# TEMPVS REPARATVM

Archaeological and Historical Associates

## REPORT ON ARCHAEOLOGICAL EVALUATION

## STOWE FARM EXTENSION (W3/PL/5)
## ~~WEST DEEPING~~ Barholm and Stowe CP
## LINCOLNSHIRE

**TR 31012 DFA**

**ON BEHALF OF:**

**Redland Aggregates Ltd**
**Sileby Road**
**Barrow-on-Soar**
**Loughborough**
**Leicestershire**
**LE12 8LX**

**TEMPVS REPARATVM**
**FIELD SERVICES DEPARTMENT**

**28 December 1994**

**TEMPVS REPARATVM**
Archaeological and Historical Associates Limited

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In connection with proposal for planning permission for mineral extraction

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Prepared by:
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Status: Report for presentation to curatorial authority

28 December 1994



TRF 91 10/92

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## APPENDICES

## 1.0 PROLEGOMENA

### 1.1 Personal and organisation qualifications

1.1.1 Tempvs Reparatvm is a private limited company concerned with many aspects of archaeology and history including consultancy field evaluation and excavation.

1.1.2 Tempvs Reparatvm works on a national basis. It is an approved contractor in many English and Welsh Counties.

1.1.3 Since its formal incorporation in 1988, the Company has represented a wide range of clients, both corporate and individuals, undertaking large scale and small scale work, Tempvs Reparatvm acts for Redland Aggregates Limited as that company's archaeological consultants and is its preferred field contractor.

1.1.4 Tempvs Reparatvm is the publisher of British Archaeological Reports, a prestigious international series of archaeological monographs and conference proceedings, and of other books and pamphlets on archaeological and historical subjects.

1.1.5 Tempvs Reparatvm is committed to ensuring that the client receives a cost–effective service while itself maintaining the highest professional standards. The Company only employs specialists and technicians whose work and expertise match the quality requirements of the Company.

1.1.6 All projects are managed in accordance with and in the light of English Heritage's MAP2 guideline, recommendations of PPG16 and the Institute of Field Archaeologists guidelines.

1.1.7 Dr Christopher Howlett is a Director of Tempvs Reparatvm and a senior consultant. Prior to joining this company he headed his own consultancy. He was previously employed by the National Trust as Landscape Archaeologist. He holds a Bachelor of Arts degree in Geography and a Doctorate of Philosophy in Landscape History.

1.1.7 Dr David Davison is a Director of Tempvs Reparatvm and Manager of the Field Services Department. He has gained archaeological experience in many European countries and is General Editor of BAR. He hold Masters degrees in both History and in Archaeology and a Doctorate of Philosophy in Archaeology.

### 1.2 The commission

1.2.1 In association with an application to extract gravel Redland Aggregates commissioned Tempvs Reparatvm to co–ordinate and undertake a field evaluation towards fulfilment of a requirement for archaeological works in a planning condition. While the evaluation was in progress Redland Aggregates received formal permission to extract. This report is the first response in fulfilment of the planning condition.

## 1.3 In connection with the commission

1.3.1 In 1989, Redland Aggregates commissioned Tempvs Reparatvm to carry out a consultancy report on the archaeological potential of the proposed area of development, and possible constraints on the planning application. Redland also supplied Tempvs Reparatvm with necessary background data for this document.

1.3.2 Tempvs Reparatvm carried out this review of the known archaeology for a number of sites at Stowe Farm, including the Stowe Farm Extension. This information is contained in an archaeological desk–top document produced in 1989 – document TR 31012DB.

1.3.2 Following refusal of permission for one of the areas initially considered (Stowe Farm W3/PL/4), a consultation took place in the summer of 1994 between Tempvs Reparatvm and S Catney, Lincolnshire County Archaeologist with regards to the need for further archaeological work of the land known as W3/PL/5 for which Redland Aggregates had applied for permission to extract sand and gravel, and regarding the likely requirements of an archaeological planning condition. As a result of this consultation, general proposals for a first phase of archaeological investigations were agreed. A document setting out explicitly a programme of works for preliminary evaluation by non–intrusive archaeological techniques (document TR 31012DCA – see **Appendix 1** of this report) was subsequently submitted to the Lincolnshire County Archaeologist for approval. The specifications initially included air photo analysis, fieldwalking and geophysical survey. Further discussions took place between S Catney and C Howlett of Tempvs Reparatvm, Redland Aggregates' archaeological consultants and it was agreed that the preliminary work should be expanded to include research of historical documents relating to the application area and a preliminary soil survey by the project's palaeoenvironmental specialist.

1.3.3 The various elements of the preliminary evaluation were put into operation and the reports are appended to this document. Air Photo Surveys of Cambridge were commissioned to undertake a reassessment and plotting of the air photographs available (**Appendix 2**). The Bartlett–Clarke Consultancy undertook geophysical survey (**Appendix 3**). James Rackham of the Environmental Archaeology Consultancy carried out the soil survey (**Appendix 6**). Tempvs Reparatvm's Field Services Department fulfilled the requirement for fieldwalking (**Appendix 4**) and Dr C E Howlett of Tempvs Reparatvm surveyed and reported on the historical landscape (**Appendix 5**).

1.3.4 The results of the preliminary evaluations were somewhat ambiguous and inconclusive and raised various further questions about the archaeological remains that may have survived. There was no indication that the site had undergone any process that would have negated the use of invasive techniques of evaluation. Thus it was agreed to proceed to a stage of trial trenching.

1.3.5 C E Howlett drew up a specification for the excavation and a plan of the physical layout of the proposed trial trenches (document TR 31012DCB) and submitted this to Lincolnshire County archaeology office together with a brief summary of the preliminary evaluations, and copies of the reports, as available (**Appendix 7**).

1.3.6 The specified fieldwork was undertaken by Tempvs Reparatvm's Field Services Department and supervised by Andrew (Bob) Hatton. Monitoring of the work was undertaken by Lincolnshire County Council archaeological officers on at least two occasions. Francis Prior of the Fenland Archaeological Trust also made a brief visit to the site and offered advice (Trenching report: **Appendix 8**).

1.3.7 In tandem with the trial trenching a programme of environmental survey and analysis, and scientific dating was undertaken. This work was done under the supervision of James Rackham and reported on by Karen Izard (**Appendix 9**). Samples of organic material were subsequently sent to Beta Analytic Inc, Miami, Florida, USA for Carbon 14 dating (**Appendix 10**).

1.3.8 Under an arrangement with Lincolnshire County Council, use was made of the archaeological processing and computer facilities currently operated by Tempvs Reparatvm at Crown Farm, West Deeping. The trench plans illustrated in the trenching report (**Appendix 8**) were computer generated and although they are of adequate quality for presentation in an archaeological evaluation report, as experience is gained a clearer product will ultimately be produced, if required for publication purposes etc.

## 2.0 THE APPLICATION SITE

### 2.1 Site Location

2.1.1 The location of the proposed Stowe Farm Extension is illustrated in **Appendix 1, Figure 1**, shown as the land marked as W3/PL/5. It is located north of the River Welland.

2.1.2 The application area comprises a total of 17.5 ha and is centred at TF 11 10.

### 2.2 Topography, soil and geology

2.2.1 The site now consists of high quality arable land. The landscape in the area is lightly alluviated Fen and Terrace gravels over Kellaway sands.

2.2.2 The river Welland is bordered by a narrow strip of alluvium and gravel up to 1.5km wide as it passes through the limestone uplands surrounding Stamford. To the east of Stamford the gravel widens, to form a broad spread of fen edge gravel set among fenland silts and peat. This gravel belt stretches from Peterborough north to Bourne, and is at its widest around West Deeping. It is at West Deeping that the Roman road now followed by King Street crossed the Welland, running north to Bourne and Lincoln.

2.2.3 Current landuse of the area is arable.

2.2.4 The geomorphology of the area has been the subject of a particular study carried out by James Rackham (**Appendix 6**).

## 3.0 THE ARCHAEOLOGICAL BACKGROUND

### 3.1 The known archaeology of the application area

3.1.1 With the exception of some faint crop marks (which are probably part of an ancient field/ditch system) there are no known archaeological finds from within the area of W3/PL/5.

3.1.2 The application area has never been systematically fieldwalked or subject to archaeological excavation.

### 3.2 Known sites from the surrounds of the application area

3.2.1 The following sites were first listed in the original desk–top report document TR 31012 and dated 8/11/89.

(1) A shield shaped enclosure visible as a cropmark. Lies on the side of the field, partly covered by woodland. Double ditches lead from the entrance, which is in the southern corner of the flattened side. Extends into the adjoining Scheduled Ancient Monument.
?IA/R NGR 0971 1167 LCC SMR 32979

(2) Ring ditch, visible as cropmark, on east side of field.
P NGR 0992 1169 LCC SMR 32991

(3) Ring ditch, visible as cropmark in the middle of the field, approached by two ditches, to form corner on west side of barrow.
P NGR 0980 1158 LCC SMR 32992

(4) An extensive, probably Roman, occupation site, set within an area of ancient fields and visible as a cropmark.
?R NGR 0980 1155 LCC SMR 33559

(5) Scheduled Ancient Monument (160). Recommended for scheduling by the RCHM(E) in 1960:

'This clearly marked enclosure, in which lines of pits can be distinguished, may be an Iron Age farm frequently reconstructed'.

The Scheduled Ancient Monument is described as an irregular pentagonal enclosure (approx. 200' x 260') with subdivisions, excavated by Welland Valley Research Committee. It contains what appears to be a timber basilical building, visible on aerial photographs. A ditched droveway leads to the site. Pottery from the site has been mostly Roman.
R NGR 0951 1400 LCC SMR 30051 (SAM 160)

(6) Scheduled Ancient Monument (327). Described by DoE as:

'Part of the large and straggling agricultural settlement at Greatford, probably of Iron Age or Romano – British date'.

This site comprises a homestead enclosure, and what appear to be

stockyards. There would appear to be a complex palimpsest of features, indicative of several overlapping periods of use.

At least fourteen irregular rounded enclosures are known in the complex as a whole, linked by droveways, and double ditches with right angle bends.
IA/R NGR 0980 1190 LCC SMR 30054

(7) Slight cropmarks, no distinctive site types visible.
?P/R NGR 0960 1170 LCC SMR 32980

(8) Cropmarks, extensive and probably indicating Roman settlement (see catalogue entries 1,2,3,6).
R NGR 0980 1155 LCC SMR 33559

**Rectory Farm**

3.2.2 The original desk–top document referred to above also included under this heading all the sites from the Rectory Farm application area (W3/PL/6). Since the preparation of the original document, a considerable amount of further archaeological work has been carried out across the Rectory Farm application area including intrusive evaluation and, in the summer of 1994, area excavation. Through this process a very considerable amount of knowledge of that area has been gained and it is therefore possible to examine the archaeology at Stowe Farm with particular reference to that at Rectory Farm.

3.2.3 This is not the place to go into the detail of the Rectory Farm archaeology, but it has been possible to trace there a succession of periods of landscape use and exploitation from the neolithic to medieval periods and including important structural evidence from the Iron Age and Roman periods (Roman villa) and field systems of the neolithic/Bronze Age, Iron Age, Roman and medieval periods. The precise significance of the wide variety of prehistoric evidence is currently undergoing detailed consideration.

## 3.3 The archaeological potential of the application site

3.3.1 The part of the Welland Valley near which the application site is located has been the focus of intensive archaeological study since at least 1957, when the Welland Valley Research Committee was formed to survey and excavate threatened archaeological sites. Subsequent research has been carried out by the Royal Commission on Historic Monuments for England (RCHM(E)) and other organizations, most recently the Fenland Archaeological Trust.

3.3.3 The results of this cumulative research demonstrate that large tracts of the Welland Valley landscape were substantially deforested by the middle Neolithic period. A palimpsest of cropmarks exists spanning several millenia and betraying the presence of a series of organized prehistoric landscapes incorporating farms, field systems, and a spectacular range of ceremonial monuments.

3.3.4 Prehistoric communal monuments settlements, field systems and landscape features have been singled out as targets for research priority by English Heritage and the Prehistoric Society. The transition from Iron Age to the Roman including sites, their settings, field boundaries

and food production and consumption also fall within the national research priority category.

3.3.5 Though the archaeology in the application area is scarce it is possible that alluviation may be covering and obscuring archaeological remains – so that these features are masked and not detectable by current techniques of aerial reconnaissance.

## 4.0 EVALUATION RESULTS

### 4.1 Aerial photographic survey

4.1.1 A number of natural ditches and archaeological ditches appear in the area which can in general be distinguished apart.

4.1.2 There are a large number of pits, probably mostly of natural origin (not mapped) but also several that may be archaeological.

4.1.3 The site is almost entirely covered by cropmarks resulting from medieval ploughing practice. The form of groups of ridges can be readily identified and at least two clearly defined headlands cross the area. A less plainly illustrated headland is also present.

4.1.4 The two clearly demonstrated headlands appear to have ditches tracing their course (in one case a parallel pair of ditches), although it is not possible to determine whether these pre– or post–date the headlands.

4.1.5 Two archaeological ring ditches have been observed and plotted towards the north west boundary of the area. These are calculated at 12.0m and 6.5m diameter.

4.1.6 Deeper soil is near the edge of the field. It is possible that this may mask archaeological features.

### 4.2 Fieldwalking

4.2.1 Fieldwalking did not locate any concentrations of artefacts that might suggest a buried archaeological site, even though relatively shallow soils and continuous cultivation should have provided ideal conditions for material from artefact rich features to become incorporated into the ploughsoil. Finds were sparse. Two flint artefacts were recovered (one prior to systematic survey), the remainder of the finds, except a fragment of a bone were of the medieval or post–medieval period.

4.2.2 It is concluded that there is a long chronological gap in man's presence on site from the neolithic to medieval period. Further there is no evidence from fieldwalking of settlement in the application area.

## 4.3 Historical survey

4.3.1 The earliest useful map is that accompanying the Enclosure Award (1801). No earlier estate map exists. A map of the 16th century, or before, which included the application area too small scale to be of use. There is a paucity also of other manuscript or published material.

4.3.2 At Enclosure the western part of the site is shown as lying in Barholme 'lordship' (manor) and a strip along the north east and south east boundary of the field in Stowe lordship.

4.3.3 The only tithe map (1840) of the area is of the Stowe part of Barholme cum Stowe parish and therefore only the eastern part of the field is shown.

4.3.4 However certain conclusions can be drawn from the cartographic sources. Prior to Enclosure the application area was part of two of the 'medieval' open fields of the parish. At the time of the mid 19th century tithe survey the field was arable, as it remains today, thus there is good evidence of a long period of continuous ploughing on the site.

4.3.5 There is little evidence that the field was sub–divided in the post–medieval period. In the early 19th century a small gravel pit was opened at the extreme western end of the field to provide material to maintain the local roads. This area was later wooded.

## 4.4 Geophysical Survey

### Magnetic susceptibility

4.4.1 The most striking feature of the survey is that the variation of readings across the site was small. Although the magnetic susceptibility plot identified small areas of high readings, the absolute range between the highest and lowest results within the application area is slight compared with the generality of areas subjected to this form of survey.

4.4.2 Two areas of relatively high readings are the extreme western and eastern ends of the field. The high readings in the east are not considered to be of archaeological interest but result from modern disturbance in the area of the field gateway. It was considered that the western high–spot required further study by detailed magnetometer survey.

4.4.3 A small area of relatively high readings to the north–west of the gateway against the field edge was considered to be an effect of the adjacent boundary fence.

4.4.4 Two other areas of relatively high readings were noted. One, 150m to the south west of the field gate and another to the south east of the western end of the field.

4.4.5 Based on these findings and the results of the air photo replot, a programme of detailed magnetometer survey was instigated.

### Magnetometry

4.4.6 As previously hypothesized by A Bartlett, relatively few of the features

identified by air photos were detected by magnetometer survey. This may be because of the apparent low level of human activity within the immediate area, the fills of any archaeological features are not sufficiently magnetic to be located. It may also result from the possibility that most of the apparent cropmark ditches are natural features which are difficult to detect.

4.4.7 No ditched features were identified – whether ring ditches, archaeological or natural. The 'modern' quarry along the north west edge identified by aerial photographs was located.

4.4.8 However there are several magnetic anomalies that may indicate archaeological pits in several parts of the area. One group of these possibly coincides with the cropmark pits shown on the air photo replot in the north west quadrant of the site. A second area is around the magnetic susceptibility high readings 150m to the south west of the gateway and a third at the western end of the field.

4.4.9 In conclusion it can be said that in an area where isolated earthwork type features are present and there has been little magnetic disturbance it can be expected that magnetometry results are likely to be inconclusive.

## 4.5 Trial Trenching and Environmental Analysis

4.5.1 This section summarises the findings of the trial trenching that was carried out on the site and which is reported fully in **Appendix 8.** The variables that need to be assessed as part of the evaluation (ie character of the archaeological remains, their date/phasing, and quality and degree of preservation) are addressed.

### Character

4.5.2 The remains of medieval and post–medieval ploughing practices (ie ridge and furrow with headlands) were evident across almost the entire site and this has had a differential effect in the level of preservation of the prehistoric archaeological remains (see below). This finding confirms the expectations from the air photo survey and preliminary historical research.

4.5.3 The trial trenching revealed an unexpectedly complex prehistoric landscape. Archaeological features ranged from those related to agricultural activities – field boundary ditches and pits, probably with a variety of functions, to funerary monuments (ie ring ditches) and features which may have had some other ceremonial purpose (eg a circular hengeform ditch and elsewhere two massive post–holes. However, though the evaluation was able to indicate a range of features, it is not possible, owing to the nature of field evaluation, to fully test the preliminary interpretations placed upon the buried features in the trial trenching report (**Appendix 8**). A total of 227 features were identified in the 18 trenches opened.

4.5.4 The surface of the 'natural' undisturbed deposits occupies a position between 0.3 m to 0.5 m below the current ground surface. Almost exactly half of the features identified were ditch sections. The vast majority of the ditches appeared to be associated with what appear to be prehistoric field systems that survive on site. The majority of these

ditches run on a NW–SE orientation, a smaller number NE–SW, and a tiny handful N–S.

4.5.6 Pits of various dimensions accounted for approximately 45% of the features identified. (About 4% of features were not interpreted as ditches or pits).

4.5.7 In addition to the almost ubiquitous ditch sections and pits, the following are the more discrete and distinctive features and groups of features that were identified:

4.5.8 Three circular ditches were revealed. The trenching was able to locate the two small ring–ditches noted during the air photo reinterpretation towards the northern boundary of the area proposed for gravel extraction (**Appendix 8**) in Trenches 1 and 2. One of these was preliminarily interpreted as a possible Neolithic 'hengeform' monument (Trench 2). The other had an apparently segmented nature and on this basis was also considered to be of Neolithic date (Trench 1), though these interpretations would need further testing. The third ring–ditch was an unexpected discovery towards the centre of the area (Trench 10). The feature has an estimated diameter of 30 m and could be of either Late Neolithic or Early Bronze Age date.

4.5.9 Towards the western part of the field two very large post–holes were revealed (Trenches 5 and 7). The post hole excavated in Trench 5 (context [258]) was up to 0.7 m diameter and survived to a depth of 0.6 m. There could be various interpretations of the function of these features. Unfortunately the evaluation process has allowed too small a proportion of the area to be sampled to make any firm statement, however, these are clearly extraordinary features.

4.5.10 In the eastern part of the field Trench 14, a rectangular trench, yielded a series of four post–holes which appear to form a semi–circle – contexts [232], [301], [303], [304].

4.5.11 Slightly north–west of the centre of the area of proposed extraction, in Trench 18 a pit was present that was deeper than any other identified in the evaluation and of a distinctly different nature. There was clear evidence of burning associated with the pit.

4.5.12 In summary it can be said that the features identified during the Stowe Farm evaluation were almost exclusively negative features, most of which were ditches and pits of undefined use. The features contained almost no artefactual material for defining their use or age. In addition, there were a number of more distinctive monumental features, as decribed above.

4.5.13 The features excavated were artefact poor, to the extent that they could not be dated by surviving material.

**Date and phasing**

4.5.14 As explained above, no useful artefactual material survived with which to propose a date for the archaeological features revealed. Thus Carbon 14 dating was applied to the only two samples of organic material that were suitable for the use of this technique. (see **Appendix 9** and **Appendix 10**). One C14 date placed on a ditch (context [0245] in Trench 13) indicates that the feature is of the Early Bronze Age, or

possibly late Neolithic. The other dated feature – the large burning pit (context [0273] in Trench 18) – is indicated as being of the Middle Bronze Age, though the date span could cross the EBA/MBA/LBA transition. There was no evidence from the evaluation to suggest that any other periods were represented among the features investigated.

4.5.15 The small ring ditch [0293] was interpreted as neolithic on the basis of its segmented nature (see above) and Francis Prior, who has considerable experience of prehistoric features and the nature of their fills believes many to be of the Neolithic.

4.5.16 Although no deep or complex stratigraphy was revealed during the evaluation there were indications that two or more phases of activity were represented. In all, 29 features cut other features and there was an example of this in each of the trenches opened for archaeological investigation. Also, as described above, there is some suggestion that the orientation of the field system may have been altered at some undefined time, which may indicate an extended period of activity or separate phases of activity.

**Extent**

4.5.17 Archaeological features were revealed in all 18 trenches opened during the evaluation and therefore it is probable that evidence of prehistoric activity extends across the entire site. However, there may be areas in which the activity is more intense than others. Activity (both ditches/pits and ring–ditches post–holes) seems to be most intense in the northern two–thirds. Fewer features were encountered towards the centre/south–west of the area (Trenches 6, 8, 9, and 16) and in the extreme east (Trench 13).

**Quality and degree of preservation**

4.5.18 There has been a long history of medieval and post–medieval cultivation of the area under investigation. Ploughing has had the effect of truncating the surviving negative features. This has been compounded by the existence of ridge and furrow formation in the medieval period which has removed all evidence of pre–existing archaeological features in strips across the area.

4.5.19 In other instances the medieval cultivation practices appear to have contributed to to the survival of features. The two medieval headlands that can still be observed running across part of the area have deepened the plough–soil and reduced the effects of truncation. It is notable that the portion of the large ring ditch preserved in Trench 10 appears to have been below one of the headlands.

4.5.20 Around the western corner of the site there is some tree–root damage of the archaeological features, caused by woodland in that area which was once more extensive than at present and probably extended a short distance south–east of Trench 4.

**Environmental survey**

4.5.21 Eighteen samples (270 litres in all) of the fill of archaeological features were subjected to standard floatation techniques to assess the potential of the site for further palaeoenvironmental work.

4.5.22 The frequency with which charred grains, charcol, seeds, insects, snails were encountered id summarized in Table 2, **Appendix 9.** The conclusion is that soil factors have produced a low potential for the survival of significant quantities of unburnt material. Only a samll quantity of snail shells were found. Animal bone preservation is poor and only fragmentary material survives. Of the grains only seven charred grains in poor condition were found.

4.5.23 Thus the potential for palaeoenvironmental research yielding useful additional data is low.

## 5.0 CONCLUSIONS

5.0.1 As well as the remains of medieval cultivation activity,buried features identified during the evaluation indicate the survival of a relatively complex prehistoric landscape consisting of non-ceremonial and ceremonial features.

5.0.2 Two or more phases of prehistoric activity may be present in the area. Dating is difficult but the features may cross the nolithic/Bronze Age transition, and possibly, the EBA/MBA/LBA periods.

5.0.3 Survival has been affected by ploughing which has lead to the truncation of features above 0.3 to 0.5 m below the current ground surface. There has been differential survival. Preservation is better below the mdieval headlands which cross the area.

5.0.4 Certain parts of the area apparently exhibit a greater intensity of archaeological activity than others.

5.0.5 It is unlikely that further palaeoenvironmental research will assist the further interpretation and dating of the site.

# APPENDIX 1

**TEMPVS REPARATVM**
Archaeological and Historical Associates Limited

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SPECIFICATIONS FOR ARCHAEOLOGICAL EVALUATION PHASE 1

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1.1.7 Dr Isabel Lisboa is a consultant at Tempvs Reparatvm. Before joining the company she was a Research Fellow at the University of London. As well as carrying out consultancy she has been project manager on archaeological excavations. She holds a Batchelor of Arts degree and a Doctorate of Philosophy in Archaeology.

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(2) Ring ditch, visible as cropmark, on east side of field.
P NGR 0992 1169 LCC SMR 32991

(3) Ring ditch, visible as cropmark in the middle of the field, approached by two ditches, to form corner on west side of barrow.
P NGR 0980 1158 LCC SMR 32992

(4) An extensive, probably Roman, occupation site, set within an area of ancient fields and visible as a cropmark.
?R NGR 0980 1155 LCC SMR 33559

(5) Scheduled Ancient Monument (160). Recommended for scheduling by the RCHM(E) in 1960:
"This clearly marked enclosure, in which lines of pits can be distinguished, may be an Iron Age farm frequently reconstructed."

The Scheduled Ancient Monument is described as an irregular pentagonal enclosure (approx. 200' x 260') with subdivisions, excavated by Welland Valley Research Committee. It contains what appears to be a timber basilical building, visible on aerial photographs. A ditched droveway leads to the site. Pottery from the site has been mostly Roman.
R NGR 0951 1400 LCC SMR 30051 (SAM 160)

(6) Scheduled Ancient Monument (327). Described by DoE as:
"Part of the large and straggling agricultural settlement at Greatford, probably of Iron Age or Romano – British date."
This site comprises a homestead enclosure, and what appear to be stockyards. There would appear to be a complex palimpsest of features, indicative of several overlapping periods of use.

At least fourteen irregular rounded enclosures are known in the complex as a whole, linked by droveways, and double ditches with right angle bends.
IA/R NGR 0980 1190 LCC SMR 30054

(7) Slight cropmarks, no distinctive site types visible.
?P/R NGR 0960 1170 LCC SMR 32980

(8) Cropmarks, extensive and probably indicating Roman settlement (see catalogue entries 1,2,3,6).
R NGR 0980 1155 LCC SMR 33559

### 3.3 The archaeological potential of the application site

3.3.1 The part of the Welland Valley near which the application site is located has been the focus of intensive archaeological study since at least 1957, when the Welland Valley Research Committee was formed to survey and excavate threatened archaeological sites. Subsequent research has been carried out by the Royal Commission on Historic Monuments for England (RCHM(E)) and other organizations, most recently the Fenland Archaeological Trust.

3.3.3 The results of this cumulative research demonstrate that large tracts of the Welland Valley landscape were substantially deforested by the middle Neolithic period. A palimpsest of cropmarks exists spanning several millenia and betraying the presence of a series of organized prehistoric landscapes incorporating farms, field systems, and a spectacular range of ceremonial monuments.

3.3.4 Prehistoric communal monuments settlements, field systems and landscape features have been singled out as targets for research priority by English Heritage and the Prehistoric Society. The transition from Iron Age to the Roman including sites, their settings, field boundaries and food production and consumption also fall within the national research priority category.

