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Proposed Electricity Wind Turbines at Bagot's Park, Staffordshire

An Archaeological Desk-based Assessment and Geophysical Survey 2003

Birmingham University Field Archaeology Unit

Birmingham University Field Archaeology Unit
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Proposed Electricity Wind Turbines at Bagot's Park, Staffordshire.

An Archaeological Desk-based Assessment and Geophysical Survey 2003

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Summary

Birmingham University Field Archaeology Unit undertook an archaeological assessment on behalf of Powergen Renewables on land at Bagot's Park, Staffordshire (centred on SK 090 278) in December 2002 and January 2003. As part of the assessment a geophysical survey was carried out by Stratascan in January 2003. The work proposed was the construction of 8 wind turbines and associated cabling/access works for the production of electricity. Bagot's Park was known from previous fieldwork and geophysical surveys to be an area containing many glass making furnaces dating from the 16th century and thus an assessment of the possible impact of turbines upon any known or unknown archaeological sites was required by Staffordshire County Council. The current archaeological assessment concluded that no known archaeological site will be affected by the development. Although the density of archaeological deposits, especially relating to the medieval glass making industry in Bagot's Park, suggest that there is the possibility that archaeological deposits from as yet unidentified sites may be encountered in the course of this development. The geophysical work, which was carried out on the 8 proposed turbine bases, demonstrated two of the areas proposed for development may contain archaeological deposits relating to the medieval glassmaking and careful consideration should be given to the location of these bases and the method of their excavation.

1.0 Introduction

This report outlines the results of an archaeological desk-based assessment carried out by Birmingham University Field Archaeology Unit (B.U.F.A.U.) and geophysical survey carried out by Stratascan in December 2002 and January 2003. The full text of the Stratascan report is included here, but not all the figures; these can be viewed in the full report (Mercer 2003). The work was carried out on land at Bagot's Park, Staffordshire (centred on SK 090 278) on behalf of Powergen Renewables, who propose the erection of 8 electricity-generating wind turbines, along with their associated cabling and access work.

Bagot's Park is an area of great archaeological potential. Its clearance for agriculture in 1966 identified several medieval glass furnaces (Crossley 1967). Glass production in the Midlands had not been well understood prior to the discovery of these glass making sites and firm dating and understanding of these features is essential for the complete understanding of this industry.

As a consequence of the known archaeological sites, Staffordshire County Council required an assessment of the possible impact of the proposed wind turbines on known archaeological and unknown archaeological sites, in order that any mitigation strategy could be informed to avoid or minimise the impact on the archaeological resource. The requirements of this assessment included an examination of the known sources for archaeological sites within Bagot's Park and a geophysical survey of a 50m radius of the 8 proposed turbine sites. Initially a programme of targeted

fieldwalking was required, but this was deemed inappropriate in discussions with the Principal Historic Environment Officer, Staffordshire County Council, as the scope of the proposed development became more defined.

The work was carried out in accordance with a brief from Staffordshire County Council Development Services (Klemperer 2002) and the Institute of Field Archaeologists' *1999 'Standard and Guidance for archaeological desk-based assessment'*.

2.0 Site Location (Figs. 1 & 2)

Bagot's Park is situated in east Staffordshire (centred on NGR SK 090 278) between Abbots Bromley, to the south and Uttoxeter, to the north, and covers an area in excess of 200ha. The park is located on a ridge of boulder clay lying over tea green marls and keuper marls (Crossley 1967). Bagot's Park is, in the main, now used for arable agriculture.

The site included the 8 probable locations of the turbine bases, each of which encompassed an area measuring 50m by 50m square, although the bases only impact on an area 10m by 10m.

3.0 Aims

The general aim of this assessment was to determine the likely location, nature, extent and survival of archaeological remains within the area of the proposed turbine bases.

A specific aim was to locate any possible medieval glass making furnaces or associated activity within the vicinity of the turbine bases.

4.0 Method for Desk-based Assessment

Staffordshire Sites and Monuments Records (S.M.R.) was consulted to assess the extent of the known archaeology. Documentary sources were then consulted in order to gain a fuller understanding of the known archaeology.

A full methodology for the geophysical survey is included in *Section 6*.

5.0 Historical and Archaeological Background (Figure 2)

5.1 Prehistory

The majority of the known archaeology and history of Bagot's Park is related to the medieval glass industry. It seems that prehistoric, roman and saxon activity are not, at this point, known in or immediately around Bagot's Park.

5.2 The Park

The history of Bagot's Park is to some extent unclear, although it does seem that for the majority of its history it was a tree or scrub-covered park with small pockets of human activity. Bagot's Park is reported to have been a Deer Park since the 15th century, covering 800-1000 acres, containing a herd of wild goats and enclosed by a fenced ditch and bank (SMR PRN 00728). This Deer Park is probably comparable with the landscaped park, which was known to be in existence until 1966, when it was converted to arable farming (SMR PRN 40132).

