

ASSESSMENT  
AND UPDATED PROJECT  
DESIGN:  
RETREAT FARM QUARRY,  
GRIMLEY,  
WORCESTERSHIRE

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With contributions by Chris Cox and GSB Prospection

Illustrated by Steve Rigby

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## **Desk Based Assessment and updated project design: Retreat Farm, Grimley, Worcestershire**

**Anna Deeks and Robin Jackson**

**With contributions by Chris Cox and GSB Prospection**

### **Part 1 Project summary**

An archaeological desk-based assessment and geophysical survey was undertaken at Retreat Farm Quarry, Grimley, Worcestershire (centred on NGR SO 8320 5970). The work took place in response to an ongoing programme of mineral extraction by Tarmac Western Limited who have an outstanding, pre-PPG 16 planning permission for the extraction of sand and gravel at the site. The project was commissioned by English Heritage through the Aggregates Levy Sustainability Fund (ALSF) and aimed assess the impact of quarrying at Retreat Farm upon extant remains, and inform proposals for subsequent stages of evaluation of any surviving areas of this site.

A study area was defined centred on the permitted quarry. This study area covered approximately 406 ha, encompassing four scheduled sites and the village of Grimley. The project aimed initially to collate and appraise existing documentary and aerial photographic evidence in conjunction with a site visit and landscape appraisal. Subsequently, a geophysical survey was undertaken of the surviving portion of the permitted quarry.

The collation of documentary sources indicated that the permitted area is located within an area of high archaeological potential, although previous investigations have been confined to the northern end of the study area. The extensive cropmark complex, which runs north-south across the study area, has been identified as a series of multi-period cut features, representing a diverse range of landscape use including occupation, cultivation and funerary activity (Edwards 1997; Cox 2003). Elements of these cropmarks (?pits) have been shown to extend into the south-west corner of the surviving permitted area. Geophysical survey has supported this evidence, recording pit type anomalies of probable archaeological origin in this area of the site.

The outstanding area, although limited to approximately 6.5ha, is important as it provides an opportunity to examine the nature and level of preservation of features to the south of previously investigated areas, thus broadening understanding of the overall complex within both its regional and national context. In the light of the results of the project, this outstanding area is considered to be of archaeological potential with an area of higher potential present in the south-west corner. An updated project design has been produced proposing further targeted evaluation (trenching) of this area of higher potential.

## Part 2 Assessment report

### 1 Background

#### 1.1 Reasons for the project

An archaeological desk-based assessment and geophysical survey was undertaken at Retreat Farm Quarry, Grimley, Worcestershire (centred on NGR SO 8320 5970; Fig 1), as part of a staged programme of evaluation commissioned by English Heritage and through the Aggregates Levy Sustainability Fund (ALSF).

The assessment has been implemented in response to a planned programme of mineral extraction by Tarmac Western Limited who have an outstanding, pre-PPG 16 planning permission for the extraction of sand and gravel at the site. Over half of the permitted area (total area 50 ha) had already been quarried at the time of the original Project Design and at the time of reporting only some 6.5ha remains for extraction (Fig 1). The development is considered by the Worcestershire Archaeological Service to have the potential to affect an archaeological site (WSM 32263).

This is an area of prime concern in terms of the remaining pre-PPG16 aggregate extraction permissions within Worcestershire since it lies within an area characterised by extensive crop marks and other evidence of former occupation. Over the past thirty years extensive gravel workings in this area have resulted in the destruction of a large majority of this significant cropmark complex mostly without any form of archaeological record. Consequently, only fragmentary islands survive either through protective scheduling (SAM H&W 209, SAM 243, SAM 213, SAM 27499) or as zones awaiting extraction, with little or limited archaeological provision. The proposed start date for the next phase of extraction within the permitted area under consideration is Spring 2004.

#### 1.2 Project parameters

The project conforms to the *Standard and guidance for archaeological desk-based assessment* (IFA 1999).

The project also conforms to a proposal prepared by The Service (AS 2003).

#### 1.3 Aims

The primary aims of the desk-based assessment were to collate all existing information relating to the archaeological potential of the site and the wider study area. In addition a site visit/walkover was carried out in order to record the topography and ground conditions at the site as well as any previously unrecorded earthworks. A full analysis and interpretation of existing aerial photographs was also completed for the study area.

The results of this work informed a second stage of work aimed at further investigating the site through non-invasive prospection techniques (fieldwalking and geophysical survey). In the event, ground conditions were not suitable within the project programme period for fieldwalking, however, a geophysical survey was undertaken to provide further information on the archaeological potential of the surviving area.

The information was analysed to assess the potential character and significance of any archaeological remains surviving within the site, as well as to assess their potential level of preservation and the impact of the permitted development upon them. In turn this has informed the production of an updated project design for the targeted further evaluation of an area of high archaeological potential which has been identified.

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The information collated and assessed during the course of this project will also inform future research and development control, it will become publicly available through:

- Accession onto the County Sites and Monuments Record
- Deposition of the project archive at the County Museum
- Publication in an appropriate journal
- Dissemination of a summary of the results of the project through the Services' web pages [www.worcestershire.gov.uk/archaeology](http://www.worcestershire.gov.uk/archaeology).

## 2 Methods

### 2.1 Documentary search (Task 1)

Prior to fieldwork commencing a search was made of the Sites and Monuments Record (SMR) concentrated in a 7.5km<sup>2</sup> area centred on the proposed quarry area. Searches were also carried out at the Worcestershire County Records Office as well as the Gloucestershire Sites and Monuments Record. In addition the following sources were also consulted:

#### *Cartographic sources*

- Grimley tithe 1840 (19<sup>th</sup> century copy; WRO BA 1572 x760/291);
- Ordnance Survey. 1<sup>st</sup> Edition 1882 25" to the mile. Sheet number 47SE, 48SW, 54NE and 55NW;
- Soil survey of England and Wales (Beard *et al* 1986);
- Ordnance survey provisional edition 1:10,560 SO 86SW (1954);
- British Geological Survey Solid and Drift sheet 182. 1:50,000 (1976).

#### *Aerial photographs*

- See Appendix 1: Aerial photographic assessment.

#### *Documentary sources*

- Place-names (Mawer and Stenton 1927);
- English Field Names (Field 1972);
- Victoria County Histories Worcestershire, Volumes 1-4;
- History of Worcestershire (Nash 1795).

The following sources were also consulted but were not considered relevant to this project;

- Estate map 1862 (BA 5403/20);
- Map of the manor of Grimley 1746 (BA 5403/18);
- Plan of 1839 (BA 5589/89);

- 19<sup>th</sup> century plan of Sinton Court;
- Plan of Wichenford Manor. 1729 (BA 6134/44).

Written sources consulted during the course of the project are listed in Appendix 3, full references for which are provided in the report bibliography (Section 17).

## 2.2 Field walkover/landscape appraisal (Task 2)

Fieldwork was undertaken on 4<sup>th</sup> June 2003. The field walkover was carried out to appraise ground conditions and topography as well as checking for any previously unrecorded earthworks. All observed features were noted onto a base map (1987 1:10 000 Ordnance Survey map), and those of the greatest clarity were also recorded using a Global Positioning System.

## 2.3 Aerial photographic assessment (Task 3)

An aerial photographic assessment of the entire study area was carried out by Chris Cox of CGMS. The full report complete with illustrations and references is provided in Appendix 1.

## 2.4 Fieldwalking (Task 4)

Current land use as rough grazing meant that fieldwalking was not possible of this area within the programme period available for the project.

## 2.5 Geophysical survey (Task 5)

The entire remaining area within the quarry was scanned with a fluxgate gradiometer by GSB Prospection Limited. On the basis of the scan, two areas of higher potential totalling 1ha were selected for detailed survey. The full report complete with illustrations and references is provided in Appendix 2.

## 2.6 The methods in retrospect

Despite the unsuitable conditions for fieldwalking, the methods adopted allow a high degree of confidence that the aims of the project have been achieved.

The documentary and cartographic collation and analysis carried out using material from Worcestershire SMR and Worcestershire Records Office was a comprehensive appraisal of the available sources of both primary and secondary information.

The aerial photographic assessment also encompassed all existing aerial records for the study area. Neither element of the desk-based assessment was impeded by limited access to sources.

Good conditions for geophysical survey were present across the whole of the surviving extent of the permitted area, while the soils at the site are of a type that would be expected to provide a reasonable level of magnetic response.

## 3 Topography and current land use

The study area covers an area of just over 400 ha located to the west of the River Severn and encompassing the village of Grimley, Worcestershire. Within this study area the permitted site, comprising approximately 20ha, centred on NGR SO 87003700. This is located to the south-west of the village of Grimley, Worcestershire and bounded by Dark Lane to the north,



Camp Lane to the east and field boundaries to the south and west (Fig 1). The land lies at approximately 20m AOD, sited on the western banks of the River Severn.

The soils of the western and central extents are a combination of typical brown earths of the Wick, Bishampton, Whimple and Salwick Series, all of which are subject to seasonal waterlogging. Gleyic brown alluvial deposits of the Trent and Teme series are confined to the east and south east end of the permitted site (Beard *et al* 1986). The underlying solid geology consists of recent Pleistocene drift deposits of glacial origin comprising the first, second and third terrace sand and gravel of the River Severn, overlying Triassic Keuper Marl (British Geological Survey 1976 and 1990).

In those areas not already subject to quarrying current land use is largely arable. However, the outstanding area within the proposed quarry site was under pasture (Fig 2).

## 4 Results

### 4.1 Desk-based appraisal and aerial photographic assessment

The desk-based appraisal and aerial photographic assessment have identified considerable evidence of known archaeological activity both on and around the site, ranging from the Neolithic to the modern period. In conjunction with the results of a recent survey covering a study area to the north of the current one and partially overlapping with it (Edwards 1997), this provides an archaeological and historical context for the outstanding permitted area at Retreat Farm as well as information relating to already quarried areas.

A total of 77 sites are listed in the WSMR within the environs of the site (Fig 3). Those within the study area or pertinent to the overall cropmark complex are summarised below (Table1) and subsequently discussed by period.

*Table 1 Sites registered with the SMR within the defined study area*

SMR reference/status	OS grid reference	Site name/description	Date
WSM 01172	SO 8250 6000	Fishponds, N of Hallow Heath, E of Sinton, Grimley	Medieval
WSM 01182	SO 8340 6050	Cropmarks, W of Church Farm, Grimley	Unassigned
WSM 01191	SO 83205980	Cropmarks, ring ditches etc, E of Tinkers Coppice, Grimley	Unassigned
WSM 02233	SO 8350 5930	Fields, N of Camp Inn, Grimley	Unassigned
WSM 02286	SO 8370 5950	Occupation, Bevere Island, River Severn	Early medieval/Dark Age Post medieval
WSM 02583	SO 8274 6078	Stone axe hammer, Ball Mill gravel pit, Holt	Bronze Age
WSM 02584/ SAM 243	SO 8354 6077	Enclosure, 100m N of St Bartholomews Church, Grimley	Roman
WSM 02597	SO 8390 6170	Stone axe hammer, Grimley Ham, west bank of River Severn	Bronze Age
WSM 02598	SO 8291 6065	Ball Mill, NW of Grimley	Medieval- Post-medieval
WSM 04055	SO 8285 6060	Statue, nr Ball Mill, Grimley	Early Iron Age to Roman
WSM 04501	SO 8330 6064	Cropmarks, W of Grimley	Unassigned

Table 1 Sites registered with the SMR within the defined study area (continued)

<b>SMR reference/status</b>	<b>OS grid reference</b>	<b>Site name/description</b>	<b>Date</b>
WSM 04503	SO 8325 6029	Cropmarks, Grimley. Field system and pit	Bronze Age and Roman
WSM 04505	SO 8355 6097	Cropmarks, N of the church, Grimley	Unassigned
WSM 04507	SO 8301 6117	Cropmarks, Holt. Occupation site	Iron Age and Roman
WSM 04510	SO 8350 6115	Enclosure, N of Grimley Church	Unassigned
WSM 04512	SO 8344 6166	Enclosure, Holt. Findspot	Bronze Age and Roman
WSM 04516	SO 8334 6068	Ring ditch, W of church, Grimley	Bronze Age
WSM 04517	SO 8359 6110	Double ring ditch, N of Grimley village	Unassigned
WSM 04534	SO 8363 6078	Romano-British Fort, Grimley	Roman
WSM 04535	SO 8364 6121	Parallel Linear Cropmarks, N of Grimley	Roman
WSM 04535	SO 8364 6121	Ridge and Furrow	Medieval
WSM 04538	SO 8339 6053	Cropmarks, Church Farm, Grimley	Unassigned
WSM 05562 SAM 27527	SO 8360 5940	Churchyard cross, Grimley	Medieval
WSM 06068	SO 8290 5940	Enclosures, S of Tinkers Coppice, Hallow	Unassigned
WSM 06730	SO 8376 6058	Medieval fishponds, Grimley	Medieval
WSM 07891	SO 8370 5950	RB Coins, Bevere Island, Claines	Roman
WSM 07892	SO 8400 5920	Enclosure and findspot, S of Bevere Manor	Findspot Roman
WSM 07895	SO 8370 5960	Bronze flat axe and stone axe hammer, Bevere Island, Claines	Bronze Age
WSM 07899	SO 8340 5890	Enclosures, S of Camp House, Hallow	Unassigned
WSM 08021	SO 8363 6068	St Bartholomew's Church, Grimley	Medieval
WSM 08022	SO 8360 6060	Possible Roman road, Grimley	Roman
WSM 12978	SO 8350 6070	Settlement shrinkage, shrunken village, Manor House, Chapel	Medieval
WSM 15157	SO 8360 6010	Enclosures, S of Ivy House, Grimley	Iron Age
WSM 15158	SO 8390 6000	Ridge and Furrow, SE of village, Grimely	Medieval
WSM 15204	SO 8361 6062	Cottage, S of Church, Grimley	Post-Medieval
WSM 15207	SO 8390 5922	Building, SW of Bevere Manor, N Claines	Post-medieval
WSM 15255	SO 8400 6100	Enclosure, NE of village, Grimley	Unassigned
WSM 15256	SO 8400 6110	Cropmarks, NE of village, Grimley	Unassigned
WSM 15623	SO 8365 6080	Mapping of Grassmarks at Grimley, identified fort	Roman
WSM 17146	SO 8280 6000	Military camp and firing range, Grimley	Post-medieval to Modern
WSM 21277	SO 8248 5995	Park and garden building	Post-medieval
WSM 21278	SO 8275 5977	Park Lodge, Thorngrove, Grimley	Post-medieval
WSM 21279	SO 8280 5960	Cropmarks (ring ditch) west of Timbers Coppice, Hallow	Later prehistoric
WSM 22531	SO 8380 5950	Bridge. Crossing of River Severn; Bevere Island Bridge, N Claines	Post-medieval

Table 1 Sites registered with the SMR within the defined study area (continued)

<b>SMR reference/status</b>	<b>OS grid reference</b>	<b>Site name/description</b>	<b>Date</b>
WSM 22791	SO 8363 6074	Watching brief on Roman Fort, Grimley. Fort and pit	Roman
WSM 22792	SO 8372 6070	Watching brief at Wagon Wheel, Grimley. Occupation site	Post-medieval
WSM 22924	SO 8350 5920	Camp House Ferry, Grimley	Post-medieval
WSM 23808	SO 8370 5950	Fish weir, Bevere Island, N Claines	Medieval
WSM 26406	SO 8270 6030	Area of archaeological potential, Grimley Raceway	Unassigned
WSM 27063	SO 8357 6027	The Dallows, Grimley, identified building	Unassigned
WSM 27204	SO 8366 6075	Watching brief at Riverdale, Grimley	Unassigned
WSM 27244	SO 8287 6076	Land at Ball Mill, Grimley	Unassigned
SAM 27499	SO 8377 6073	Medieval fishponds and ridge cultivation remains and medieval-post-medieval hollow way, east of Grimley village.	Medieval – post-medieval
WSM 28877	SO 8404 5924	Park and garden at Bevere Manor	Post-medieval to modern
SAM 209	SO 82776143	Enclosures south of Upper Barn, Holt	Unassigned
WSM 27906	SO 8356 6054	Church Farm, Grimley	Unassigned
WSM 29605	SO 8301 6117	Desk-based assessment of enclosures south of Top Barn Farm	Early Iron Age to Roman Early Neolithic to Late Bronze Age
WSM 29807	SO 8370 5950	Salvage recording at Retreat Farm, Grimley	Early Bronze Age to Post Medieval
WSM 29812	SO 8372 6050	Survey of Grimley ponds	Medieval to post-medieval
WSM 29917	SO 8361 6057	Watching brief at Grimley and Holt primary school	Negative result
WSM 29918	SO 8362 6056	Evaluation at Grimley and Holt primary school, Grimley	Medieval – post-medieval
WSM 29927	SO 8362 6136	Evaluation at Church Farm, Grimley	Neolithic
WSM 29977	SO 8414 5919	Three fishponds by Bevere Manor	Post-medieval
WSM 30069	SO 8370 6090	Watching brief at Grimley sewage works	Medieval – post-medieval
WSM 30111	SO 8376 6073	Watching brief at Grimley fishponds. Track way and pond identified	Unassigned
WSM 30182	SO 8361 6040	Watching brief at Dark Lane, Grimley	Negative result
WSM 30290	SO 8357 6048	Evaluation at Church Farm Yard, Grimley, identified ground surface, ditch and structure	Post-Medieval - Modern
WSM 31046	SO 8266 5970	Field name: Little Street, Hallow	Unassigned
WSM 31056	SO 8253 5955	Field name: Nether Street, Hallow	Unassigned

Table 1 Sites registered with the SMR within the defined study area (continued)

SMR reference/status	OS grid reference	Site name/description	Date
WSM 31144	SO 8358 6015	Enclosure south of Retreat Farm Cottage, Grimley. Identified ? fortlet	Roman
WSM 31615	SO 8370 6128	Field name: High Bridge, Grimley	Unassigned
WSM 31940	SO 8290 5978	Woodland bank on boundary of Hallow and Grimley	Post-medieval
WSM 31941	SO 8295 5068	Ditch and hedge forming E boundary of Tinkers Coppice	Post-medieval

A number of archaeological fieldwork and survey projects are included within this SMR listing and these have been summarised with relevant bibliographic references in Appendices 3 and 4.

In addition, this project has identified additional information and potential archaeological sites not recorded by the SMR (see Table 2).

Table 2 Additional sites and information

OS grid reference	Site name/description	Date
SO 829 595	Ditched enclosures and pits identified within aerial photographic interpretation	May 2003

#### 4.1.1 Prehistoric and Roman

The quarry lies towards the southern end of a well-documented series of cropmarks stretching along the gravel terraces west of the Severn. These were first identified and photographed in the 1950s by A Baker and J Pickering (Hunt *et al* 1986, 7) and are principally believed to represent prehistoric and Roman period features.

In 1969 and 1970, C J Bond, the then Worcestershire County Archaeological Officer, plotted many of the aerial photographs available at the time. Gravel extraction in the area was beginning, and the serious effect it was having on the archaeological sites represented by the cropmarks led to a series of small scale rescue excavations, carried out between 1970 and 1975 (Hunt *et al* 1986). The areas excavated, and also those fieldwalked, are situated approximately 1.5km north of the current study area.