3.3.5 Though the archaeology in the application area is scarce it is possible that alluviation may be covering and obscuring archaeological remains – so that these features are masked and not detectable by current techniques of aerial reconnaissance.

## 4.0 METHODOLOGY

### 4.1 Introduction

4.1.1 A phased approach is proposed consisting of: (1) air–photo interpretation, (2) fieldwalking and (3) a programme of geophysical survey, which will be followed by consultations with the County Archaeologist.

## 4.2 Aerial Photography

4.2.1 Aerial photographic work is to involve searches from CUCAP and NLAP. Photographs will be rectified to produce a plan at 1:25000 showing relevant archaeological and non-archaeological information.

## 4.3 Field walking

4.3.1 As much as possible of the application area will be fieldwalked. Fieldwalking will be carried out in lines spaced at 20m, except in areas of aerial photographic cropmarks, where the density will be increased to 10m. Collection policy is that of bagging every 20m. Where surface scatters are located the finds will be collected and recorded every 5m or 10m.

4.3.2 During the survey careful records will be maintained about personnel, weather, sunlight and soil conditions. This allows for biases in the collection exercise to be controlled which allows greater confidence to be placed in the results. Soil changes will be noted and marked during fieldwalking.

## 4.4 Geophysical survey

4.4.1 Geophysical evaluation is to comprise a programme of magnetic susceptibility on 10m grid. This is to be followed by a detailed magnetometer survey, covering an area 5 ha in maximum extent.

4.4.2 The magnetometer survey is to be focused on:

1. Areas where the magnetic susceptibility show hot spots

2. In areas showing cropmarks.

3. Where concentrations of artefacts show up in the course of the fieldwalking.

# 5.0 ARCHIVE AND PUBLICATION

## 5.1 Archive

5.1.1 All finds will be dealt with on site by an archaeologist nominated for the task and will be:

1. Cleaned/given conservation first aid /packaged as appropriate.

2. Catalogued and numbered

3. Boxed and removed to a place of security pending final deposition.

5.1.2 Where possible, advice will be sought from local specialists on the identification of finds.

5.1.3 The archive consisting of all relevant background information, the fieldwalking results (including plans showing the locations and densities of all classes of finds collected), cultural materials, the replotted aerial photographs, the geophysical report will be prepared, ordered and presented according to the guidelines issued by English Heritage (MAP2).

5.1.4 The archive will be assessed for its further potential in addressing local and national research objectives as well as its ability to have addressed the stated aims of the evaluation.

5.1.5 The archive and an assessment of the archive will be deposited with the allocated repository for archive material, after consultation with the curatorial authority.

## 5.2 Publication

5.2.1 A fully illustrated report containing factual details concerning findings of the various archaeological investigations will be submitted to the client and the County Archaeologist within 6 weeks of leaving the field.

5.2.2 This report will contain plans and illustration of artefacts, the air photographic and geophysical reports. This information and any other relevant data will be assessed in relation with the stated aims of the project.

5.2.3 A summary report will be submitted to the County Archaeologist for inclusion in the County round–up of archaeological news.

5.2.4 A fuller report will be submitted for publication in the local County Journal.

5.2.5 After completion of all works the archive and copies of the report will be deposited with the County Museum. A summary of the finding will be deposited with Lincs SMR.

# 6.0 STAFFING AND SCHEDULE OF WORKS

## 6.1 Staffing

### Project Director

6.1.1 Company position: Project Manager Field Services Department
Company Grade: Manager Band D

### Site supervisor

6.1.2 Company position: Assistant Manager Field Services Department
Company Grade: Manager Band E

### Archaeological Staff

6.1.3 Company Position: Field Archaeologist
Company Grade: Manager Band E/F

**Central Office Staff**

6.1.4 D P Davison MA MPhil DPhil PGEE
Company Position: Manager Field Services
Company Position: Senior Manager/ Band C

6.1.5 E P Hedges BA MStud MIoD
Company Position: Senior Director, Head of Counting House
Company Position: Senior Manager/ Band C

**Other Staff**

6.1.6 J Sandoe BA
Company Position: illustrator
Company Grade: Illustrated / Grade F

**Specialists**

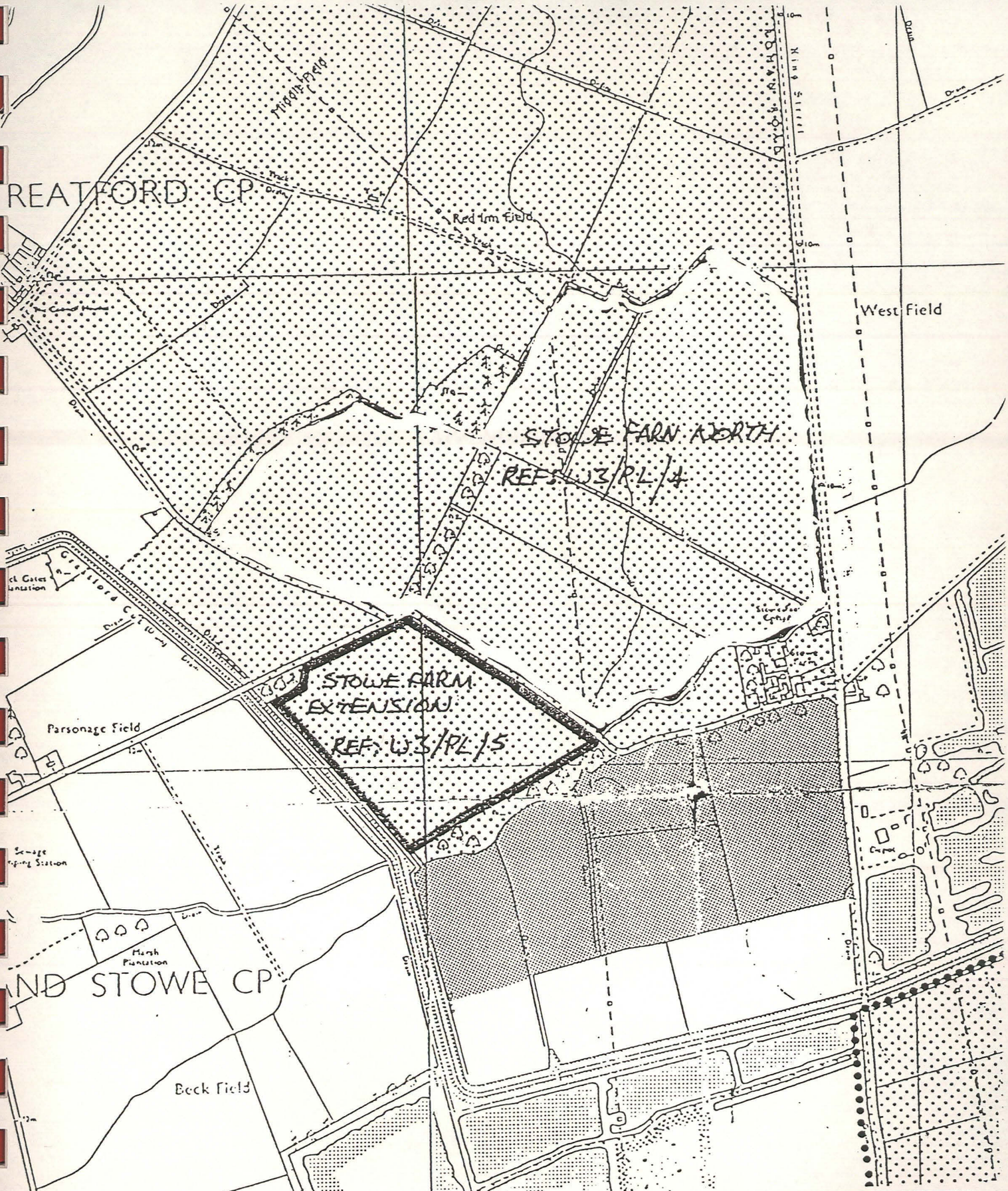
6.1.7

| | |
|---|---|
| Air Photo Interpretation | Roger Palmer,<br>Air Photo Services |
| Geophysical Survey | Alister Bartlett<br>Bartlett–Clarke<br>Consultancy |
| Prehistoric Pottery | A Barklay |
| Flint | P Kiberd |
| Roman Pottery | M Wood |
| Medieval Pottery | L Bown |

## 6.2 Works schedule

6.2.1 It is envisaged that fieldwalking and the programme of geophysics work will start by the week of 19 September 1994 and will last for aprroximately a week.

# FIGURES




**TEMPVS REPARATVM**

*29 Beaumont St Oxford 0865 311046*

Location and extent of application area
1:100000

Area W3/PL/5
Stowe Farm, W Deeping
Lincs

**TR 31112DCA**

# APPENDIX 2

**AIR PHOTO SERVICES**
21 GUNHILD WAY
CAMBRIDGE
CB1 4QZ
PHONE/FAX 0223 572063

# STOWE FARM,
# WEST DEEPING, LINCOLNSHIRE
# (centred TF100110)

## AERIAL PHOTOGRAPHIC ASSESSMENT

**SEPTEMBER 1994**

COMMISSIONED BY

TEMPVS REPARATVM
29 BEAUMONT STREET
OXFORD OX1 2NP

PARTNERS: ROG PALMER MA MIFA CHRIS COX MA MIFA

*Archaeological consultants for aerial photographic interpretation, accurate mapping and oblique aerial photography*

# STOWE FARM, WEST DEEPING, LINCOLNSHIRE

## AERIAL PHOTOGRAPHIC ASSESSMENT

Rog Palmer MA MIFA

## INTRODUCTION

Photographic interpretation was undertaken and mapping produced at 1:2500 to show archaeological and non-archaeological information in the trapezoidal field referenced W3/PL/5 (centred *c.* TF100110).

## PHOTO INTERPRETATION AND MAPPING

The principal photographs examined for this assessment came from the Cambridge University Collection of Aerial Photographs (CUCAP) and the National Library of Air Photographs (NLAP), Swindon. Following instructions from Tempvs Reparatvm enquiries were made to determine whether photographs had been taken in recent years (and not yet accessioned into NLAP) by two regional aerial photographers: Glenn Foard, Northamptonshire County Council and James Pickering, Hinckley, Leicestershire. Northamptonshire County Council had no aerial photographs of the assessment area (telephoned information: Christine Addison, NCC, 14 September 1994) while Pickering's response was to send me *c.*200 transparencies and prints of the general area.

Aerial photographs examined for this assessment showed the general area to have been visited for the purposes of archaeological reconnaissance on at least 31 different dates between 1952 and 1991. Vertical survey added a further 9 visits over the assessment field. All relevant photographs are listed, by source, in the appendix to this report.

Interpretation and mapping was carried out following procedures described by Palmer and Cox (1993) and all rectification was carried out using AERIAL 4.2 software (Haigh 1993). Vertical prints, and some obliques, were examined stereoscopically at 1.5x magnification. Other interpretation of obliques was carried out under different degrees of magnification (1.5x to 6x) as necessary. In all cases there was an increase in scale from the photographs to the 1:2500 mapping which may introduce its own minor errors. Information from three photographs was used to compile the final 1:2500 interpretative plan (a computer generated version of which illustrates this report) and correlation of features was good. Archaeological and non-archaeological features appeared on a number of prints and those mapped present a reliable record of crop-marked sub-surface remains in the area. The record of ridge and furrow was more variable and that mapped is combined from the sources used. Matching of control points by AERIAL was within acceptable limits and in all cases the mean control point error match was below ±2.0m.

The 1:2500 presentation that accompanies this report comprises three sheets designed as overlays to one another and to the Ordnance Survey map. One sheet is a schematic base map which outlines field W3/PL/5 and shows the single instance of recent(?) quarrying. The other overlays separate the medieval fields from the archaeological, possible archaeological and natural features. This final overlay depicts all features whose crop-marked evidence sugests them to be ditches or other sub-surface soil-filled depressions that should be visible after topsoil is removed.

## COMMENTARY

W3/PL/5 is situated on gravel terrace soils and, as such, is in an area that produces crop-marked natural features such as result from past ice action (Wilson 1982, 143-152; Harris 1990, 118-124) as well as those of archaeological origin. Both can be interpreted and mapped from aerial photographs but confident classification as one or other type is sometimes problematical. Many of the natural linear features form marks closely similar to archaeological ditches and their assignation as 'natural' may be made on slight differences in appearance (such as irregular width) or their less-purposeful course. Confusion is sometimes added by the fact that they appear to link with archaeological features (arguably logical as, once encountered during ditch digging, following such soil-filled features would be easier than cutting a ditch through natural). Fortunately for this assessment the more confusing of such areas are in adjacent fields. Attribution of features within the assessment area as archaeological or non-archaeological is – hopefully – more accurate and has been based on the following interrelated criteria:

> ***Discontinuity*** – archaeological ditches tend to be continuous but for occasional formal entrance gaps. Natural fissures can appear to form linear features but which detailed examination shows to be made of a series of discontinuous segments.
>
> ***Width*** – natural linear features tend to be broader than their archaeological counterparts.
>
> ***Regularity*** – archaeological linear ditches, especially those originating in the later prehistoric and Romano-British periods, are often of extremely constant width. Natural linear features tend to be of variable width.
>
> ***Definition*** – crop marks above archaeological ditches in the Market Deeping area generally have very sharply defined edges. Those caused by natural linear fissures are often of fuzzy appearance, possibly due to extreme edge weathering (from past climatic action) creating pockets that can be penetrated by moisture-seeking roots.

Classification of linear crop-marked features as archaeological or not can be carried out with more conviction than can be applied to pits. Much of the assessment area shows evidence of past pits but most are considered to be natural and tend to combine in dense clusters that have no known excavated archaeological parallels. A small number of pits have been mapped as of possible archaeological origin although there is little evidence to support this assumption. They have been selected by virtue of the sharpness and shape of their crop-marked record and due to their isolated location (ie they are not in the densely pitted area). Pits assumed to be natural may remain in isolation but are more frequently tightly clustered, and are sometimes so dense that edge erosion has led to them, at some previous date, spreading together to form a larger pocket of deeper soil. The area of dense pitting has been indicated schematically on the relevant 1:2500 map but, for reasons of clarity, has been omitted from the illustration in this report.

The predominant archaeological features on the aerial photographic record are the headlands and ridge and furrow of the medieval open field system. These show no height on any of the photographs examined stereoscopically and are likely to be totally levelled by modern cultivation.

Ditched archaeological features in the assessment area comprise two ring ditches: one, partly masked by a roadside verge at TF09951129, is *c.*12.0m in diameter; the other, at TF09861122, is *c.*6.5m diameter. Some photographs suggest the latter may be penannular, with a break in

circumference on the north side, but this is thought more likely to be a false record due to minute variations of crop growth and angle of view. The feature has been mapped as a continuous circle, and is more probably so formed. Other, possibly archaeological, features are the small number of straight, or near straight, crop-marked ditches. Some of these are nearly aligned with the remnant ridge and furrow but do not appear to be related to the open field system while other perpendicular components cross individual furlongs and must, therefore pre- or post-date the medieval fields. Both of the medieval headlands crossing the assessment area show evidence for ditches along the same course. In one place (TF09791103) the ditches are a parallel pair and may represent a ditch-defined track. Dating of these is impossible from the aerial photographs alone: they could be considerably earlier than the medieval headland (now sufficiently degraded for a ditch that it once masked to have come to the surface again), which fortuitously followed the same course, or they could be evidence of a later track that followed the slightly higher route of the headland. It is unlikely that they are anything to do with the planning of the medieval fields since use of marking-out ditches was extremely rare in medieval England (David Hall: pers com: 9 September 1994). Examination of first edition Ordnance Survey six-inch maps may help understanding of these features.

A single bank or headland, of slighter form than the two parallel examples, is evident in the western angle of the field. It abuts the western of the parallel headlands in the assessment field and can be traced west across the adjacent field. It appears most likely to be a headland and may represent addition, or changes, to and existing system of land allotment. Study of the Enclosure Award may further clarify the layout of medieval fields.

Examination of the fields surrounding W3/PL/5 show there to be a number of natural linear features that link with those mapped for this assessment. No archaeological features were identified that suggest continuation within the assessment area but for one possibility. Some aerial photographs show there to be a sinuous double ditched track in the field to the southeast of W3/PL/5 that *may* just intrude into the extreme southern part of the assessment area. No evidence for this within the assessment area was identified during specific examination of the available air photos. The relevant photograph (TF1010/10) was taken from such a position that there is insufficient control information to attempt any accurate mapping. Field examination against, and parallel to, the belt of trees using geophysics or trenching and extending no more than 30m ENE from the drain of Greatford Cut (TF0996010824) is the best action that can be suggested to test for this feature. Absence of ridge and furrow evidence against this field edge suggests, as would be expected along a field boundary, the presence of slightly deeper soil.

Despite the amount of archaeological reconnaissance in the area field W3/PL/5 has been photographed as an archaeological target on very few occasions although it appears in the background of other prints of other dates. Like most fields in Britain the variables of crop type, farming practice and climate have resulted in it being photographed in a range of informative and uninformative conditions. At its most revealing (summer 1990) it was showing archaeological and non-archaeological features with sufficient clarity to convince me that crop differences were indicating as much as was possible. That, and the number of times the area has been examined by airborne archaeologists – and the field not specifically photographed – lead me to conclude that the mapped sub-surface features are a good record of such archaeological features in the assessment area.

## REFERENCES


Haigh, J G B, 1993. A new issue of AERIAL – Version 4.20. *AARGnews* 7, 22-25.

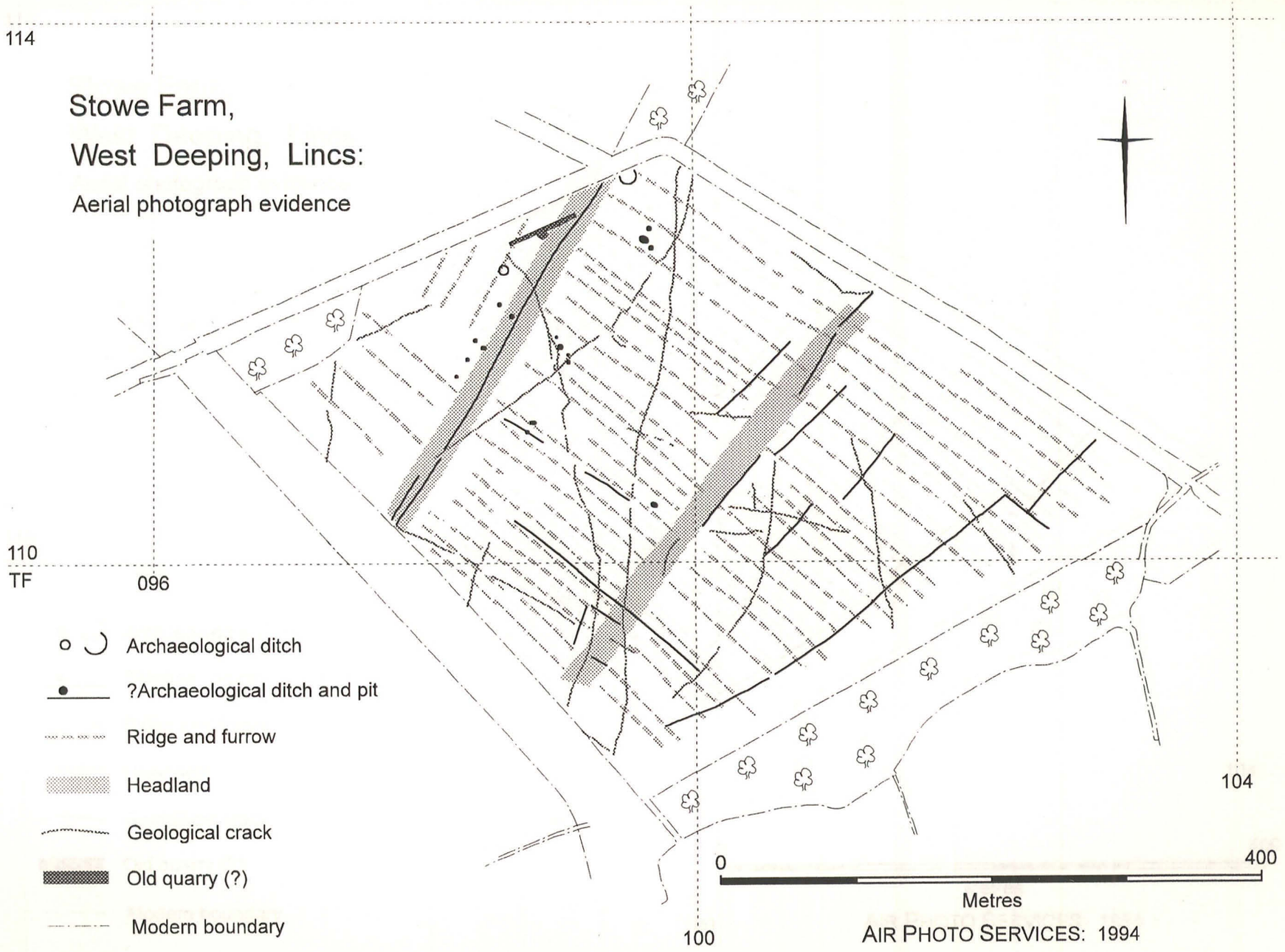
Harris, C, 1990. Periglacial landforms, in N Stevens (ed) *Natural Landscapes of Britain from the Air*. Cambridge.

Palmer, R and Cox, C, 1993. *Uses of aerial photography in archaeological evaluations. IFA Technical Paper* 12.

Wilson, D R, 1982. *Air Photo Interpretation for Archaeologists*, London.