5.3 The Enclosure Monuments

The possibility of several moated or enclosure monuments have been suggested in the area of Bagot's Park. The majority of these have been identified from aerial photographic surveys and are of unknown date, although some of these have been interpreted as medieval or post-medieval moated sites. A possible moated site (SMR PRN 00730) in the south of the park was identified and thought to be possibly medieval or early post-medieval, although the exact location of this is uncertain at this time. In the southwest corner of the park is an earthwork, measuring 60m long and 50m wide, which could also possibly be a medieval or post-medieval moated site (SMR PRN 02045). Another possible site, to the southeast of the park, is visible as a small enclosed earthwork (SMR PRN 20020). Interestingly this site has a visible earthwork trackway linking it to Park Lodge (SMR PRN 11167), described in further detail below. The last of the crop mark enclosures, SMR PRN 20019, is to the south of the park. Although it is by no means certain that these earthworks are moats, structures such as these are not unknown in the area, especially in association with medieval parkland (Larkham 1982).

5.4 The Medieval Glass Making Industry

When Bagot's Park was cleared for agricultural use in 1966, 15 glass making sites were identified in the area. Recent archaeological work in the area has identified a further four sites. These sites are generally recognisable as glassmaking residue scattered through the plough soil, identified as concentrated scatters during fieldwalking, or as geophysical anomalies when using magnetometry survey (Crossley 1967). Crossley excavated several of the sites (Site 4, SMR PRN 02646; Site 6, SMR PRN 02644 and Site 7, SMR PRN 02644) in 1966 (*ibid*.). Excavations revealed surfaces and stone structures associated with the various stages of glass making, in particular parts of semi-circular furnaces with central flues. (*ibid*.)Further work carried out by Keele University and Staffordshire County Council has further defined sites by the use of field walking and geophysical analysis.

5.41 List of Glass Making Sites (see Fig. 2)

Site 1 (SMR PRN 02651)

This site is directly adjacent to Squitch House, a property present at the southwest corner of Bagot's Park with a single surviving cruck of late medieval date. It is suggested that the Harvey family, associated with glass making in the area, held this land at around this time and various references to glass production appear in documentary evidence around this time (see Crossley 1967, 48 for a full account). Geophysical survey was not able to identify this site in 1997 (Staffs County Council 2000).

Site 2 (SMR PRN 02645)
This site is at the western side of Bagot's Park and was identified on the clearance of the land in 1966. This site could not be verified by geophysical survey in 1997 (*ibid*.).

Site 3 (SMR PRN 02647)
This site has been subject to geophysical survey, which suggests the presence of three furnaces; a main melting furnace and two small subsidiary furnaces to the south (*ibid*.).

Site 4 (SMR PRN 02646)
This site was excavated in 1966. Two furnaces were identified and excavated, each representing distinct stages of the glass making process, probably window glass in this case (Crossley 1967). This site has been subject to geophysical survey in 1998-9, which confirmed the location of this site (Staffs County Council 2000).

Site 5 (SMR PRN 02641)
This was identified when Bagot's Park was cleared for agricultural use in 1966. Pottery from the 16th century was recovered from this site at this time (Crossley 1967), although the location of this site could not be confirmed by geophysical survey in 1988 (Staffs County Council 2000).

Site 6 (SMR PRN 02644)
This was excavated in 1966, in an area of fused glass and stone spread in the plough soil. On excavation it was discovered that much of the structure of this kiln had been destroyed leaving only the burnt clay from below the furnace (Crossley 1967). This site has been subject to geophysical survey in 1999, the results of which suggest two furnaces in this area (Staffs County Council 2000).

Site 7 (SMR PRN 02648)
This site was identified during the clearance of Bagot's Park in 1966 and it was suggested that this furnace site had an associated brick-built structure (Crossley 1967). Subsequent construction work resulted in the destruction of this site and only traces of an outline of a furnace were recorded at this time (*ibid*.).

Site 8 (SMR PRN 02639)
Geophysical survey in this area suggest a main melting furnace with possibly two small furnaces to the south (Staffs County Council 2000).

Site 9 (SMR PRN 02640)
Geophysical plots of this area suggest a single main furnace, with a possible opening at the east end (*ibid*.).

Site 10 (SMR PRN 02643)
A furnace was identified in 1966 when Bagot's Park was cleared for agricultural use (Crossley 1967)

Site 11 (SMR PRN 02642)
Field walking was carried out on this site. Subsequent geophysical survey was also carried out and suggested the presence of a probable furnace. It was noted that this is

some distance from the anticipated location of a furnace suggested by the field walking. It is also thought that this could be an earlier medieval furnace, unconnected with the post-medieval activities nearby (Staffs County Council 2000).

Site 12 (SMR PRN 02649)
This site has been subject to geophysical survey that confirmed the location of the suspected melting furnace identified by field walking (Staffs County Council 2000).

Site 13 (SMR PRN 02653)
This site was recorded when the area was cleared for farming in 1966 (Crossley 1967).

Site 13a (SMR PRN 50128)
This site was identified during geophysical work on the area in 2000 (Staffs County Council 2000).

Site 14 (SMR PRN 02652)
This site was identified when the area was cleared in 1966 (Crossley 1967).