Further elements of the cropmark series were plotted by the RCHME and the results of this work to 1980 are shown in Figure 4, overlain onto a map background. This series corresponds to those features A – E, G, I, J and N discussed in the aerial photographic assessment undertaken as part of this project (Appendix 1). The aerial photographic assessment (see Appendix 1) states that there is “clear evidence of buried traces of past occupation, agriculture and funerary land use” echoing the results of previous work and conclusions of a recent desk-based assessment (Edwards 1997). This interpretation also points not only to the multi-phase nature of the cropmarks but also to the diversity of the activities and uses of the landscape that they represent.

More recent archaeological investigations, carried out in the 1980s and 1990s, have largely been undertaken in advance of development as part of the planning control process. These have been limited in extent and again have largely been confined to the northern end of the study area (see Appendix 4), although salvage recording was undertaken in the field to the immediate north of the outstanding permitted area. This recorded low levels of both prehistoric and Roman activity (Jackson 1991).

There is currently no evidence for Palaeolithic or Mesolithic activity within the study area while evidence for Neolithic activity is typically limited, only being represented by a thin scatter of artefacts. Bronze Age activity is better represented, notably including a barrow

cemetery extending along the gravel terrace near the scheduled enclosures to the north (SAM H&W 209) and just outside the study area. Bronze Age activity has also been identified within the study area, including to the immediate north of the currently threatened area. Here, boundary features probably reflect early division of the landscape into fields. The latter, identified through salvage recording during construction of a conveyor (WSM 4503), lie within an area identified by the aerial photographic assessment as including elements of field systems and possibly settlement enclosures as well as a ring-ditch with a central pit (Feature G, Appendix 1). Along with further ring-ditches within the overall cropmark complex, the evidence indicates that earlier prehistoric funerary monuments formed an important element of a landscape (see Features D and J, Appendix 1), which was already being parcelled up into fields.

Many of the remaining cropmark enclosures and associated field systems can be dated on the basis of morphology to the later prehistoric and Roman periods. These indicate that settlement and activity of this date is widespread within the study area (Appendix 1). To the north, Roman and Romano-British activity has been identified through excavation and salvage recording focussed around a fort at the north end of Grimley village (SAM H&W 213; Appendix 1, Feature A), and also around the two of the scheduled areas (SAM H&W 209 and 213). The latter probably included settlement and agricultural activity, although it should be noted that one of these two sites (SAM H&W 213; Appendix 1, Feature D) was quarried away during the early 1970's. In addition to the enclosure sites, prehistoric and Romano-British finds have been recorded within the study area (WSM 02583, WSM 02597 and WSM 04055).

Evidence of prehistoric and Roman activity at the southern end of the study area is also recorded. In addition to the recovery of a Bronze Age flat axe and stone axe hammer as well Romano-British coins from Bevere Island, Claines (WSM 07895), several cropmark sites in this area can be fairly confidently assigned to the prehistoric and Romano-British periods. A total of five distinct cropmark groups have been identified (Appendix 1, Features F, H, K, L and M). With the exception of 'Feature K', these are listed within the Worcestershire SMR (WSM 15157/31144, WSM 06068, WSM 01191 and WSM 21279 respectively). The SMR listing only categorically identified two of these sites as prehistoric and Roman features; WSM 15157 listed as an Iron Age enclosure and WSM 31144 listed as a Roman fortlet. The nature of the remaining cropmark features; ditched enclosures, pits and possible ring-ditches almost certainly indicates other areas of both prehistoric and Romano-British settlement and funerary activity in this part of the study area.

One of these cropmark groups (Appendix 1; 'Feature L') lies within the area of permitted quarrying at Retreat Farm and has largely been removed by the ongoing work. However, one part of the group, the north-eastern 'area of pits', does survive presently, although this too will be quarried shortly.

#### 4.1.2 Anglo Saxon and medieval

In the Anglo-Saxon period Grimley and Moseley comprised the large estate of *Wican* which was granted to the church by Offa in the mid-eighth century (Hooke 1990). Following this, in 851AD, Grimley is again mentioned when a grant of land at Grimley is made by Berhtwulf, King of Mercia, to the church of St Mary in Worcester (Hooke 1990).

The name Grimley, written as Grimanleage, means 'the wood or clearing of Grim', furthermore the name Grim is a nick-name for the god Woden. The use of the name Grim is often linked to the presence of inexplicable earthworks and earthworks that have thus been associated with superstition. Given these connotations the presence of numerous Roman and prehistoric sites within the parish of Grimley, including a Roman fortlet and the remains of numerous Bronze Age barrows (which may have been fairly visible earthworks during this period), may well account for the use of this name.

Previous work in this area has noted that no archaeological evidence for post-Roman or Anglo-Saxon activity has been identified. However, it has also been observed that this would be very difficult to distinguish, as this period is virtually aceramic in rural areas in the region (Edwards 1997).

The manor of Grimley was still held by the church in 1086. The Domesday survey records that the manor comprises 0.5 by 0.5 leagues of woodland, the remains of an extensive area of woodland known as Weogorena leah in the Anglo-Saxon period. In addition 15 plough-teams are listed as working and the population is recorded as 34 individuals (Hooke 1990). There is also note of a fishery yielding a render of eels and a mill owned by the church (VCH III).

The SMR listing includes several sites and monuments, which reflect the nature of medieval occupation and cultivation. The church of St Bartholomew, which is located at the northern end of the present village, contains extant fabric reflecting its Norman origins (WSM 08021) and a churchyard cross in the village is also listed as medieval (WSM 05562, SAM 27527). In addition, several fishponds (WSM 01172, WSM 06730 and SAM 27499) have been identified all of which are focused in proximity to the River Severn and very likely relate to the fisheries mentioned in the Domesday survey. The Ball Mill (WSM 02598), situated to the north-west of Grimley, is also recorded as having medieval origins and continued in use until at least 1648 when it was sold as part of the Manor of Grimley by the parliamentary commissioners (VCH III).

Evidence of the field systems is provided by cropmarks showing several areas of broad ridge and furrow, typical of medieval cultivation. These features have been identified in fields to the north, east and west of Grimley (WSM 04535 WSM 04503 and WSM 15158) and are noted in the aerial photographic assessment (Appendix 1).

In addition the WSMR listing assigns the initial occupation on Bevere Island (WSM 02286) to the early medieval period.

#### 4.1.3 Post-medieval and modern

There is typically no indication of any break in occupation of Grimley from the medieval to the post-medieval period, although shifts in the settlement pattern following the medieval period are reflected by the settlement shrinkage recorded at Manor House (WSM 12978) to the north of the present village.

There is no direct evidence for the early post-medieval land use of the fields surrounding Grimley. The earliest mapped evidence of the area is the 1840 tithe map, which shows fairly small plots of land typical of the inclosure period (Fig 5). A number of these field boundaries appear to correspond to the more modern boundaries and the alignment of the broad ridge and furrow observed, in the aerial photographic assessment, to the north, east and west of Grimley (Cox 2003; WSM 04535 WSM 04503 and WSM 15158). The correlation between the alignment of the ridge and furrow and the tithe field systems suggests a continuity in the field boundaries from the medieval period.

The inclosure map also contains field names, which may give some indication of the land use. Often the use of field names, much as with manorial and village names, can suggest far earlier origins, landform or usage. The majority of field names, such as *middle meadow*, *upper orchard* and *sheep piece*, refer to either arable or pastoral use of the land. However there are also more specialised usage's implied. Immediately to the west of the River Severn several fields bear names such as, *ten brick kilns*, *wire meadow brick kiln and cott and great and little brick kiln meadow cottages and coal yard*, which strongly suggest a concentration of brick industries and associated activities along the banks of the river. To the south of Grimley Brook, a concentration of field names pertaining to a mill are evident such as *mill perry* and *mill field*, which almost certainly reflects their proximity to Ball Mill which lies to the west. Other names include *Willow bed and meadow* and *Rowton Hop Yard*, which again imply the specific crop and usage of land.

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The 1886 edition map covering the study area indicates that several smaller fields noted on the inclosure map have been amalgamated to form larger field units resulting in fewer boundaries (Fig 6). There is no information regarding the land use at this time, other than the presence of brick works and old clay pits to the west of the river which reflects the field names shown for this area on the tithe map. However apart from the clay pits there is no record of any other quarrying in the area at this time. The map also indicates that area is liable to floods along the western banks of the river. This would correlate with the known geology of the area, which comprises gleyic brown alluvial deposits.

Within the SMR several listings for the post-medieval and modern periods exist, representing both occupation, Park Lodge and park and garden building (WSM 212178 WSM 21277) and transport, in the form of the camp House Ferry and the bridge crossing the River Severn to Bevere Island (WSM 22924 WSM 22531).

## 5 Fieldwork

### 5.1 Site visit and appraisal

A site visit was made on the 4<sup>th</sup> June 2003 to appraise landscape features and usage. A large extent of the site has already been quarried, with the north-east field (c 6.5ha) the only outstanding area (Fig 7). This is currently divided in two by a post and wire fence and is under permanent pasture, grazed to the south by sheep. The boundaries of the site are covered by a bund, which further masks the original ground profile. The remaining area is fairly undulating and slopes gently down towards the south-east corner.

### 5.2 Geophysical survey

Following completion of the desk-based appraisal, aerial photographic assessment and site visit, a geophysical survey was undertaken of the surviving area. Scanning was undertaken across the whole of this allowing selection of two areas totalling 1 ha for detailed survey.

The southern area of detailed survey produced the most significant results, with a series of small-scale responses consistent with pits and perhaps indicating unenclosed settlement (Appendix 2). Tentative evidence for a ploughed out sub-circular feature was also recorded.

The northern area was the smaller of the two and produced weak anomalies consistent with a row of possible pits within a larger east to west trend, probably reflecting activity along a former boundary (Appendix 2).

## 6 Archaeological potential

The results of the desk-based assessment and aerial photographic assessment indicate that the permitted quarry at Retreat Farm lies within an area of generally high archaeological potential. The cropmark series running approximately north to south across the study area represents a complex multi-period pattern of settlement, field systems, trackways, funerary monuments and other activities (Edwards 1997).

The outstanding area at Retreat Farm Quarry (Fig 7) includes, and is flanked by, elements of this cropmark complex (WSM 4503/Feature G; WSM 01191/Feature L and WSM 15157/Features F; see Appendix 1: figure 1). These cropmark elements lie towards the southern extent of the complex. To the south are sinuous and linear ditches, a large pit, a possible ring ditch and traces of small cut features (WSM 01191/Feature L). To the north further sinuous and linear ditches, pits and a ring-ditch have been identified (WSM 4503/Feature G) while to the east, is a double-ditched incomplete enclosure (WSM 15157/Feature F). These probably represent Bronze Age funerary monuments (the ring-

ditches) and elements of prehistoric and Roman period field systems and settlement enclosures.

Of these cropmarks, only one (WSM 01191/Feature L) falls within the permitted area at Retreat Farm. Unfortunately, recent quarrying has largely removed this cropmark 'site', leaving only a group of small cut features (pits?) in the south-west corner of the surviving area (Fig 8). Geophysical survey has supported the cropmark evidence indicating 'pit type anomalies' at this location. These may relate to an area of unenclosed settlement or activity of probable later prehistoric or Roman date. Unenclosed settlements of later prehistoric or Roman date have rarely been recorded within the region and thus these are of considerable potential interest.

The geophysical survey indicated that other parts of the outstanding area are unlikely to contain extensive evidence for former activity.

Assessment of this evidence, allied to the wider potential for the continuation of activities noted in the adjacent areas, indicates that, while the whole surviving area can be considered to be of some archaeological potential, the south-west corner has the highest potential to contain features relating to former activity (Fig 7). This potential importance is increased by the fact that these may relate to unenclosed settlement and since the remainder of this area of the wider cropmark complex has already been destroyed, leaving only a small fragment for investigation.

## 7 Recommendations

Quarrying has clearly removed the majority of the deposits relating to the cropmarks present at Retreat Farm Quarry. Extraction within the outstanding permitted area (c 6.5ha) during 2004 will undoubtedly remove the last remnants of this element of the wider cropmark complex.

The cropmark assessment and geophysical survey have indicated that the south-west corner of the outstanding area potentially includes pits indicating the presence of unenclosed settlement or activity of prehistoric or Roman date. As a result, the Service consider that evaluation through trenching is desirable to further assess the survival, date and character of these deposits prior to destruction by quarrying.

## 8 Publication summary

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

*An archaeological desk-based assessment and geophysical was undertaken for land at Retreat Farm Quarry, Grimley, Worcestershire (NGR SO 8320 5970) as part of a staged program of evaluation supported by English Heritage and the Aggregates Sustainability Levy (ALSF). The land lies within a permitted quarry of which only a small area remains for extraction. This is situated at the southern extent of a large complex of cropmark features representing multi-period activity, ranging from the Neolithic to the medieval period. Much of this complex has been removed by quarrying, including cropmarks within this particular quarry.*

*Assessment and survey have focussed on the outstanding permitted area, which includes evidence for survival of pits, possibly indicative of unenclosed occupation or activity of prehistoric or Roman date. Although quarrying has removed much of the area and thus compromised the potential of the surviving remains, as with all surviving remnants of this cropmark complex, these have a high archaeological potential to evaluate the nature and*



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*level of preservation of the remaining features and contribute to the understanding of the character of the previously quarried areas.*

*Evidence of medieval settlement in the vicinity was focused around the village of Grimley with associated cultivation represented by ridge and furrow in fields to the east, west and south.*

## 9 **The archive**

The archive consists of:

- 3 Photographs
- 1 A4 card folder of photocopies and SMR data print-outs
- 1 Geophysical survey report
- 1 Aerial photographic assessment
- 1 Computer disk
- 1 Report

The project archive is intended to be placed at:

Worcestershire County Museum  
Hartlebury Castle  
Hartlebury  
Near Kidderminster  
Worcestershire DY11 7XZ  
Tel Hartlebury (01299) 250416

## 10 **Acknowledgements**

The Service would like to thank the following for their kind assistance in the successful conclusion of this project; Kathy Perrin from English Heritage; and Colin Hume and Ben Yates from Tarmac Western Limited.

## 11 **Personnel**

The fieldwork and report preparation was led by Anna Deeks. The project manager responsible for the quality of the project and production of the UPD was Robin Jackson. Fieldwork was undertaken by Anna Deeks, and illustration by Steve Rigby. Chris Cox contributed the Aerial photographic assessment. GSB Prospection Ltd undertook the geophysical survey.

## Part 3 Updated Project Design

### 12 Introduction

This updated project design (UPD) has been produced to accompany the desk-based assessment presented above (Part 2) and in line with the original Project Design (AS 2003; Stage 3, Task 6).

The UPD presents a methods statement, estimate and programme proposal for undertaking Stage 4 (trenching) of the programme of evaluation as defined in the original Project Design. The trenching is designed to further evaluate an area of high potential identified by Stages 1, 2 and 3.

An additional stage (Stage 5) for assessment and reporting at the completion of trenching has been separately identified. This will be completed following all fieldwork and will be accompanied by an Updated Project Design for mitigation works as appropriate.

The project will be undertaken by the Worcestershire Historic Environment and Archaeology Service (the Service). Proposed works will be limited to the extents of the outstanding area of the permitted quarrying.

Project funding is requested through use of outstanding elements of the previously agreed project budget (PD dated 19 February 2003; Agreement dated 18/03/03) and through the Aggregates Levy Sustainability Fund (ALSF) within its currently agreed programme period (ending March 2004).

Proposed methods and programming within the UPD are designed to meet this budget and completion date.

The proposals made in this document have been outlined to Tarmac Western Limited, the quarry company and landowner who have expressed support for the project and who have agreed access for undertaking the proposed works.

### 13 Aims and objectives

The original broad aims of the project were to provide sufficient information to:

- assess the potential significance of any archaeological remains and the built heritage within the permitted quarrying area (both already quarried and outstanding areas);
- assess the impact of the permitted development on these archaeological remains and the built heritage;
- recommend mitigation measures to offset any detrimental effects of the development on any surviving areas of the archaeological resource within the permitted area (in line with current development control practice as identified by PPG16 and incorporated within the Minerals Local Plan);
- inform the local population of the archaeological resource within the parish.

Stages 1 (desk-based assessment), 2 (non-intrusive survey) and 3 (assessment and updated project design) of the project have now been completed and the identified aims of these stages have been fulfilled.

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Stages 4 and 5 (trenching and reporting) of the evaluation programme (as proposed) have the following defined aims and objectives:

- further identify and refine understanding of the character and potential significance of the area of higher archaeological potential identified during Stages 1,2 and 3 and which may be affected by the ongoing quarrying;
- test for the presence of unknown sites and assess their character and potential;
- inform the design of an appropriate mitigation strategy for any archaeological deposits which may be present.

## 14 **Methods statement**

### 14.1 **Management (Task 1)**

The Project Manager will co-ordinate Service staff, and liaise with English Heritage and Tarmac Aggregates (Western) Limited.

The Project Manager will maintain project tracking (using the Gantt chart, Microsoft Project and weekly time sheets completed by Service staff recording at quarter day increments). The Project Manager will produce progress reports for the English

### 14.2 **Stage 4 Trial trenching (Task 2)**

Trenching will be kept to the minimum to meet the aims and objectives of the project and will be restricted to the area of higher archaeological potential in the south-west corner of the outstanding permitted area (Fig 7).

Trenching will aim to ensure that a sample of the full range of potential deposits and conditions of survival is tested.

To maximise the potential for identifying pit type features, wider trenches than normal (3.5m wide as opposed to 1.8m) will be used. These will cover a total area of *c* 525m<sup>2</sup> (representing slightly over 4.5% of the area of higher potential).

A proposed trench layout is presented in Figure 8 overlying the geophysical plot. The Service would welcome the advice of the County Archaeologist and English Heritage in determining the location of trenches. Trenches will be located in the field using an EDM and tied to Ordnance Survey detail.

All trenches will be opened by machine using a toothless bucket and under supervision of an archaeologist (Field Officer – banksman). Please note that the precise location and size of trenches may vary according to health and safety and archaeological requirements.

All subsequent excavation will be by hand. Fieldwork will follow the procedures of the Manual of Service Practice: fieldwork recording manual, 1995 as amended (County Archaeological Service internal report, 399). Of particular importance here are the Guidelines on evaluation, Finds recovery policy, and Guidelines for environmental sampling. Copies of the guidelines will be supplied on request.

The following will be undertaken:

- Clean surfaces will be inspected and preliminary trench records will be made;

- Selected deposits will be fully or partially excavated and recorded to determine their nature and retrieve artefactual material and environmental samples;
- Deposits will be initially selected for excavation on the basis of the minimum required to meet the aims of the project;
- Where possible less significant deposits will be excavated in order to define the nature and extent of those likely to be of greater significance.
- Recognisable human remains, structured deposits, and areas of complex stratigraphy likely to be a significant part of the site will not be removed as part of the evaluation.
- Selection for excavation will be on the judgement of the Project Leader.
- The assistance of the Curator in selection of deposits for excavation is welcomed by the Service.
- The Service's specialist staff in artefacts and environmental evidence will be available for on-site advice.
- Unless otherwise specified reinstatement shall consist of simple replacement of the excavated material.

The results of all stages will be used as the basis of a report (Stage 5, see below).

