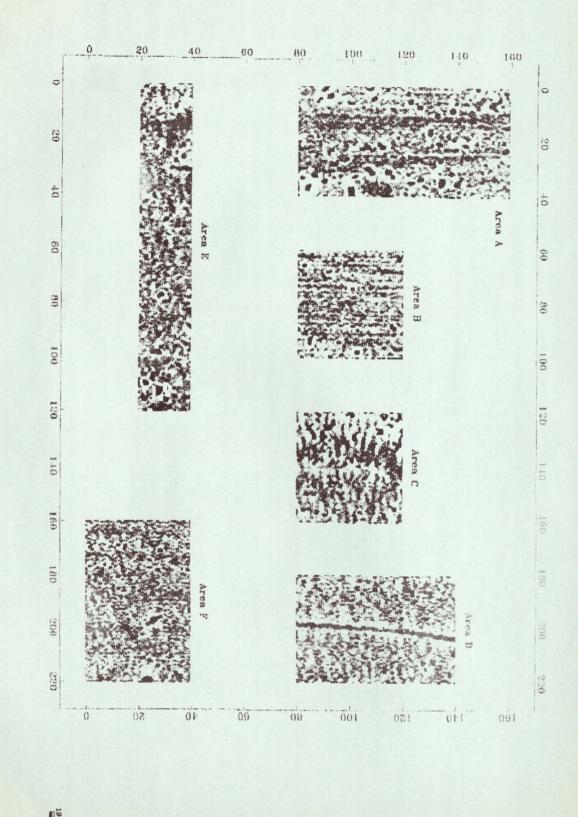
Reproduced from the Onlinened Survey 1:5(xx) map with the permission of The Controller of HMSO O Crown Copyright (RIASSN)

Not to scale



11-FFB-00 WFD 18.1







MANOR PIT, BASTON