Site 15 (SMR PRN 02650)
At the time of the land clearance in 1966 it seems that the foundations of a kiln and associated structure were recognisable in the ground. Pottery dating to the 16th century was also recovered (*ibid*.). Aerial photography suggested that this site consisted of a square ditched enclosure with furnaces and possible dwellings. Field walking and a geophysical survey identified a number of anomalies which are thought to represent furnaces, one of which may be an annealing furnace, a waste tip and one side of the enclosure ditch (Staffs County Council 2000).

Site 16 (SMR PRN 02646)
Excavated in 1966, the remains of a double ring gully, with pottery dating to the 17th and 18th centuries, were recovered. The nature of this feature was not ascertained at the time of excavation (Crossley 1967). No evidence for any features was found during a geophysical survey in 2000, and it is thought that this site has now been destroyed by subsequent agricultural activity (Staffs County Council 2000).

Site 17 (SMR PRN 50129)
This site was identified during a geophysical survey in (*ibid*.).

Site 18 (SMR PRN 50130)
This site was identified during a geophysical survey in 2000 (*ibid*).

5.42 Summary
Little may be confirmed as to the date and duration of glass making at Bagot's Park itself, although it seems that it was carried out in the area from as early at the late 13th century (Crossley 1967). It is certain that glass was in production in Bagot's Park from the beginning of the 16th century. Historical documentation suggests glass manufacture to the north of Bagot's park near Glasshouse Bank and Glasshouse Farm (SMR PRN 00718) (*ibid*.). Also Site 4 (SMR PRN 02647) has been dated to this period. The field walking exercises carried out in 1997 and 1998 (Welch 1997 & 1998) would also suggest that Sites 11, 12 and 15 (SMR PRN 2650) were also of this

date. The potential for earlier medieval activity is suggested at Site 11 (SMR PRN 02642), located with the use of geophysical survey, and tentatively dated from the field walking results (Staffs County Council 2000). The duration of the glass making industry here is unknown; it was certainly at its peak in the 16th century, with the rate of decline afterwards untested. There may have been glass making taking place as late as the 19th century, but this remains unconfirmed (Crossley 1966).

5.5 Post-medieval Structures

There are several listed buildings within the boundaries, at the eastern edge of Bagot's Park. These are Park Lodge (SMR PRM 11167); a Grade II listed 19th century brick-built farmhouse. Associated with this is Park Lodge Barn (SMR PRN 11168) a Grade II listed 19th brick-built barn and cartshed. At the southern edge of the park, there is Parkside Farm (SMR PRN 11324), a Grade II listed 17th century timber-framed cottage, stable and cowhouse.

6.0 Geophysical Survey Report by Stratascan

A Report for

BUFAU

on a

Geophysical Survey

carried out at

Bagot's Park, Staffordshire

January 2003

Job Ref. No. 1728

REGISTERED IFA ORGANISATION

Author E J F Mercer BA(Hons) MSc AIFA

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CONTENTS

1 SUMMARY OF RESULTS

The magnetometer survey successfully located strong magnetic anomalies of possible interest around the proposed sites for T5 and T8.

2 INTRODUCTION

2.1 Background synopsis

Stratascan were commissioned by BUFAU on behalf of Powergen to undertake a geophysical survey of eight proposed turbine sites. The survey forms part of an archaeological investigation being carried out by BUFAU.

2.2 Site location

The site is located at Bagot's Park east of Stafford at OS ref. SK 090278.

2.3 Description of site

The survey areas were located on arable land containing oil-seed rape. Most of the survey areas were fairly flat although those on the southeast side of the site sloped towards the southeast. The ground conditions were wet underfoot as the photograph below shows.

View from the survey area at T8 looking west to T7

The underlying geology is Triassic Mudstones (British Geological Survey South Sheet, Third Edition Solid, 1979) with an overlying drift geology of Boulder Clay (Institute of Geological Sciences South Sheet, First Edition Quaternary, 1977). The overlying soils are known as Wickham 2 soils which are typical stagnogley soils. These consist of slowly permeable seasonally waterlogged fine loamy over clayey, fine silty soils (Soil Survey of England and Wales, Sheet 3 Midland and Western England).

2.4 Site history and archaeological potential

Until the 1960s Bagot's Park was an area of Bracken, scrub and ancient oak trees. Between 1964 and 1967 it was reclaimed and during that time a number of glass making sites were discovered. One example was excavated in 1966 and was dated to the mid-16th century. The reclamation was for arable cultivation and most of the fifteen sites originally located are now traceable as debris spreads in the ploughsoil. Examination of the area has now added a further three sites to the total. Recent fieldwork on the sites has revealed that associated brick and furnace fragments can be seen in relatively discrete concentrations although after thirty years of ploughing these are not in the same place. A geophysical survey carried out over known sites in 1998-99 identified features associated with furnaces and the glassmaking industry.

2.5 Survey objectives

The objective of the survey was to locate any features of possible archaeological significance in order that they may be investigated prior to the proposed turbine developments.

2.6 Survey methods

Magnetometry was considered to be the most suitable technique. More information regarding this technique is included in the Methodology section below.

3 METHODOLOGY

3.1 Date of fieldwork

The fieldwork was carried out over three days from Thursday 2nd January 2003 to Monday 6th January 2003 when the weather was cold.