### 14.3 **Stage 5 Post-fieldwork: assessment, report and outreach (Tasks 3 to 5)**

#### 14.3.1 **Task 3: Assessment and analysis**

Upon completion of fieldwork, the following will be undertaken:

- fieldwork records will be checked and cross-referenced (by the Field Officer and Archaeologist);
- preliminary processing of finds (washing and marking; by the Finds Assistant);
- processing of selected environmental samples for assessment (by the Environmental Archaeologist);
- assessment of structural data (by Field Officer);
- assessment of artefactual material (by Finds Officer);
- assessment of environmental material (by Environmental Officer);
- production of plans and sections for report and finds illustration (by Illustrator)

#### 14.3.2 **Task 4: Assessment report and UPD**

The following will be undertaken:

- collation of report;
- editing;
- production of UPD (mitigation recommendations).

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The results of all stages of fieldwork will be presented as a report in the Service's internal report series.

The report will contain:

- a non-technical summary;
- background;
- aims;
- methods;
- location and size of archive;
- a summary of the results of all stages;
- an assessment of the potential significance of deposits; and
- an Updated Project Design (mitigation) for further works as appropriate at the site.

Assessment will employ the criteria for the scheduling of ancient monuments used by the Department for Culture Media and Sport as a guide (DoE, PPG 16 1990, Annex 4). Other criteria, such as those prepared by English Heritage for the Monuments Protection Programme or contained in structure or local plans, may also be used where appropriate.

In assessing the state of deposit preservation, physical, artefactual and environmental aspects will all be considered. An assessment of the quantity and range of artefactual and environmental material will be presented. Appropriate specialists will be consulted or contracted where appropriate.

The Service will supply six copies of the report to English Heritage, two copies to Tarmac Western Limited and two copies to the County Archaeological Officer.

All artefacts, except articles defined as treasure under the Treasure Act 1996 (or other legal requirements), discovered in the course of the archaeological project shall be the property of the landowner, Tarmac Western Limited. The Service will encourage Tarmac to donate any artefacts to an appropriate museum where they may be curated and made available for research and education. The Service will approach Tarmac after completion of the project with regard to the final deposition of artefacts.

The record archive will be prepared in accordance with the specification provided by English Heritage in MAP2 (Appendix 3) and is intended to be placed at:

Worcestershire County Museum  
Hartlebury Castle  
Hartlebury  
Near Kidderminster  
Worcestershire DY11 7XZ  
Tel Hartlebury (01299) 250416

Security copies will be kept by the Service (or other appropriate arrangement).

#### 14.3.3 **Task 5: Dissemination and outreach**

The Service has a professional obligation to make archaeological information available within a reasonable period (outside of any period of confidentiality reasonably required by the Client). The report will be submitted to the SMR with a short summary to be published in

one or more regional journals (eg West Midlands Archaeology, Transactions of the Worcestershire Archaeological Society) where appropriate. The report will be submitted to the SMR within three months of completion of the fieldwork, unless the Service is notified to the contrary.

It is proposed that the following provision is also made to encourage local community involvement and interest:

- Website – the Services' website (<http://www.worcestershire.gov.uk/home/index/cs-index/cs-archeo.htm>) will be updated (by the Project Manager, Field Officer and Illustrator) with a page to include information on the project results.

## 15 Health and Safety

The Service is covered by the conditions and requirements of the County Council's health and safety policies and procedures (as amended):

- Health and Safety, corporate health and safety policy 1998;
- Corporate Services safety policy (Cultural Services) 2000.

The County Council also produces supplementary guidance, which may be applicable (for example):

- Guide to general risk assessment, no date;
- Display screen equipment, information for users, 1992;
- Manual handling in libraries, no date.

The Service has issued Manual of Service practice: safe working practice (1996 as amended, County Archaeological Service internal report, 461) which are guidelines drawn from its risk assessments of common situations. The following guidelines are relevant to this project, and all staff and volunteers will be made aware of them through an initial site induction:

- Working out of doors and working with soils;
- Travelling;
- Processing finds and environmental samples;
- Working with tools and small equipment;
- Working with large plant.

In addition provision has been made within the guidelines for assessing further risks which may be encountered during the project (The specific circumstances of the site).

All these documents may be viewed at the Service's offices, and may be copied to the English Heritage on request.

The Service will check with Tarmac Aggregates (Western) Limited on the location of any hazards within the archaeological site before the project commences. These include the location of existing services, contaminated ground and any agricultural chemicals.

The project is for the purposes of survey (partly to establish site conditions) and is considered to fall outside of the Construction (Design and Management) Regulations 1994. Should the Service be asked to participate in any development programme it will fulfil its responsibilities both as an archaeological designer and contractor, where requested.

- Protective clothing will consist of hard hat, protective boots, and high visibility jacket.
- All staff will be appropriately certified in the use of any equipment used during the project. Any equipment or plant (including scaffolding) will be inspected before use by Service staff.

## 16 Resources and programming

### 16.1 Personnel

The Project Manager (Robin Jackson) will direct the project and should be the first point of contact in all matters relating to the project.

All staff will be appropriately qualified with an established record of expertise. Profiles of key members of the team will be made available on request.

The team will comprise the following, as required.

- |   |   |
|---|---|
| • Project Manager (Robin Jackson)           | Responsible for the project.<br>Co-ordination/liaison. Edit assessment.<br>Produce UPD<br>Outreach; |
| • Field Officer (to be notified)            | Lead fieldwork.<br>Prepare assessment report and UPD<br>Outreach;                                   |
| • Archaeologist                             | Undertake fieldwork.<br>Check and cross-reference fieldwork archive;                                |
| • Finds Officer (Laura Griffin)             | Finds co-ordination, analysis and assessment.<br>External specialist liaison;                       |
| • Environmental Officer (Elizabeth Pearson) | Environmental sampling policy, processing, analysis and assessment.<br>External specialist liaison  |
| • Illustrator (to be determined)            | Production of report figures<br>Outreach;   |

The Service has worked previously with a range of external specialists in other fields who may be used as appropriate (details will be supplied on request).

The following English Heritage and EH retained specialist staff will be consulted and involved in the undertaking of this project:

Kathy Perrin	Project Monitoring
Ian George	Inspector of Ancient Monuments

## 16.2 Task list and programme

Task	Task name	Staff	Days
1	Manage project	Project Manager	0.25
2	Trenching	Field Officer Archaeologist	5 5
3	Assessment/analysis	Field Officer Finds Officer Environmental Officer Archaeologist	2 0.75 0.75 1
4	Report and UPD	Field Officer Finds Officer Environmental Officer Illustrator	1.75 0.50 0.50 1.50
5	Outreach	Project Manager Field Officer	0.25 0.25

The level of resources indicated is for the purposes of demonstrating that an adequate level of resources have been committed to the project and variation may occur due to staff availability and the nature of the archaeological site. Any such variation will not compromise the quality or standard of the project.

The project will commence on a date to be mutually agreed in writing. An overall programme period of 6 weeks can be identified, comprising 1 week to initiate the project, 1 week to complete fieldwork (Task 2) and 4 weeks to complete post-fieldwork analysis, assessment and reporting (Tasks 3 and 4).

It is intended that the fieldwork stage shall be completed by 19 December 2003 and that all stages of the project will be completed and the report submitted to English Heritage by 27 February 2004.

## 16.3 Budget

The Service offers to undertake the project on the basis of the above specification and its best estimate (time and expenses ceiling) of the actual project costs.

The previously agreed budget under the provisions of the ALSF for Stages 1, 2 and 3 at Retreat Farm has a projected underspend of £3,317.74.

It is requested that this sum be made available to meet the estimated cost of £3,314.48 (excluding VAT at 17.5%) of the work proposed within this UPD. A breakdown of costs is appended.

Staff costs are inclusive of employer's National Insurance and Superannuation contributions.

All figures are based on the rates for 2003/4.



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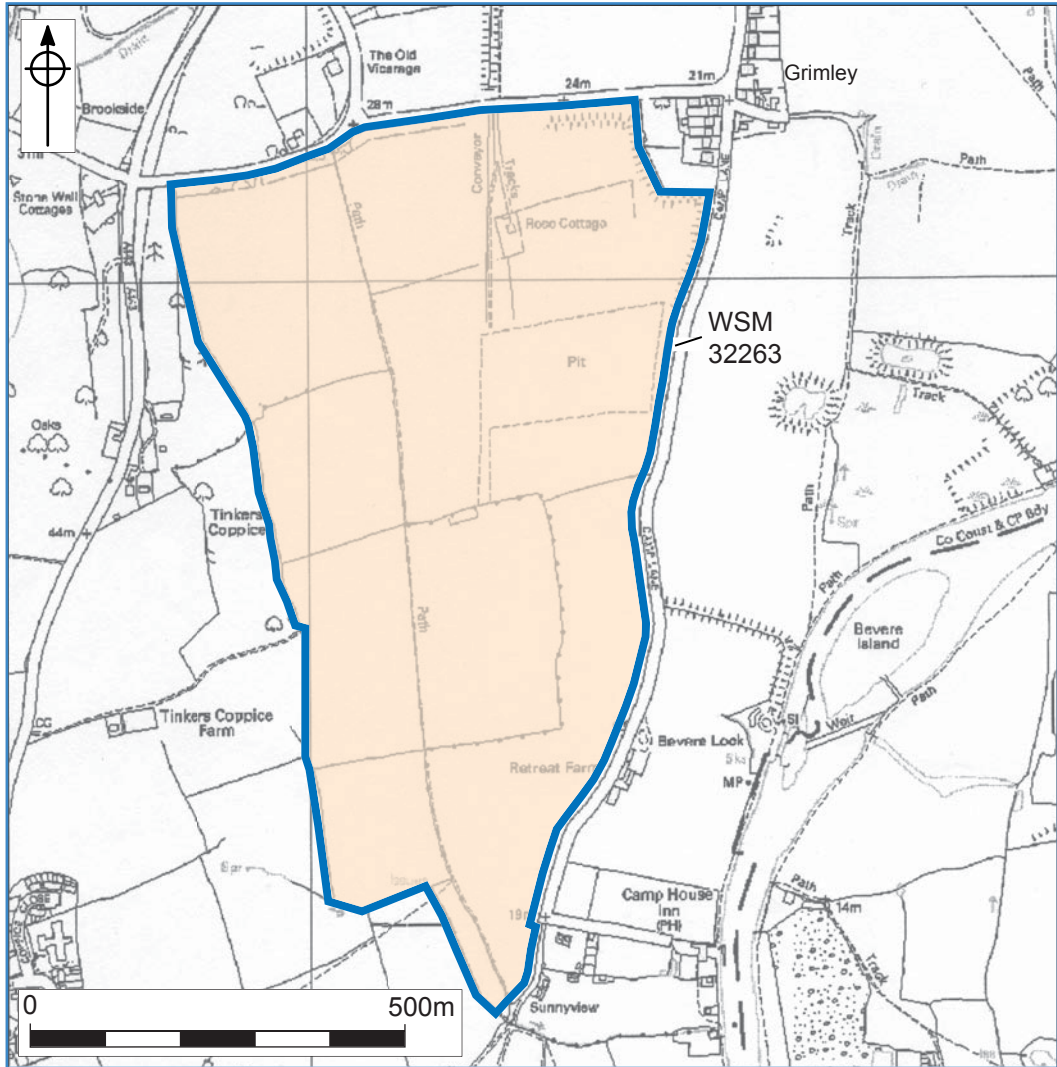
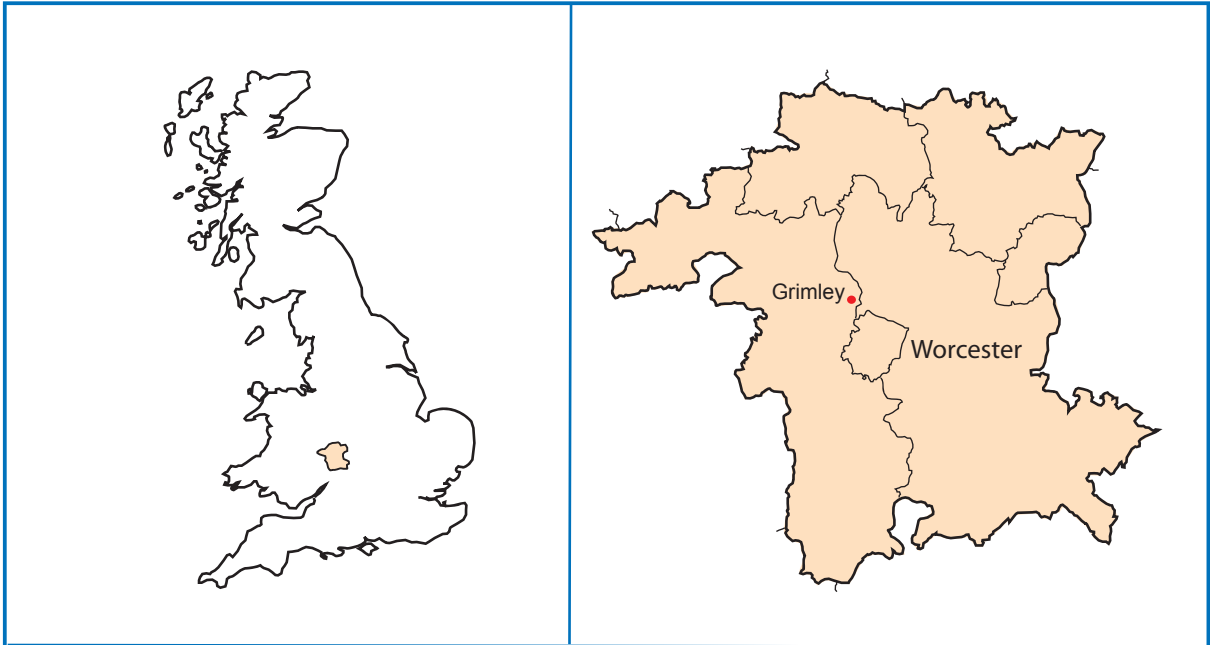
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## 18 Abbreviations

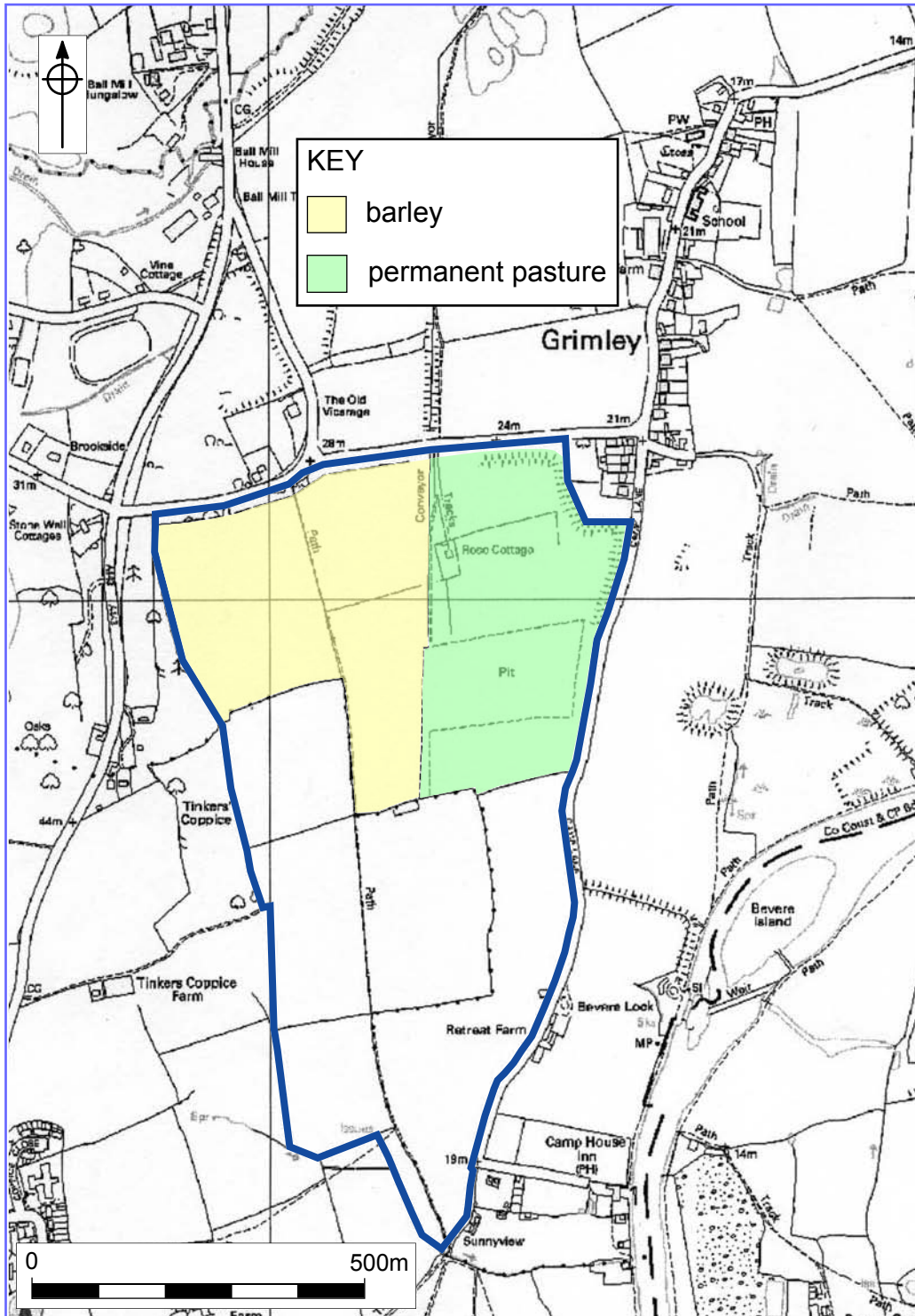
WSM	Numbers prefixed with 'WSM' are the primary reference numbers used by the Worcestershire County Sites and Monuments Record.
WCRO	Worcestershire County Records Office.
SMR	Sites and Monuments Record.



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Location of the site.