# Stowe Farm,
# West Deeping, Lincs:

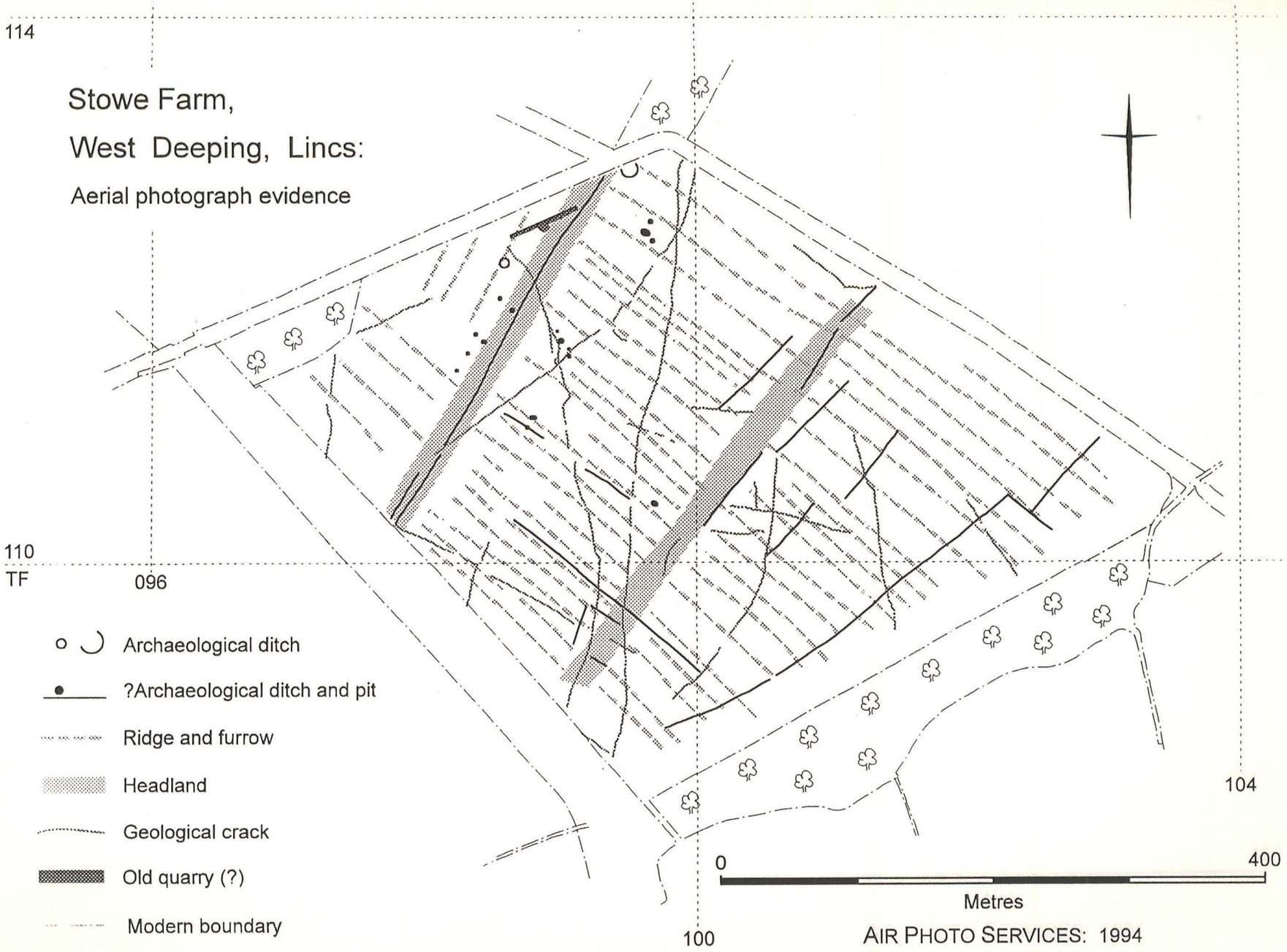
Aerial photograph evidence




AIR PHOTO SERVICES: 1994

# Stowe Farm,
# West Deeping, Lincs:

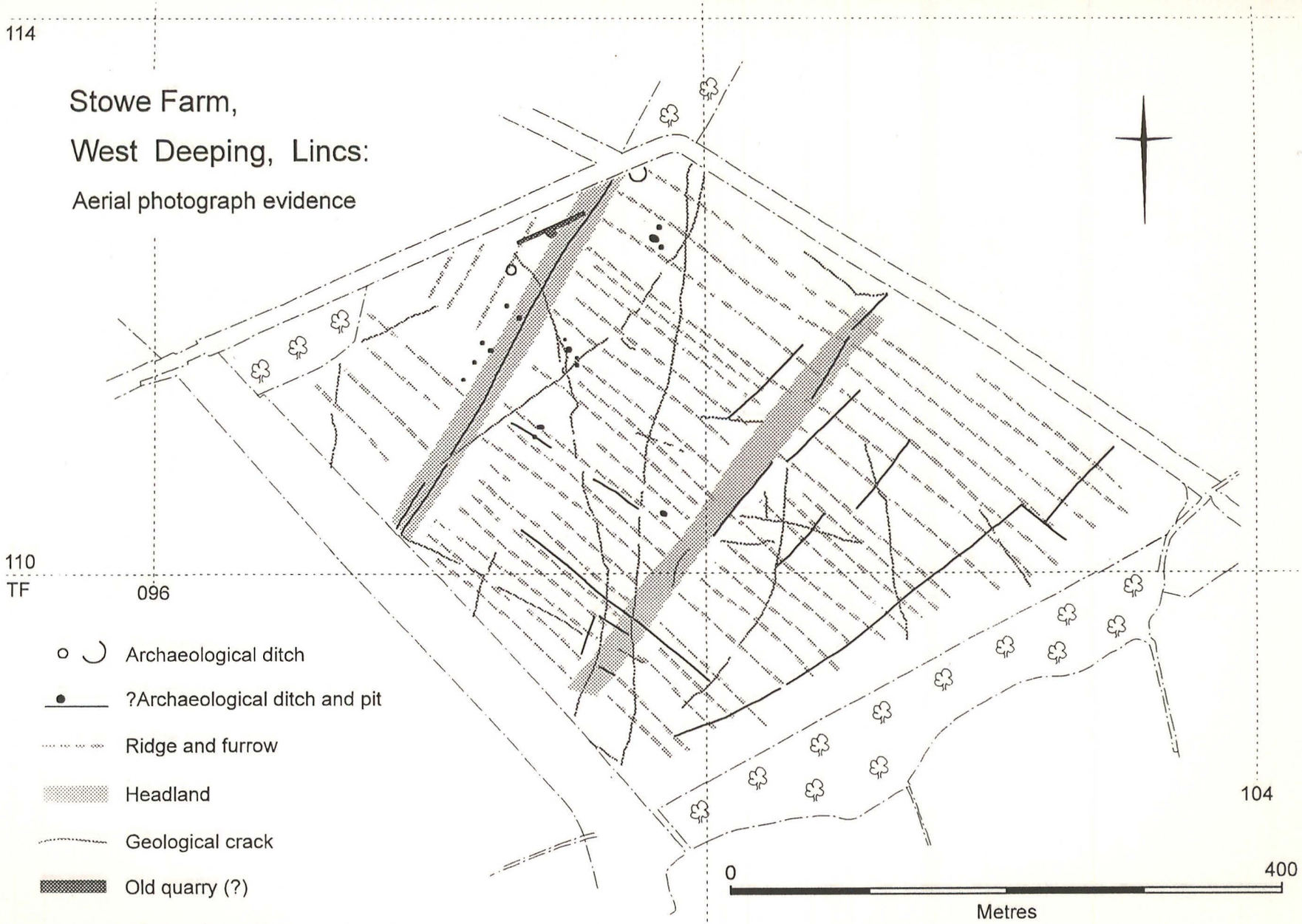
Aerial photograph evidence




AIR PHOTO SERVICES: 1994

# Stowe Farm,
# West Deeping, Lincs:

Aerial photograph evidence

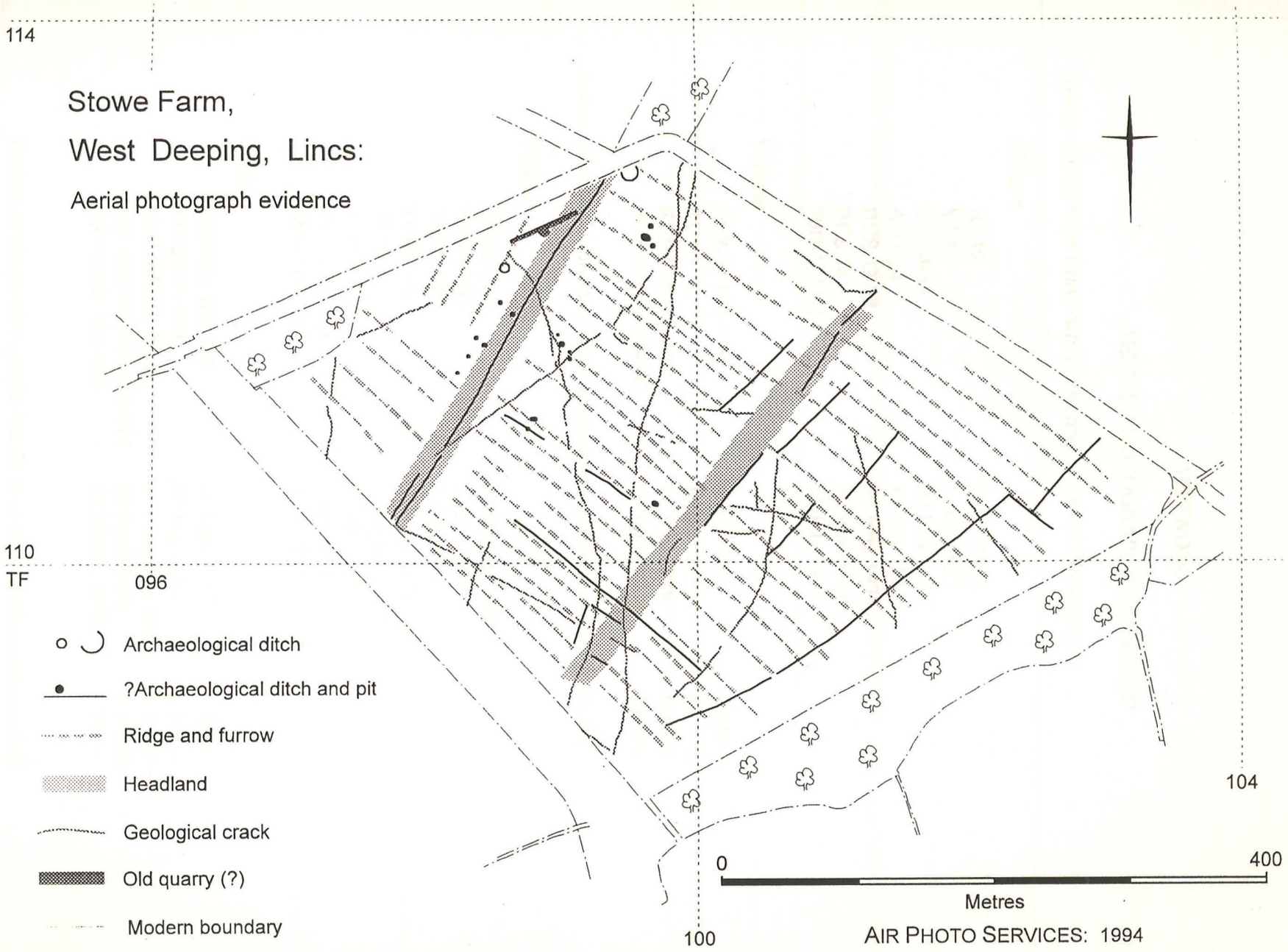



- Archaeological ditch
- ?Archaeological ditch and pit
- Ridge and furrow
- Headland
- Geological crack
- Old quarry (?)
- Modern boundary

AIR PHOTO SERVICES: 1994

# Stowe Farm,
# West Deeping, Lincs:

Aerial photograph evidence




AIR PHOTO SERVICES: 1994

## APPENDIX

## AERIAL PHOTOGRAPHS EXAMINED

*Source: Cambridge University Collection of Aerial Photographs*

Oblique

| | |
|---|---|
| JG 49 | 5 July 1952 |
| VJ 29 | 1 July 1957 |
| ZG 54-55 | 30 June 1959 |
| ADT 24 | 14 July 1961 |
| BCS 32-33 | 30 June 1970 |
| BCS 48 | 30 June 1970 |
| 70H-V 12-13 | 11 July 1974 |

Vertical

| | | |
|---|---|---|
| RC8-M 154-156 | 4 July 1969 | 1:10200 |
| RC8-V 31-33 | 17 April 1971 | 1:15000 |
| RC8-LM 183-184 | 11 July 1989 | 1:5500 |
| RC8-KnCP 144-147 | 19 July 1990 | 1:6000 |

*Source: National Library of Air Photographs (coversearch CA948660BP)*

Oblique

| | |
|---|---|
| TF0910/25 | 22 August 1981 |
| TF0911/63 | 1 July 1980 |
| TF0911/87 | 3 July 1990 |
| TF1010/4 | 31 July 1977 |
| TF1010/10 | 7 August 1983 |
| TF1011/9 | 5 July 1984 |
| TF1011/16-18 | 3 July 1990 |
| TF1011/20-22 | 5 July 1984 |

Vertical

| | | |
|---|---|---|
| 58/2481: 102-105 | 16 June 1958 | 1:5000 |
| 543/2337: 440 | 30 July 1963 | 1:10200 |
| MAL/65093: 29-30 | 3 November 1965 | 1:12000 |
| HSL/UK/66/475: 113-114 | 30 April 1966 | 1:11200 |
| OS/73048: 574-576 | 27 March 1973 | 1:7500 |

The lists of oblique photographs include those in which the assessment field appears in the background as well as those in which the field has been targeted.

*Source: James Pickering (Elmtree Drive, Hinckley, Leicestershire)*

Following instructions from Tempvs Reparatvm I asked Pickering – a regional aerial photographer – if he had any material that covered the assessment area that was not yet accessible at NLAP. His response was to send me approximately 200 transparencies and prints that he had indexed under Km squares TF0910-0912 and TF1010-1012. These photographs had been taken on 23 different flights to the area in twelve years between 1975 and 1991. From this mass of material not one photograph had been targeted on the assessment field, although it did appear in the background of a very small number. All that was visible on those photographs, when there was any crop response at all, was crop-marked natural cracks.

Pickering's transparencies have no clear individual identification references – they are filed by a mixture of grid reference, date and stick-on numbers – and it would be futile to attempt to list those frames that include the assessment area.

*Most informative photographs:*

Of all the photographs examined, the most informative were those taken in 1990: a vertical run by CUCAP at 1:6000 and a series of obliques taken by RCHME, held by NLAP.

## TERMS AND CONDITIONS

Air Photo Services have produced this assessment for their clients, Tempvs Reparatvm, subject to the following conditions:

Air Photo Services will be answerable only for those transcriptions, plans, documentary records and written reports that it submits to the clients, and not for the accuracy of any edited or re-drawn versions of that material that may subsequently be produced by the clients or any other of their agents.

That transcriptions, documentation, and textual reports presented within this assessment report shall be explicitly identified as the work of Air Photo Services.

Although Air Photo Services has endeavoured to identify and consult all existing air photographic coverage of the assessment area which was available within the assessment timescale, it cannot guarantee that further aerial photographs of archaeological significance do not exist in collections unknown or inaccessible to it.

That the original working documents (being interpretation overlays, control information, and digital data files) will remain the property of Air Photo Services and be securely retained by it for a period of three years from the completion date of this assessment after which only the digital files may be retained.

# APPENDIX 3

# STOWE FARM, WEST DEEPING
# LINCOLNSHIRE

## Report on Archaeogeophysical Survey
## 1994


A.D.H. Bartlett

Surveyed by:

Bartlett-Clark Consultancy

Oxford Centre for Innovation,
Mill Street, Oxford, OX2 0JX
(0865 200864)


for

Tempus Reparatum Archaeological and Historical Associates Ltd

# Stowe Farm, West Deeping, Lincolnshire

## Report on Archaeogeophysical Survey, 1994

### Introduction

This survey was commissioned by Tempus Reparatum Archaeological and Historical Associates Ltd, who are undertaking an archaeological assessment of the site on behalf of Redland Aggregates Ltd. Fieldwork for the survey was carried out in September 1994, and initial plots of the findings were supplied for use during the trial trenching which followed immediately after the survey.

### Site Description

The site is some 17ha in extent, centred at NGR TF 1011, and lies some 2 km NW of the productive multi-period site currently under excavation by Tempus Reparatum at Rectory Farm, West Deeping. The sites are similarly located to the north of the River Welland on a gravel deposit overlying Oxford Clay. A number of archaeological sites and features including ring ditches, and settlements of probable Iron Age/Romano-British date, are known from cropmarks to be present in fields to the north of the Stowe Farm site, but aerial photographs provide only limited indications of archaeological features within the site itself.

An interpretative drawing of cropmarks prepared by Air Photo Services and supplied to us by Tempus Reparatum is reproduced for comparison with the survey findings on plan 1. It shows linear markings resulting from cultivation and natural frost cracking, but also some possible archaeological features including ring ditches and pits. These features, especially those of natural origin, are unlikely all to be detectable by geophysical methods, which are most responsive to disturbances associated with former occupation or industrial activities. The survey should, however, provide at least some indication of whether there could additionally have been significant settlement activity which is not clearly identifiable from the cropmarks.

### Survey Procedure

It was necessary, given the size of the site and the lack of apparent concentrations of archaeological features within it, to carry out the survey in two stages, with an initial overall assessment followed by selective detailed surveying. The procedure specified for the survey was therefore to carry out a magnetic susceptibility survey with readings recorded at 10m intervals across the entire site, and to follow this with a magnetometer

survey of up to 5 hectares. These two techniques provide related but complementary information. The magnetometer responds to small localised anomalies in the earth's magnetic field caused when cut features such as ditches or pits are silted with topsoil, which usually has a higher magnetic susceptibility than the underlying subsoil. This contrast in susceptibility values and the corresponding strength of the magnetic anomalies will in general be greater in areas where burnt material derived from past human occupation or industry has become dispersed in the soil. The resulting susceptibility enhancement can also be detected by means of direct measurements of topsoil magnetic susceptibility values, as was done in the initial assessment here.

The susceptibility survey was carried out using a Bartington MS2 meter with field sensor. The results are presented on plan 1 in the form of plots of shaded squares, each corresponding to the 10m square on the ground from which the reading was taken. High susceptibility values are represented by dark shading.

The areas selected for coverage by magnetometer surveying are also indicated in outline on a map extract (plan 1iv), with an interpretation added to show the more significant detected anomalies. The magnetometer findings from each area are reproduced in their correct relative positions at 1:1000 scale on plan 2, which shows the results as graphical profile or trace plots, and as half tone plots on plan 3. All the plots as reproduced are based on a processed version of the data in which high readings (usually caused by buried iron) have been truncated, irregularities in the line spacing caused by variations in the instrument zero setting have been corrected, and the results smoothed to reduce background noise levels and emphasise the broader features which may be archaeologically significant. Additional comparative plots of the unsmoothed data have been prepared, but are not reproduced in this report.

Both the susceptibility and magnetometer surveys were located by reference to a site grid corresponding to the 100m NG squares. The grid intersections were located by measurement from base points at the four corners of the field which had previously been surveyed in and marked with the full NG coordinates by Tempus Reparatum.

The survey findings were as follows:

## Magnetic Susceptibility Survey

The survey plots show some overall variations between different areas of the field, but only within a relatively limited range of values. The readings have a mean of 25 x $10^{-5}$ SI (volume susceptibility), which suggests that the site should be reasonably, but not highly, responsive to a magnetometer survey, but they have only a small standard deviation (3.9). Areas of significant susceptibility enhancement at many sites are often sufficiently strongly defined to be recognisable when readings of similar magnitude to these are plotted between cut-off levels at 0 and 50 SI, as in plot 1(ii), but here only very limited variation is apparent. The contrasts can be emphasised by plotting between narrower limits, as in plot 1(i) (which shows readings in the range mean $\pm$ 2.5 standard deviations), but this plot is quite uneven, showing that much of the activity is in the form of small - scale or localised noise, rather than distinct areas of high readings. The noise level has been reduced in plot 1(iii) by averaging each reading with its neighbours. The

display range for this plot has been selected to include variations above the mean value of the data only, and it therefore provides an approximate indication of the extent of areas within the site which show susceptibility enhancement. The susceptibility variations seen in these plots suggest that the overall level of archaeological activity at this site is likely to be slight, but with the possibility of local concentrations.

The main findings from the susceptibility survey, as seen particularly in plot 1(iii), are that high readings are present at the east and west corners of the field, and that they extend irregularly for some distance into the field from the two ends. High susceptibility values can be caused by non-archaeological effects, which may well have had some influence on the readings nearest the corners of the field at A and B. The high readings at A lie close to the former quarry which occupies the north west corner of the field, and those at B are close to the field entrance, which often has an effect on susceptibility values, and are also near an electricity pylon. The area of slightly raised readings does, however, extend beyond the immediate influence of such disturbances. It extends some 200m east from the corner at A, and a rather greater distance along the south east boundary of the field from B. The magnetometer survey areas were located to test and compare a number of the susceptibility variations and cropmarks, as noted below.

**Magnetometer Survey**

The six areas selected for magnetometer coverage are numbered on the plans in sequence from north to south.

Area 1

This area includes a number of cropmarks at the north of the field, together with part of the area of enhanced susceptibility as noted at the western end of the field. It takes in features including the cropmark pits labelled on plan 1(v) at C, together with a possible ring ditch, additional pits, and a former headland with a linear ditch. None of these, except around C, correspond to any particular susceptibility activity.

A few magnetic anomalies were detected in this area, and are indicated on plan 2, as well as on the 1:2500 location plan 1(iv). They include a large pit-like anomaly 4 - 5m across (C on plan 2), which corresponds well to one of the cropmarks. There is a band of anomalies outlined at D, which correlates with the cropmark labelled as an old quarry. The magnetic disturbance here is rather uneven, and may indicate variations in the composition of the fill of an old trench. There is a large pit at E which lies within a semicircular pattern of other anomalies, which may represent small pits. These potential small pits are not, however, very distinct, and there are other comparable but randomly placed examples elsewhere in the plot. There is another faint arc-like feature marked by a dotted line at F, and an alignment at G, which are recognisable particularly in the half tone plot, but these again are both weak and could be spurious patterns in the background noise.

The anomaly at H lacks the strong negative peak which is usually seen alongside the positive displacement when buried iron is detected, and which is present at a number of other anomalies which are not outlined on the plot. The feature at H could therefore represent a pit with a strongly magnetic fill, although the interpretation cannot be conclusive for an isolated feature of this kind.

A linear pattern can be seen at intervals in the half tone plot (arrowed on plan 3), and must relate to the ridge and furrow cultivation pattern, which was noted also in other areas of the survey, as noted below.

Area 2

This lies in an area of high susceptibility readings close to the former quarry, and appears to be relatively noisy in the magnetometer plots. Most of the individual magnetic anomalies are, however, small and narrow, and difficult to distinguish from iron objects or other strongly magnetic modern debris. Initial reports from the trial excavation do, however, confirm the presence of archaeological features in this area, including post holes. Post holes are often too small to be detected in a magnetic survey, but given a sufficiently strongly magnetic fill they could produce narrow anomalies as seen here. A number of anomalies which could signify small holes have been circled on plan 2, but the selection is rather arbitrary against a background of disturbed readings in an area where pieces of iron may also be present. A enlarged copy of this section of the survey is also included on plan 2 so that the anomalies can be compared without the interpretative outlines.

Area 3

This area was surveyed for comparative purposes to check the magnetometer response in a relatively undisturbed part of the site. The area is free of cropmarks except for ridge and furrow, and showed only slight susceptibility variation. The only magnetic anomalies detected were pit-like features as circled on the plot, which are similar to those seen in Area 1, and whose significance is difficult to determine in isolation. They could be archaeologically significant, especially if weak features are found to be significant elsewhere, but may only be small naturally silted hollows in the gravel, except for the stronger anomaly at J. This could possibly be a strongly magnetic pit or hearth, or perhaps a large iron object.

Area 4

This area includes the intersection of a number of linear cropmarks, but produced very limited magnetometer findings. Some magnetic disturbances are likely to be caused by buried iron, and the only potentially archaeological features are again isolated pit-like anomalies of uncertain significance. There are also slight linear anomalies relating to the ridge and furrow (arrowed on plan 3). The fact that these very slight features have been detected, but other cropmarks have not, is consistent with the possibility that some of the linear cropmarks are natural frost cracks, which are not readily detectable in a magnetometer survey, rather than ditches associated with human activity.

Area 5

This area corresponds to a distinct region of susceptibility enhancement, but is comparatively free of cropmarks. The survey here proved to be relatively productive, and detected a number of anomalies which could represent pits. These are clustered against a quiet background. A few of the stronger anomalies could represent buried iron objects, but not unambiguously so, and it is not impossible that anomalies K, L and M (as well as J in Area 4) could be such features as hearths or pits with a strongly enhanced

fill. The survey did not, however, detect any ditches or enclosures which might also be expected to be found at a site where such features are present, except for the very faint indications of linear features as marked by dotted lines. Some ridge and furrow was again detected, as indicated by arrows on the half tone plot. An enlarged extract showing the most responsive section of this area of the survey is again inset on plan 2.

Area 6

This area was surveyed to test for any features which may be associated with a cropmark ditch which has been reported to enter the field at this corner. The area failed to show any susceptibility activity, and is also largely free of magnetic anomalies. There is slight increase in the noise level towards the east of the area, but this is not associated with any distinct or identifiable features.

## Conclusions

The survey findings have shown that a number of concentrations of archaeological features are likely to be present, although substantial areas of the site also appear to be largely free of archaeological disturbances or activity. The survey has detected clusters of pits in Areas 1, 2 and 5, and perhaps isolated examples elsewhere, but has failed to detect most of the linear features noted as cropmarks, except perhaps for limited indications of the ridge and furrow cultivation pattern. It is frequently the case that natural geological cracks or channels, or man made ditches remote from any archaeological source of susceptibility enhancement, are not detected in a survey of this kind. Ceremonial monuments not closely associated with occupation features may similarly be difficult to detect.

It is possible, given that archaeological features appear to have been detected in Areas 1 and 2, that other such features could be present within the area of enhanced susceptibility values at the west end of the field, which was too large to be surveyed fully by magnetometer. Additional settlement features may particularly be a possibility in the vicinity of the cluster of relatively high susceptibility values at N (plot 1iii), and perhaps also at the east end of the field near to the high readings at B.

**Report by:** A.D.H. Bartlett BSc MPhil

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A. Gilbert BA and B.Y. Turton MA assisted with the fieldwork for this survey. Dr A.J. Clark FSA has advised on the interpretation.

**Date of report:** 20 October 1994

# APPENDIX 4

# STOWE FARM PROJECT (LIWDSF 94)

## Field walking report: Field W3/PL/5

### Introduction

The first part of this exercise involved the positioning of five pegs partly for the purposes of surveying the finds from field walking. These pegs will also be used for the geophysical survey (comprising magnetometry and magnetic susceptibility) as well as facilitating the setting-out of trenches for the evaluation proper.

All of the pegs have XYZ values written on them; four are placed around the edges of the field and the fifth is located on the major OS grid intersection 510000/311000 (see printed sheet 1 for the positioning of these pegs).

### Methodology

As stated in the specification for the project the lines to be walked were set at 20 metre intervals (Cf. TR31012 Section 4.3). Only the western 2/3rds of the field were available for walking (the remaining third being stubble). Base lines were set to the north and south of the area that had been ploughed and harrowed. A total of fourteen lines were available for walking (see printed sheet 2 for the location of the walked lines and base lines). For the purposes of recovering and surveying the finds these lines were numbered sequentially from 1 from the west. There were only single finds spaced at large intervals on any one line walked (i.e. there were no concentrations of artefacts) so the collection policy of bagging every 20 metres on each line was adhered to.

### Conditions

For the duration of the survey the weather was sunny and warm on the whole although cloud cover built up in the latter part of the day. The conditions on the ground and the light were conducive to field walking but rainfall prior to the commencement of the survey would have increased the likelihood of recovering more finds as the soil would have been 'washed' thereby making more finds visible (but see the comments below under 'results' on this point).

### Results & Conclusions

The objects recovered are as follows (see printed sheet 3 for the plot of individual finds):

Line 1 Find 1 = Post-Medieval sherd.
Line 2 Find 1 = Medieval/Post-Medieval sherd.
Line 3 Find 1 = Post-Medieval sherd.
Line 3 Find 2 = Flint.
Line 4 Find 1 = Medieval/Post-Medieval sherd.
Line 5 Find 1 = Post-Medieval glass fragment.
Line 5 Find 2 = Post-Medieval sherd.
Line 6 Find 1 = Fragment of a hone.
Line 9 Find 1 = Post-Medieval sherd.
Line 10 Find 1 = Post-Medieval sherd.
Line 10 Find 2 = Medieval/Post-Medieval sherd.

## STOWE FARM PROJECT (LIWDSF 94)

### Field walking report: Field W3/PL/5

Line 13 Find 1 = Fragment of a clay pipe.
Line 14 Find 1 = Worked flint.

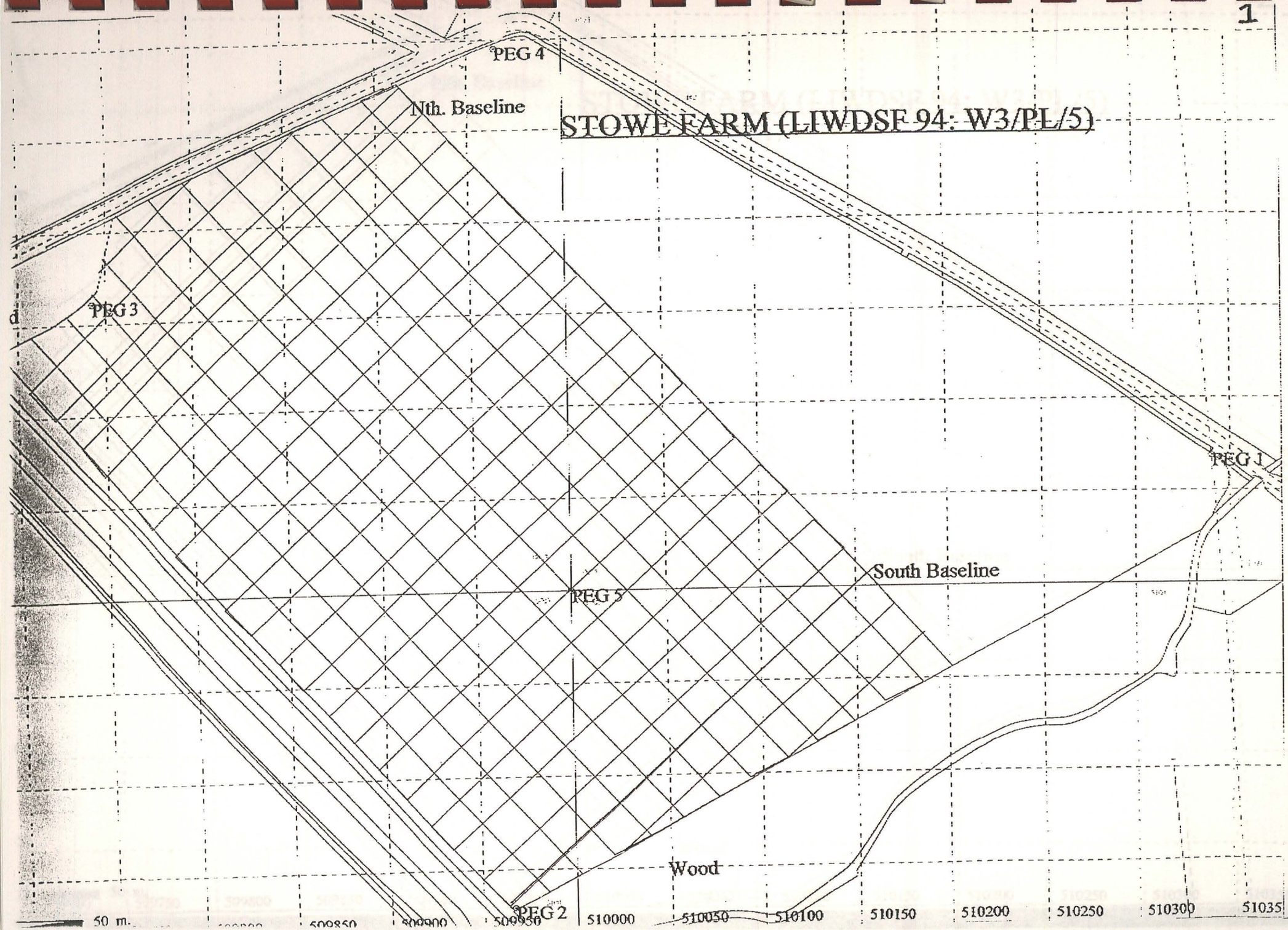
Thus, the survey produced a total of 13 ceramic, glass, flint and worked stone objects (see printed sheet 3 for their location). A flint flake was also recovered prior to the commencement of the survey and this has been noted but not included in the plotting of the finds.