3.2 Grid locations

At each proposed turbine site an area 50m x 50m was surveyed. The location of the survey grids has been plotted in Figure 2 together with OS coordinates for each of the survey area pegs.

3.3 Description of techniques and equipment configurations

Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTesla (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

The magnetic survey was carried out using an FM36 Fluxgate Gradiometer, manufactured by Geoscan Research. The instrument consists of two fluxgates mounted 0.5m vertically apart, and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.

3.4 Sampling interval, depth of scan, resolution and data capture

3.4.1 *Sampling interval*

Readings were taken at 0.5m centres along traverses 1m apart. This equates to 800 sampling points in a full 20m x 20m grid. All traverses are surveyed in a "parallel" rather than "zigzag" mode to avoid heading error.

3.4.2 *Depth of scan and resolution*

The FM36 has a typical depth of penetration of 0.5m to 1.0m. This would be increased if strongly magnetic objects have been buried in the site. The collection of data at 0.5m centres provides an appropriate methodology balancing cost and time with resolution.

3.4.3 *Data capture*

The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each job, data is transferred to the office for processing and presentation.

3.5 Processing, presentation of results and interpretation

3.5.1 *Processing*

Processing is performed using specialist software known as *Geoplot 3.* This can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids. 'Despiking' is also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Once the basic processing has flattened the background it is then possible to carry out further processing which may include low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies.

The following schedule shows the basic processing carried out on all processed magnetometer data used in this report:

Zero mean grid	*Threshold = 0.25 std. dev.*
Zero mean traverse	*Last mean square fit = off*

Despike *X radius = 1 Y radius = 1*
Threshold = 3 std. dev.
Spike replacement = mean

3.5.2 *Presentation of results and interpretation*

The presentation of the data for each site involves a print-out of the raw data both as grey scale and trace plots, together with a grey scale plot of the processed data. Magnetic anomalies have been identified and plotted onto the 'Abstraction and Interpretation of Anomalies' drawing for the site.

4 RESULTS

4.1 *T1*

The results for the survey carried out at T1 can be seen in Figures 3-6. These show the area to be generally 'quiet' with a number of feint anomalies having been abstracted in Figure 7. These consist mainly of positive linear anomalies with some discrete areas of positive response also located. Their origin is uncertain but they may be cut features of archaeological origin. A small number of discrete ferrous objects have also been abstracted.

4.2 *T2*

As with the survey for T1 the results for the survey at T2 are also fairly 'quiet'. The plotting parameters for both the raw and processed data (Figures 8 and 11) reflect the fact that no anomalies appear to have been located associated with the glass making sites. The abstraction of anomalies in Figure 12 shows feint positive linear anomalies and possible discrete cut features that may be archaeological in origin. However, there is no obvious patterning which would aid interpretation of these features.

4.3 *T3*

The results for the survey at T3 (Figures 13-16) have located feint positive anomalies which appear to curve as plotted in Figure 17. From their characteristics they appear to be the results of agricultural activity.

4.4 *T4*

The north east corner of the survey area for T4 could not be surveyed due to a mast being present. The results for the remaining area (Figures 18-21) again appear to have located features reminiscent of agricultural marks. A number of differing alignments of parallel feint positive linear anomalies have been plotted in Figure 22.

4.5 *T5*

Figures 23-26 show an anomaly of potential in the northwest corner of the survey for T5. The trace plots show the magnitude of the anomaly which suggests that this may be associated with a glassmaking site. Its position on the edge of the survey area inhibits a

more accurate interpretation and it is possible that the anomaly could also be a ferrous object.

To the south of this anomaly a negative linear feature can be clearly seen which is reminiscent of an embankment or earthwork. Other more feint negative features have been abstracted in Figure 27 which may also be the remains of such features, two of which can be observed with a positive linear which could suggest the remains of a bank and ditch.

4.6 *T6*

The results for the survey at T6 show relatively little of any interest (Figures 28-31). The anomalies plotted in Figure 32 are mainly small feint positive linear anomalies which could be of an archaeological or agricultural origin. The discrete positive anomalies are reminiscent of small features such as pits. However, they appear increasingly in the surveys for T7 and T8 where they appear to be of a more natural origin.

4.7 *T7*

Figures 33-37 show the southwest corner of the survey for T7 was omitted. This was due to the presence of the woodland. Along the east side of the survey a pipeline has been located. The strong response from this feature may prevent more subtle features from being observed. Therefore the data has been clipped and can be seen in Figure 34. However, the anomalies abstracted in Figure 38 are of no archaeological interest. The positive linear anomalies observed in the data are likely to be a results of agricultural activity due to the parallel alignment of each anomaly and of the anomalies to the south west boundary. Other anomalies can be seen running perpendicular to the boundary probably relating to ploughing.

4.8 *T8*

The results for the survey at T8 (Figures 39-42) clearly show evidence for the relict field boundary in the form of magnetic debris. However, three large strong magnetic anomalies have been located which may be of interest in association with the glassmaking works. If this is so, the magnetic debris may also be associated and through agricultural activity may have collected at the field boundary.