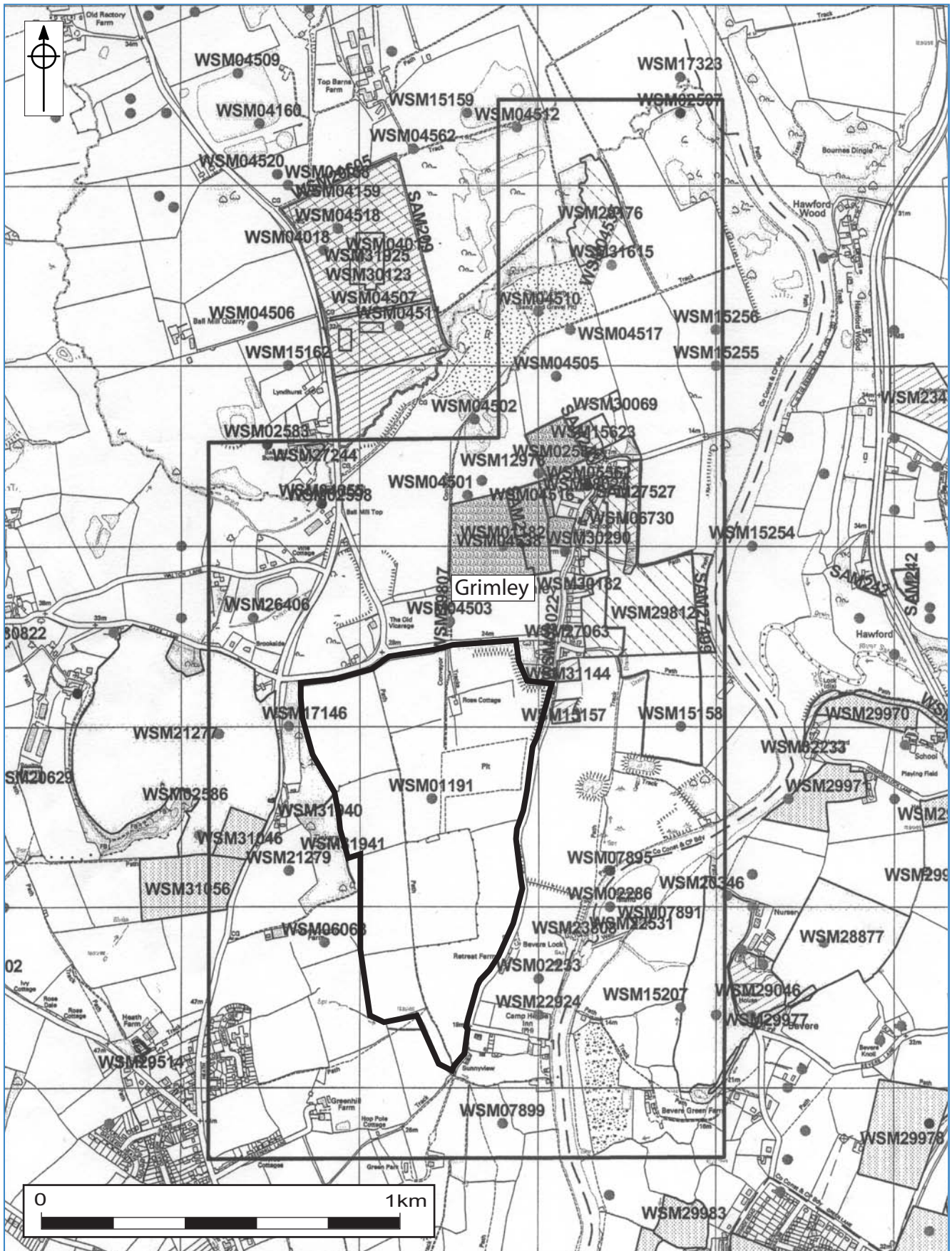
Figure 1



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Map of recent land use

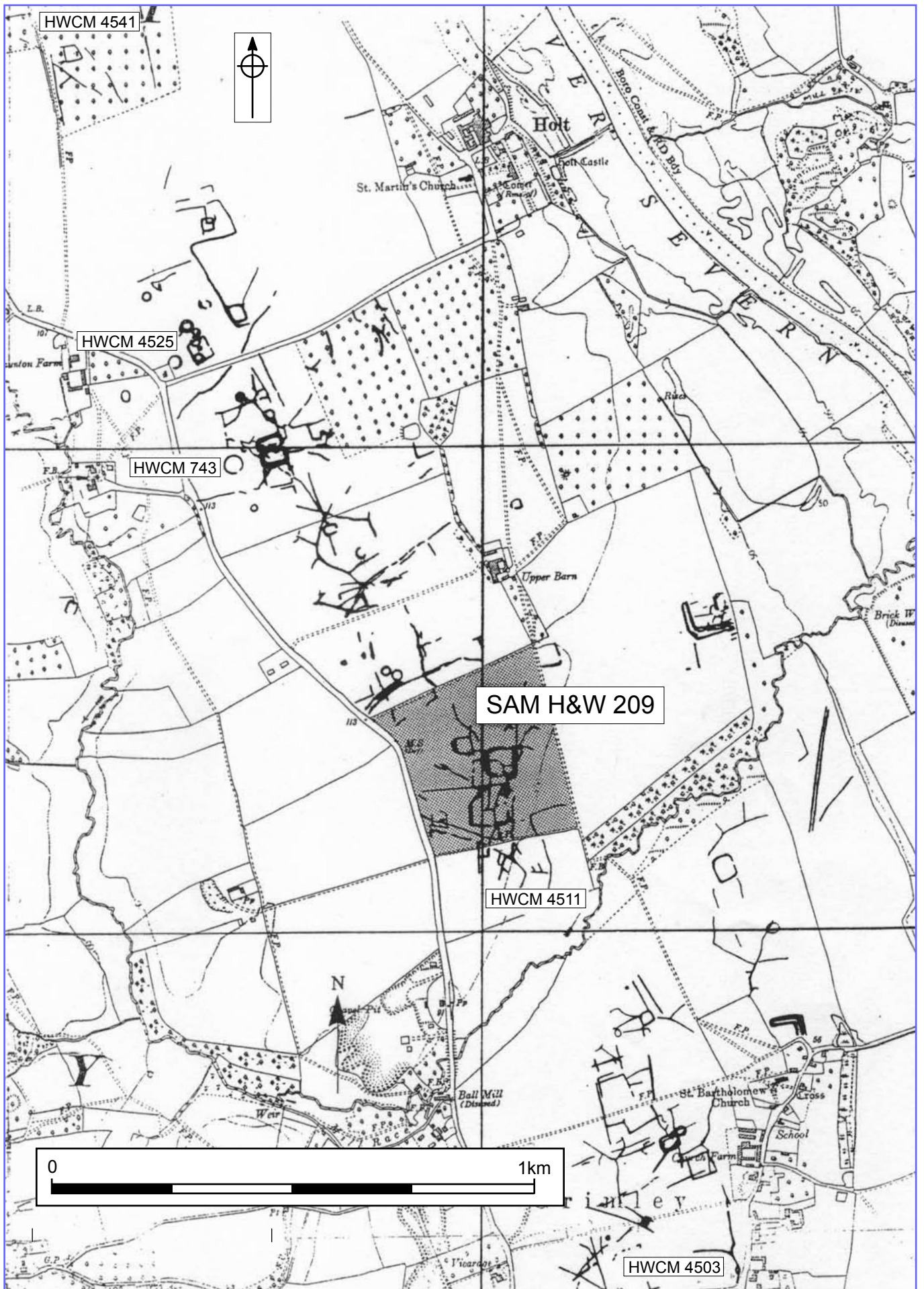
Figure 2



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Sites registered on the WSMR (within 3.5km<sup>2</sup> of the proposed quarry)

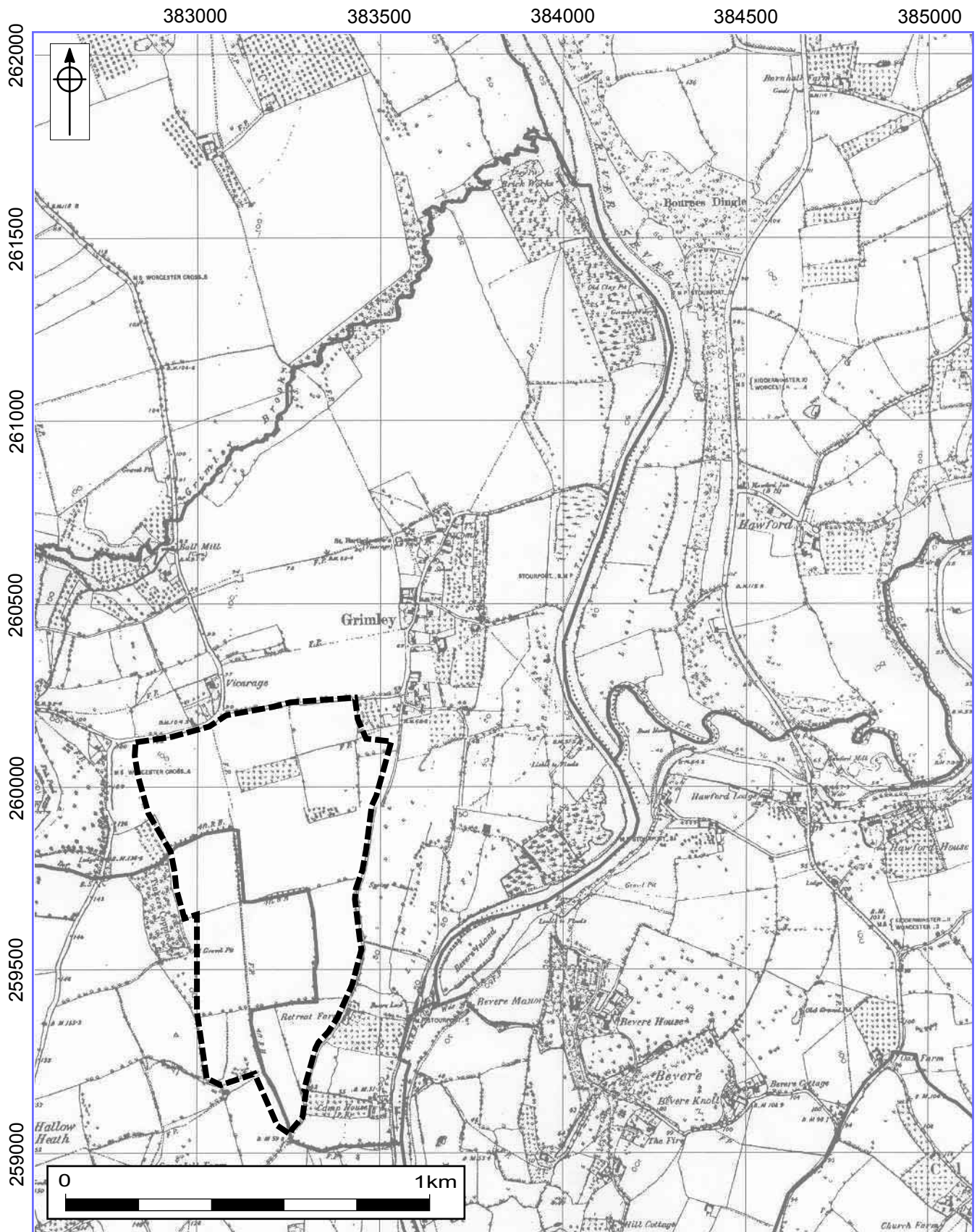
Figure 3





Tithe map of Grimley 1840

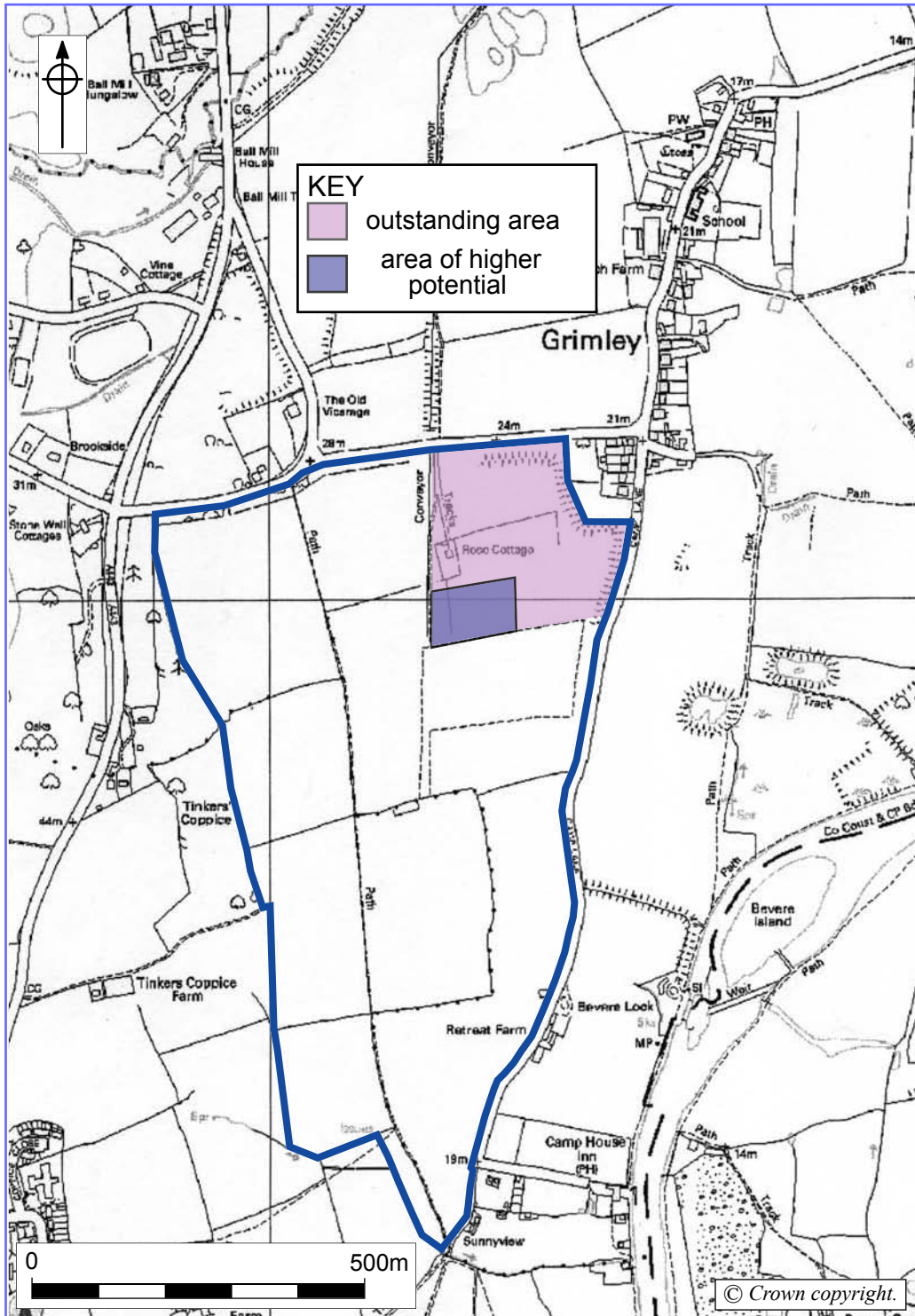
Figure 5



1882 edition map of the study area

Figure 6





Plan of Retreat Farm quarry showing outstanding area

Figure 7



*Proposed trench locations*

*Figure 8*



*Plate 1: Outstanding area of permitted quarry – looking south*



*Plate 2: Outstanding area of permitted quarry – looking west.*



*Plate 3: Area currently under extraction – looking west*

## **Appendix 1: Aerial photographic assessment**

## CONTENTS

- 1 INTRODUCTION
- 2 THE STUDY AREA, FIGURE 1
- 3 ARCHAEOLOGY FROM AERIAL PHOTOGRAPHS
- 4 AERIAL PHOTOGRAPHS: TYPES AND SOURCES
- 5 INTERPRETATION AND MAPPING METHODOLOGY
- 6 MAPS
- 7 RESULTS
- 8 CONCLUSION

### APPENDIX 1

Aerial Photographs Consulted At the NMR

**FIGURE 1** Archaeological features recorded within the Site

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**Every effort is made to provide detailed and accurate information, however CgMs limited cannot be held responsible for errors or inaccuracies within this report.**

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1 **INTRODUCTION**

- 1.1 Chris Cox BA MA MIFA, of CgMs Consulting, undertook this assessment of aerial photographs during May 2003.
- 1.2 It was completed on behalf of Worcestershire County Archaeological Service, to identify and provide detailed mapping of archaeological features visible on aerial photographs within the study area at Retreat Farm, Grimley, Worcestershire.

## 2 **THE STUDY AREA, Figure 1**

### 2.1 **Location**

2.1.1 The site lies to the south of Grimley village on the west bank of the River Severn. It centres upon National Grid Reference SO 830595.

### 2.2 **Soils and Geology**

2.2.1 The study area lies on first terrace sand and gravels, overlain by Brown Earth soils of the Bromsgrove and Whimple 3 associations. The well-drained soils and substrates allow the formation of marks in crops over buried cut features in times of soil moisture deficit, which may be seen clearly from the air.

### 2.3 **Archaeology**

2.3.1 The study site and its environs contain evidence for human activity in the prehistoric, Iron Age, Roman and Medieval periods. Clear evidence for buried trace of past occupation, agricultural and funerary land use is seen on aerial photos.

### 2.4 **Land-use and condition**

2.4.1 The area is relatively level and lies partially on the first gravel terrace of the River Severn. The majority of the area is in arable cultivation, and features contained within the top and sub soils may be heavily eroded. The northern end of the area has been extensively quarried over the last 50 years, and some of the land is reclaimed and the boundaries have changed considerably.



### 3 **ARCHAEOLOGY FROM AERIAL PHOTOGRAPHS**

#### 3.1 **The role of aerial photographic interpretation**

3.1.1 Air photo interpretation provides a unique overview of landscape history and changes in land-use. It provides informed guidance for subsequent desk and ground-based investigations and complements cartographic and documentary research.

3.1.2 Information gained from aerial photographs cannot easily be detected by other means and the interpretation of contemporary and archival aerial photographs is thus an important component of multi-disciplinary archaeological investigation.

3.1.3 Interpretation of aerial photographs allows the accurate mapping of archaeological sites recorded as crop, grass or vegetation marks (caused by the differential growth of plants over buried features); soil marks (caused by differences in soil colour over ploughed buried features) and shadows cast by upstanding earthworks and features seen in relief. In this instance, features were seen as positive marks in crops.

#### 3.2 **Limitations of the data**

3.2.1 Aerial photographic evidence is limited by seasonal, agricultural, meteorological and environmental factors which affect the extent to which either buried or upstanding archaeological features can be detected. It is thus advantageous to examine a range of photos taken under a variety of environmental conditions in order to build up a comprehensive interpretation of the archaeological landscape.

3.2.2 The visibility of archaeological features may differ from year to year. Individual photographs thus often record only a small percentage of the actual extent of buried or upstanding features. In this case, I consider that the buried features which show as crop marks are likely to be much more extensive in both area and complexity than shown by existing aerial photographs.

## 4 **AERIAL PHOTOGRAPHS: TYPES AND SOURCES**

### 4.1 **Types**

- 4.1.1 Two types of aerial photograph are used for archaeological interpretation. Vertical aerial photographs are taken for general-purpose survey using a camera mounted inside a modified aircraft. The aircraft is flown on a pre-planned set of overlapping flight-lines which cover the survey area completely. The camera points straight towards the ground. The vertical viewpoint provides aerial photographic coverage from a fixed scale and constant 180° angles at the centre of each frame. The overlap between the areas covered by each consecutive frame is usually 60%. This overlap between frames enables the photo interpreter to study each pair of vertical photos under a stereoscope.
- 4.1.2 The stereoscope combines the two images to allow the interpreter to see one three-dimensional image of the ground surface. Vertical aerial photographs carry inherent distortions introduced by variations in perspective and ground height, but are essentially ‘map-like’ in appearance. They are generally taken for non-archaeological, civil and military purposes and form the basic data from which most modern maps are compiled. Vertical aerial photographs are a very useful source of archaeological data, particularly in areas where features survive as earthworks. They also constitute historical documents.
- 4.1.3 Oblique aerial photographs are taken using a hand held camera by an aerial archaeologist to portray features which have been identified during specialist survey. These photos are extremely useful, but contain inherent perspective distortions, which must be accounted for in rectification and mapping procedures. All features recorded during this assessment were interpreted from oblique aerial photographs, and supplementary data were derived from verticals.

4.2 **Sources of data**

- 4.2.1 Vertical and oblique aerial photographs taken between 1946 and 2002 were interpreted. These are archived at the English Heritage National Monuments Record (NMR - EH Coversearch number AP 55475, 31-03-03, at Appendix 1), at Cambridge University and Worcestershire SMR.