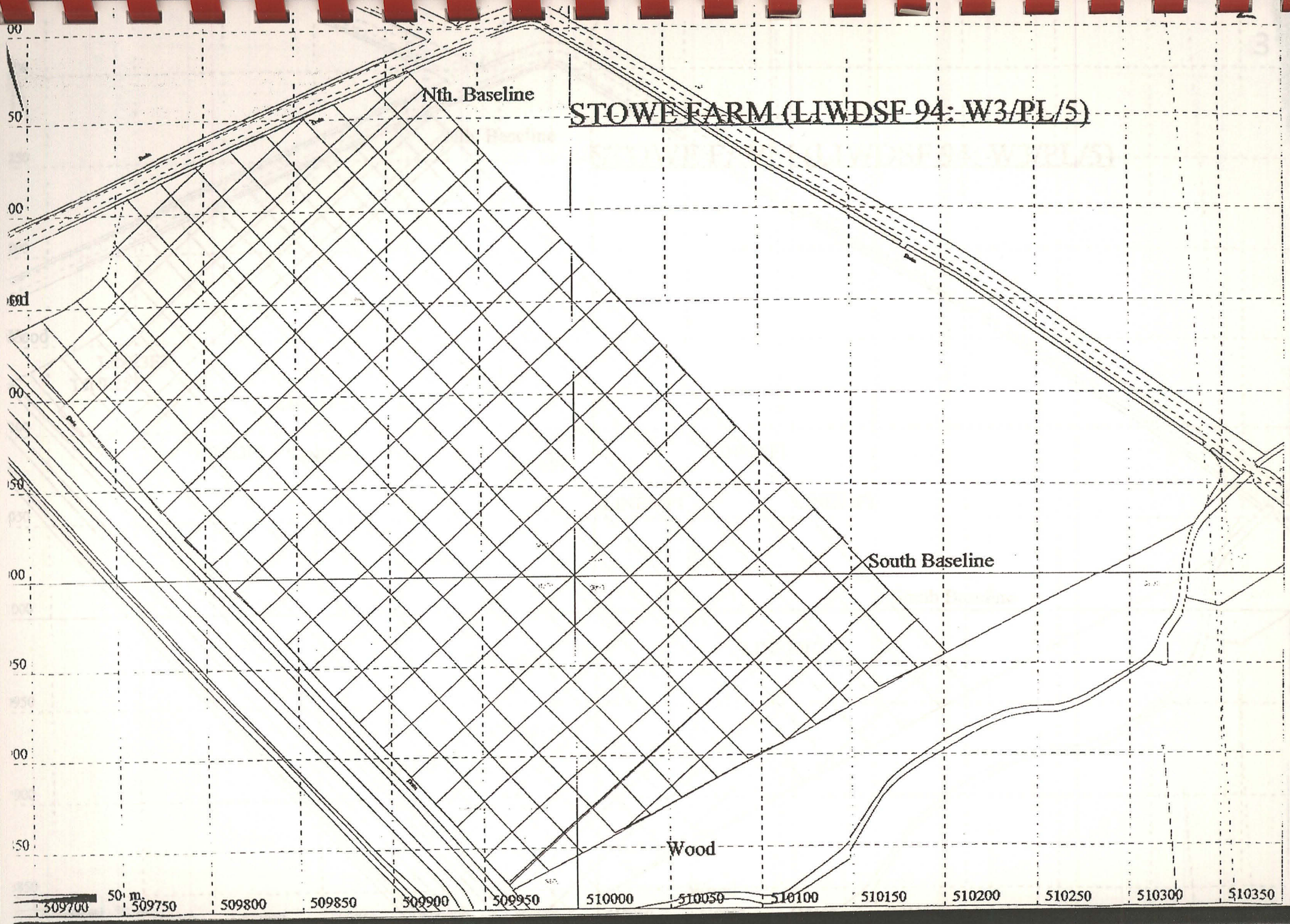
Given the range of types and the date of the artefacts actually recovered the fact that rain had not fallen prior to the lines being walked would tend to suggest that rainfall would only have increased the overall recovery rate. Thus, in all probability, the broad chronological span and range of types of objects recovered would remain the same. No ceramic item earlier than the Medieval period was found and in fact the majority of sherds date to the post-Medieval period.

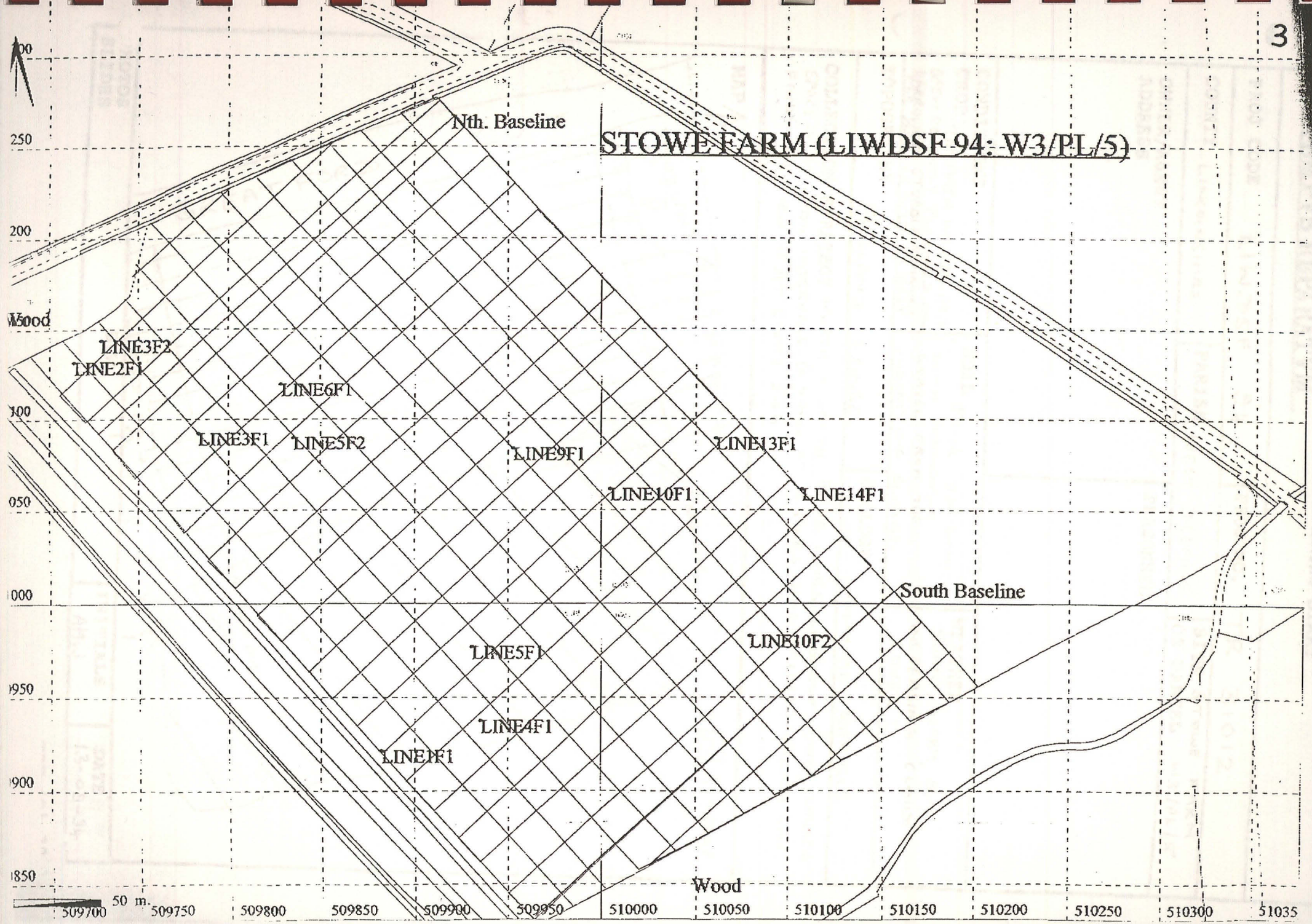
The results of the survey indicate the presence of Neolithic man (Cf. the flints) followed by a long chronological gap until farming took place in the Medieval and post-Medieval periods.

No late Bronze Age, Iron Age, Roman or post-Roman artefacts were found. Trial trenching over known crop mark features will conclusively prove whether the long chronological gap between the Neolithic and Medieval periods (as is suggested by the field walking survey) is true or false in terms of the presence of human activity in field W3/PL/5.

**A M Wood** **September 19th 1994**







# TEMPVS REPARATVM — FIELDWALKING DIARY

PROJ CODE LIWDSF 94

COUNTY LINCOLNSHIRE

PARISH WEST DEEPING

PROJ NO. TR 3101 2

SITE STOWE FARM

OS PARCEL W3/PL15

OWNER/AGENT
ADDRESS

PERSONNEL

CONDITIONS
CROP THE AREA WALKED HAD BEEN RECENTLY PLOUGHED AND HARROWED. STUBBLE REMAINED FOR APPX. ½ OF FIELD TO EAST.

SOIL FINE TOPSOIL WITH ABUNDANT GRAVEL FROM THE UNDERLYING GEOLOGY.

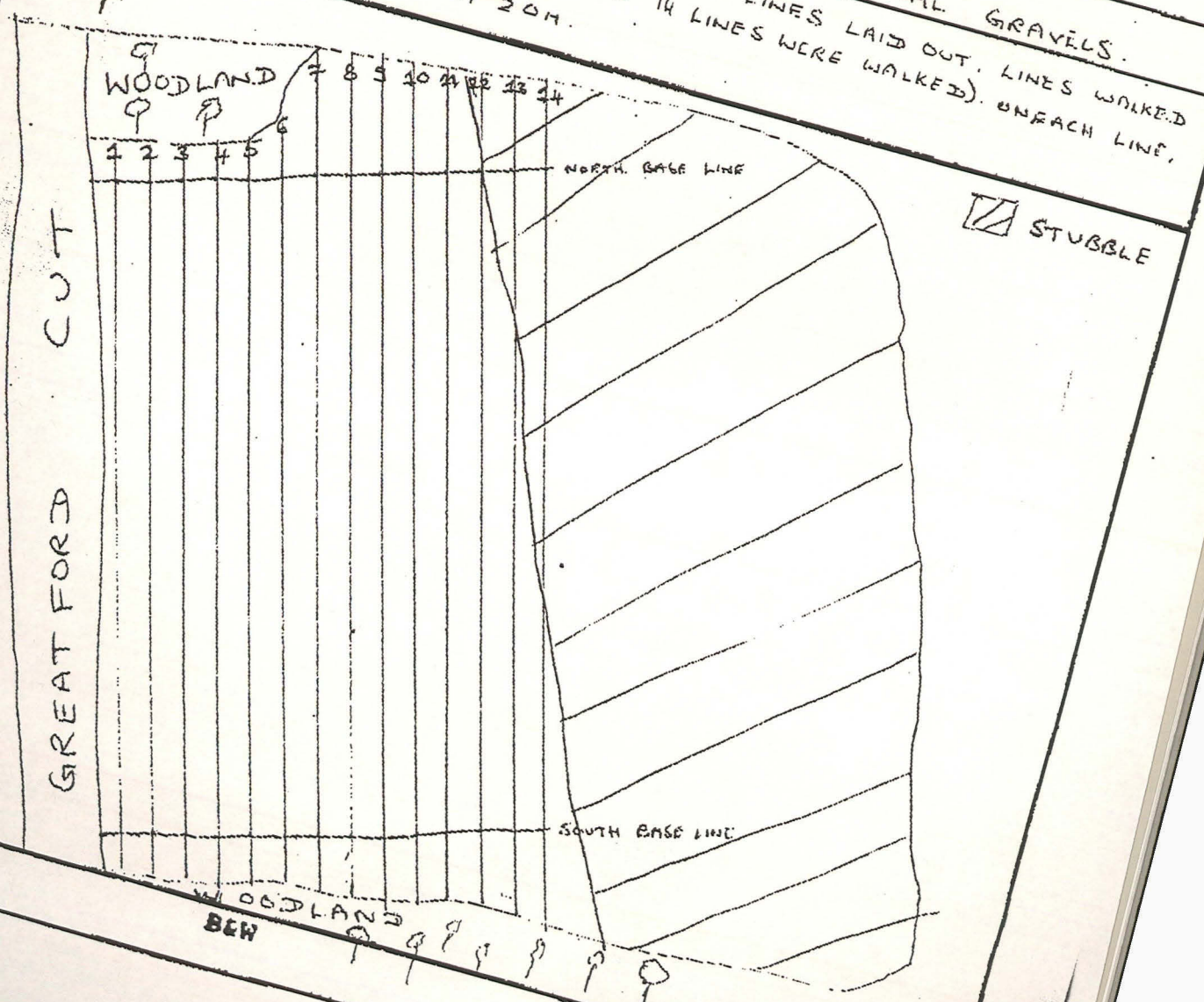
TOPOGRAPHY FENLAND FRINGE.

WEATHER SUNNY, WARM, BUT INCREASING CLOUD COVER.

COLLECTION STRATEGY NORTH & SOUTH BASE LINES LAID OUT. LINES WALKED SPACED AT 20M INTERVALS. (A TOTAL OF 14 LINES WERE WALKED). UNEACH LINE, FINDS SURVEYED IN AT EVERY 20M.

GEOLOGY GLACIAL GRAVELS.

MAP




PHOTOS
SLIDES
B&W

INITIALS AMW

DATE 13-09-94

# APPENDIX 5

Tempvs Reparatvm 28.12.94

**STOWE FARM, BARHOLME, LINCOLNSHIRE TR DOC NO. 31016DCC**

**HISTORICAL LANDSCAPE SURVEY**

## 1.0 INTRODUCTION

### 1.1 Documents consulted

1.1.1 This report is a brief history of landscape and landuse of the proposed Stowe Farm extraction site. It is based on manuscript evidence of cartographic and related sources that are most readily available in local repositories, as well as secondary printed material where this is available. In connection with the survey the Lincolnshire Record Office, St Rumbold Street, Lincoln, was visited on two occassions and the subject was discussed briefly between Dr Christpher E Howlett of Tempvs Reparatvm Ltd and Steve Catney, County Archaeologist for Lincolnshire.

1.1.2 As is usual, there is no useful material for the early historical period – during the first millenium AD. The Domesday Book is the first document that can be utilized in reconstructing early landscapes in the area of the proposed extraction site. There is an unusually early map that dates to the sixteenth century and contains the proposed extraction area, but it is small scale, and although it illustrated the contemporary arrangement of settlement in the area, no detail connected with the present proposed extraction site.

1.1.3 Stowe has a close relationship with the neighbouring settlement of Barholm. At present the only form of settlement in Stowe is a farmsted adjacent to King Street. The parish is 'Barholm–cum–Stowe'. At certain times Barholme and Stowe have been treated as a single parish, in other cases as separate parishes. At the time of Parliamentary Enclosure there is an Award and Map for Barholme (1802), but Stowe was not included within the Award. In the 'Barholm–cum–Stowe Tithe Award and Apportionment' of 1843 only the Stowe part of the parish received the attention of the Tithe Commissioners, Barholm was not included. The Stowe Farm proposed area of gravel extraction straddles the border between Barholm and Stowe.

## 2.0 FIELD SIZE, SHAPE AND LANDUSE

### 2.1 Introduction

2.1.1 The present area of proposed extraction covers a single large field that forms a trapesium with its corners pointing towards the cardinal points of the compass. There are currently no internal sub–divisions.

## 2.2 Landuse & historical features within the area of proposed gravel extraction

2.2.1 Linking map evidence with what is known of the agricultural history of areas such as this, it can be postulated that the field has probably been arable since at least the medieval period. The Domesday Book records several 'ploughs' in Barholm and Stowe, but only 1 acre of meadow and no wood or waste (DB, 1986, 1 & 2, pp 8, 24, 27 & 51).

2.2.2 At the time of Parlimaentary Enclosure (1802 in Barholm and Stowe) that part of the application area within Barholm parish is clearly annotated as forming part of Parsonage and Intercommoning Fields – part of the open fields cultivated in common by the villagers of Barholm. As the whole of the proposed extraction area had lain within the open arable fields of Barholm, it is reasonable to assume that the entire site was covered by 'ridge and furrow' cultivation, with the attendant ridges and furrows, baulks, droveways etc. From time to time the area of the field would have been left fallow for the grazing of livestock.

2.2.3 There is no evidence from the documentary material available that the area was extensively wooded at any time since the medieval period. No wood is recorded in the Domesday Book (1086) for either Barholm or Stowe (DB, 1986, 1 & 2, pp 8, 24, 27 & 51) and none of the map sources illustrate this landuse. However, the area of the small gravel pit in the western corner (see below), when abandoned, reverted to woodland which extended to a slightly larger area than that at present.

## 2.3 Field boundaries and sub–divisions

2.3.1 The boundaries of the present field were marked at this time by artificial watercourses on the south–western and south–eastern sides. It is likley that these features were the result of improvements made at the time of, or shortly before, formal Enclosure. The hawthorn hedge along the road that runs along the northern side of the site was planted probably at the time of Enclosure. (As described above, all boundary features shown on the Parliamentary Enclosure Map are 'overlain' by the names of the common fields of which the application area had previously formed part).

2.3.2 The Enclosure Award Map shows an internal boundary crossing the proposed extraction area running in a NW to SE direction from slightly west of the northern corner (apex) of the area. Whether this was at the beginning of the nineteenth century a physical boundary, or a proposed hedged bounday is not clear.

2.3.3 The Tithe Map that covers Stowe in 1843 shows that the north–eastern third of the proposed extraction area and a narrower strip of land along the south–eastern boundary covered 6.45 ha of arable land. The division between this part of the field and that in Barholm ran along the boundary described in the above paragraph; it is shown as a pecked line and therefore was probably not a fence/hedge at the middle of the nineteenth century.

## 2.4 Conclusion

2.4.1 In conclusion it can be said that the area of proposed gravel extraction has almost certainly been continuously cultivated since the medieval period and there is little evidence since Parliamentary Enclosure that there has been any physical sub–division.

# 3.0 INDUSTRIAL ARCHAEOLOGY

## 3.1 Gravel pit

3.1.1 The Parliamentary Enclosure Map and Award show that a small gravel quarry was opened near the western corner of the application area. It is likely that this was opened at Parliamentary Enclosure, and was for the maintenance of the newly formalised Public Roads in the parish.

# APPENDIX 6

# STOWE FARM, BARHOLM, LINCOLNSHIRE

A brief assessment of the soils at the site of Stowe Farm was commissioned. The objectives set were to consider:

i) why the site has produced so little crop mark evidence while adjacent fields have considerable activity.

ii) whether the soils or sediments would have a detrimental effect on the success of a magnetic susceptibility survey of the site.

A short report on the site investigations carried out by Redlands was supplied.

*Situation*

The site, in the main, lies above the 10m OD contour although peripheral areas in the east and west drop just below the 10m level. The highest point recorded on site during the Redlands investigation was 11.30m OD in the north. The site is situated immediately to the east of an artificial clay lined dyke, the Greatford Cut, that links the West Glen River with the River Welland. The dyke is embanked well above the level of the site, but the water level within the dyke is recorded in the Redlands report as 10m OD.

On the south side a drain/brook runs SSW-ENE with the water or base level falling from 8.69m in the west to 8.10m OD in the east. These levels are considerably below the water level in the adjacent Greatford Cut.

The Soil Survey record the site as Badsey 2, a well drained calcareous fine loamy soil over limestone gravel.

*Field work*

Field observation shows that two ridges of slightly higher ground run across the site SW-NE. These run approximately parallel to each other and are separated by approximately 200m. They may represent ridges or bars in the underlying gravel or have been formed as a result of human land use. Any field evaluation work should ensure that trenchs are located over these features to establish their origin and whether they 'preferentially' preserve underlying archaeology.

The Redlands site investigation report was augmented by a transect of boreholes running E-W across the site (Fig 1). These were carried out with a screw auger and seven bores were located at approximately 100m intervals (see Fig 1). Augering was stopped each time gravel or unconsolidated sediments were reached, that could not be lifted out with this auger.

The detailed descriptions of each bore are attached (Appendix). Brief sediment descriptions were made and the depth at which major sediment boundaries were recognised was recorded.

The Redlands investigation records an 'overburden' (soil) of between 30 and 80 cms above the gravel across the site with the whole of the central area being a very shallow soil. The auger transect confirmed this with gravel being recorded at approximately 30cm in 2, 5 and 6; 40-50cms in 3 and 7; 70 cms in 4 and 125cms in 1. This latter bore appears to be located over a ditch cut into the underlying gravels. Charcoal flecks and a darker silty loam were recorded immediately above the gravels. This bore was the only bore to show evidence of fluctuating water levels in the form of calcareous deposits within the sediment matrix (77-88cm). Bore 4 lay on the north side of the southern of the two ridges and the greater soil depth in this bore, relative to 3 and 5, may indicate that the ridge is a headland.

Water was only recorded in bore 1, with the sandy gravels at 135cms being distinctly wet.

In bores 2-4 the basal deposits recorded were loose textured yellow sandy gravels. However westwards the sediments changed. In bore 5 these became yellow orange silty sandy small stoned gravel, and in 6 and 7 the auger failed to grip or penetrate further than a fine sandy, very stony silt. This was a loamy chalky small stoned gravel, it was unconsolidated and 'very dry' at 44-52cms depth, crumbling to dust on handling.

All the sediments are well drained silty loams with little clay input even in the lower 'ditch' fill in bore 1. There is no evidence of alluvial deposition on the site.

*Conclusions*

Aerial photography

The shallow nature of the soils and their silty well drained character, and absence of any major clay component, suggests that any archaeological features, unless of substantial depth (perhaps over 1.4m deep) may have failed to form a subsoil reservoir of the sort that might lead to the formation of crop marks. The very dry character of the sediments at 50cms depth in the northern half of the site, despite recent heavy rain, is an indication of how well drained they are.

The sites immediately to the north show extensive crop mark evidence and there is no obvious reason why this should be so. However watertables vary in depth across the area and local soil changes and a greater clay component in the sediments could be responsible for the visibility assuming the absence at Stowe

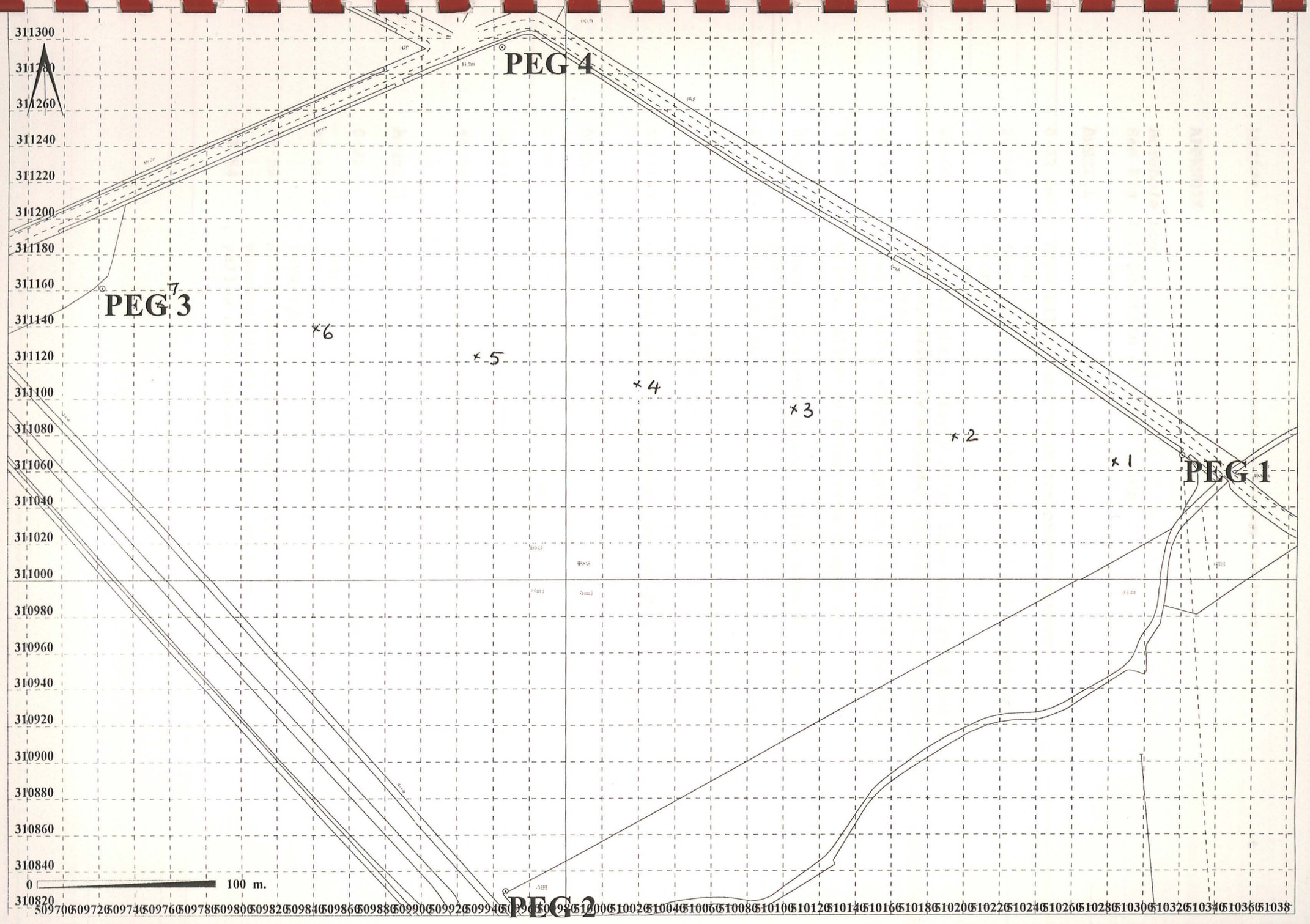
Farm cannot be attributed to poor aerial coverage or inappropriate stages of crop development when photographed.