A large number of discrete positive anomalies can be seen in the data. These have not been abstracted due to the number as it is thought that these may be pedological features.

5 CONCLUSIONS AND RECOMMENDATIONS

The magnetometer survey over the eight proposed turbine sites found very little of interest in the majority of the areas. Only the surveys in T5 and T8 located strong magnetic responses which may be associated with the glassworking sites but it is advised that these areas are investigated further.

7.0 Discussion (Figs. 2-6)

The results of this survey of the known archaeological sites at Bagot's Park demonstrate that the proposed wind turbines do not disturb any of the known archaeological sites. The closest site to a turbine is site 5 (SMR PRN 02641 Figure 2), a glass kiln site identified in 1966 by a surface scatter of finds, although the location of this site could not be confirmed with later geophysical survey. It maybe that this site has already be destroyed by modern agricultural activity, or that the location of the original site is incorrect.

The geophysical survey has pinpointed several areas of interest. There may be cut archaeological linear features within the locations of Turbines1 and 2 (T1 and T2). The entirety of the proposed area for Turbine 5 (Figs. 2, 3 & 4) contains possible archaeological features. With a possible kiln to the northwest and possible associated bank and ditch. The high magnetic result in the proposed area of Turbine 8 (Figs. 2, 5 & 6) suggests that kiln debris could have collected in a field boundary. Although there is a possibility that some part of a structure survived outside of the ditch.

8.0 Recommendations

The location of the proposed turbines have been initially sited to avoid any known archaeological deposits and this has been confirmed during the current desk-based assessment. The location of known deposits could be listed incorrectly or erroneously, however this margin for error should have been negated by the subsequent geophysical survey.

It is recommended that in general there should be an archaeological watching brief during the excavation of the Turbine bases and any associated intrusive service or access trenches. Where possible the location of the actual turbine bases should be outside the located archaeological anomalies identified in the geophysical surveys, especially in the survey areas of Turbines 1, 2, 5 and 8. Careful consideration should be given to the excavation of the bases for Turbines 5 and 8 under archaeological control, as the density of geophysical anomalies may suggest that any 'blank' area chosen for the actual turbine base has a higher chance of encountering archaeological deposits not visible to the geophysical survey already carried out. The final decision for any mitigation lies with Staffordshire County Council and these recommendations are only the considered opinion of the authors.

9.0 Acknowledgements

Mary Duncan carried out the research and wrote the report along with Gary Coates, who also compiled and edited the report. Nigel Dodds prepared the illustrations. Gary Coates also managed the project for B.U.F.A.U. Emily Mercer managed the project on behalf of Stratascan.