## 5 **INTERPRETATION AND MAPPING METHODOLOGY**

- 5.1 Photographic interpretation, rectification and mapping were carried out following procedures defined by IFA Technical Paper Number 12. All photographs were closely examined, under 1.5x and 4x magnification and interpreted with the aid of a mirror stereoscope where appropriate.
- 5.2 Transparent interpretative overlays were prepared, from which archaeological and associated relevant data were scanned for rectification to the map base.
- 5.3 Interpreted features were rectified, where appropriate, by computer using ortho-photo rectification software, AirPhoto 2.17. This software calculates values for the closeness of control point match between the photograph and an accurately surveyed digital map base. It utilises an initial plane surface mathematical rectification technique to match photo and map data.
- 5.4 The mean error value of the control points when matched to the map lay between 1.4 and 4.3 metres which is acceptable when matching to maps surveyed at 1:2500 scale with additional controls derived from older 1:10000 scale maps surveyed prior to quarrying and boundary changes.

6 **Maps**

- 6.1 Aerial photographic data were rectified to an OS digital map base. This base was used for geo-referencing and presentation of the results in both digital and paper formats.
- 6.2 The mapping was produced using AutoCAD Map Release 14 and 2000 and may be exported as required subject to checking of complete data transfer and positional accuracy by the client.

7 **RESULTS Figure 1**

7.1 The following features were identified within the Site:

**Feature A**

NGR	SO 836607
WSM	04534
Principle photo	SO 8360/61, 74-78; BUF 035
Location	Grimley

Buried triple ditched rectilinear enclosure with internal and external features, recorded by the SMR as a Romano-British fort. The site cuts, or is cut by, two parallel ditches which may be modern agricultural features, although this interpretation is conjectural.

The features show as positive marks in crops. The area to the immediate east of the site carries further potential for discovery of archaeological remains, probably associated with the enclosure. This area contains evidence for pits and areas of deeper soil, which may be indicative of external settlement or rubbish disposal. Part of the enclosure underlies the northern end of the modern settlement at Grimley.

The area to its west and north contains further evidence for ditched features, and for subsequent ploughing in the Medieval or post Medieval period.

A possible Roman road, noted by the National Monuments Record as RRX 55, may be seen to the north of the enclosure and is recorded as feature N.

The enclosures and track form part of a larger, probably late prehistoric or Iron Age/Romano British landscape which extends over the northern part of this study area.

**Feature E**

NGR	SO 833606
WSM	4501
Principle photo	SO8361/11
Location	West of Grimley

Further traces of buried features which comprise enclosures, pits, possible tracks or fragments of field system and a possible pit alignment, which is documented by the SMR but has not been seen clearly on aerial photographs.

These features form part of the extensive past landscape in the area and are truncated to the north by quarrying and change in the field boundaries to accommodate the extractive processes.

**Feature F**

NGR	SO 836601
Photo number	SO8360/27-29
WSM	15157, 15158
Location	East of Camp Lane, south of Ivy House, Grimley

Sinuuous and linear ditches with associated double ditched incomplete enclosure, which is partially overlain by the modern village. The double ditched enclosure may be a further Roman site.

These features are overlain by traces of ploughed-out ridge and furrow.

**Feature B**

NGR SO 834616  
WSM 04512  
Photo number BBW 42; SO8361/30-32  
Location Holt

Double ditched rectilinear enclosure, pits and tracks which show as marks in crop at Location B. these features have not been accurately mapped as there are not sufficient control points which match between map and photographs, but their presence has been noted.

**Feature C**

NGR SO 835612  
WSM 04510  
Photo number ABF 81; SO8361/26 & 54  
Location Now Church Farm Quarry

Buried ditched enclosure, fragment of a possible further enclosure, pits and ditches. These features showed as positive marks in crops prior to their removal by quarrying at Church Farm.

**Feature D**

NGR SO 833605  
WSM 04538, SAM 213  
Photo number SO8360/50; AFX 51  
Location Church Farm, Grimley

An extensive and complex area of multi-period buried features which comprise a double ditched sub-rectangular enclosure, further ditched enclosures, ring ditch, track ways and many pits and fragmentary ditched features. The ring ditch and enclosure are partially superimposed, and represent different phases, and possibly types of past land use.



**Feature G**

NGR SO 832602  
WSM 04503  
Photo number VD 7; SO8360/8  
Location East of The Old Vicarage

Sinuuous and linear buried ditches indicative of a former field system with fragmentary stock penning and settlement enclosures. Extensive areas of dense pits, of varying shapes and sizes. The northern modern field boundary cuts a buried ring ditch with central pit, which is likely to have been a Bronze Age burial mound (round barrow). These features form part of the extensive archaeological landscape in the area surrounding Grimley village.

**Feature H**

NGR SO 829595  
Photo number SO8259/1,3,4  
WSM 06068  
Location South and east of Tinker's Coppice Farm

Ditched enclosures which are now buried and show as positive marks in crops.

**Feature I**

NGR SO 840612  
Photo number SO8461/2  
WSM 15255, 15256  
Location North east of Grimley village

Ditched enclosures which are now buried and show as positive marks in crops, and amorphous features which may be archaeological. These features are not mapped due to lack of matching control points on both photos and maps.

**Feature J**

NGR SO 836609  
Photo number SOABF 76; SO8360/15; SO8361/20  
WSM 04505  
Location Church Farm, Grimley

Sinuuous ditches indicative of a buried field system, extensive pits and cut area features. This location contains a double ring ditch which is likely to have been a Bronze Age round barrow. All features are now buried and show as positive marks in crops.

**Feature K**

NGR SO 829595  
Photo number SO8359/1  
WSM -  
Location South west of Bevere Manor

Ditched enclosures and pits which are now buried and show as positive marks in crops.

**Feature L**

NGR SO 832598  
Photo number SO8360/68  
WSM 01191  
Location East of Tinker's Coppice

Sinuuous and linear buried ditches, large pit and possible ring ditch. As with the majority of sites in this area, the field shows traces of many small cut features, indicating high archaeological potential.

**Feature M**

NGR	SO 828596
Photo number	SO8259/1,3,4
WSM	21279
Location	West of Tinker's Coppice

Very faint crop marked features which may indicate the position of a possible ring ditch and linear ditches. These features have not been photographed directly, but show in the background of photos which portray sites to the south.

**Feature N**

NGR	SO 836612
Photo number	AKM 136
WSM	04535
Location	North of Grimley

Parallel ditched features and other sinuous and fragmentary features. The parallel ditches may be the fossae which bounded a former Roman road, and are listed on the former NMR records as such.

## 8 **CONCLUSION**

- 8.1 The study area contains several extensive complexes of multi period cut features.
- 8.2 All are now ploughed and eroded. The ditches are buried and show only as crop marks.
- 8.3 Ring ditches probably indicate the position of eroded Bronze Age burial mounds, and further features are likely to be later prehistoric, Iron Age and Romano-British field systems and areas of enclosed and open settlement and stock penning areas.
- 8.4 The features are likely to be much more extensive than indicated by the major features which show on aerial photos, and to be heavily truncated by ploughing.
- 8.5 The area was farmed and settled in the medieval period, and some traces of ridge and furrow survive.

## AP APPENDIX 1

### Aerial photographs consulted at EH NMR

ENGLISH HERITAGE - NATIONAL MONUMENTS RECORD  
National Monuments Record - Air Photos Library

Summary report for specialist collection

Date : 31-Mar-2003 Time : 10:17:49

Customer Enquiry Reference No. 55475

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S08258/3	WAB 11624	ORACLE40	499	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3 S0822589
S08258/4	WAB 11624	500	500	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3 S0822589
S08258/7	CAP 8380	6	VD	CAP	CAP	B Unknown	Black& white	16-JUN-1957	1 S0823588
S08259/1	WAB 138	51		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2 S0828593
S08259/2	CAP 7920	87	BUF	CAP	CAP	B Unknown	Black& white	12-JUL-1975	1 S0829594
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S08259/4	WAB 902	192		WAB	NMR	B 5x5"	Black& white	01-JUL-1975	2 S0828592
S08260/1	WAB 11620	256	256	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3 S0826609
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S08260/3	JAP 5318	710	16	JAP	NMR	B 35 mm	Copy slide	17-JUL-1986	1 S0825605
S08260/4	JAP 6969	709	86.22	JAP	NMR	B 35 mm	Copy slide	17-JUL-1986	1 S0824604
S08261/1	WAB 11657	3504	65	WAB	NMR	B Unknown	Black& white	01-JAN-1965	3 S0828615
S08261/2	CAP 8380	9	VD	CAP	CAP	B Unknown	Black& white		S0827617
S08261/3	CAP 8380	10	VD	CAP	CAP	B Unknown	Black& white		S0827617
S08261/4	WAB 86	60		WAB	NMR	B 5x5"	Black& white	01-JUL-1968	2 S0827619
S08261/5	WAB 86	62		WAB	NMR	B 5x5"	Black& white	01-JUL-1968	2 S0827619
S08261/6	WAB 86	63		WAB	NMR	B 5x5"	Black& white	01-JUL-1968	2 S0827619
S08261/7	WAB 11628	895	895	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3 S0827617
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S08261/9	WAB 11631	1638	1638	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3 S0828615
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S08261/14	WAB 11624	267 57	267 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3 S0828617
S08261/15	WAB 11624	316 57	316 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3 S0827617

Retreat Farm, Grimley, Worcestershire, Aerial Photographic Interpretation.

-2-

NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details		Date Flown	DF	6 Fig	NGR
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S08261/18	WAB 11624	321 57	321 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0827617	
S08261/19	WAB 11624	324 57	324 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0827617	
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S08261/22	WAB 11624	326 57	326 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0828615	
S08261/23	WAB 11624	328 57	328 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0828615	
S08261/24	WAB 11624	329 57	329 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0828615	
S08261/25	WAB 11624	ORACLE41	441	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0828615	
S08261/26	WAB 11624	ORACLE42	442	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0827617	
S08261/27	WAB 11624	ORACLE43	444	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	S0827617	
S08261/28	WAB 138	76		WAB	NMR	B 5x5"	Black& white	01-JAN-1969	2	S0821616	
S08261/29	JAP 328	12A	71 16	JAP	NMR	B 35 mm	Black& white	21-JUL-1971	1	S0829613	
S08261/30	JAP 328	13A	71 16	JAP	NMR	B 35 mm	Black& white	21-JUL-1971	1	S0829613	
S08261/31	WAB 319	67		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	S0829613	
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S08261/35	CAP 7728	100	ASL	CAP	CAP	B Unknown	Black& white	04-JUL-1967	1	S0828615	
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S08262/3	WAB 11640	2202	2202	WAB	NMR	B Unknown	Black& white	01-JAN-1962	3	S0825620	
S08262/4	WAB 11625	ORACLE85	646	WAB	NMR	B Unknown	Black& white	01-JAN-1958	3	S0823621	
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S08262/19	WAB 11620	243	243	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	S0825620	
S08262/20	WAB 11620	254	254	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	S0825620	

Retreat Farm, Grimley, Worcestershire, Aerial Photographic Interpretation.

NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repository	Film Details	Date Flown	DF	6 Fig NGR	
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SO8262/28	WAB 138	66		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO824622
SO8262/29	WAB 138	67		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO824622
SO8262/30	WAB 138	74		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO824622
SO8262/31	WAB 138	75		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO824622
SO8262/32	WAB 138	77		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO824622
SO8262/33	WAB 138	78		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO824622
SO8262/34	WAB 226	65		WAB	NMR	B 5x5"	Black& white	18-JUL-1970	1	SO826620
SO8262/35	JAP 328	10A	71 16	JAP	NMR	B 35 mm	Black& white	21-JUL-1971	1	SO823622
SO8262/36	JAP 328	11A	71 16	JAP	NMR	B 35 mm	Black& white	21-JUL-1971	1	SO823622
SO8262/37	WAB 319	68		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	SO824622
SO8262/38	WAB 319	69		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	SO824622
SO8262/39	WAB 319	70		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	SO824622
SO8262/40	WAB 319	71		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	SO824622
SO8262/41	WAB 319	72		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	SO824622
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SO8262/58	CAP 7607	53	AFX	CAP	CAP	B Unknown	Black& white	10-JUL-1967	1	SO827620
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SO8360/4	WAB 11649	3078	3078	WAB	NMR	B Unknown	Black& white	01-JAN-1963	3	SO833607
SO8360/5	WAB 11649	3079	3079	WAB	NMR	B Unknown	Black& white	01-JAN-1963	3	SO833607

Retreat Farm, Grimley, Worcestershire, Aerial Photographic Interpretation.

NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details	Date Flown	DF	6 Fig	NGR
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SO8360/7	WAB 11655	3357	3357	WAB	NMR	B Unknown	Black& white	01-JAN-1964	3	SO837608
SO8360/8	CAP 8380	7	VD	CAP	CAP	B Unknown	Black& white			SO833603
SO8360/9	WAB 11631	1510	1510	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3	SO837608
SO8360/10	WAB 11631	1636	1636	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3	SO837608
SO8360/11	WAB 11631	1637	1637	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3	SO833607
SO8360/12	WAB 11620	218	218	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO837608
SO8360/13	WAB 11620	219	219	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO837608
SO8360/14	WAB 11620	223	223	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO837608
SO8360/15	WAB 11620	255	255	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO833608
SO8360/16	WAB 11620	290	290	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO837608
SO8360/17	WAB 11620	291	291	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO837608
SO8360/18	WAB 11624	330 57	330 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO834604
SO8360/19	WAB 11624	ORACLE44	437	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO835603
SO8360/20	WAB 11624	ORACLE45	439	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO832602
SO8360/21	WAB 11624	ORACLE46	440	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO832602
SO8360/22	WAB 11624	ORACLE47	443	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO832602
SO8360/23	WAB 11624	ORACLE48	438	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO836607
SO8360/24	WAB 11624	ORACLE49	496	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO834603
SO8360/25	WAB 11624	ORACLE50	497	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO834603
SO8360/26	WAB 11624	ORACLE51	610	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO834603
SO8360/27	WAB 138	52		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO836600
SO8360/28	WAB 138	61		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO836600
SO8360/29	WAB 138	70		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO836600
SO8360/30	WAB 138	53		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO836608
SO8360/31	WAB 138	62		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO836608
SO8360/32	WAB 138	69		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO836608
SO8360/33	WAB 138	71		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO833607
SO8360/34	WAB 226	63		WAB	NMR	B 5x5"	Black& white	18-JUL-1970	1	SO835603
SO8360/35	WAB 226	64		WAB	NMR	B 5x5"	Black& white	18-JUL-1970	1	SO833607
SO8360/36	CAP 8143	44	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	SO836608
SO8360/37	CAP 8243	66	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	SO833607
SO8360/38	CAP 8243	67	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	SO833607
SO8360/39	CAP 8243	68	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	SO833607
SO8360/41	CAP 8413	8	XO	CAP	CAP	B Unknown	Black& white	24-JUL-1958	1	SO836608
SO8360/42	CAP 7547	72	ABF	CAP	CAP	B 5x5"	Black& white	17-JUN-1960	1	SO836609
SO8360/43	CAP 7547	74	ABF	CAP	CAP	B 5x5"	Black& white	17-JUN-1960	1	SO834608



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NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details	Date Flown	DF	6 Fig	NGR
S08360/44	CAP 7547	75	ABF	CAP	CAP	B 5x5"	Black& white	17-JUN-1960	1	S0834608
S08360/45	CAP 7547	76	ABF	CAP	CAP	B 5x5"	Black& white	17-JUN-1960	1	S0836609
S08360/46	CAP 7607	51	AFX	CAP	CAP	B Unknown	Black& white	07-JUL-1962	1	S0834605
S08360/47	CAP 7646	136	AKM	CAP	CAP	B Unknown	Black& white	04-AUG-1964	1	S0836608
S08360/48	CAP 7646	138	AKM	CAP	CAP	B Unknown	Black& white	04-AUG-1964	1	S0836608
S08360/49	CAP 7699	17	AOV	CAP	CAP	B Unknown	Black& white	02-JUL-1966	1	S0830609
S08360/50	CAP 7729	1	ASM	CAP	CAP	B Unknown	Black& white	04-JUL-1967	1	S0834605
S08360/51	CAP 7849	47	BGD	CAP	CAP	B Unknown	Black& white	15-JUL-1971	1	S0830609
S08360/52	CAP 7849	49	BGD	CAP	CAP	B Unknown	Black& white	15-JUL-1971	1	S0836608
S08360/53	CAP 7920	85	BUF	CAP	CAP	B Unknown	Black& white	12-JUL-1975	1	S0836608
S08360/54	JAP 1434	28	861	JAP	NMR	B 35 mm	B&W copy clr	10-AUG-1977	1	S0836608
S08360/55	JAP 1434	29	860	JAP	NMR	B 35 mm	B&W copy clr	10-AUG-1977	1	S0832606
S08360/56	JAP 1434	30	859	JAP	NMR	B 35 mm	B&W copy clr	10-AUG-1977	1	S0836608
S08360/57	JAP 1730	13	440	JAP	NMR	B 35 mm	B&W copy clr	28-JUL-1979	1	S0838605
S08360/58	JAP 1730	14	439	JAP	NMR	B 35 mm	B&W copy clr	28-JUL-1979	1	S0836602
S08360/60	CAP 8143	45	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	S0836608
S08360/61	CAP 8143	46	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	S0836608
S08360/62	CAP 8243	62	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	S0833607
S08360/63	CAP 8243	63	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	S0833607
S08360/64	CAP 8243	64	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	S0833607
S08360/65	CAP 8243	65	OU	CAP	CAP	B Unknown	Black& white	09-JUL-1954	1	S0833607
S08360/66	WAB 902	188		WAB	NMR	B 5x5"	Black& white	01-JUL-1975	2	S0836608
S08360/67	WAB 902	189		WAB	NMR	B 5x5"	Black& white	01-JUL-1975	2	S0833600
S08360/68	WAB 902	190		WAB	NMR	B 5x5"	Black& white	01-JUL-1975	2	S0833600
S08360/69	NMR 18410	35		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	S0836607
S08360/70	NMR 18410	36		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	S0836608
S08360/71	NMR 18433	18		EHC	NMR	B 70mm,120,220	Black& white	26-JUL-1999	1	S0836608
S08360/72	NMR 18433	19		EHC	NMR	B 70mm,120,220	Black& white	26-JUL-1999	1	S0835608
S08360/73	NMR 18433	20		EHC	NMR	B 70mm,120,220	Black& white	26-JUL-1999	1	S0835608
S08360/74	NMR 18411	01		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	S0836608
S08360/75	NMR 18411	02		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	S0836608
S08360/76	NMR 18411	03		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	S0836608
S08360/77	NMR 18395	06		EHC	NMR	B 35 mm	Colour slide	26-JUL-1999	1	S0836607
S08360/78	NMR 18395	07		EHC	NMR	B 35 mm	Colour slide	26-JUL-1999	1	S0836608
S08361/1	WAB 11657	3502	65	WAB	NMR	B Unknown	Black& white	01-JAN-1965	3	S0837614
S08361/2	WAB 11657	3503	65	WAB	NMR	B Unknown	Black& white	01-JAN-1965	3	S0835617
S08361/3	WAB 11649	3074	3074	WAB	NMR	B Unknown	Black& white	01-JAN-1963	3	S0831611