Magnetic Susceptibility

There is no overburden of alluvium on the site that might obscure features from a mag/sus survey and I would presume this would be an effective survey technique.

The results from auger hole 1 suggests that there are ditches on the site although not visible as crop marks and these should be picked up using mag/sus.

The soil is easily cultivated and there is no evidence to indicate that this site was less favoured for prehistoric and more recent activity than its immediate neighbours. Any evaluation should ensure particularly that the ridges/headlands are investigated and also the deeper soils on the eastern margin of the site, where plough damage to archaeological features is likely to be less than in the centre of the field.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APPENDIX

*Borehole Log*
See Fig. for location of auger holes.

Auger 1

| | |
|---|---|
| 0-22 cm | fine silty loam, with occasional stones<br>10YR 4/4 |
| 22-44 | fine silty loam, with some sand and occasional stones<br>10YR 4/6 |
| 44-66 | very slightly clayey silty loam with grits but no stones, slightly mottled<br>10YR 5/6 |
| 66-77 | clayey silt, slightly gritty, with red mottling<br>10YR 5/6 |
| 77-88 | gritty, slightly calcareous clayey silt<br>10YR 5/6 |
| 88-102 | loamy calcareous gravel (ditch bank erosion?)<br>10YR 5/8 |
| 102-110 | fell off auger |
| 110-121 | stony, slightly clayey silty loam, with charcoal flecks (ditch fill?)<br>10YR 4/3 |
| 121-135 | wet sandy gravel, boundary at 125cm. |

Auger 2

| | |
|---|---|
| 0-22 | silty loam, with grits and many small stones<br>10YR 4/3 |
| 22-44 | yellow sandy gravel at 30cm |
| 44-54 | yellow sandy gravel |

Auger 3

| | |
|---|---|
| 0-22 | silty loam with grits and small stones<br>10YR 4/3 |
| 22-44 | pale silty loam with some grits, boundary at 33cm<br>10YR 4/6 |
| 44-52 | silty loam becoming very stony, with unconsolidated yellow sand at 48cm |
| 52-54 | yellow sandy gravel |

Auger 4

| | |
|---|---|
| 0-22 | silty loam with small grits and occasional stones<br>10YR 4/3 |
| 22-44 | friable silty loam<br>10YR 5/6 |
| 44-60 | stony silt loam, becoming coarser<br>10YR 5/6 |
| 60-66 | stony silt loam, with large stones<br>10YR 4/4 |
| 66-77 | very stony silt into brown sandy gravel with some silt<br>10YR 4/6 |
| 77- | unconsolidated silty sandy gravel |

Auger 5

| | |
|---|---|
| 0-22 | silty loam<br>10YR 4/3 |
| 22-44 | silty loam, with grits and occasional stones<br>10YR 4/3 |
| 22-39 | silty loam changing to yellow orange sandy gravel at 30cm |
| 39-44 | silty fine sand with small stone gravel |

Auger 6

| | |
|---|---|
| 0-22 | silty loam with grits and occasional small stones<br>2.5YR 4/3 |
| 22-44 | paler sandy silt loam with many small stones at 30cm<br>10YR 5/6 |
| 44-52 | unconsolidated 'dry' chalky silty gravel at 35-40cm |

Auger 7

| | |
|---|---|
| 0-22 | silty loam<br>2.5YR 4/3 |
| 22-33 | light friable silty loam<br>10YR 4/4 |
| 33-40 | 'dry' silty loam with grits and small stones<br>10YR 4/4 |
| 40-44 | 'very dry' friable very stony silt<br>10YR 4/6 - 5/6 |
| 44-52 | unconsolidated silty small stoned calcareous gravel |

# APPENDIX 7

Stowe Farm, Barholme, Lincolnshire

Document Ref: TR 30012DCB

Summary of initial assessment reports, evaluation trench layout and outline specifications

## 1.1 INTRODUCTION

1.1.1 This document provides a summary of desk–based and pre–invasive field survey. The reports produced on this project have been forwarded to the Lincolnshire County Archaeological Officer. None of the reports produced to date are long and the main conclusions can be easily gleaned from them. Therefore this is a very brief summary, highlighting some of the points and issues that have been noted as requiring further investigation during a programme of trial excavation. Little attempt has been made at this stage of a full integration and synthesis.

1.1.2 The surveys completed to date are as follows:

| | |
|---|---|
| Soils survey | – J Rackham |
| Air Photo replot | – Air Photo Services (R Palmer) |
| Historical landscape research | – C Howlett of Tempvs reparatvm |
| Magnetic susceptibility survey followed by detailed magnetometer survey | – A Bartlett |

## 2.1 RESULTS OF AERIAL PHOTOGRAPHIC SURVEY

2.1.1 A number of natural ditches and archaeological ditches appear in the area which can in general be distinguished apart.

2.1.2 There are a large number of pits, probably mostly of natural origin (not mapped) but also several that may be archaeological.

2.1.3 The site is almost entirely covered by cropmarks resulting from medieval ploughing practice. The form of groups of ridges can be readily identified and at least two clearly defined headlands cross the area. A less plainly illustrated headland is also present.

2.1.4 The two clearly demonstrated headlands appear to have ditches tracing their course (in one case a parallel pair of ditches), although it is not possible to determine whether these pre– or post–date the headlands.

2.1.5 Two archaeological ring ditches have been observed and plotted towards the north west boundary of the area. These are calculated at 12.0m and 6.5m diameter.

2.1.6 Deeper soil is near the edge of the field. It is possible that this may mask archaeological features.

## 2.2 RESULTS OF FIELDWALKING

2.2.1 Fieldwalking did not locate any concentrations of artefacts that might suggest a buried archaeological site, even though relatively shallow soils and continuous cultivation should have provided ideal conditions for material from artefact rich features to become incorporated into the ploughsoil. Finds were sparse. Two flint artefacts were recovered (one prior to systematic survey), the remainder of the finds, except a fragment of a hone were of the medieval or Post–medieval period.

2.2.2 It is concluded there is a long chronological gap in man's presence on site from the neolithic to medieval period. Further there is no evidence from fieldwalking of settlement in the application area.

## 2.3 HISTORICAL SURVEY

2.3.1 The earliest useful map is that accompanying the Enclosure Award (1801). No earlier estate map exists. A map of the 16th century, or before, which included the application area too small scale to be of use. There is a paucity also of other manuscript or published material.

2.3.2 At Enclosure the western part of the site is shown as lying in Barholme 'lordship' (manor) and a strip along the north east and south east boundary of the field in Stowe lordship

2.3.3 The only tithe map (1840) of the area is of the Stowe part of Barholme cum Stowe parish and therefore only the eastern part of the field is shown.

2.3.4 However certain conclusions can be drawn from the cartographic sources. Prior to Enclosure the application area was part of two of the 'medieval' open fields of the parish. At the time of the mid 19th century tithe survey the field was arable, as it remains today, thus there is good evidence of a long period of continuous ploughing on the site.

2.3.5 There is little evidence that the field was sub–divided in the post–medieval period. In the early 19th century a small gravel pit was opened at the extreme western end of the field to provide material to maintain the local roads. This area was later wooded.

## 2.4 GEOPHYSICAL SURVEY

**Magnetic susceptibility**

2.4.1 The most striking feature of the survey is that the variation of readings across the site was small. Although the magnetic susceptibility plot identified small areas of high readings, the absolute range between the highest and lowest results within the application area is slight compared with the generality of areas subjected to this form of survey.

2.4.2 Two areas of relatively high readings are the extreme western and eastern ends of the field. The high readings in the east are not considered to be of archaeological interest but result from modern disturbance in the area of the field gateway. It was considered that the

western high–spot required further study by detailed magnetometer survey.

2.4.3 A small area of relatively high readings to the north–west of the gateway against the field edge was considered to be an effect of the adjacent boundary fence.

2.4.4 Two other areas of relatively high readings were noted. One, 150m to the south west of the field gate and another to the south east of the western end of the field.

2.4.5 Based on these findings and the results of the air photo replot, a programme of detailed magnetometer survey was instigated.

**Magnetometer**

2.4.6 As previously hypothesized by A Bartlett, relatively few of the features identified by air photos were detected by magnetometer survey. This may be because of the apparent low level of human activity within the immediate area, the fills of any archaeological features are not sufficiently magnetic to be located. It may also result from the possibility that most of the apparent cropmark ditches are natural features which are difficult to detect.

2.4.7 No ditched features were identified – whether ring ditches, archaeological or natural. The 'modern' quarry along the north west edge identified by aerial photographs was located.

2.4.8 However there are several magnetic anomalies that may indicate archaeological pits in several parts of the area. One group of these possibly coincides with the cropmark pits shown on the air photo replot in the north west quadrant of the site. A second area is around the magnetic susceptibility high readings 150m to the south west of the gateway and a third at the western end of the field.

2.4.9 In conclusion it can be said that in an area where isolated earthwork type features are present and there has been little magnetic disturbance it can be expected that magnetometry results are likely to be inconclusive.

## 3.1 TRENCHING

3.1.1 In the Stowe Farm application area where some potentially archaeological features have been identified and where there are a number of areas where archaeological features may be present but masked from air photography and geophysical survey by relatively deep and unresponsive soils, a programme of targeted trial trenching is proposed. A primary aim of the trenching programme is to determine whether or not certain of the aerial photographic and geophysical features are of archaeological origin, and if so, to characterise and date those features.

3.1.2 A variety of trenches is proposed – 50mx2m and 100mx2m linear and 15mx15m boxes (the equivalent in area of a linear 100mx2m trench).

3.1.3 The linear features are to be used to locate and identify ditched and other linear features (eg headlands). The boxes are more effective for

locating and investigating isolated features such as pits. If a number of pits are present in the area opened then it is proposed to sample excavate only a sample so as to elucidate character, form, function and date.

3.1.4 The following trench programme and the explanation for it is as follows: (Fig 1)

| | | |
|---|---|---|
| Trench 1 | 50mx2m | to locate and investigate the larger ring ditch |
| Trench 2 | 100mx2m | to locate the smaller ring ditch and the ditch along the western headland |
| Trench 3 | 15mx15m | to locate and investigate possible pits of possible archaeological origin identified by air photo and geophysics |
| Trench 4 | 15mx15m | to locate and investigate possible archaeological pits in western part of site |
| Trench 5 | 50mx2m | to determine the presence or absence of archaeology under the weak headland in the south west of the area |
| Trench 6 | 50mx2m | to locate parallel double ditches and any other archaeological associations with the clearly defined headland |
| Trench 7 | 50mx2m | to locate apparent gap in ditch that follows course of headland |
| Trench 8 | 50mx2m | to locate the apparent double ditched linear feature which may enter the area at the southern tip of the field |
| Trench 9 | 100mx2m | to identify and distinguish archaeological and natural linear features and their relationship to the eastern headland |
| Trench 10 | 100mx2m | to investigate possible archaeological and natural linear features |
| Trench 11 | 50mx2m | to locate and investigate two potentially archaeological linear features and any archaeology that remain beneath the eastern headland |
| Trench 12 | 100mx2m | to investigate the area of deeper soils towards the north east edge of the field and an apparent area devoid of any cropmark or magnetic features |
| Trench 13 | 100mx2m | to investigate a possible archaeological linear feature and the probable ditch identified in bore 1 of the soil survey |

| | | |
|---|---|---|
| Trench 14 | 15mx15m | to investigate possible archaeological pit features detected by geophysical survey |
| Trench 15 | 100mx2m | to investigate possible archaeological and natural linear features in the area of deeper soils towards the south east of the area |

**Methodology** – outline

3.1.5 Trenches will be excavated by use of a 360° excavator fitted with a 2m toothless ditching bucket.

3.1.6 The overburden will be removed to the top surface of the natural or of significant archaeological deposits whichever is the highest. Trenches may, at the discretion of the site Director, be widened (in units of 2m) to more fully elucidate features revealled.

3.1.7 Sufficient of archaeological features will be sample excavated by hand to determine form, character, nature extent, date and function. The fills of sufficient and appropriate features will be sampled for their environmental potential by a qualified environmental specialist.

3.1.8 Linear features will normally be sectioned and their fills investigated to a depth appropriate to the feature, the nature of the fills and considerations of health and safety.

3.1.9 Larger archaeological pits will be half or quarter sectioned as appropriate to size. Their fills will be investigated to an appropriate extent as defined by the feature and health and safety considerations.

3.1.10 Smaller discrete archaeological features will be half sectioned. Groups of archaeological features will be 25% sample excavated sufficient to determine their character, relationships and date.

**Recording procedure**

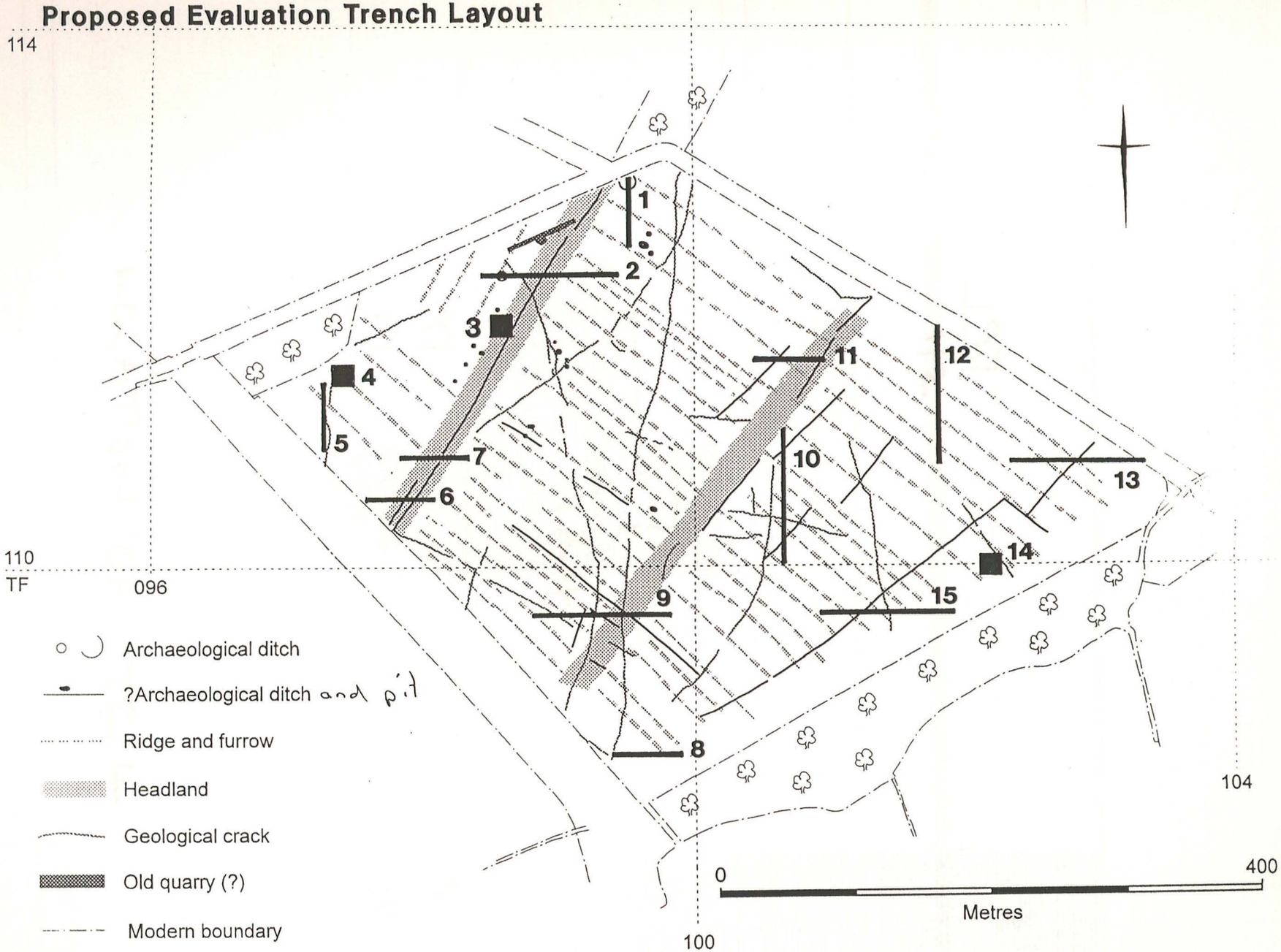
3.1.11 Trenches will be located on an overall 1:1250 site plan and surveyed to the national grid.

3.1.12 Individual trench plans of located features (natural and archaeological) will be produced at a scale 1:200 or 1:100 as appropriate to the intensity and level of features present.

3.1.13 Excavated features within trenches will be planned at a scale 1:50 or 1:20 as appropriate to the scale of the feature.

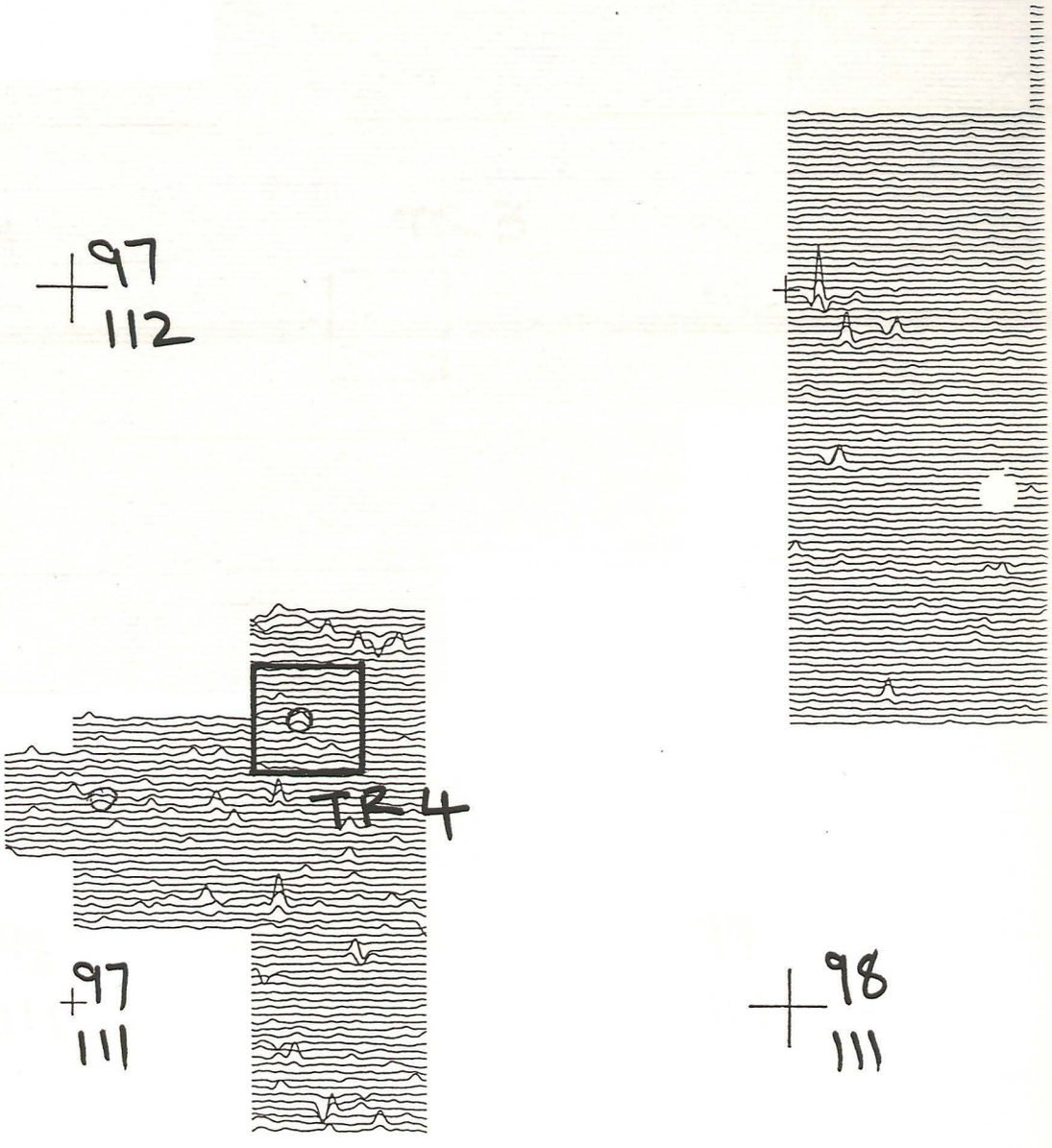
3.1.14 Section drawings of investigated features will be produced at scale 1:10.

# Proposed Evaluation Trench Layout

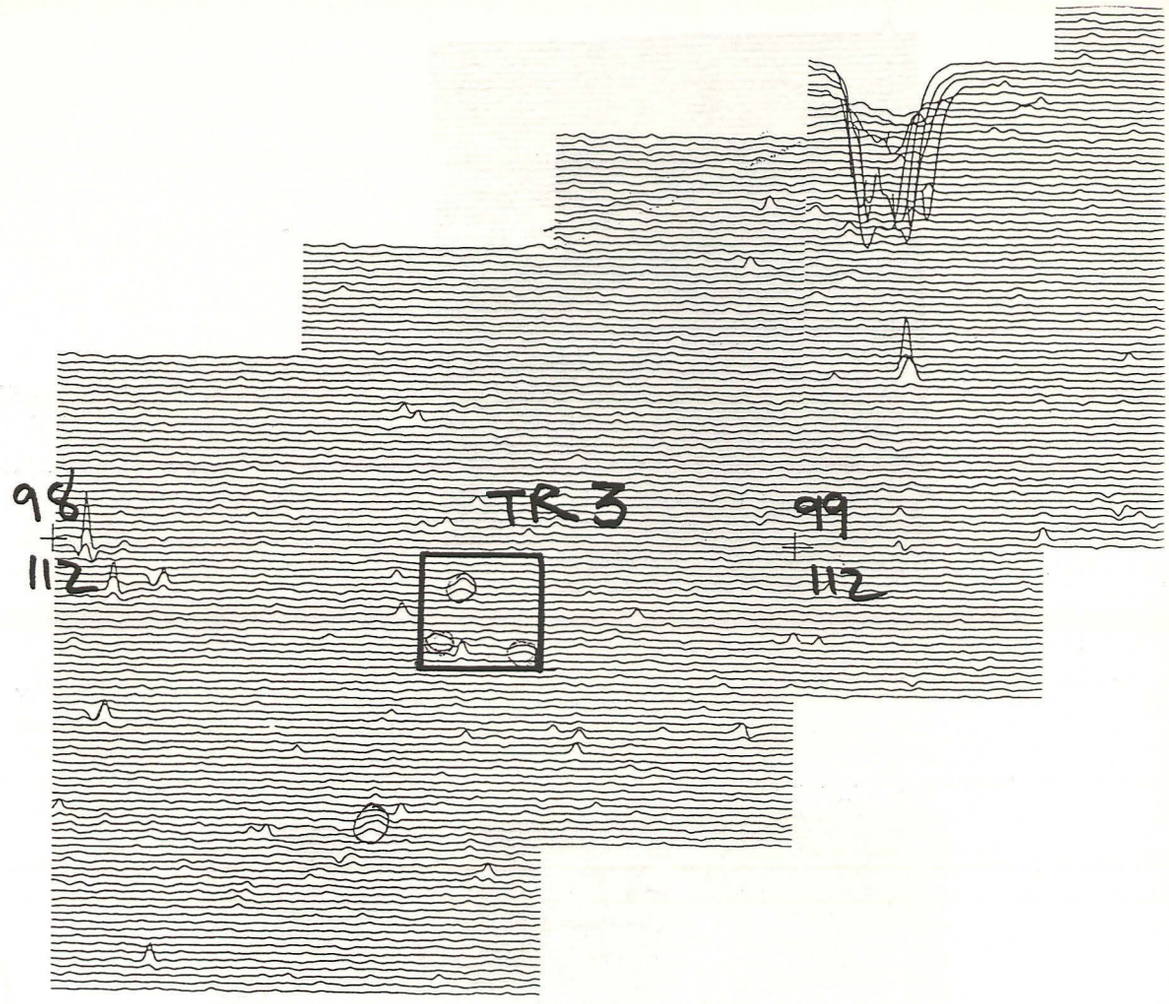



AIR PHOTO SERVICES: 1994

at 15-9-94




LOCATION OF TR 4

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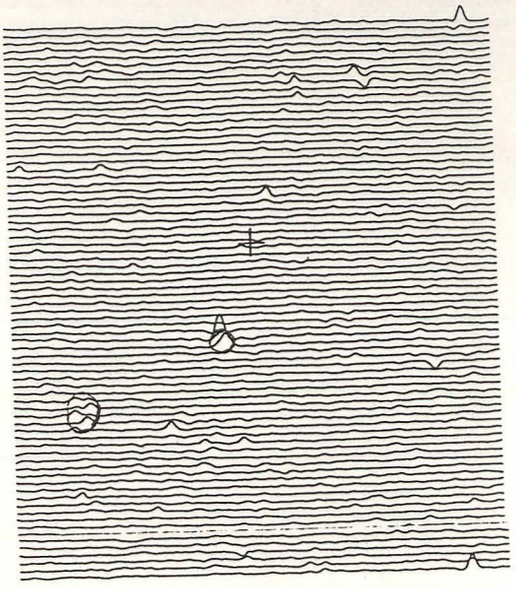
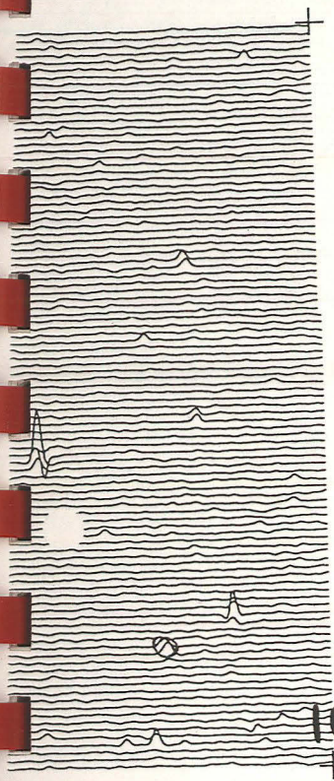
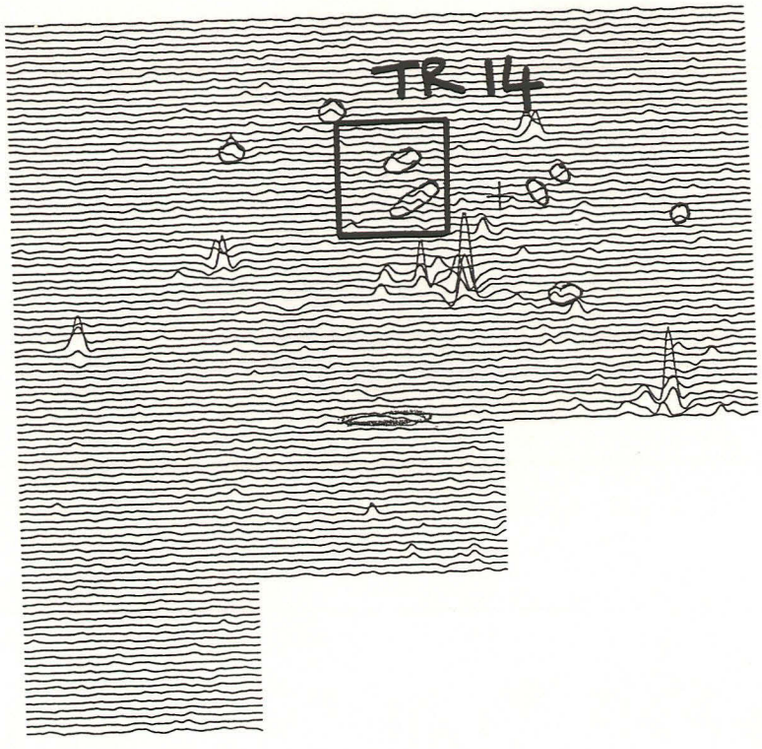
LOCATION OF TR 3



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LOCATION OF TR 14

# APPENDIX 8

# REPORT ON ARCHAEOLOGICAL EVALUATION

STOWE FARM
Barholme, Linconshire

By Andrew Hatton

## 1 INTRODUCTION

During October 1994 an evaluation was undertaken, to determine the possible existence of archaeological features within the perimeter of a large arable field, in Barholme parish (centred NGR 311000/510000) (fig. 1), in advance of gravel extraction. A field walking survey, soils survey, geophysical survey, aerial photographic survey and an historical survey were all undertaken with very limited results (see below). The ground interventional work consisted of a number of trial trenches located across the field at specific intervals (some traversing possible archaeological features, others 'randomly' located), to ensure an adequate level of cover, sufficient to locate any surviving archaeological remains.