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Figures

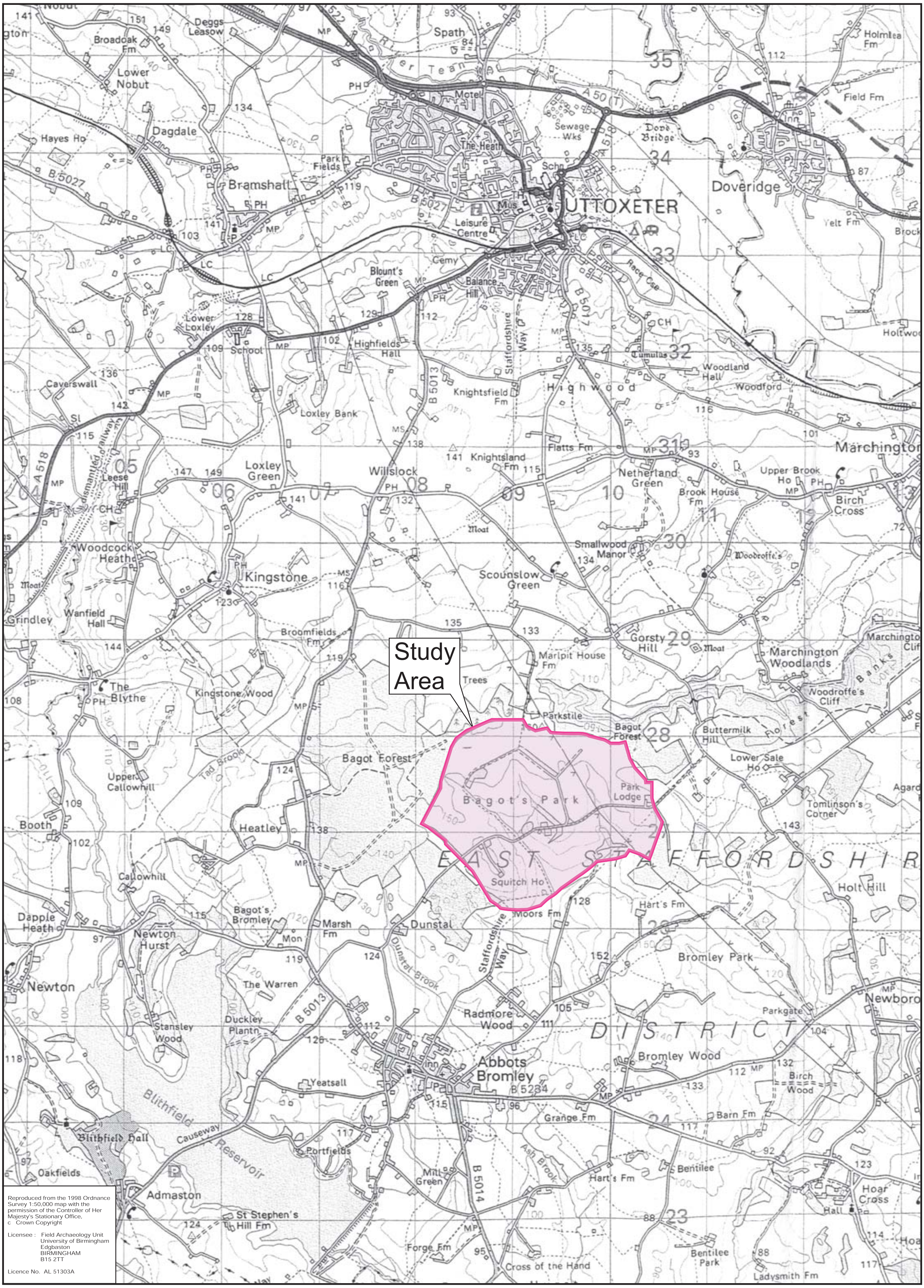
Study Area
Bagot's Park
Park Lodge
Squitch Ho
Parkstile
Bagot Forest
EAST STAFFORDSHIRE
DISTRICT
UTTOXETER
Doveridge
Bramshall
Dagdale
Lower Nobut
Broadoak Fm
Deggs Leasow
Spath
Motel
The Heath
Sewage Wks
Dove Bridge
Leisure Centre
Cemy
Blount's Green
Balance Hill
Race Cse
Lower Loxley
School
Highfields Hall
Knightsfield Fm
Highwood
Woodland Hall
Woodford
Caverswall
Loxley Bank
Knightsland Fm
Flatts Fm
Loxley Green
Willslock
Netherland Green
Brook House Fm
Upper Brook Ho
Birch Cross
Marchington
Leese Hill
Woodcock Heath
Kingstone
Moat
Smallwood Manor
Woodroffe's
Scounslow Green
Grindley
Wanfield Hall
Broomfields Fm
Gorsty Hill
Marlpit House Fm
Marchington Woodlands
Marchington Cliff
The Blythe
Kingstone Wood
Trees
Woodroffe's Cliff
Buttermilk Hill
Forest Banks
Lower Sale Ho
Tomlinson's Corner
Upper Callowhill
Tad Brook
Heatley
Booth
Callowhill
Holt Hill
Hart's Fm
Dapple Heath
Newton Hurst
Bagot's Bromley
Marsh Fm
Mon
Dunstal
Moors Fm
Staffordshire Way
Bromley Park
Newton
The Warren
Dunstal Brook
Radmore Wood
Parkgate
Newborough
Stansley Wood
Duckley Plantn
Abbots Bromley
Bromley Wood
Birch Wood
Yeatsall
Blithfield Hall
Blithfield Reservoir
Causeway
Grange Fm
Barn Fm
Portfields
Mill Green
Ash Brook
Bentilee
Hart's Fm
Oakfields
Admaston
St Stephen's Hill Fm
Hoar Cross
Hall
Forge Fm
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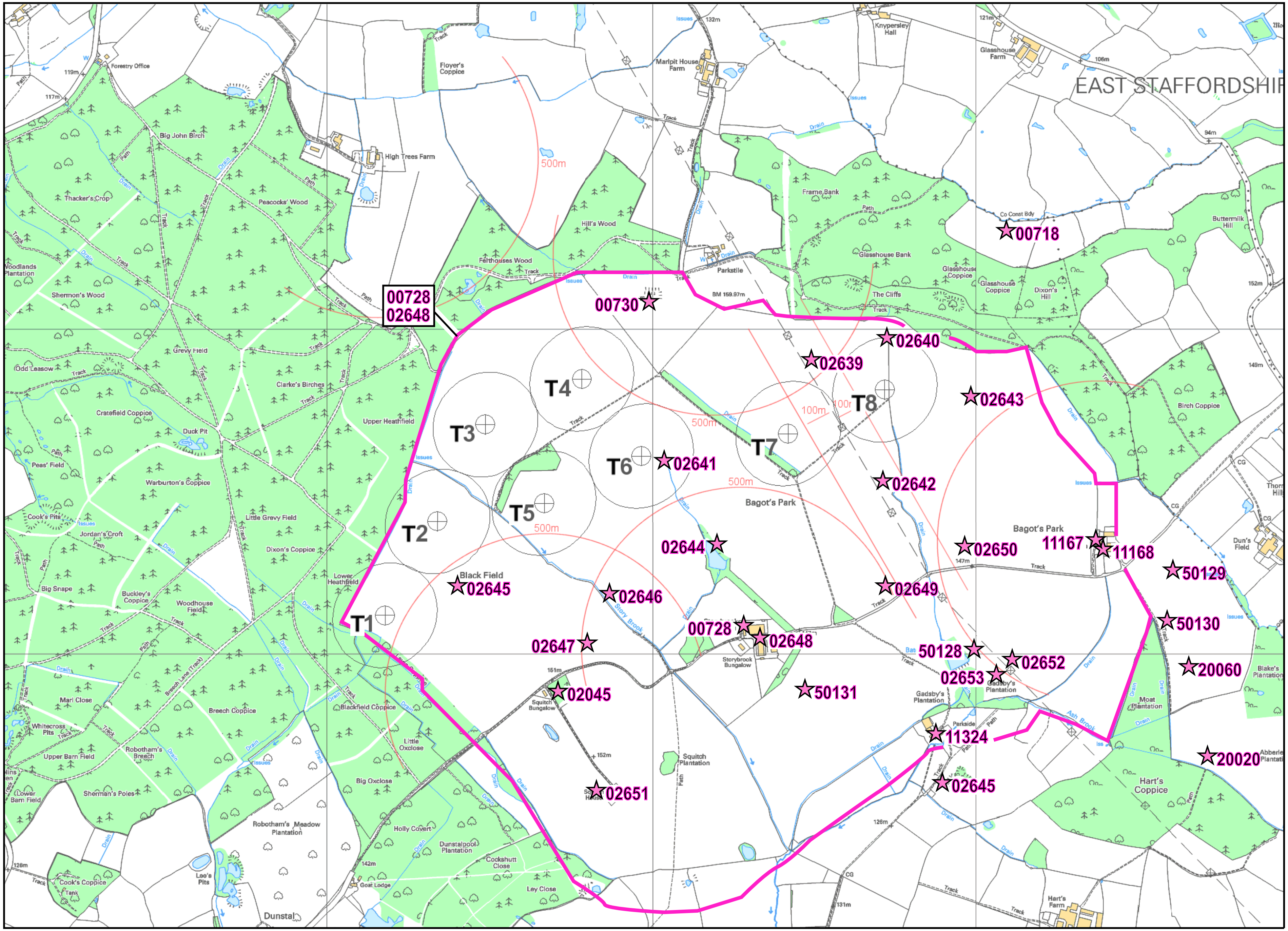
Fig.1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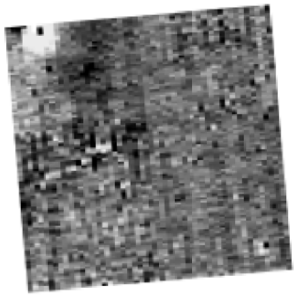
Black Field
Hart's Coppice
Gadsby's Plantation
Squitch Plantation
Storybrook Bungalow
Parkstile
Hill's Wood
Frame Bank
Glasshouse Bank
The Cliffs
Birch Coppice
Marlpit House Farm
High Trees Farm
Floyer's Coppice
Upper Heathfield
Lower Heathfield
Dunstal