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NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details	Date Flown	DF	6 Fig	NGR
SO8361/4	WAB 11649	3075	3075	WAB	NMR	B Unknown	Black& white	01-JAN-1963	3	SO831611
SO8361/5	WAB 11649	3076	3076	WAB	NMR	B Unknown	Black& white	01-JAN-1963	3	SO834610
SO8361/6	WAB 11655	3355	3355	WAB	NMR	B Unknown	Black& white	01-JAN-1964	3	SO835617
SO8361/7	WAB 11655	3356	3356	WAB	NMR	B Unknown	Black& white	01-JAN-1964	3	SO835617
SO8361/8	CAP 8380	8	VD	CAP	CAP	B Unknown	Black& white			SO830613
SO8361/9	CAP 8380	23	VD	CAP	CAP	B Unknown	Black& white			SO830613
SO8361/10	WAB 86	61		WAB	NMR	B 5x5"	Black& white	01-JUL-1968	2	SO831612
SO8361/11	WAB 86	64		WAB	NMR	B 5x5"	Black& white	01-JUL-1968	2	SO831612
SO8361/12	WAB 11628	868	868	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3	SO830611
SO8361/13	WAB 11628	896	896	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3	SO830611
SO8361/14	WAB 11628	897	897	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3	SO830611
SO8361/15	WAB 11631	1507	1507	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3	SO830613
SO8361/16	WAB 11631	1508	1508	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3	SO830613
SO8361/17	WAB 11631	1511	1511	WAB	NMR	B Unknown	Black& white	01-JAN-1960	3	SO834610
SO8361/18	WAB 11620	217	217	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830613
SO8361/19	WAB 11620	222	222	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830613
SO8361/20	WAB 11620	241	241	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO837610
SO8361/21	WAB 11620	242	242	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830614
SO8361/22	WAB 11620	249	249	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830614
SO8361/23	WAB 11620	250	250	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830614
SO8361/24	WAB 11620	252	252	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830614
SO8361/25	WAB 11620	253	253	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO830614
SO8361/26	WAB 11620	340	340	WAB	NMR	B Unknown	Black& white	01-JAN-1956	3	SO835612
SO8361/27	WAB 11624	327 57	327 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO837617
SO8361/28	WAB 11624	ORACLE52	495	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO835611
SO8361/29	WAB 11624	ORACLE53	609	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO831611
SO8361/30	WAB 138	54		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO834616
SO8361/31	WAB 138	55		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO834616
SO8361/32	WAB 138	68		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO834616
SO8361/33	WAB 138	56		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830618
SO8361/34	WAB 138	58		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613
SO8361/35	WAB 138	59		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613
SO8361/36	WAB 138	60		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613
SO8361/37	WAB 138	63		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613
SO8361/38	WAB 138	64		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613
SO8361/39	WAB 138	72		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613
SO8361/40	WAB 138	73		WAB	NMR	B 5x5"	Black& white	01-JUL-1969	2	SO830613

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NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details	Date Flown	DF	6 Fig NGR	
S08361/41	WAB 11669	ORACLE1	SITE 26	WAB	NMR	B Unknown	B&W copy b&w	10-AUG-1955	1	S0834616
S08361/42	WAB 319	66		WAB	NMR	B 5x5"	Black& white	21-JUL-1971	1	S0834610
S08361/43	JAP 1174	21	902	JAP	NMR	B 35 mm	B&W copy clr	06-JUL-1976	1	S0830616
S08361/44	JAP 1174	22	901	JAP	NMR	B 35 mm	B&W copy clr	06-JUL-1976	1	S0833614
S08361/45	JAP 1174	23	900	JAP	NMR	B 35 mm	B&W copy clr	06-JUL-1976	1	S0833614
S08361/46	JAP 1240	2	903	JAP	NMR	B 35 mm	B&W copy clr	06-JUL-1976	1	S0830616
S08361/47	CAP 8350	5	TI	CAP	CAP	B Unknown	Black& white	14-JUN-1956	1	S0830613
S08361/51	CAP 8390	56	VN	CAP	CAP	B Unknown	Black& white	02-JUL-1957	1	S0836613
S08361/52	CAP 8427	67	YS	CAP	CAP	B Unknown	Black& white	20-JUN-1959	1	S0830613
S08361/53	CAP 8427	69	YS	CAP	CAP	B Unknown	Black& white	20-JUN-1959	1	S0830613
S08361/54	CAP 7547	81	ABF	CAP	CAP	B 5x5"	Black& white	17-JUN-1960	1	S0835611
S08361/55	CAP 7639	14	AJG	CAP	CAP	B Unknown	Black& white	25-JUN-1964	1	S0835616
S08361/56	CAP 7639	16	AJG	CAP	CAP	B Unknown	Black& white	25-JUN-1964	1	S0835616
S08361/57	CAP 7639	17	AJG	CAP	CAP	B Unknown	Black& white	25-JUN-1964	1	S0830610
S08361/58	CAP 7639	19	AJG	CAP	CAP	B Unknown	Black& white	25-JUN-1964	1	S0832616
S08361/59	CAP 7728	96	ASL	CAP	CAP	B Unknown	Black& white	04-JUL-1967	1	S0832616
S08361/60	CAP 7728	98	ASL	CAP	CAP	B Unknown	Black& white	04-JUL-1967	1	S0830612
S08361/61	CAP 7811	42	BBW	CAP	CAP	B Unknown	Black& white	15-JUN-1970	1	S0834616
S08361/62	CAP 7882	19	BOE	CAP	CAP	B Unknown	Black& white	13-JUL-1973	1	S0835616
S08361/63	CAP 7894	15	BQH	CAP	CAP	B Unknown	Black& white	09-JUL-1974	1	S0830613
S08361/64	CAP 7894	16	BQH	CAP	CAP	B Unknown	Black& white	09-JUL-1974	1	S0830613
S08361/65	CAP 7894	17	BQH	CAP	CAP	B Unknown	Black& white	09-JUL-1974	1	S0830613
S08361/66	JAP 1731	25	869	JAP	NMR	B 35 mm	B&W copy clr	21-JUL-1979	1	S0830614
S08361/67	JAP 1731	26	870	JAP	NMR	B 35 mm	B&W copy clr	21-JUL-1979	1	S0830614
S08361/68	JAP 1731	27	871	JAP	NMR	B 35 mm	B&W copy clr	21-JUL-1979	1	S0830614
S08361/69	NMR 1575	9-12		CRW	NMR	B 70mm,120,220	Black& white	05-JUL-1979	1	S0830613
S08361/70	NMR 1575	13-14		CRW	NMR	B 70mm,120,220	Black& white	05-JUL-1979	1	S0831613
S08361/71	NMR 1809	382-386		CRW	NMR	B 70mm,120,220	Black& white	25-JUN-1980	1	S0830610
S08361/72	NMR 21694	07		EHC	NMR	B 70mm,120,220	Black& white	15-JUL-2002	1	S0830613
S08361/73	NMR 21694	08		EHC	NMR	B 70mm,120,220	Black& white	15-JUL-2002	1	S0830613
S08361/74	NMR 21694	09		EHC	NMR	B 70mm,120,220	Black& white	15-JUL-2002	1	S0830613
S08361/75	NMR 21694	10		EHC	NMR	B 70mm,120,220	Black& white	15-JUL-2002	1	S0830613
S08361/76	NMR 21686	35		EHC	NMR	B 35 mm	Colour neg	15-JUL-2002	1	S0830613
S08361/77	NMR 21686	36		EHC	NMR	B 35 mm	Colour neg	15-JUL-2002	1	S0830613
S08361/78	NMR 21686	37		EHC	NMR	B 35 mm	Colour neg	15-JUL-2002	1	S0830613
S08458/1	JAP 1168	24	C 184	JAP	NMR	B 35 mm	B&W copy clr	21-JUL-1975	1	S0843587
S08458/2	NMR 4644	15		CRW	NMR	B 70mm,120,220	Black& white	10-JUN-1990	1	S0842589

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NGR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details		Date Flown	DF	6 Fig NGR
SO8459/1	WAB 11657	3501	65	WAB	NMR	B Unknown	Black& white	01-JAN-1965	3	SO841596
SO8459/2	WAB 11640	2204	2204	WAB	NMR	B Unknown	Black& white	01-JAN-1962	3	SO840591
SO8459/3	WAB 11624	332 57	332 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO841596
SO8459/4	WAB 11624	333 57	333 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO841596
SO8459/5	WAB 11624	331 57	331 57	WAB	NMR	B Unknown	Black& white	01-JAN-1957	3	SO841596
SO8459/6	WAB 11667	ORACLE1	SITE 17	WAB	NMR	B Unknown	B&W copy b&w	04-AUG-1955	1	SO841596
SO8459/7	CAP 8380	1	VD	CAP	CAP	B Unknown	Black& white	16-JUN-1957	1	SO841596
SO8459/8	CAP 8380	3	VD	CAP	CAP	B Unknown	Black& white	16-JUN-1957	1	SO841596
SO8459/9	CAP 7656	58	ALD	CAP	CAP	B Unknown	Black& white	17-JUN-1965	1	SO841596
SO8459/10	CAP 7920	82	BUF	CAP	CAP	B Unknown	Black& white	12-JUL-1975	1	SO843594
SO8459/11	NMR 4644	10		CRW	NMR	B 70mm,120,220	Black& white	10-JUN-1990	1	SO843594
SO8459/12	NMR 4644	11		CRW	NMR	B 70mm,120,220	Black& white	10-JUN-1990	1	SO841595
SO8459/13	NMR 4644	12		CRW	NMR	B 70mm,120,220	Black& white	10-JUN-1990	1	SO841595
SO8459/14	NMR 4644	13		CRW	NMR	B 70mm,120,220	Black& white	10-JUN-1990	1	SO842595
SO8459/15	NMR 4644	14		CRW	NMR	B 70mm,120,220	Black& white	10-JUN-1990	1	SO842595
SO8459/16	JAP 19142	X136	E23	JAP	JAP	B 35 mm	Colour slide	16-JUL-1996	1	SO841595
SO8459/17	JAP 19142	X137	E23	JAP	JAP	B 35 mm	Colour slide	16-JUL-1996	1	SO841595
SO8460/1	WAB 11625	ORACLE86	645	WAB	NMR	B Unknown	Black& white	01-JAN-1958	3	SO845603
SO8460/2	WAB 11625	ORACLE87	647	WAB	NMR	B Unknown	Black& white	01-JAN-1958	3	SO845603
SO8460/3	WAB 11625	ORACLE88	648	WAB	NMR	B Unknown	Black& white	01-JAN-1958	3	SO845603
SO8460/4	WAB 11628	861	861	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3	SO845603
SO8460/5	WAB 11628	862	862	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3	SO845603
SO8460/6	WAB 11628	863	863	WAB	NMR	B Unknown	Black& white	01-JAN-1959	3	SO845603
SO8460/10	CAP 8143	48	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	SO845604
SO8460/11	CAP 8413	1	XO	CAP	CAP	B Unknown	Black& white	24-JUL-1958	1	SO845604
SO8460/12	CAP 8413	4	XO	CAP	CAP	B Unknown	Black& white	24-JUL-1958	1	SO845604
SO8460/13	CAP 7607	48	AFX	CAP	CAP	B Unknown	Black& white	07-JUL-1962	1	SO845604
SO8460/14	CAP 7699	18	AOV	CAP	CAP	B Unknown	Black& white	02-JUL-1966	1	SO845604
SO8460/18	CAP 8143	47	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	SO845604
SO8460/20	CAP 8143	49	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	SO845604
SO8460/21	CAP 8143	50	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	SO845604
SO8460/22	CAP 8143	51	NE	CAP	CAP	B Unknown	Black& white	12-AUG-1953	1	SO845604
SO8460/23	CAP 8283	75	QM	CAP	CAP	B Unknown	Black& white	06-JUL-1955	1	SO844603
SO8460/25	CAP 7535	ORACLE2		CAP	CAP	B Unknown	Black& white			SO845603
SO8460/29	NMR 18433	21		EHC	NMR	B 70mm,120,220	Black& white	26-JUL-1999	1	SO845607
SO8460/34	NMR 18411	05		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	SO845607
SO8460/35	NMR 18411	06		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	SO844607

Retreat Farm, Grimley, Worcestershire, Aerial Photographic Interpretation.

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Summary report for vertical coversearch

Date : 31-Mar-2003 Time : 10:20:58

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Sortie Number	Library Number	Cam Pos	Start Frame	End Frame	Held	National Start	Reference End	Date	Date Flag	Qual ity	Scale 1:	Focal Length	Format	Repos itory	Copy Right
RAF/106G/UK/1333	274	FV	7302	7304	P	S0823606	S0835608	29-MAR-1946	1	AB	9900	20.00	BW87	MOD	RAF
RAF/106G/UK/1333	274	FV	7444	7446	P	S0839603	S0826605	29-MAR-1946	1	AB	9900	20.00	BW87	MOD	RAF
RAF/106G/UK/1333	274	V	5444	5446	P	S0837586	S0825587	29-MAR-1946	1	AB	9900	20.00	BW87	MOD	RAF
RAF/CPE/UK/1873	532	FP	1016	1018	P	S0837602	S0827603	04-DEC-1946	1	AC	12000	36.00	BW87	MOD	RAF
RAF/82/1372	1738	F22	212	215	P	S0837591	S0825591	23-MAR-1956	1	AC	5000	20.00	BW87	MOD	CRW
RAF/543/401	1878	F22	4	6	N	S0839617	S0839604	26-SEP-1958	1	B	10000	36.00	BW87	MOD	CRW
RAF/543/401	1878	F22	7	9	P	S0840598	S0839586	26-SEP-1958	1	B	10000	36.00	BW87	MOD	CRW
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RAF/543/401	1878	F22	77	77	N	S0835592	S0835592	26-SEP-1958	1	B	10000	36.00	BW87	MOD	CRW
RAF/58/2697	1889	F21	65	65	N	S0848608	S0848608	28-JAN-1959	1	BC	19400	20.00	BW87	MOD	CRW
RAF/58/2697	1889	F21	66	67	P	S0835607	S0821607	28-JAN-1959	1	BC	19400	20.00	BW87	MOD	CRW
RAF/58/2736	1891	F21	83	84	P	S0838611	S0838599	16-MAR-1959	1	BC	20000	20.00	BW87	MOD	CRW
RAF/58/3971	2005	V	79	79	P	S0827618	S0827618	06-DEC-1960	1	BC	12000	6.00	BW99	MOD	CRW
RAF/58/3971	2005	V	80	80	N	S0829611	S0829611	06-DEC-1960	1	BC	12000	6.00	BW99	MOD	CRW
RAF/58/3971	2005	V	81	81	P	S0831605	S0831605	06-DEC-1960	1	BC	12000	6.00	BW99	MOD	CRW
RAF/58/3971	2005	V	82	82	N	S0833598	S0833598	06-DEC-1960	1	BC	12000	6.00	BW99	MOD	CRW
RAF/58/3971	2005	V	83	83	P	S0836591	S0836591	06-DEC-1960	1	BC	12000	6.00	BW99	MOD	CRW
RAF/58/5965	2183	F21	282	283	P	S0837606	S0830606	09-OCT-1963	1	AB	10000	20.00	BW87	MOD	CRW
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OS/69256	9411	V	44	44	P	S0828589	S0828589	10-JUN-1969	1	A	22000	6.00	BW99	NMR	CRW
OS/62058	9414	V	62	64	P	S0826599	S0838593	07-JUN-1962	1	A	7000	12.00	BW99	NMR	CRW
OS/62058	9414	V	69	69	N	S0838606	S0838606	07-JUN-1962	1	A	7000	12.00	BW99	NMR	CRW
OS/62058	9414	V	70	71	P	S0832609	S0826612	07-JUN-1962	1	A	7000	12.00	BW99	NMR	CRW
OS/68168	9427	V	170	172	P	S0829607	S0828592	10-JUN-1968	1	A	7500	12.00	BW99	NMR	CRW
OS/68295	9428	V	30	33	P	S0840613	S0841593	06-SEP-1968	1	A	7500	12.00	BW99	NMR	CRW
OS/89107	13454	V	818	821	P	S0840588	S0839602	03-MAY-1989	1	A	5100	12.00	BW99	OS	CRW
EA/AEL/94C/725	40076	V	2304	2306	N	S0828605	S0834605	09-FEB-1994	1	A	3000	6.00	CO99	AEL	EA
EA/AEL/94C/725	40076	V	2307	2308	P	S0836606	S0839606	09-FEB-1994	1	A	3000	6.00	CO99	AEL	EA
EA/AEL/94C/725	40076	V	2336	2337	P	S0840601	S0837600	09-FEB-1994	1	A	3000	6.00	CO99	AEL	EA

Retreat Farm, Grimley, Worcestershire, Aerial Photographic Interpretation.

NCR Index Number	Accession Number	Frame	Original Number	Copy right	Repos itory	Film Details	Date Flown	DF	6 Fig	NGR
S08460/36	NMR 18411	07		EHC	NMR	B 35 mm	Colour neg	26-JUL-1999	1	S0845607
S08461/1	JAP 1731	28	872	JAP	NMR	B 35 mm	B&W copy cir	21-JUL-1979	1	S0840610
S08461/2	JAP 1731	29	873	JAP	NMR	B 35 mm	B&W copy cir	21-JUL-1979	1	S0840610

Total 290 Records








Retreat Farm, Grimley, Worcestershire, Aerial Photographic Interpretation.