## 2 METHODOLOGY

Initial research (desktop evaluation) was carried out using secondary sources, SMR information, and aerial photography of the area, noting the position of any monuments likely to be affected by gravel extraction.

Preliminary field work consisted of a field–walking campaign and geophysical prospecting, in order to locate any concentrations of artefacts and also archaeological features not visible using aerial photographic information.

In total, 18 trenches were excavated ranging in size from 50mx2m, 100mx2m and 15mx15m. The topsoil from each trial trench was removed down to the top of the subsoil with a mechanical digger, as it is at this interface, especially in heavily ploughed fields, that archaeological remains can be identified. Where features were identified, small scale excavations were conducted, according to the specifications for the recording of the features set out in TR 31012DCB.

## 3 RESULTS

The field–walking campaign did not locate a large number of artefacts on the surface of the topsoil; however, the artefacts recovered indicated a long chronological gap in man's presence on the site between the Neolithic and the Medieval period. The reason for the lack of evidence gained from the surveying techniques used became apparent with the removal of the overburden from each of the trial trenches (see below).

All trenches had evidence of not only plough–soil but also a light brown sub–soil located immediately above the gravel and below the plough–soil, which varied in depth across the whole of the field, with the exception of trench 1 (fig. 3); the latter trench having no light brown sub–soil between the gravel and the plough–soil. The subsoil (hoggin) is for the most part sterile, and of no use in terms of cultivation, in fact, there is a distinct possibility that the subsoil would have a damaging effect on the plough soil should the two become amalgamated.

Trial Trench descriptions (all relevant features are high–lighted on the respective illustrations):

Trench 1 (fig.3)
Dim: 50m x 2m
Area: 100 sq m
Orient: N–S
Context: 0001–0010. 0293–0300

Description: Located at the northern end of the trial trench is one of the two ring ditches identified through aerial photography. On excavation, the ditch appeared not to be continuous but segmented, suggesting a Neolithic date for the monument (Pryor, F pers comm). Moving in a southerly direction along the trench, indications of three medieval furrow striations are evident, also there appears to be evidence of ditches of a date as yet to be determined.

Trench 2 (fig. 4)
Dim: 100 x 2m
Area: 200 sq m
Orient: E–W
Context: 0122–0135. 0288–0290
Description: Located in the western half of the trial trench is the second of the two ring ditches identified. This, as with the other ring ditch previously mentioned, is present on the aerial photographs and from the geophysical survey. The monument was later described by Francis Pryor as being a 'Hengiform monument' and he attributed its construction to the Neolithic period. An extension to the trench was later excavated in an attempt to identify the return of the ditch, unfortunately a medieval furrow cut the monument through the middle. This (potentially) has badly damaged the north western half of the monument. Moving in an easterly direction along the trench there are ditch and pit features dated to the prehistoric period some of which are truncated by the later medieval furrows.

Trench 3 (fig. 4)
Dim: 15m x 15m
Area: 225 sq m
Context: 0220–0224
Description: There are pits and also remains of a medieval furrow in this trench.

Trench 4 (fig. 5)
Dim: 15m x 15m
Area: 225 sq m
Context: 0225–0230
Description: There is evidence of a possible medieval fence line, which is the only feature within the excavated area that has not been badly damaged by tree root action.

Trench 5 (fig. 5)
Dim: 50m x 2m
Area: 100 sq m
Orient: N–S
Context: 0201–0210. 0255–0262
Description: Located in the southern half of the trench is a post–hole (context no. 0258), of a size (diameter 0.70m, depth 0.60m) that cannot be associated with a building construction, rather it is more likely to be from a ritual/ceremonial monument (Pryor, F pers comm). The remaining area within the trench is covered by construction of possible prehistoric ditches and also medieval furrows.

Trench 6 (fig. 6)
Dim: 50m x 2m

Area: 100 sq m
Orient: E–W
Context: 0112–0121
Description: The parallel ditches identified in the geophysical survey running in a NE–SW direction were not evident when the trench had the top and sub–soil removed. This was put down to the fact that a medieval furrow truncates the two ditches at the point where the trial trench was excavated. The remaining exposed surface within the trench is covered by the construction of ditches and pits which have a potentially early (probably Neolithic) date.

Trench 7 (fig. 6)
Dim: 50m x 2m
Area: 100 sq m
Orient: E–W
Context: 0167–0179. 0263–0264
Description: Located in the centre of the trench is a large post–setting with the same diameter (see above) as the feature described in trench 5; (the feature was not excavated). Therefore, this feature is probably part of the same ritual/ceremonial monument. As with the trenches already described the exposed surface of trench 7 is covered by a complexity of ditch and pit/posthole construction of an early (probably Neolithic) date.

Trench 8 (fig.7)
Dim: 50m x 2m
Area: 100 sq m
Orient: E–W
Context:0211–0219. 0283–0286. 0294–0297
Description: The exposed surface is covered by ditch and pit activity, although at a less intensive level compared with that in some of the other trenches.

Trench 9 (fig. 8)
Dim: 100m x 2m
Area: 200 sq m
Orient: E–W
Context: 0180–0193. 0281–0282
Description: The exposed surface is covered by ditch and pit activity, although at a less intensive level than previously described (above).

Trench 10 (fig. 9)
Dim: 100m x 2m
Area: 200 sq m
Orient: N–S
Context: 0068–0093. 0291–0292
Description: This trench had to be extended in a northerly direction in an attempt identify the return of a large ring–ditch and also to estimate the size of the monument, this was later identified by Francis Pryor as a Neolithic Barrow / burial mound. The return of the ring–ditch was identified within the extension to the trial trench, and the diameter of the monument was estimated to be some 30m. As the trial trench did not dissect the monument through the middle the diameter had to be estimated. The headland is sited directly over the barrow and has in fact helped in the preservation of bank material located on the ground surface around the inside of the ditch. Moving in a southerly direction along the trench are postholes and ditches of early, (probably Neolithic) date, along with medieval furrows.

Trench 11 (fig. 10)
Dim: 50m x 2m
Area: 100 sq m
Orient: E–W

Context: 0159–0166, 0279–0280
Description: Ditches and pits together with medieval furrows.

Trench 12 (fig. 11)
Dim: 100m x 2m
Area: 200 sq m
Orient: N–S
Context: 0039–0067. 0275–0278
Description: The removal of the top–soil and sub–soil from this trench uncovered a complexity of early ditch systems, many of which were cut by later ditches (still attributed to a probable prehistoric date) and the medieval furrows.

Trench 13 (fig. 12)
Dim: 100m x 2m
Area: 200 sq m
Orient: E–W
Conrtext: 0094––111. 0236–0245. 0267–0270
Date: 1935 to 1420 BC (contexts 0268–0269)
Description: This trench was extended west and south in an attempt to identify a small ring–ditch. Unfortunately there was insufficient evidence to reinforce the original interpretation. The eastern half of the trench has evidence of ditch/pit and furrow activity.

Trench 14 (fig. 13)
Dim: 15m x 15m
Area: 225 sq m
Context: 0231–0235
Description: Located in the western half of the trench are four post–holes forming a semi–circle, unfortunately, the position of the baulk obstructed any further possibility of interpreting the feature. A ditch running in a NW–SE direction was identified in the eastern corner of the trench as was a medieval furrow.

Trench 15 (fig. 14)
Dim: 100m x 2m
Area: 200 sq m
Orient: E–W
Context: 0136–0158. 0246–0254
Description: This trench was extended in three areas in an attempt to discover the direction of a series of parallel ditches, many of which were inter–cutting, suggesting early (probably Neolithic/E.B.A) multi–phase field–boundary ditches. There are also posthole and pit features within the exposed trench.

Trench 16 (fig. 15)
Dim: 100m x 2m
Area: 200 sq m
Orient: NE–SW
Context: 0025–0038. 0265–0266
Description: There are posthole and ditch features within the trench, although these are not present in the same intensity as in the trenches previously described.

Trench 17 (fig. 3)
Dim: 50m x 2m
Area: 100 sq m
Orient: E–W
Context: 0011–0024
Description: Fairly intense activity concerning the construction of ditches and pits. There is also evidence for medieval furrows within the exposed trench area.

Trench 18 (fig. 16)
Dim: 50m x 2m
Area: 100 sq m
Orient: NW–SE
Context: 0194–0200. 0271–0274
Date: 1405 to 930 BC (context 0272)
Description: This trench was positioned in order to cut across one of the three large pits identified through the geophysical survey. One feature located was interpreted as being a large burning pit of considerable depth (when compared with the rather shallow nature of features excavated during the course of the evaluation (fig. 2)). The remaining area exposed by the machine, uncovered further medieval ploughing activity, and also possible postholes that may potentially be considered to be post–settings.

Each of the trial trenches revealed a reasonably complex system of field boundary ditches varying in size and directional alignment and as a consequence many were intercutting, suggesting multi–phase ditch systems. The two ring–ditches evident from the aerial photographic survey (fig. 2) when excavated proved to have a reasonably substantial circular ditch, cut in the gravel. On excavation, the ring–ditch (barrow) located in the north of the field has a segmented ditch, suggesting a Late Neolithic date for the monument (Francis Pryor. pers comm). The other ring–ditch (Hengiform monument) appeared on excavation to have a continuous ditch (no mound evidence remained), although when the monument was constructed the ditch would have had at least one and maybe two entrance ways, which would have been removed at a later date (Francis Pryor. pers comm). Located in the north–west corner of the field were two very large post–holes (see above), both of which were in different trenches and at least 50m apart (figs 5 & 6). These post–holes are considered to be too large to be structural and an alternative possibility has been put forward: that they may have had a ceremonial/ritual use (Francis Pryor. pers comm). Positioned nearer the centre of the field under the southern headland is a ring–ditch (barrow) at least 30m in diameter (fig. 9). On excavation, the ditch reached a depth of 0.30m and in accordance with the other features excavated, had no artefactual remains within the fill of the ditch. This lack of artefactual evidence ties in with the virtual absence of finds recovered from the field–walking campaign. The lack of material evidence suggests a very early date for the features identified during the evaluation (apart from the medieval furrows that are very much in evidence across the whole field).

Environmental samples were taken from the excavated features excavated with a view to obtaining a chronological sequence for the monuments and potential field systems located across the area under investigation (NGR 311000/510000). However, after processing only two of the samples taken had enough organic material present to warrant C14 dating. Samples 0304/0305 were amalgamated, as they were from related fills 0268/0269 of a ditch 0245 (fig. 12). These samples gave a C14 date ranging from 1935 to 1420 BC for the feature. Sample 0312 taken from the secondary fill 0272 of a large pit 0273 (fig. 16) gave a C14 date ranging from 1404 to 930 BC for the feature. The organic evidence recovered from sample 0308 taken from the post–pipe fill of 0256 amounted to 0.4grms, and as a consequence was found to be too small to give an accurate date for the feature. However, should features of a similar constructional nature be identified at a later date, then there is a possibility that an accurate C14 date could potentially be recovered from additional samples.

## RECOMMENDATIONS

In order to gain a better understanding of the more important archaeology present in the field evaluated (i.e. the Neolithic/Early Bronze Age landscape) the following points should be considered:

1) The ephemeral nature of the features present (fig. 2).
2) The ceremonial/ritual implications and to examine this aspect of the landscape in both a regional and national context. The need to place the features identified during the evaluation of Stowe Farm in context is made all the more important when compared with the dateable evidence obtained from the Rectory Farm excavation located 2 miles to the east, which has a C14 date ranging from 1150 to 800 BC, suggesting a chronologically later date for the development of the landscape (see above). It should be pointed out that by its nature an evaluation cannot determine the precise layout and extent of such a landscape. As a consequence further archaeological work should be undertaken in the field (see below).

The injudicious removal of the topsoil prior to gravel extraction could damage the early archaeology present (c.f. point 1, above). Therefore, total stripping of the soil could go ahead in tandem with an archaeological project designed to investigate the precise nature of the suggested Neolithic/E.B.A. landscape. However, careful monitoring of the soil removal is recommended to ensure that features are not damaged prior to investigation.

Fig. 1

**Stowe Farm,** Barholme, Lincolnshire

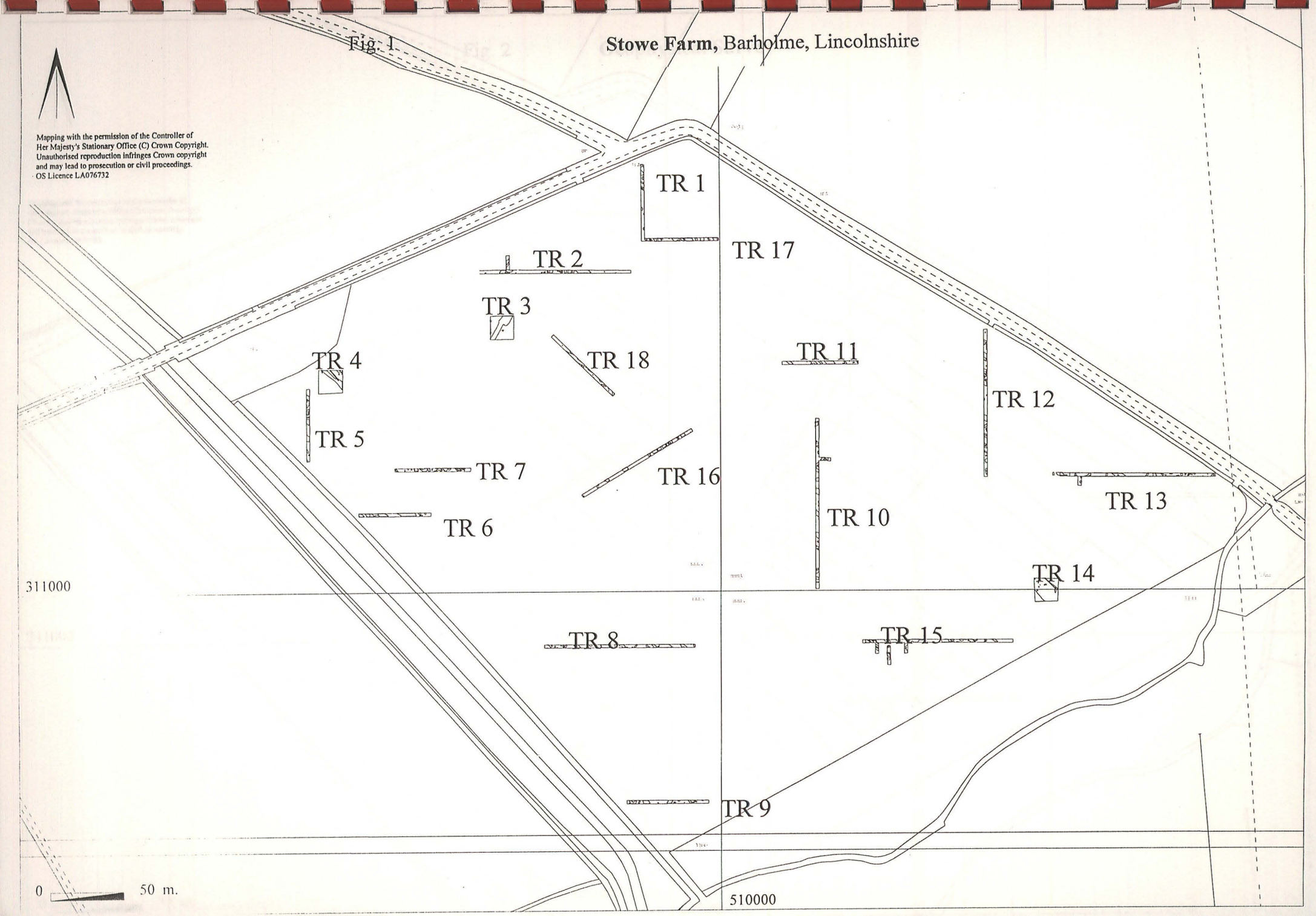


Fig. 2 **Geophysical Survey**

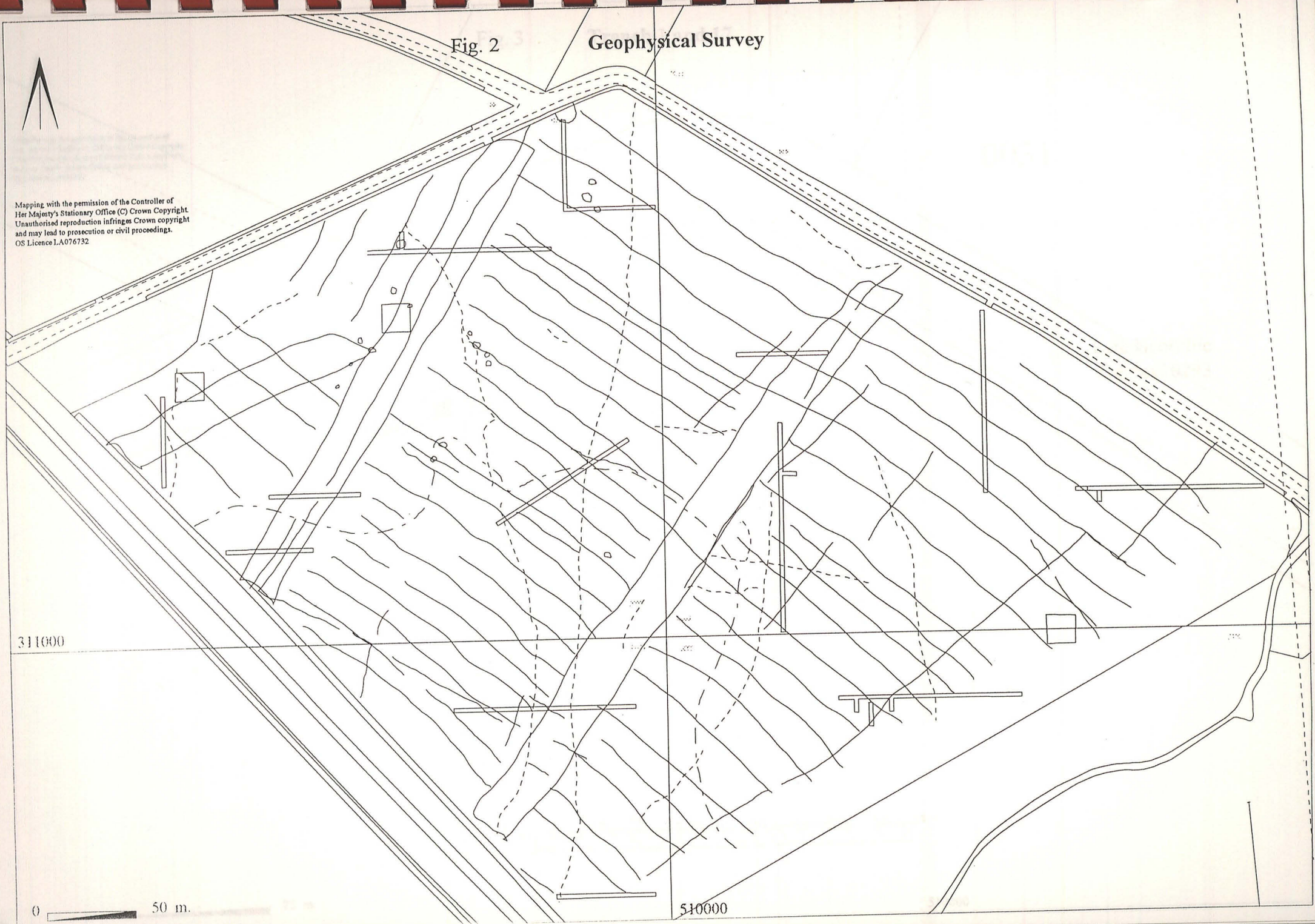


Fig. 3 **Trench 1 and 17**



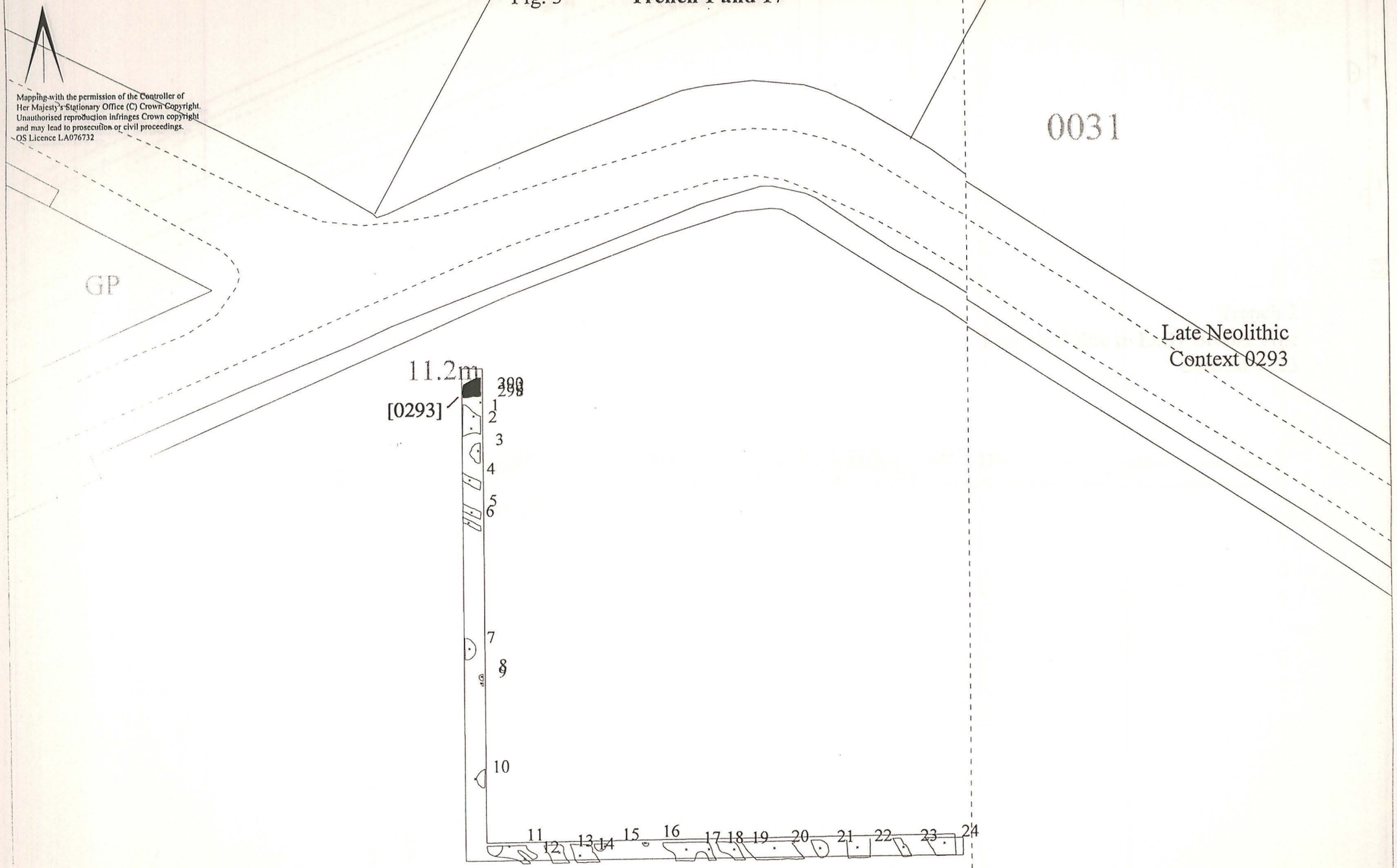
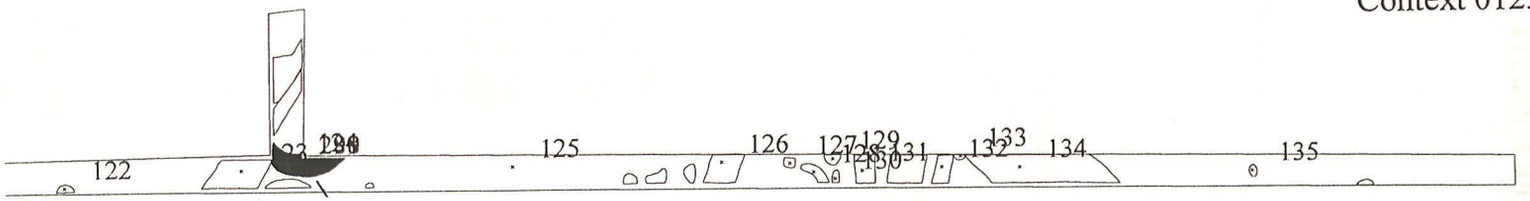


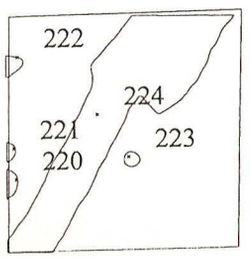
Fig. 4 **Trench 2 and 3**



Drain

Trench 2
Late Neolithic to Early Bronze Age
Context 0123



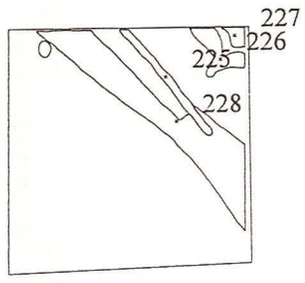

0 6.25 m.