Fig.2



Amendments

Issue No.	Date	Description
-	-	
		-

Plotting parameters

Maximum +0.9nT (black)
Minimum -1.1nT (white)

-3SD +3SD

+0.9nT

-1.1nT

Client

BUFAU

Project Title Job No. 1728

GEOPHYSICAL SURVEY -
BAGOT'S PARK, STAFFORDSHIRE

Subject

PLOT OF PROCESSED
MAGNETOMETER DATA FOR T5

STRATASCAN™
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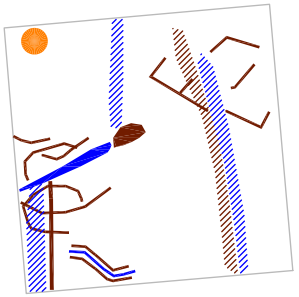
REGISTERED ORGANISATION IFA

Scale 1:1000 0m 10 20 30 40m

Plot	Checked by	Issue No.
A3	PPB	01
Survey date	**Drawn by**	**Figure No.**
JAN 03	EJFM	26

Figure 3



Amendments		
Issue No.	Date	Description
-	-	
		-

KEY

	Positive linear anomaly - cut feature of possible archaeological significance
	Feint positive anomaly - ?cut feature of possible archaeological significance
	Negative linear anomaly - remains of ?earthwork/embankment
	Feint negative anomaly - remains of ?earthwork/embankment
	Strong discrete anomaly - possibly associated with furnaces

Client

BUFAU

Project Title — Job No. 1728

GEOPHYSICAL SURVEY - BAGOT'S PARK, STAFFORDSHIRE

Subject

ABSTRACTION AND INTERPRETATION OF MAGNETOMETER ANOMALIES T5

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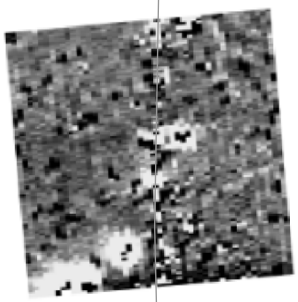
Scale	Plot	Checked by	Issue No.
1:1000 (0m 10 20 30 40m)	A3	PPB	01
	Survey date: JAN 03	Drawn by: EJFM	Figure No.: 27

Figure 4



Amendments

Issue No.	Date	Description
-	-	
		-

Plotting parameters

Maximum +1.5nT (black)
Minimum -1.5nT (white)