-2-

Sortie Number	Library Number	Cam Pos	Start Frame	End Frame	Held	National Start	Reference End	Date	Date Flag	Qual ity	Scale 1:	Focal Length	Format	Repos itory	Copy Right
EA/AEL/94C/725	40076	V	2338	2338	N	S0835600	S0835600	09-FEB-1994	1	A	3000	6.00	CO99	AEL	EA
EA/AEL/94C/725	40076	V	2339	2340	N	S0836589	S0838591	09-FEB-1994	1	A	3000	6.00	CO99	AEL	EA
EA/AEL/94C/725	40076	V	2404	2405	N	S0838597	S0836595	09-FEB-1994	1	A	3000	6.00	CO99	AEL	EA

Total 15 Sorties 68 Prints

RETREAT FARM, GRIMLEY  
 INTERPRETATION OF AERIAL PHOTOGRAPHS

-  Cut archaeological features
-  Possible archaeological features
-  Area of former ridge and furrow
-  Features of unknown origin
-  Area of archaeological potential
-  Area of pits
-  Feature discussed in text

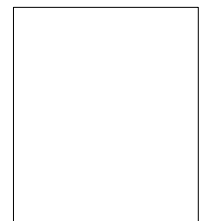
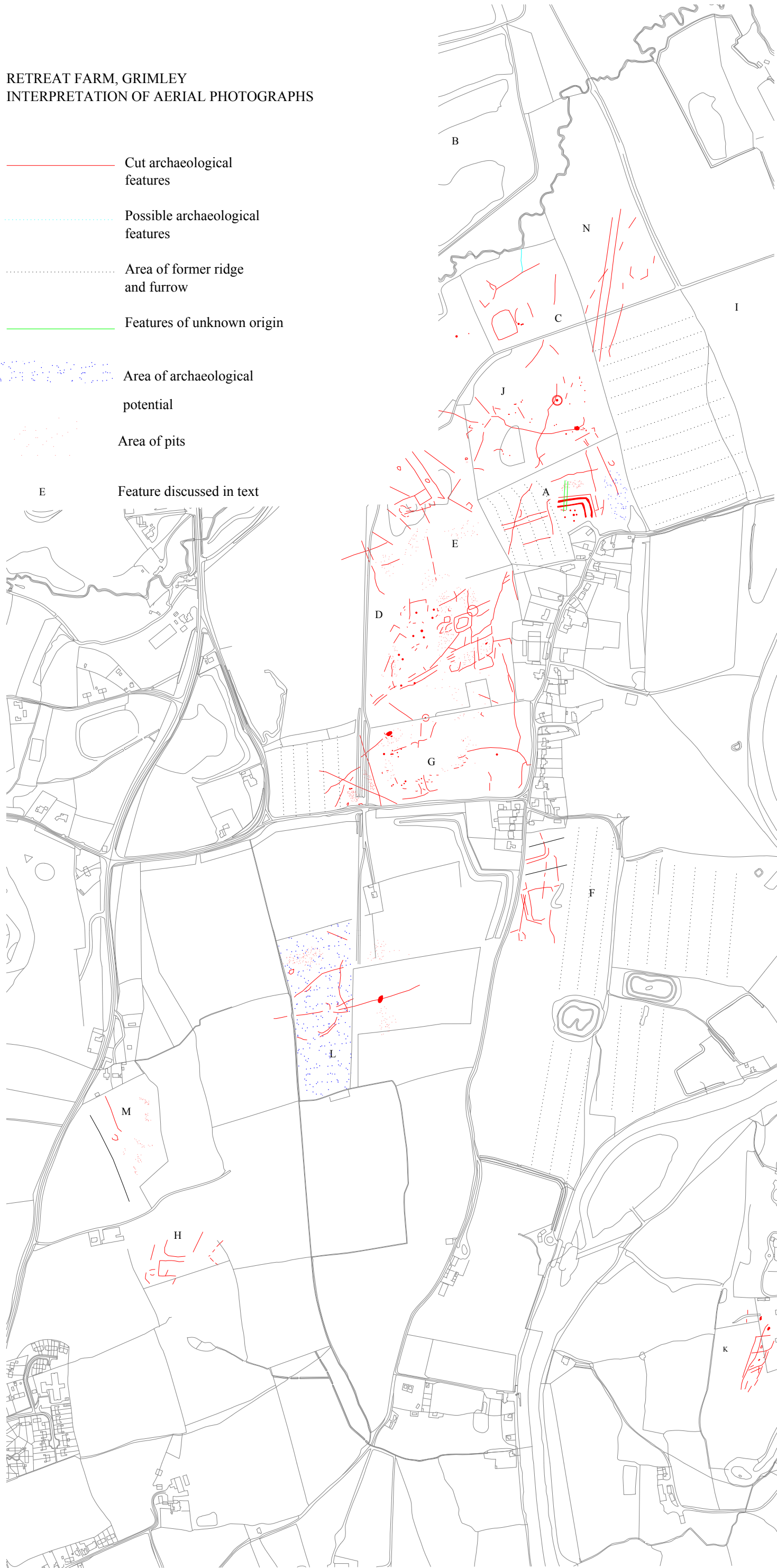


FIGURE 1



Retreat Farm, Grimley, Worcestershire, Geophysical survey

## **Appendix 2: Geophysical survey report**

GSB Prospection: Geophysical survey report 2003/73

## SITE SUMMARY SHEET

2003 / 73 Retreat Farm, Grimley, Worcestershire

**NGR:** SO 837 601 (approximate centre).

### Location, topography and geology

The site is situated north of Worcester between the A443 road and the village of Grimley. To the south and the west of the study area is an existing quarry. The two fields that are the focus of the investigation are flat, with close cropped pasture. The soils at the site are deep well drained coarse loamy and sandy soils of the Wick 1 association (541r) and overlie glaciofluvial or river terrace gravels (SSEW 1983).

### Archaeology

Although significant archaeology is known to exist in the locality of the survey area, very little has been proved to exist within it. Low earthworks appear to be present within the study area, although it is not certain if they relate to former agricultural boundaries or ridge and furrow.

### Aims of Survey

The aim of the magnetometer survey was to locate anomalies of potential archaeological within the area of interest. The geophysical survey forms part of a larger investigation undertaken by **Worcestershire Historic Environment and Archaeology Service (WHEAS)**.

### Summary of Results \*

A scan using fluxgate gradiometers revealed a low magnetic background throughout the area investigated. On the basis of the scan two areas were chosen for detailed survey.

The detailed survey covered a total of 1ha and confirmed the low magnetic background suggested by the scan. A number of pit type anomalies were detected in both survey areas. Of these, the most promising was a group of anomalies in the south west corner of the area of investigation (Area 1). Several curving trends in this block may also have some archaeological interest. By way of contrast, the group in the northern part of the investigation area (Area 2) is likely to be part of a former field boundary.

**\* It is essential that this summary is read in conjunction with the detailed results of the survey.**

## SURVEY RESULTS

2003 / 73 Retreat Farm, Grimley, Worcestershire

### 1. Survey Area

- 1.1 Scanning with a fluxgate gradiometer assessed approximately 7.5ha of land. On the basis of the scan, two areas totalling 1ha were chosen for detailed survey. Figure 1 shows the location of the survey areas on the basemap at a scale of 1:2500
- 1.2 The survey grid was set out by **GSB Propection** and tied in to existing boundaries using an EDM. Detailed tie-in information has been lodged with the client.

### 9 Display

- 2.1 The results are displayed as X-Y traces, dot density plots and greyscale images. These display formats are discussed in the *Technical Information* section, at the end of the text.
- 2.2 Figures 2 and 3 are a summary greyscale image and an interpretation of the survey results superimposed on the basemap at a scale of 1:1250. Figures 4 to 7 are data plots and interpretation diagrams of each survey area produced at a scale of 1:500.
- 2.3 Letters in parentheses in the text of the report refer to anomalies highlighted in the relevant interpretation diagram.

### 3. General Considerations - Complicating Factors

- 3.1 The two pasture fields provided good survey conditions over the majority of the study area.
- 3.2 The soils are of a type that would be expected to provide a reasonable level of magnetic response particularly where remains of occupation and industrial activity are likely to be present.

### 4. Results of Survey

- 4.1 With gradiometers in scanning mode, the evaluation area was examined along traverses spaced at intervals of approximately 10-15m. During this operation, fluctuations in magnetic signal were observed on the instruments' display panel. Any significant variations were investigated more closely to determine their likely origin and those anomalies considered to have archaeological potential were marked with canes for detailed, recorded survey.
- 4.2 The site was found to be magnetically quiet, with few anomalies of possible interest located. This suggested low potential for significant settlement or other large scale archaeological activity. However, sufficient anomalies were found in both of the fields to produce a sampling strategy that covered all the reponses and was extended to give good spatial cover.

## Area 1

- 4.3 This is the larger of the two detailed survey areas and is situated in the southern of the two fields that were scanned.
- 4.4 The detailed survey confirmed the low background response, although a number of ferrous 'spikes' are evenly distributed across the survey area. These responses are likely to be modern in origin.
- 4.5 The most interesting anomalies are a series of small scale responses that are located in the south west corner of the proposed extraction area. The archaeological interpretation of these suggests that they may be the result of pits, perhaps indicating unenclosed settlement of some kind. This interpretation is cautious, however, as natural variation in the subsoil can produce similar responses.
- 4.6 Additional to the pit type responses is a series of trends in the central and western part of the survey area. While it is possible that the trends are due to ploughing, those at (A) may be of greater archaeological interest as they may represent a ploughed out sub-circular feature.

## Area 2

- 4.7 This sample lies within the northern of the two fields in this evaluation.
- 4.8 The evidence for archaeological type anomalies in the data is slight. While there is a row of possible pit type anomalies the signal is very weak and the interpretation is equally tentative. The putative pits lie within a larger trend and it is possible that they are part of a former boundary.

## 5. Conclusions

- 5.1 The gradiometer scan suggested a low level of magnetic background response and few anomalies of archaeological interest were identified.
- 5.2 The detailed survey confirmed the general impression suggested by the scan, revealing generally low levels of background fluctuation. Some archaeological type anomalies were detected in both detailed survey blocks. Area 1 revealed the presence of possible pits and some trends that may be of archaeological interest. An archaeological interpretation for the few pit type anomalies detected in Area 2 is more tentative and they may be part of a former boundary.

**Project Co-ordinator:** Dr C F Gaffney  
**Project Assistants:** C Stephens & B Urmston

**Start of Survey:** 22<sup>nd</sup> September 2003  
**Date of Report:** 3<sup>rd</sup> October 2003

## References:

SSEW 1983 *Soils of England and Wales. Sheet 3, Midland and Western England.* Soil Survey of England and Wales.

## Terms commonly used in the graphical interpretation of gradiometer data

### **Ditch / Pit**

This category is used only when other evidence is available that supports a clear archaeological interpretation e.g. cropmarks or excavation.

### **Archaeology**

This term is used when the form, nature and pattern of the response is clearly or very probably archaeological but where no supporting evidence exists. These anomalies, whilst considered anthropogenic, could be of any age. If a more precise archaeological interpretation is possible then it will be indicated in the accompanying text.

### **? Archaeology**

The interpretation of such anomalies is often tentative, with the anomalies exhibiting either weak signal strength or forming incomplete archaeological patterns. They may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.

### **Areas of Increased Magnetic Response**

These responses show no visual indications on the ground surface and are considered to have some archaeological potential.

### **Industrial**

Strong magnetic anomalies, that due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.

### **Natural**

These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions e.g. palaeochannels or magnetic gravels.

### **? Natural**

These are anomalies that are likely to be natural in origin i.e geological or pedological.

### **Ridge and Furrow**

These are regular and broad linear anomalies that are presumed to be the result of ancient cultivation. In some cases the response may be the result of modern activity.

### **Ploughing Trend**

These are isolated or grouped linear responses. They are normally narrow and are presumed modern when aligned to current field boundaries or following present ploughing.

### **Trend**

This is usually an ill-defined, weak, isolated or obscured linear anomaly of unknown cause or date.

### **Areas of Magnetic Disturbance**

These responses are commonly found in places where modern ferrous or fired materials are present e.g. brick rubble. They are presumed to be modern.

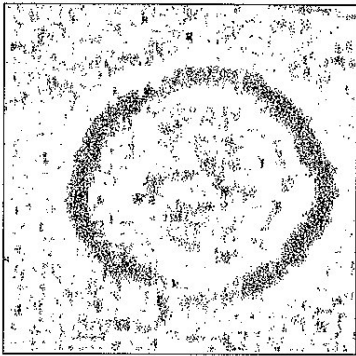
### **Ferrous Response**

This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes or above ground features such as fence-lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.

**NB** This is by no means an exhaustive list and other categories may be used as necessary.

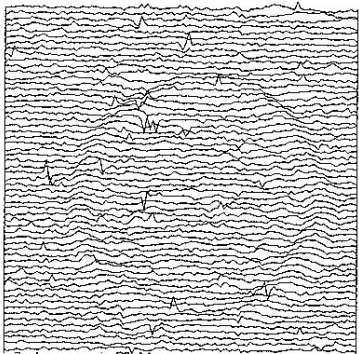
## Display Options

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



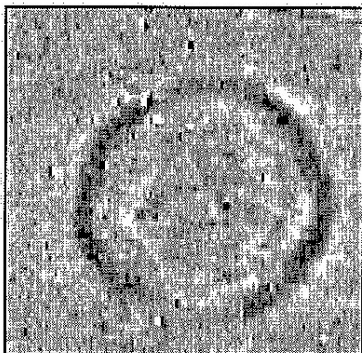
### (a) Dot Density

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



### (b) XY Plot

This involves a line representation of the data. Each successive row of data is equally incremented in the Y axis, to produce a stacked profile effect. This display may incorporate a hidden-line removal algorithm, which blocks out lines behind the major peaks and can aid interpretation. The advantages of this type of display are that it allows the full range of the data to be viewed and shows the shape of the individual anomalies. The display may also be changed by altering the horizontal viewing angle and the angle above the plane. The output may be either colour or black and white.



### (c) Greyscale

This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots or shade of grey, the intensity increasing with value. This gives an appearance of a toned or grey-scale. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. While colour plots can look impressive and can be used to highlight certain anomalies, greyscales tend to be more informative.

## TECHNICAL INFORMATION

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

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

### Instrumentation

#### (a) Fluxgate Gradiometer - Geoscan FM36/FM256 and Bartington *Grad601-2*

Both the Geoscan and Bartington instruments comprise of two fluxgate magnetometers mounted vertically apart at a distance of 500mm and 1000mm, respectively. The gradiometers are carried by hand, with the bottom sensor approximately 100-300mm from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT), or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. Generally features up to one metre deep may be detected by this method. Readings are logged at 0.25 or 0.5m intervals along traverses 1.0m apart, unless stated otherwise in the report. Having two gradiometer units mounted laterally with a separation of 1.0m, the Bartington instrument can collect two lines of data per traverse. The *Grad601-2* has marginally greater sensitivity afforded by the increased fluxgate separation, unfortunately this also increases the instrument's susceptibility to external sources of interference.

#### (b) Resistance Meter - Geoscan RM15

This measures the electrical resistance of the earth, using a system of four electrodes (two current and two potential.) Depending on the arrangement of these electrodes an exact measurement of a specific volume of earth may be acquired. This resistance value may then be used to calculate the earth resistivity. The "Twin Probe" arrangement involves the pairing of electrodes (one current and one potential) with one pair remaining in a fixed position, whilst the other measures the resistance variations across a fixed grid. The resistance is measured in Ohms and the calculated resistivity is in Ohm-metres. The resistance method as used for area survey has a depth resolution of approximately 0.75m, although the nature of the overburden and underlying geology will cause variations in this generality. The technique can be adapted to sample greater depths of earth and can therefore be used to produce vertical "pseudo sections". In area survey readings are logged at 1.0m x 1.0m intervals, unless stated otherwise in the report.

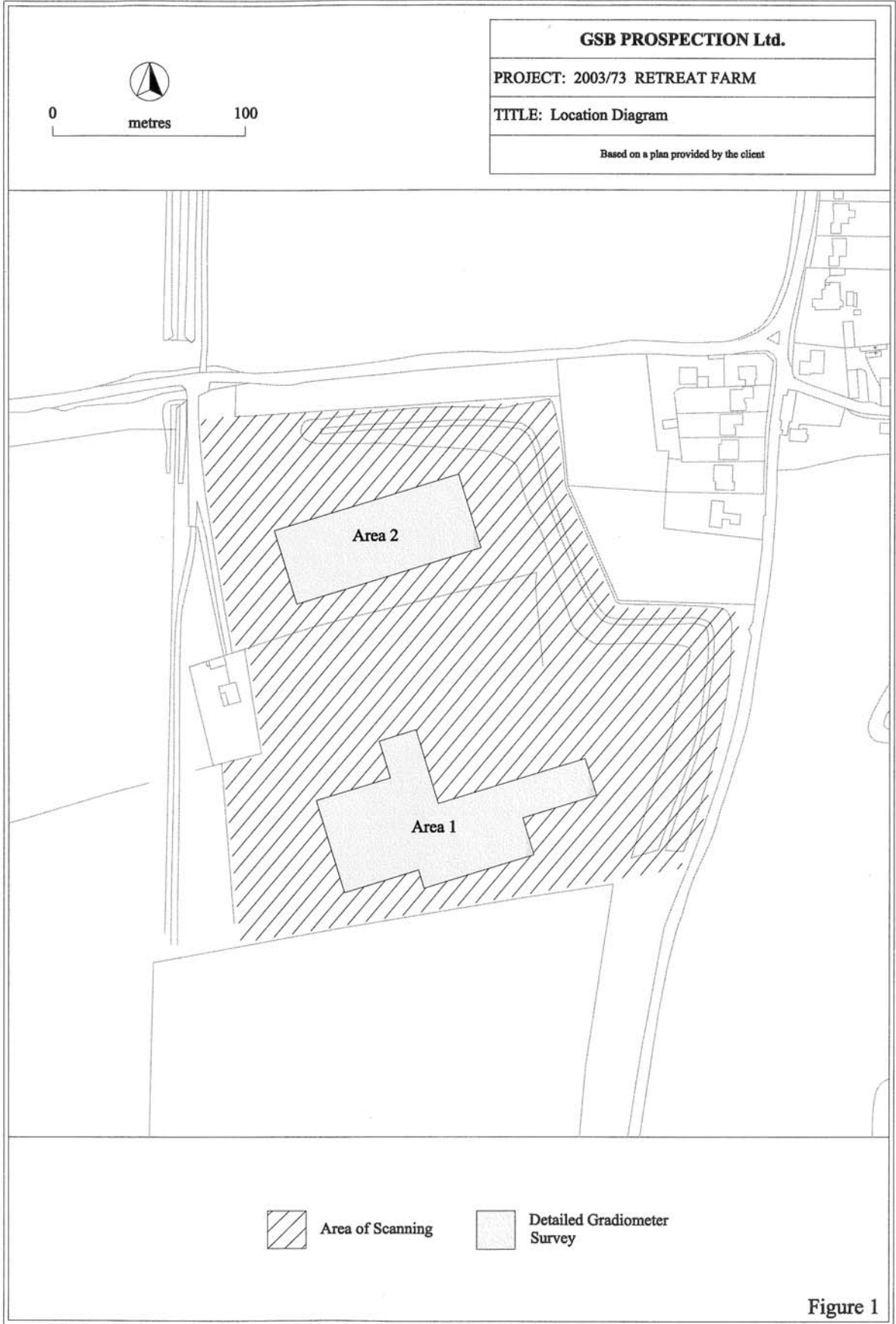
#### (c) Magnetic Susceptibility

Variations in the magnetic susceptibility of subsoils and topsoils occur naturally, but greater enhanced susceptibility can also be a product of increased human/anthropogenic activity. This phenomenon of susceptibility enhancement can therefore be used to provide information about the "level of archaeological activity" associated with a site. It can also be used in a predictive manner to ascertain the suitability of a site for a magnetic survey. Sampling intervals vary widely but are often at the 10m or 20m level. The instrument employed for measuring this phenomenon is either a field coil or a laboratory based susceptibility bridge. The field coil measures the susceptibility of a volume of soil. The laboratory procedure determines the susceptibility of a specific mass of soil. For the latter 50g soil samples are collected in the field. These are then air-dried, ground down and sieved to exclude the coarse earth (>2mm) fraction. Readings are made using an AC-coil and susceptibility bridge, with results being expressed either as SI/kg x 10<sup>-8</sup> or m<sup>3</sup>/kg.