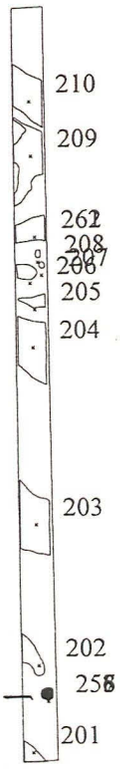
Fig. 5 **Trench 4 and 5**



7016

Late Neolithic
Context 0256

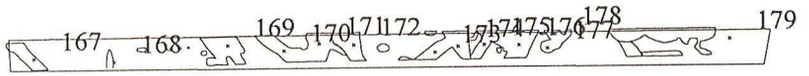


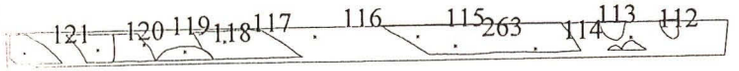




0 6.25 m.

Fig. 6 **Trench 6 and 7**





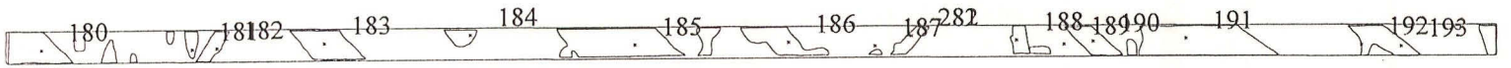

0 25 m.

Fig. 7 **Trench 8**

0003



0003

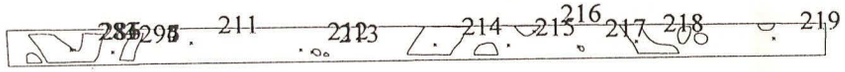



0 6.25 m.

5100

Fig. 8 **Trench 9**





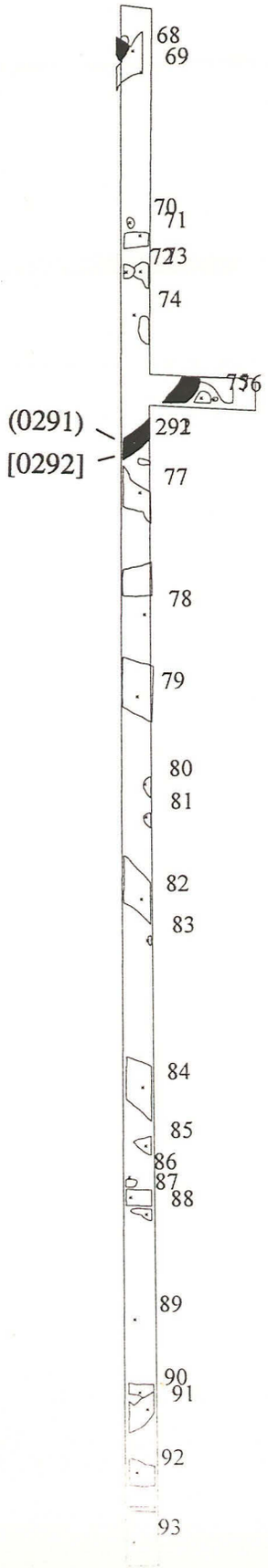

3100

510000

0 6.25 m.

Fig. 9 **Trench 10**



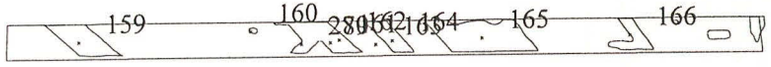



Possible Late Neolithic
Context 0291 Fill
0292 Cut

0 6.25 m.

Fig. 10 **Trench 11**






0 6.25 m.

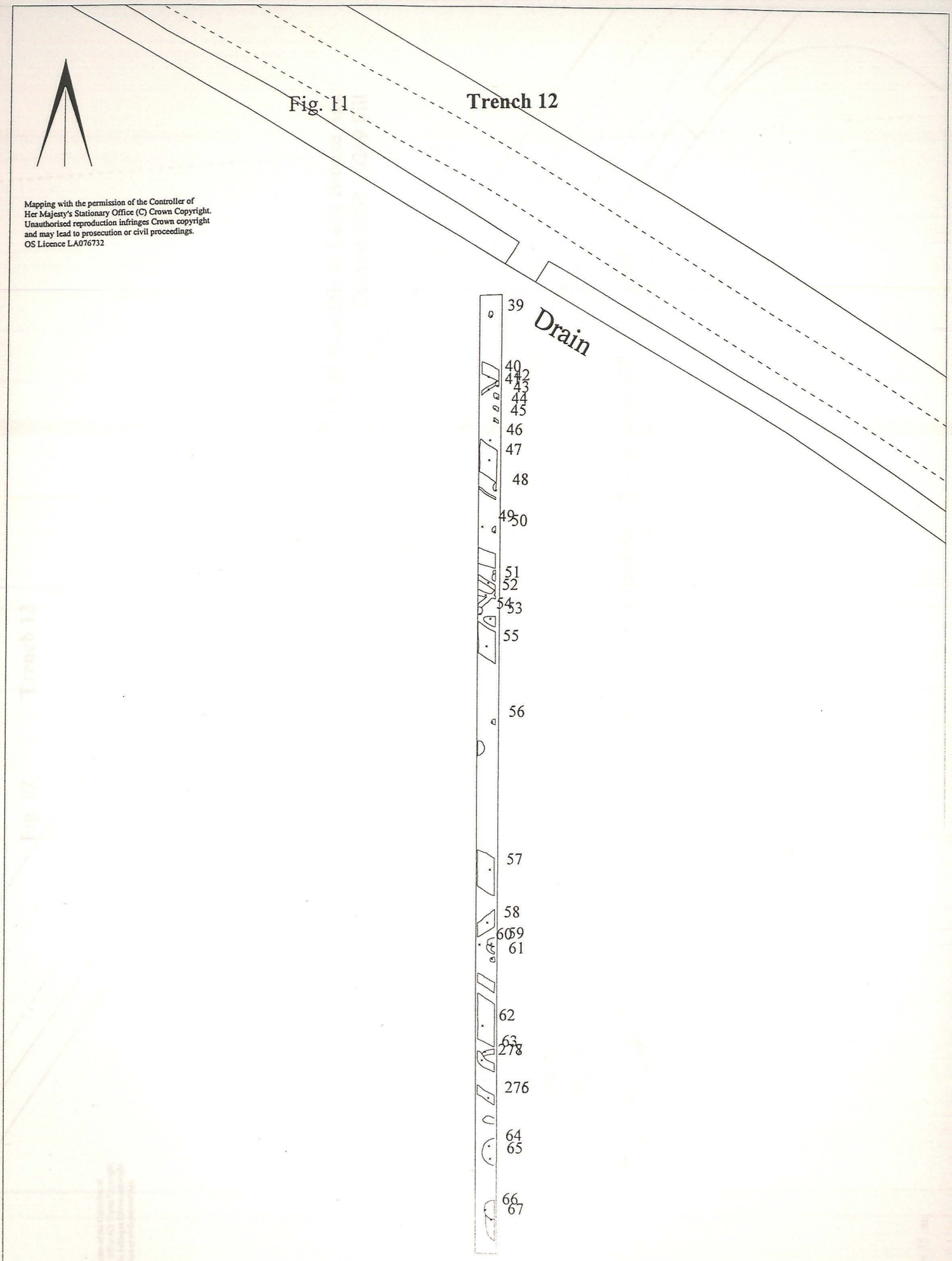
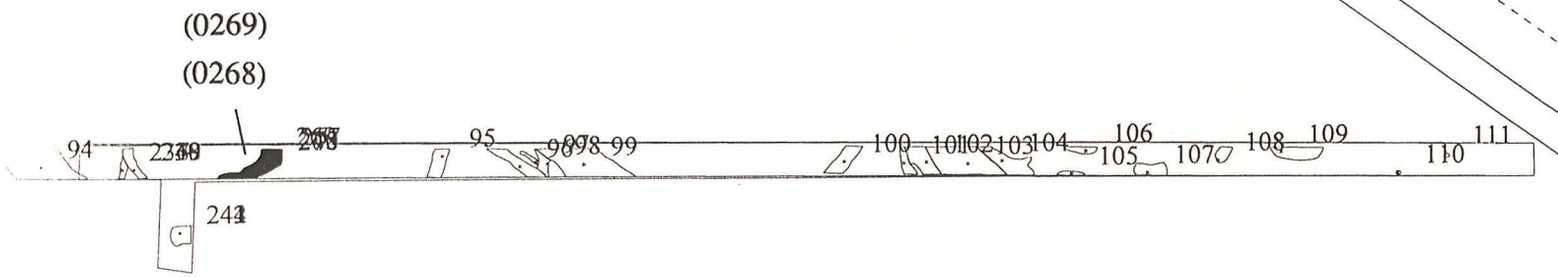


Fig. 12 **Trench 13**



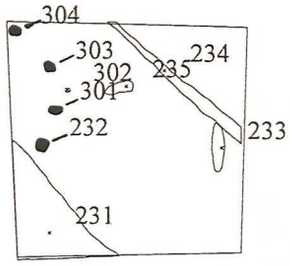
Late Neolithic to Early Bronze Age
Context 0268 - 0269 Fill

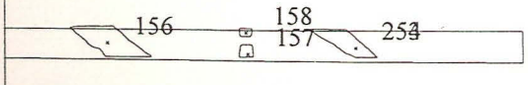



0 6.25 m.

Fig. 13 **Trench 14**



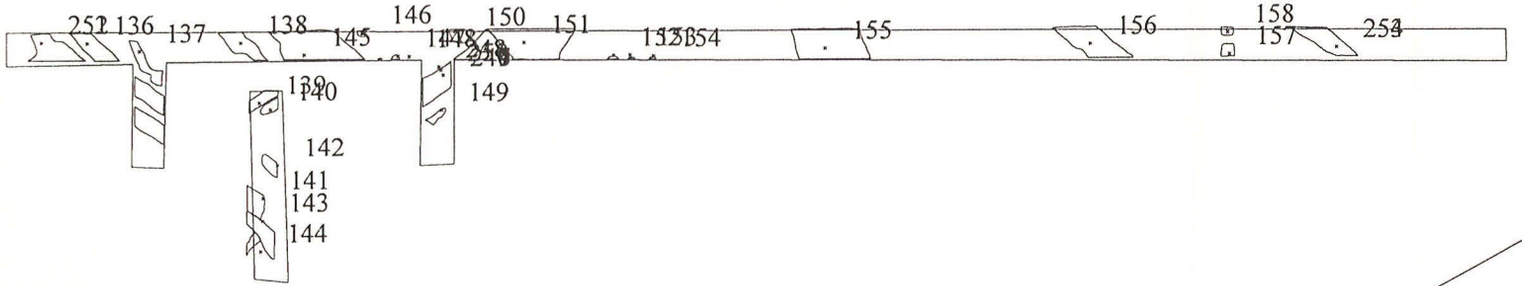


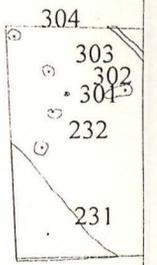




0 6.25 m.

Fig. 14 **Trench 15**






0 6.25 m.

Fig. 15 **Trench 16**



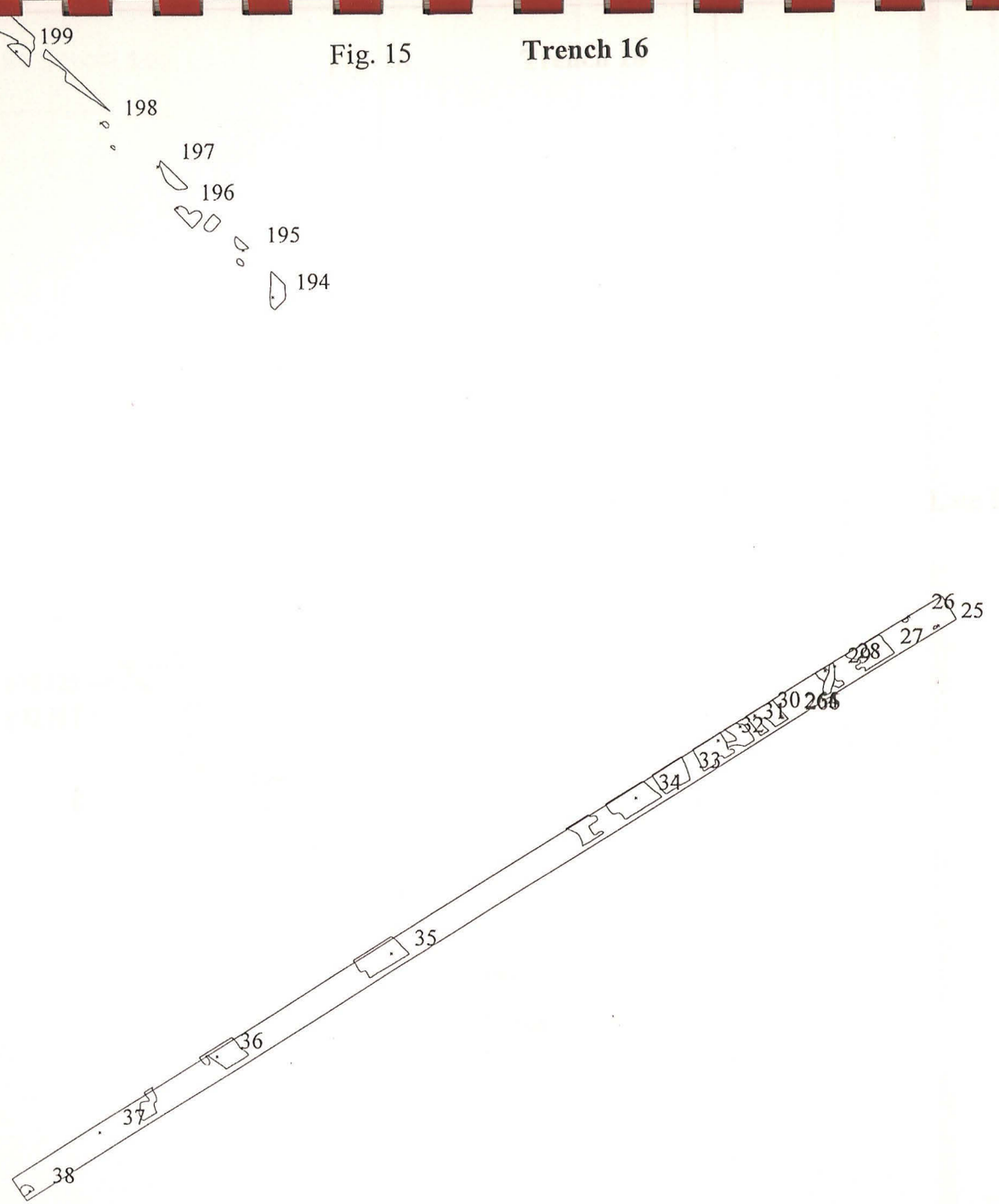
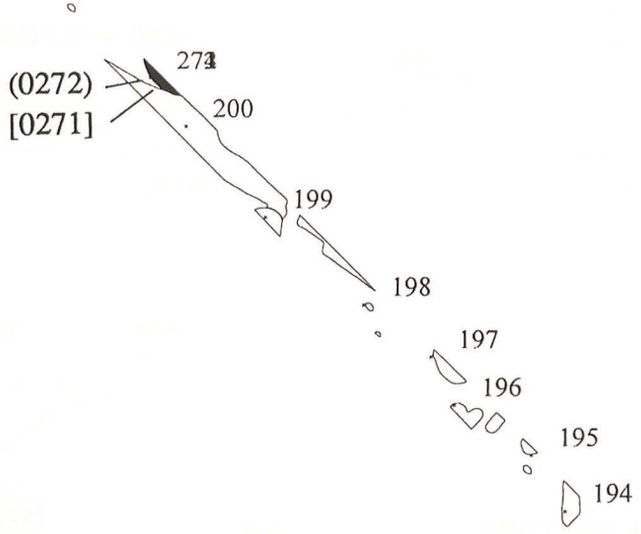


Fig. 16 **Trench 18**



Late Bronze Age to Early Iron Age
Context 0272 Fill
0271 Cut




0 6.25 m.

51000

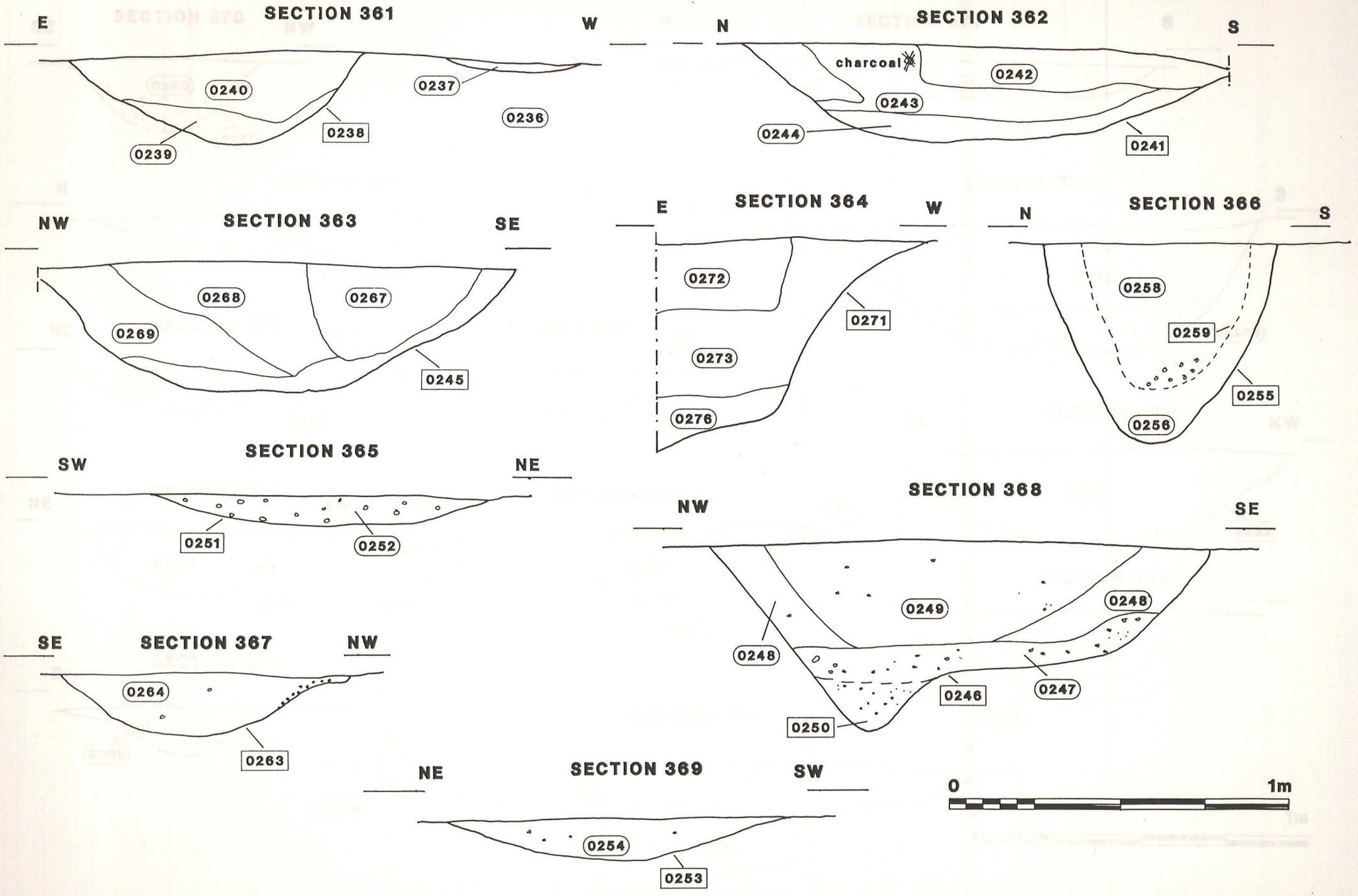



Figure 17 Sections

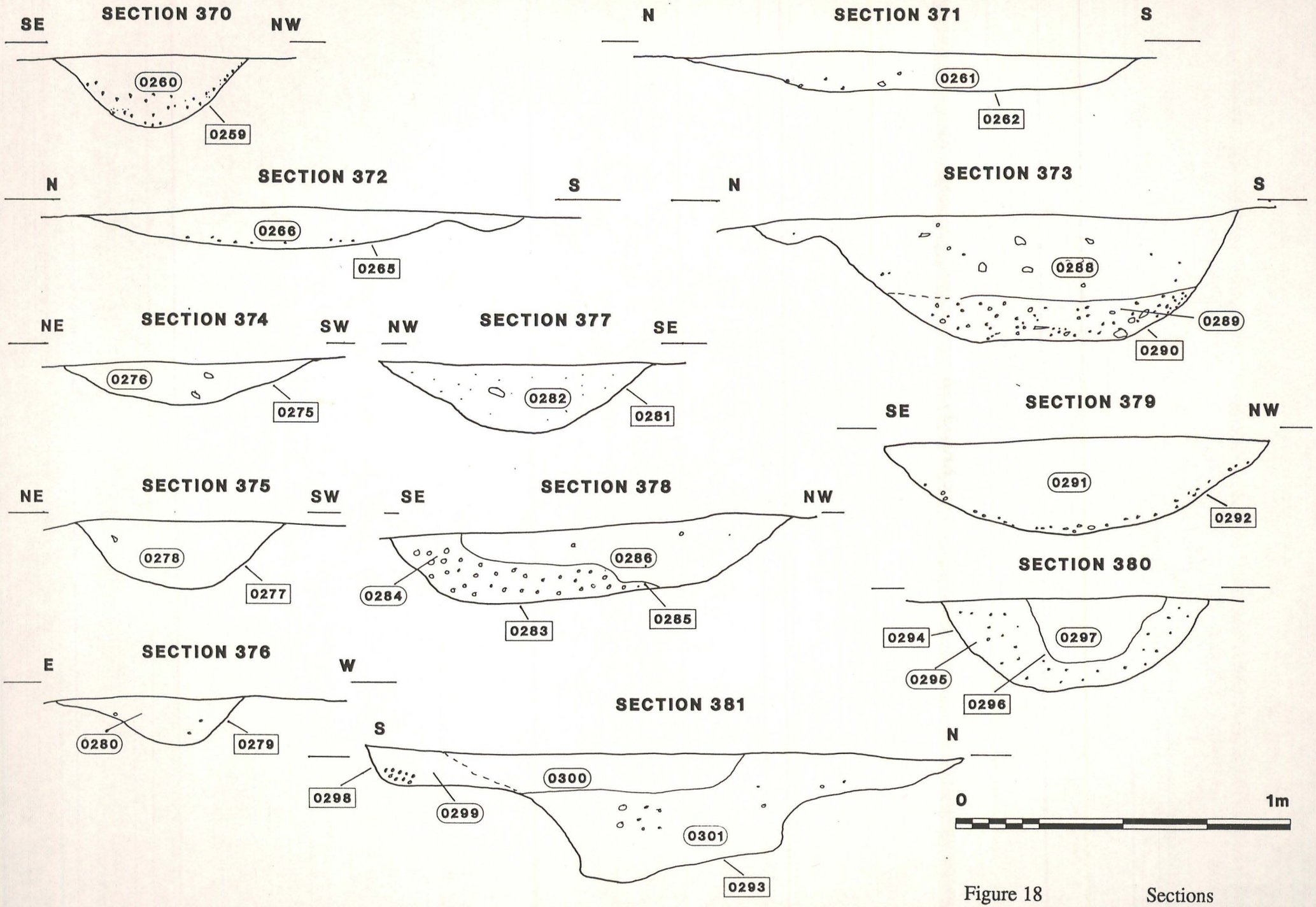



Figure 18 Sections

# APPENDIX 9

# STOWE FARM, Barholme, Lincolnshire



**Environmental Assessment**
**Karen Izard**

## Introduction

This assessment was completed in order to determine the potential of environmental material from Stowe Farm in Lincolnshire. Of the 18 trenches opened, material was sampled from 8 of them. The volume of the 18 samples ranged between 10 and 30 litres and a total of 270 litres was processed.

## Sample processing

Each sample was floated using a 1mm mesh for the residue and a 500 micron mesh to collect the carbonised material. The residue was air dried and sorted for bone, shell, carbonised and waterlogged material and pot. The flot was also air dried and scanned under a microscope for charred grain, charcoal, seeds, insects and snails. The combined results of these processes are summarised in Table 2. Each category was scored using the following symbols: + - a single species present or very low numbers/quantity of items: ++ - more than one species and greater than 10 individuals or a medium quantity - potentially an analysable assemblage; +++ - greater than 30-40 individuals or large quantities - definitely an analysable assemblage. Any modern inclusions such as burrowing snails, waterlogged seeds or worm egg cases are denoted by $. The quantity of modern rootlets was defined by S ,M and L for small, medium and large amounts within the flots.

## Results

The majority of the samples came from contexts which were largely sandy silt (Table 1). This suggests that the potential for recovering environmental material that has not been burnt is low. Some samples did have a small clay content but not sufficient for the preservation of non carbonised remains.

The animal bone recovered from the samples was small, fragmentary and some were mineralised. The bone found in the trenches was so poorly preserved and unidentifiable that it was not collected.

A small quantity of aquatic, semi aquatic and terrestrial snails were recovered from most of the samples. The presence of these species gives some indication of the type of environments that existed during the ? Neolithic occupation of the area that is now Stowe Farm but the numbers are too low to justify making any conclusions. *Cecilioides sp*, a burrowing snail which is probably modern, actually had the greatest quantity.

Two samples (0304, 0305) from the same feature (ring ditch 245, Trench 13) had a reasonable quantity of partly mineralised, charred wood. As separate samples, they are insufficient for radiocarbon dating but combined they might produce a date.

Charcoal was present in most of the samples. The pieces are too small for any sort of identification and with the exception of one sample (0312, 8 grams) too few for radiocarbon dating.

A total of seven charred cereal grains were identified from the flots. Each grain was in fairly poor condition.

The majority of the seeds recovered from the residue and flot are probably modern contaminants as they have a waterlogged appearance, were from samples that were not waterlogged and in these conditions would not survive for long periods of time. There are a few that appear to be carbonised but in these quantities they are not going to give us a great deal of information.

Due to the time element and the absence of long datable sequences, samples or subsamples were not taken for pollen analysis.