-3SD +3SD

+1.5nT

-1.5nT

Client

BUFAU

Project Title Job No. 1728

GEOPHYSICAL SURVEY -
BAGOT'S PARK, STAFFORDSHIRE

Subject

PLOT OF PROCESSED
MAGNETOMETER DATA FOR T8

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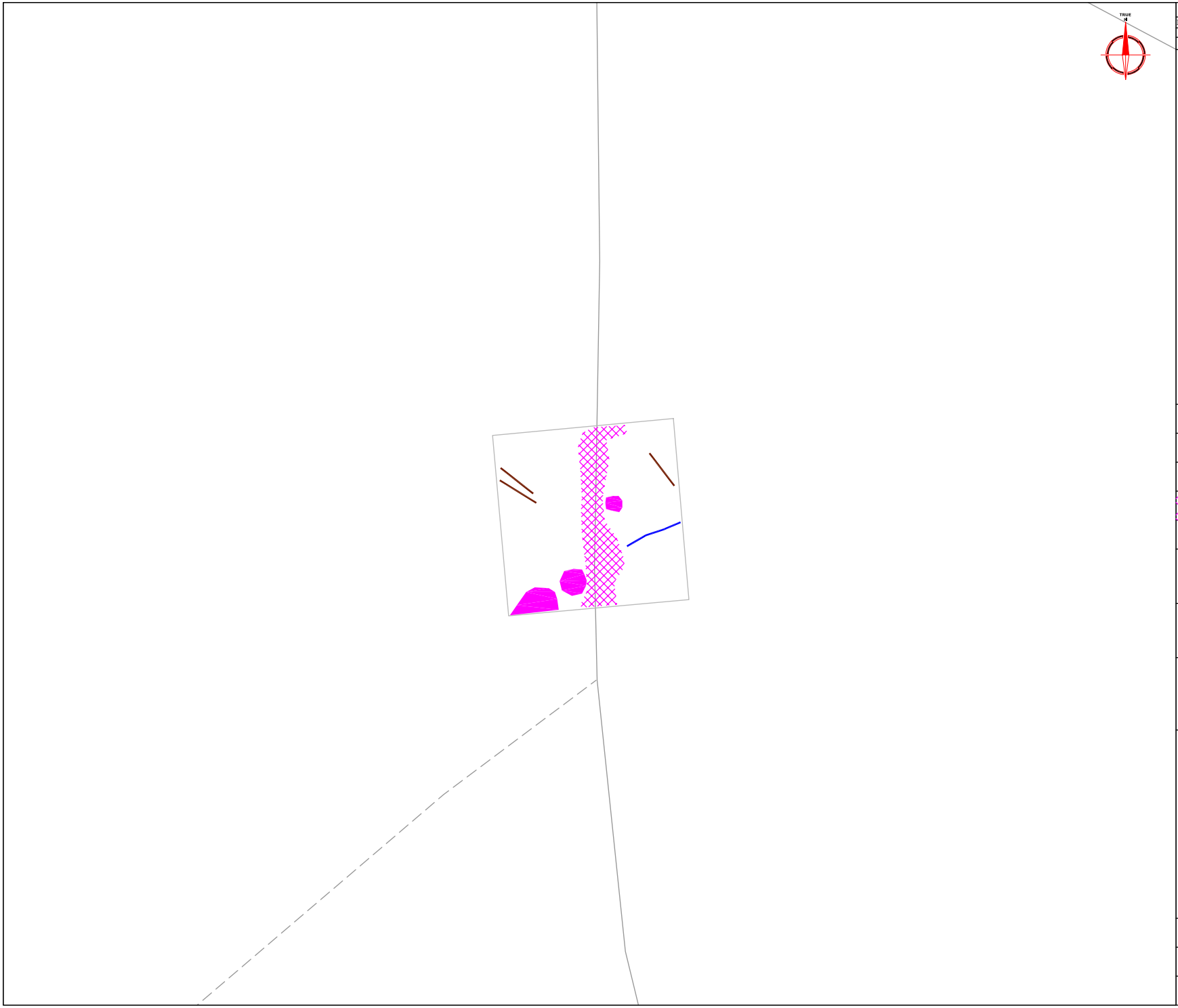
Scale 1:1000 0m 10 20 30 40m

Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
JAN 03	EJFM	42

Figure 5



Amendments		
Issue No.	Date	Description
-	-	
		-

KEY

	Positive linear anomaly - cut feature of possible archaeological significance
	Negative linear anomaly - remains of ?earthwork/embankment
	Area of magnetic debris
	Strong discrete positive anomaly with negative return - ferrous object

Client

BUFAU

Project Title — Job No. 1728

GEOPHYSICAL SURVEY - BAGOT'S PARK, STAFFORDSHIRE

Subject

ABSTRACTION AND INTERPRETATION OF MAGNETOMETER ANOMALIES FOR T8

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IFA REGISTERED ORGANISATION

Scale 1:1000 — 0m 10 20 30 40m

Plot	Checked by	Issue No.
A3	PPB	01
Survey date	**Drawn by**	**Figure No.**
JAN 03	EJFM	43

Figure 6