**Conclusions and Recommendations**

Very little environmental information can be interpreted from the samples obtained at Stowe Farm. In the event of an excavation taking place, I would recommend concentrating on fills with carbonised material for dating evidence as well as indicators of settlement and agricultural practices. The sample size should be increased to 50 litres per sample in order to increase the chances of recovery of a reasonable size assemblage for analysis. Little would be learnt from the analysis of any animal bone collected due to losses through preservational problems. The low frequency and small variety of snails would also be insufficient for a major analysis. Any environmental evidence recovered should still be recorded and retained for archive only.

## STOWE FARM
## Environmental Evaluation Results

**Table 1**

| Sample | Tag | Trench | Context | Type | Munsell | Description |
|---|---|---|---|---|---|---|
| 0301 | | 13 | 0240 | Ditch fill | 10YR 5/6 | Sandy silt from top layer of ditch fill |
| 0302 | | 13 | 0239 | Ditch fill | 10YR 6/6 | Lowest fill from context cut 0238 |
| 0303 | | 13 | 0242 | Pit fill | 5YR 5/6 | Redish brown evidence of burning small proportion of charcoal |
| 0304 | | 13 | 0268 | Ditch fill | 10YR 3/2 | V shaped recut in ditch cut 0245 |
| 0305 | | 13 | 0269 | Ditch fill | 10YR 5/8 | Sandy silty clay deposit |
| 0306 | 0821 | 15 | 0252 | Ditch fill | 10YR 4/6 | Sandy silt |
| 0307 | 0822 | 15 | 0249 | Ditch fill | 10YR 4/3 | Sandy silt |
| 0308 | 0826 | 5 | 0258 | Postpipe fill | 10YR 4/4 | Silty sand |
| 0309 | 0823 | 15 | 0254 | Ditch fill | 10YR 5/6 | Sandy silt |
| 0310 | 0827 | 12 | 0276 | Ditch fill | 10YR 4/6 | Sandy silt |
| 0311 | 0825 | 18 | 0274 | Pit fill | 2.5Y 4/2 | Waterlogged deposit at base of pit |
| 0312 | 0824 | 18 | 0272 | Pit fill | 10YR 2/1 | Area of burnt clay, high charcoal, burnt stone |
| 0313 | 0828 | 12 | 0278 | Ditch fill | 10YR 4/6 | Sandy silt |
| 0314 | 0829 | 2 | 0288 | Ditch fill | 10YR 4/4 | Light gritty textured sandy clay loam with sparse inclusions of gravel and a small amount of charcoal |
| 0315 | 0830 | 10 | 0291 | Ditch fill | 10YR 5/6 | Sandy clay with sparse inclusions of gravel |
| 0316 | 0831 | 10 | 0291 | Ditch fill | 10YR 5/6 | Sandy clay |
| 0317 | 0832 | 10 | 0071 | Ditch fill | 10YR 4/2 | Silty sand |
| 0318 | 0833 | 1 | 0300 | Ditch fill | 10YR 5/6 | Sandy silt |

## Stowe Farm Environmental Evaluation Results cont.

**Table 2**

| Sample | cereal | seeds | chcoal | wood | moll.t | moll.a | bone | shell | insect | worm | pot | comments | root | appprox date* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0301 | + | $ | | | +$ | + | + | | | | | | m | |
| 0302 | | $ | + | | +$ | + | | | | | | | s | |
| 0303 | | | + | | +$ | | | | + | | | | s | |
| 0304 | | +$ | + | + | | | | | | | | | s | |
| 0305 | + | + | + | + | $ | | + | | | | | | s | |
| 0306 | + | + | | | +$ | | | | | | | | m | LN/EBA |
| 0307 | | $ | + | + | +$ | | + | | | | | | m | LN/EBA |
| 0308 | | $ | + | + | $ | | | | | | | | m | N |
| 0309 | | +$ | + | | +$ | | | | | | | | m | |
| 0310 | + | $ | + | | +$ | | | | | | | | m | |
| 0311 | | | + | | + | | | | | | | | s | N |
| 0312 | + | + | + | | $ | | | | | | | | s | N |
| 0313 | + | $ | + | | +$ | | | | | | | | m | |
| 0314 | | +$ | | | +$ | | | | + | | | | l | N |
| 0315 | + | $ | + | | +$ | | | + | | | | | s | N |
| 0316 | | + | + | | +$ | | | | | | | | m | |
| 0317 | | $ | + | | +$ | | + | | + | | | | s | N |
| 0318 | | $ | + | | +$ | | + | | + | | + | | s | LN/EBA |

Key:
+ - a single species present or very low numbers/quantity of items
$ - modern contaminants
s - small quantity of root
m - medium quantity of root
l - large quantity of root
N - Neolithic LN - Late Neolithic EBA - Early Bronze Age * dates from pot and similar feature type

# APPENDIX 10

## CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

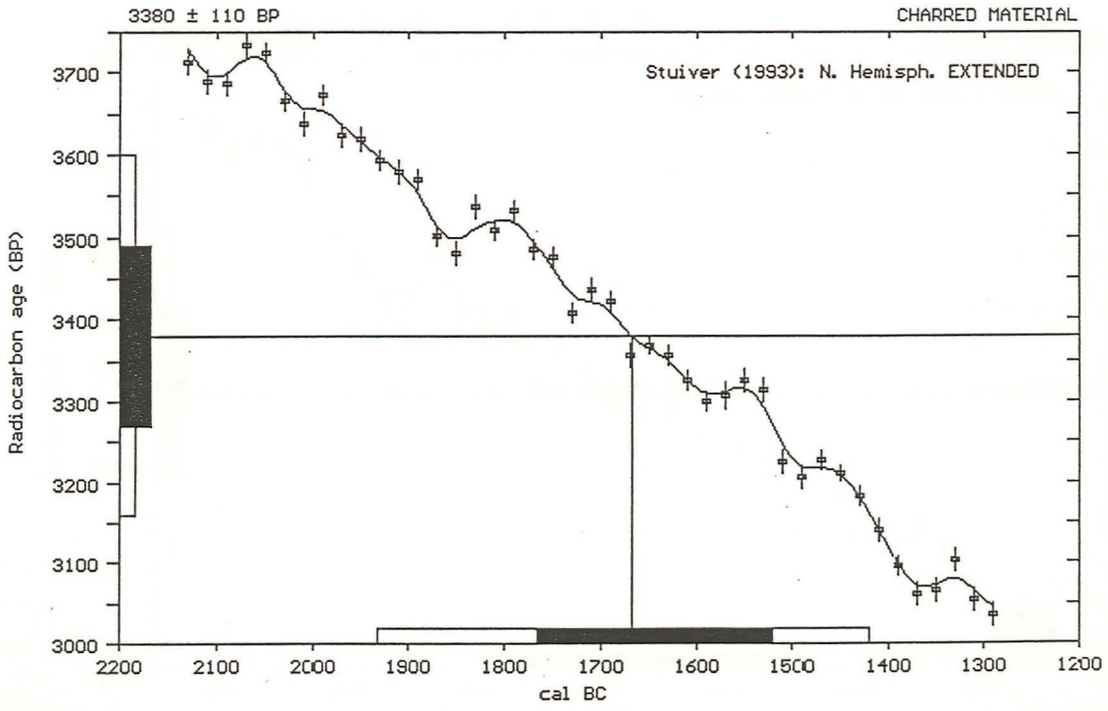
(Variables:estimated C13/C12=-25:lab mult.=1)

| | |
|---|---|
| Laboratory Number: | Beta-77929 |
| **Conventional radiocarbon age*:** | **3380 +/- 110 BP** |
| **Calibrated results: (2 sigma, 95% probability)** | **cal BC 1935 to 1420** |

* C13/C12 ratio estimated

Intercept data:

| | |
|---|---|
| Intercept of radiocarbon age with calibration curve: | cal BC 1670 |
| 1 sigma calibrated results: (68% probability) | cal BC 1765 to 1520 |





References:

*Vogel, J. C.,Fuls, A., Visser, E. and Becker, B., 1993, Radiocarbon 35(1), p73-86*

*Talma, A. S. and Vogel, J. C., 1993, Radiocarbon 35(2), p317-322*

*Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., Radiocarbon 35(1)*


Results prepared by:

*Beta Analytic, Inc. 4985 S.W. 74th Court, Miami, Florida 33155*

## CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

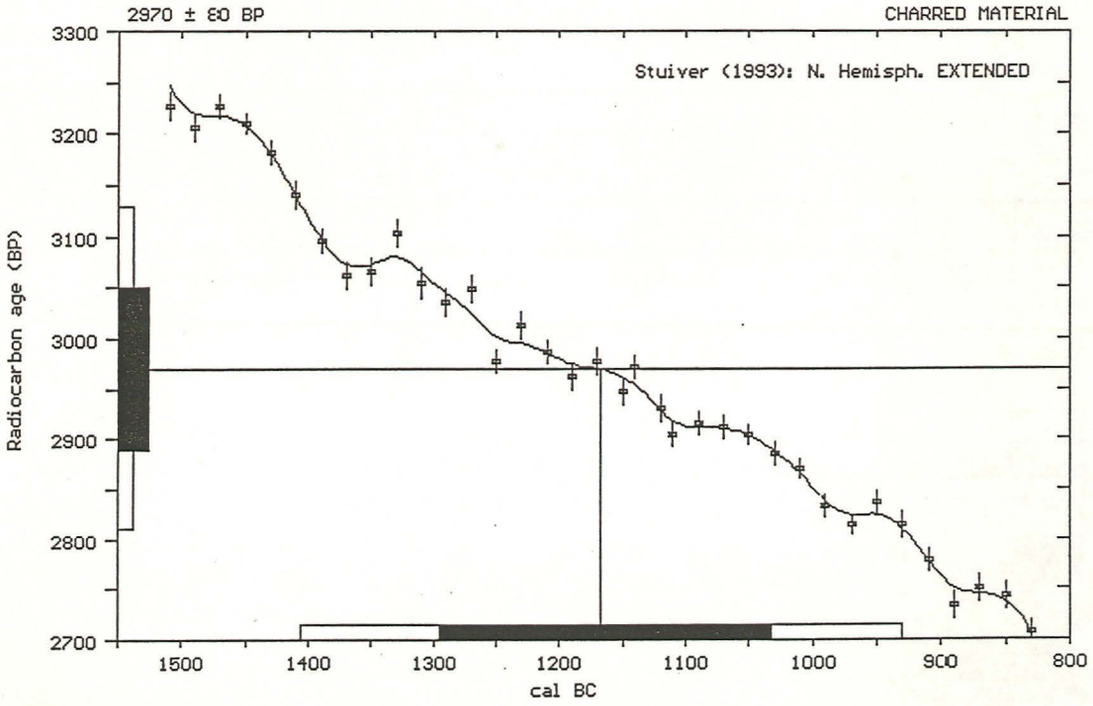
(Variables:estimated C13/C12=-25:lab mult.=1)

| | |
|---|---|
| Laboratory Number: | Beta-77931 |
| **Conventional radiocarbon age*:** | **2970 +/- 80 BP** |
| **Calibrated results: (2 sigma, 95% probability)** | **cal BC 1405 to 930** |

* C13/C12 ratio estimated

Intercept data:

| | |
|---|---|
| Intercept of radiocarbon age with calibration curve: | cal BC 1170 |
| 1 sigma calibrated results: (68% probability) | cal BC 1295 to 1030 |





References:

*Vogel, J. C.,Fuls, A., Visser, E. and Becker, B., 1993, Radiocarbon 35(1), p73-86*

*Talma, A. S. and Vogel, J. C., 1993, Radiocarbon 35(2), p317-322*

*Stuiver, M., Long, A., Kra, R. S. and Devine, J. M., Radiocarbon 35(1)*


Results prepared by: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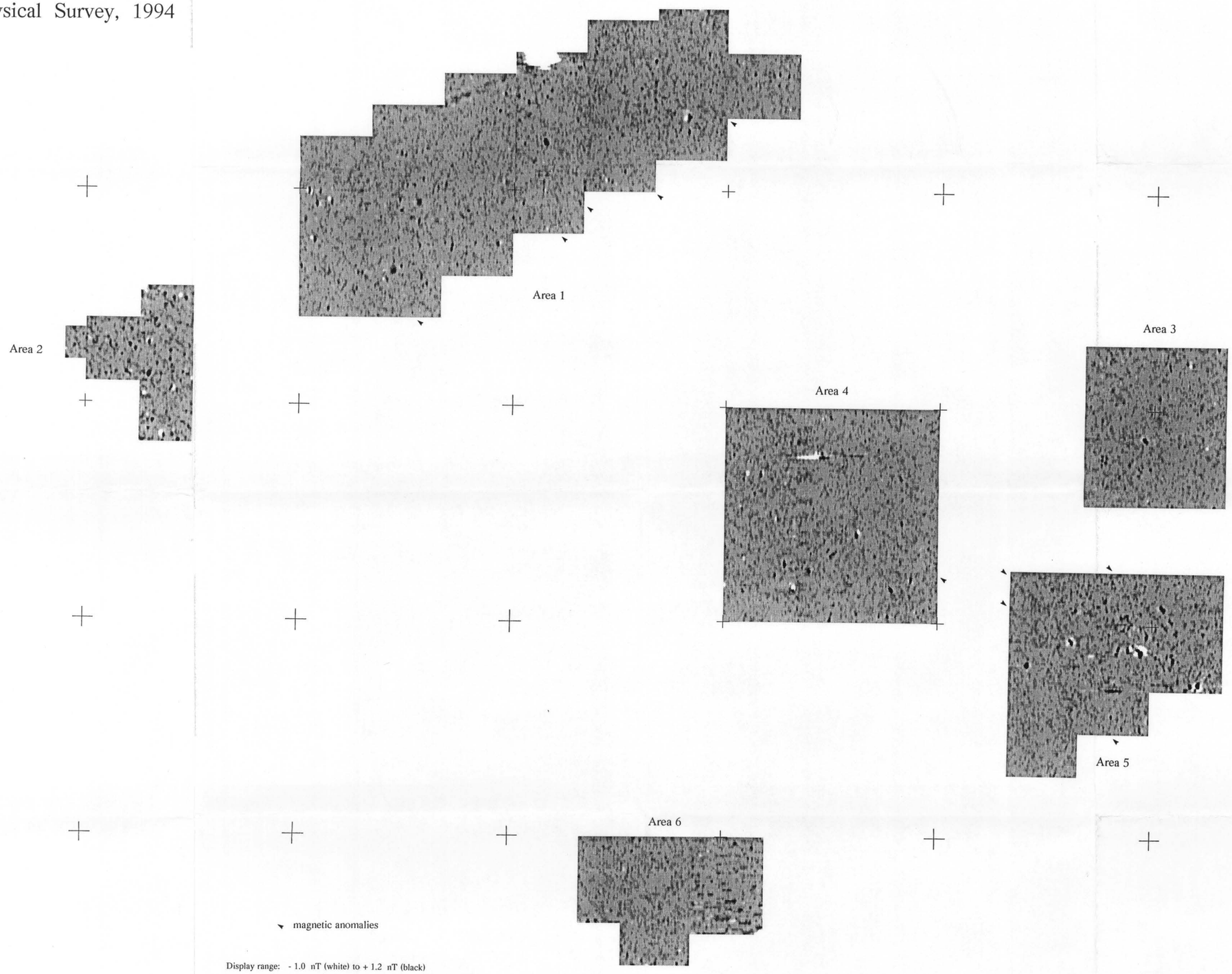
STOWE FARM, WEST DEEPING,
LINCOLNSHIRE

Geophysical Survey, 1994




magnetic anomalies

Display range: - 1.0 nT (white) to + 1.2 nT (black)

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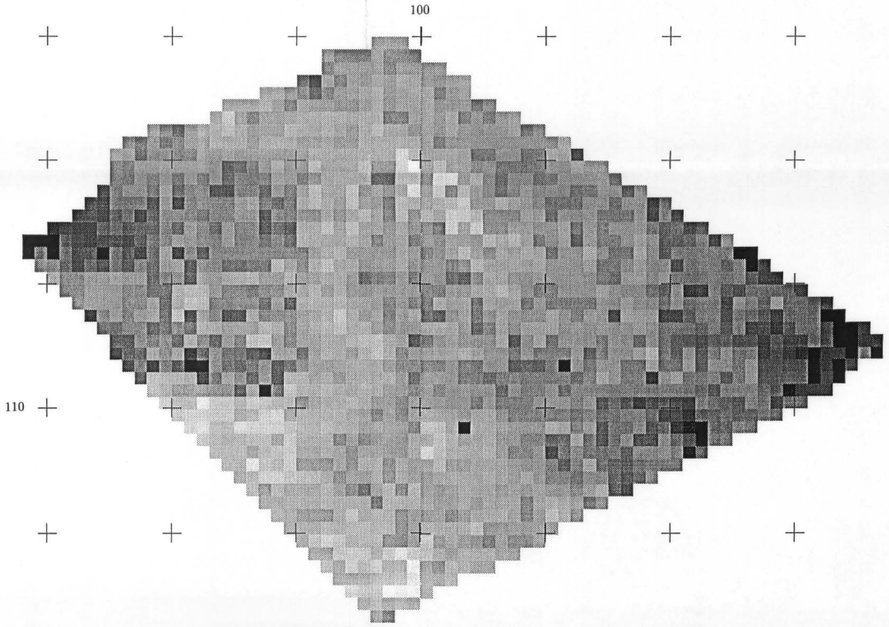
1:1000

Stowe Farm, West Deeping
Geophysical Survey 1994
Plan 3:
Magnetometer Survey: half tone plot

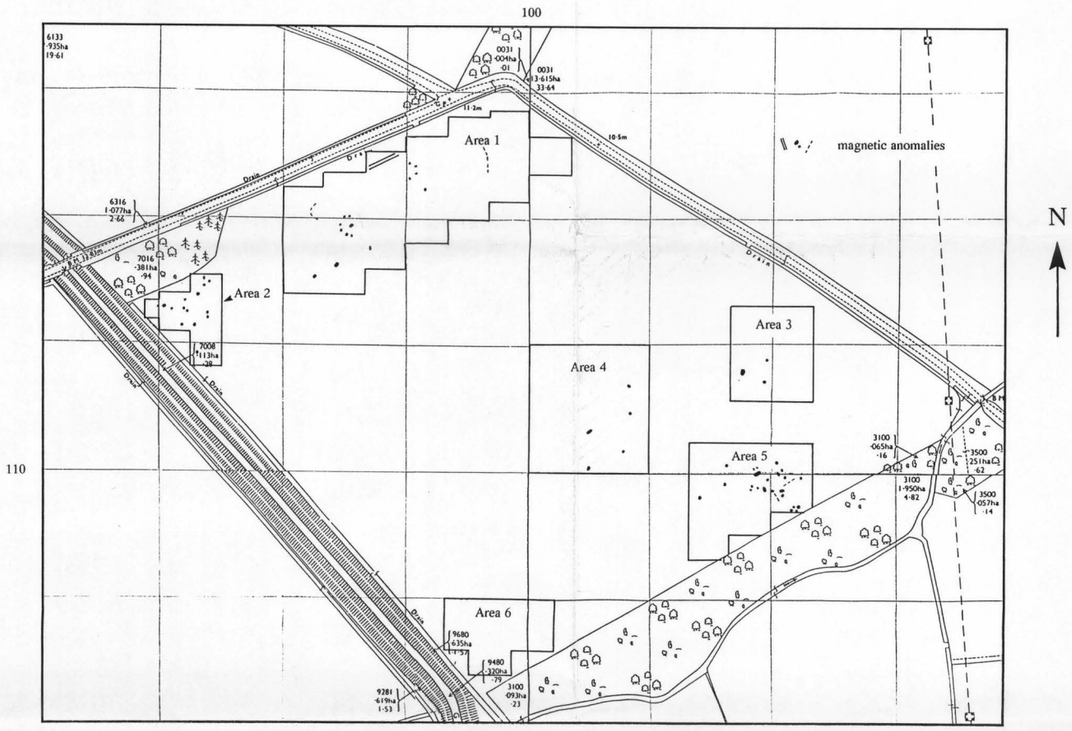
# STOWE FARM, WEST DEEPING, LINCOLNSHIRE

## Geophysical Survey, 1994

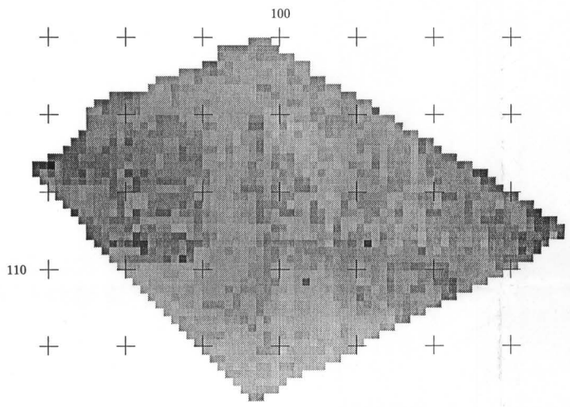



(i) Magnetic susceptibility survey 1:2500

Display range: 15 x $10^{-5}$ SI (white) to 35 x $10^{-5}$ SI (black)

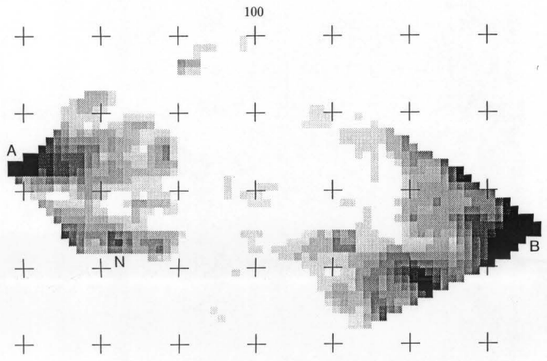



(iv) Location of magnetometer survey 1:2500

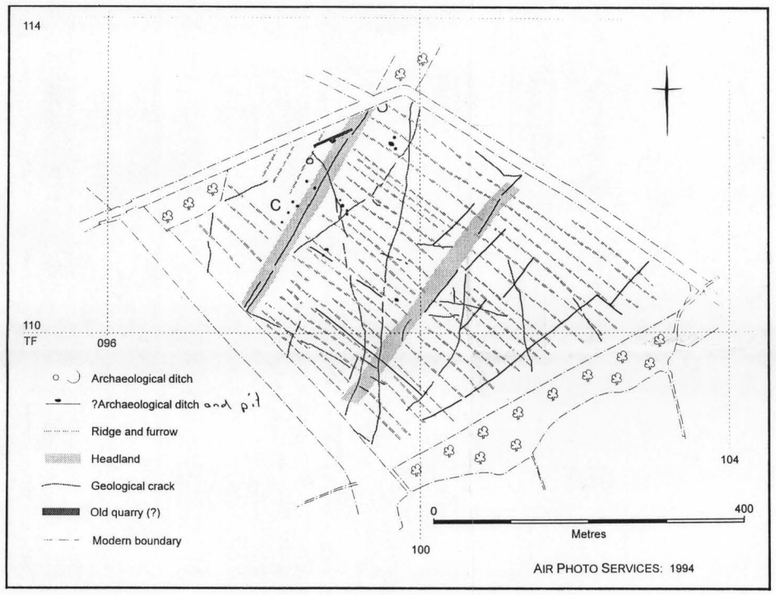



(ii) Magnetic susceptibility survey 1:4000

Display range: 0 (white) to 50 x $10^{-5}$ SI (black)




(iii) Magnetic susceptibility survey: smoothed data, positive anomalies 1:4000




(v) Interpretation of cropmarks 1:4000

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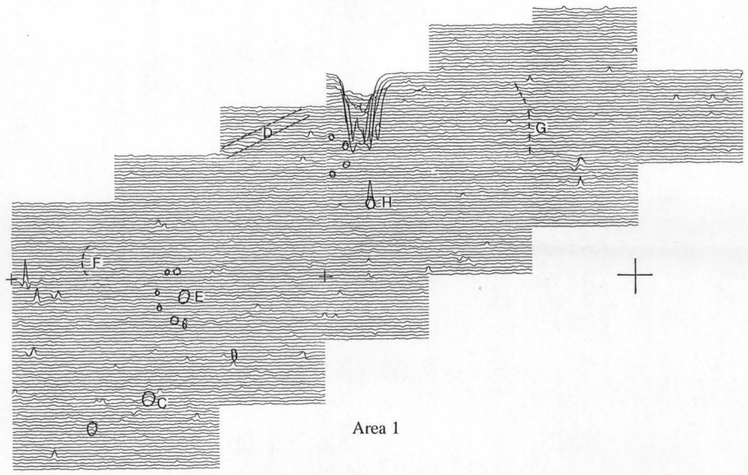
Stowe Farm, West Deeping
Geophysical Survey 1994

Plan 1:

Magnetic Susceptibility Survey

# STOWE FARM, WEST DEEPING, LINCOLNSHIRE

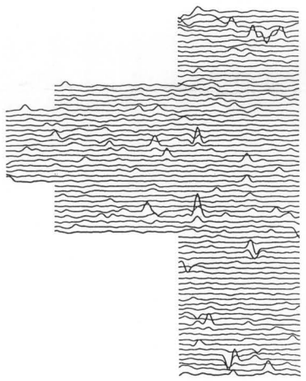
Geophysical Survey, 1994




Area 1

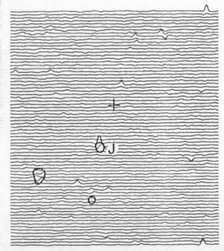
N

Area 2

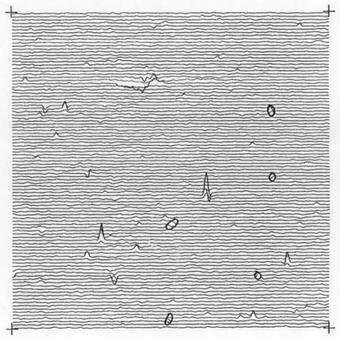


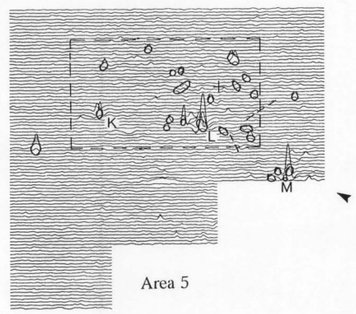
Area 2 1:625

Area 3

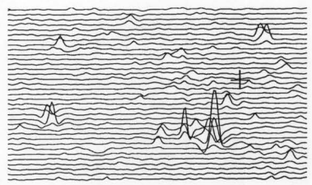



Area 4



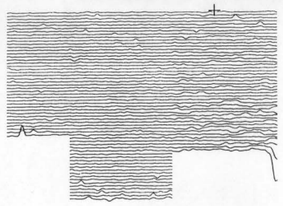



Area 5



Detail from Area 5 1:625

Area 6



magnetic anomalies

1:1000

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Stowe Farm, West Deeping
Geophysical Survey 1994
Plan 2:
Magnetometer Survey