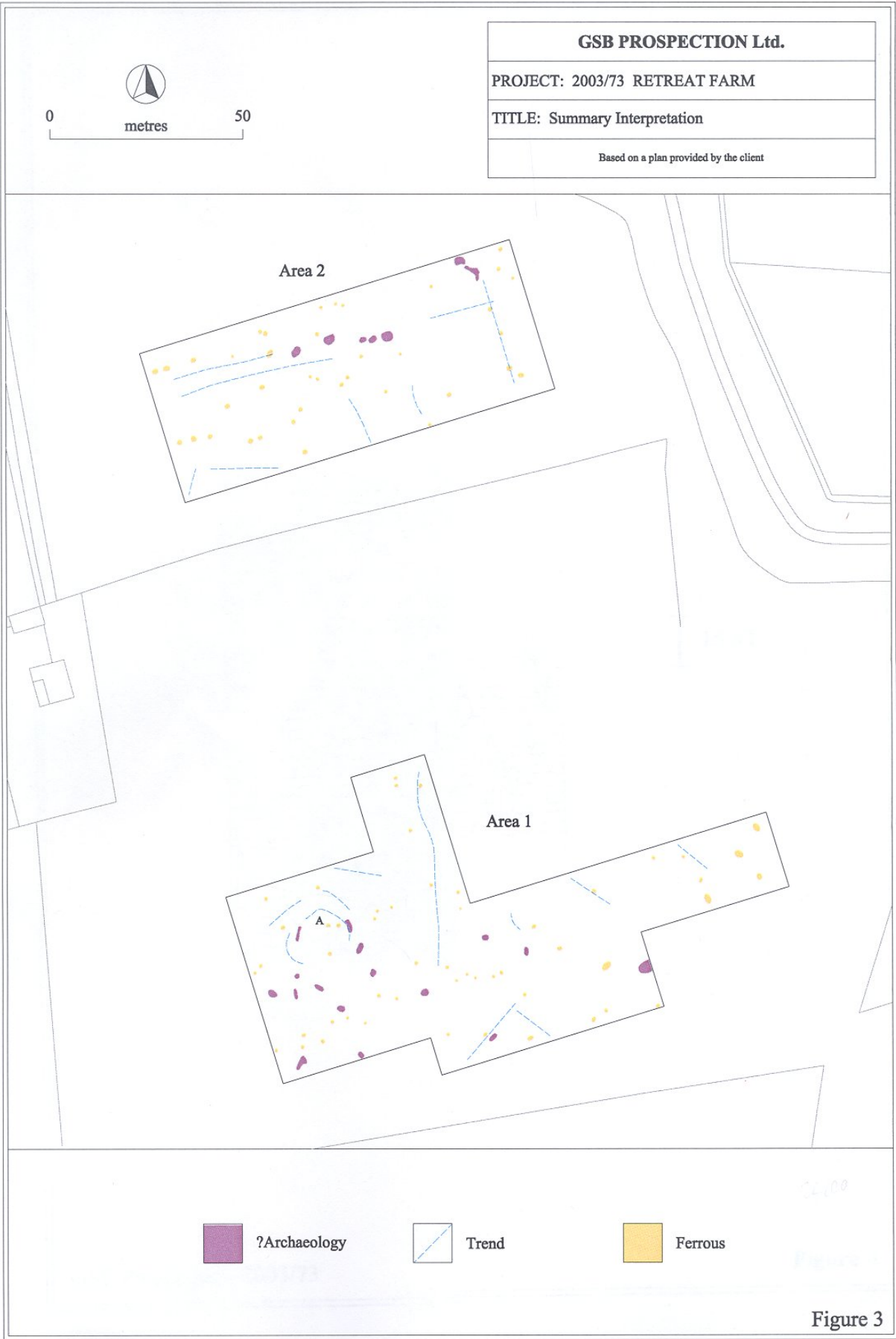
## List of Figures

Figure 1	Location Diagram	1:2500
Figure 2	Summary Greyscales	1:1250
Figure 3	Summary Interpretation	1:1250
Figure 4	Area A: XY Trace	1:500
Figure 5	Area A: Dot Density Plot	1:500
Figure 6	Area A: Interpretation Diagram	1:500
Figure 7	Area B: XY Trace, Dot Density Plot & Interpretation	1:500

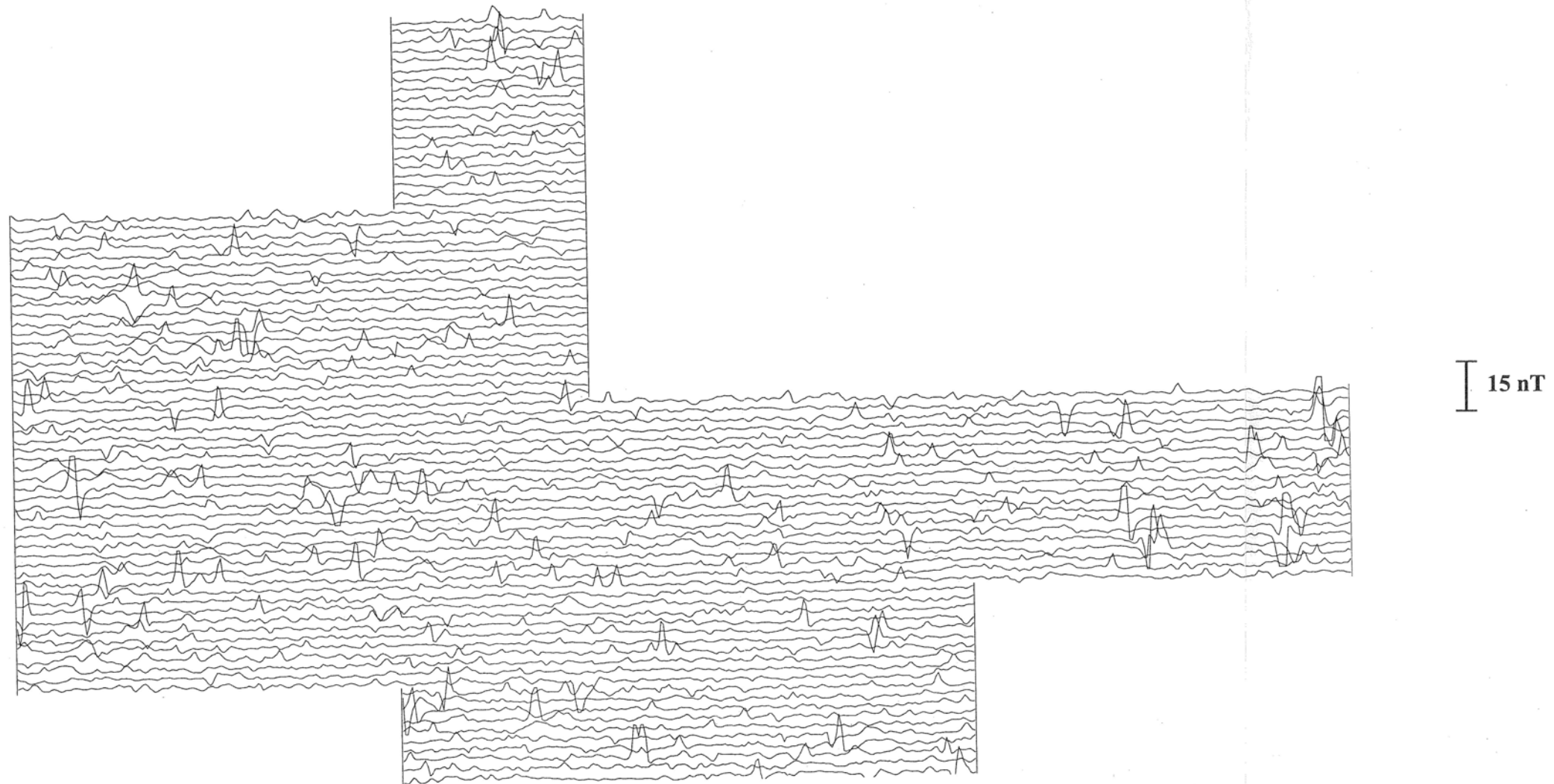








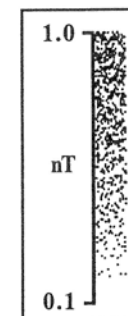
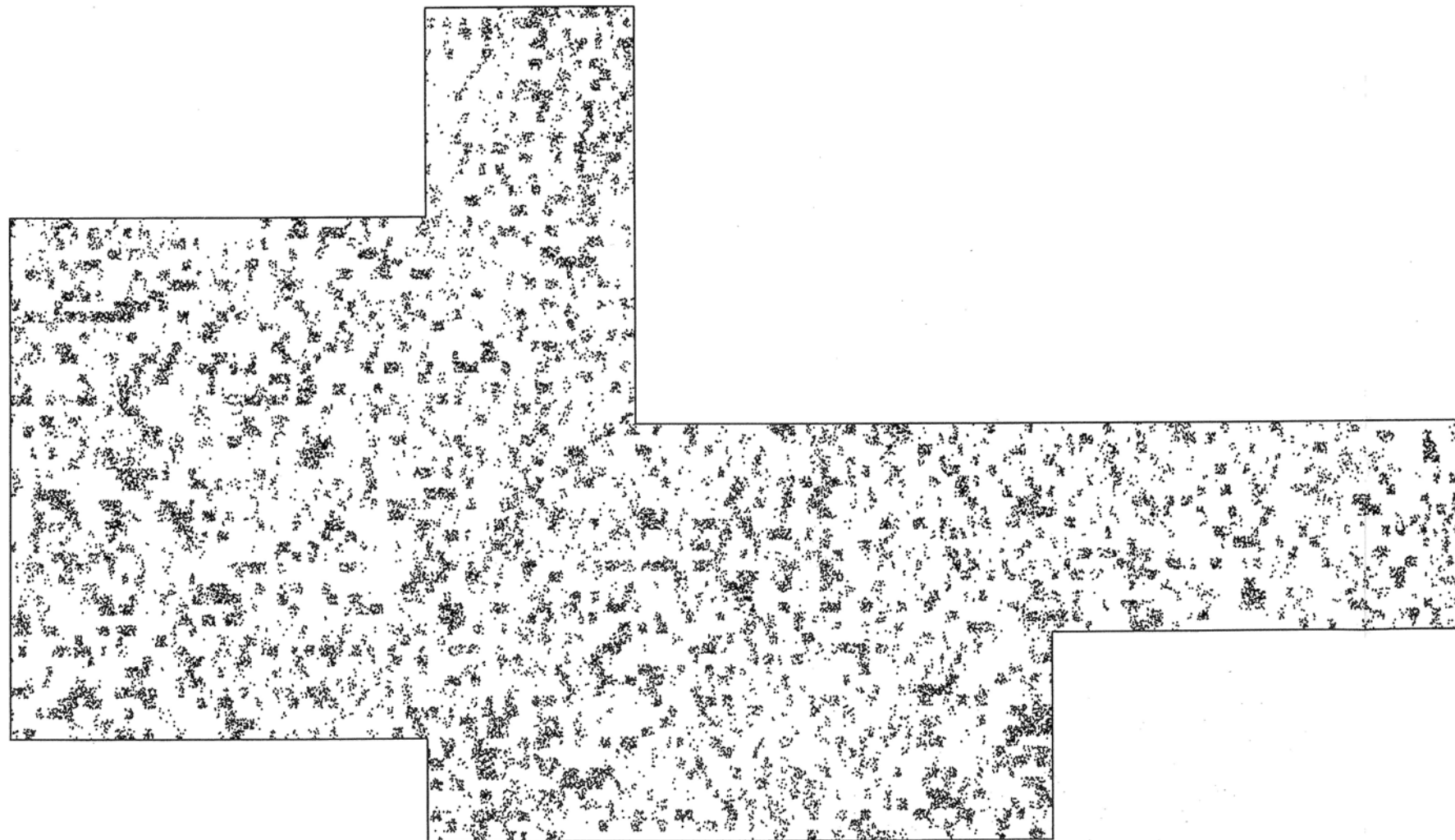
**RETREAT FARM  
Area 1**



GSB Prospection 2003/73

**Figure 4**

RETREAT FARM  
Area 1



GSB Prospection 2003/73

Figure 5

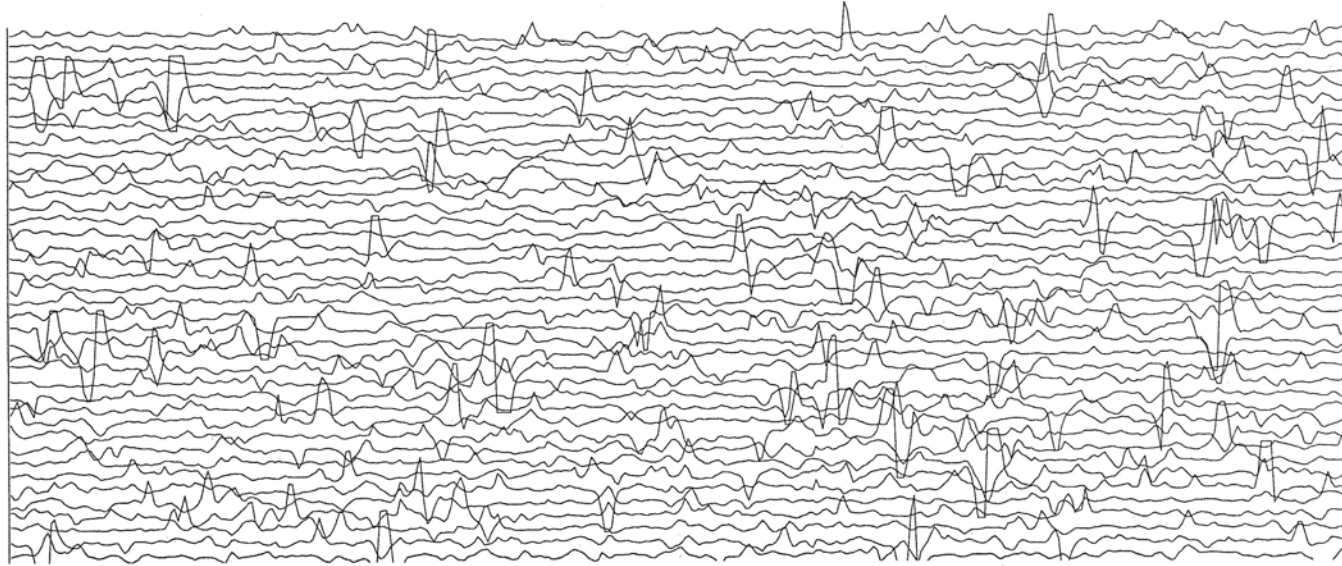
RETREAT FARM  
Area 1



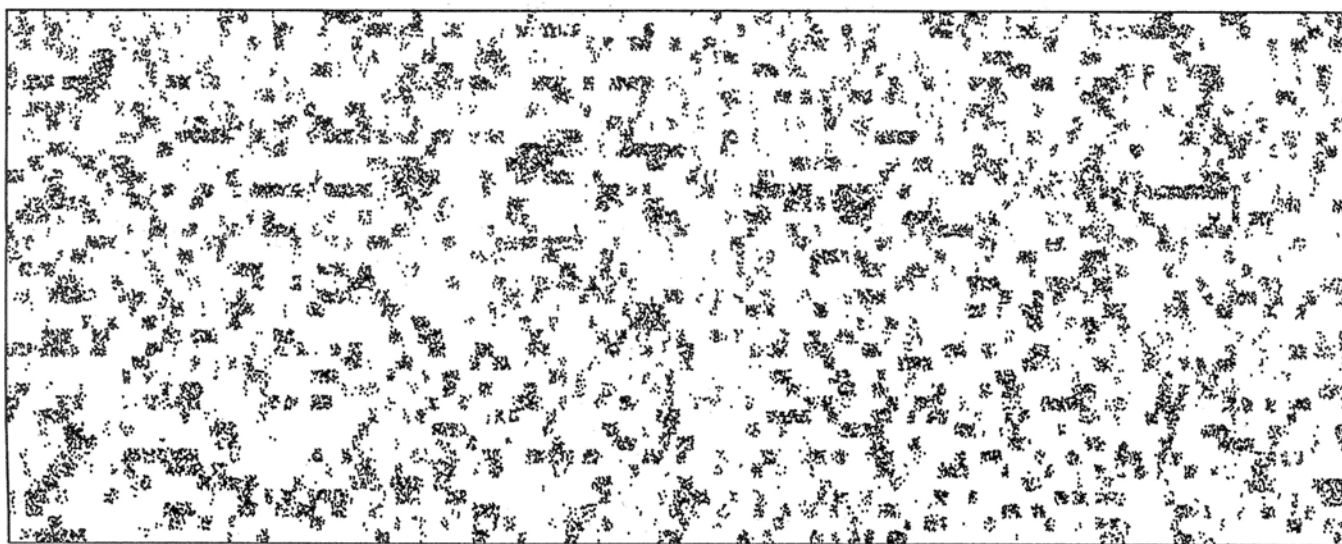
GSB Prospection 2003/73

Figure 6

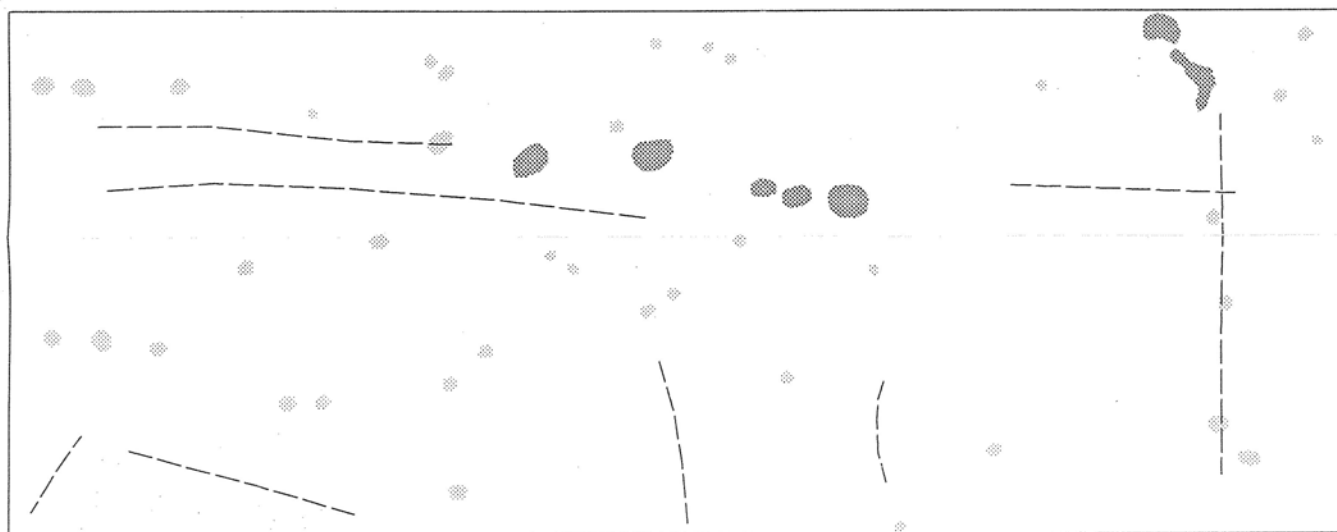
# RETREAT FARM Area 2



15 nT



1.0  
nT  
0.1



?Archaeology  
Trend  
Ferrous



0 m 20

### Appendix 3 Archaeological sources

<b>Date</b>	<b>Title</b>	<b>Reference</b>
n/d	Grimley fish ponds, Grimley, Worcestershire. Watching Brief for the National Rivers Authority	IGMTAU WSM 30111
n/d	Watching brief at Grimley and Holt primary school, Grimley	Wichbold, Internal report 194
1965-7	Excavations at Grimley, Worcestershire	Peltenburg, 1965-7. Transactions of the Worcestershire Archaeology Society 3 <sup>rd</sup> series, Vol I. University of Birmingham
1991	Salvage recording at Retreat Farm, Grimley	Jackson 1991
1992	Evaluation at Church Farm East, Grimley	Fagan 1992
1993	Evaluation at Grimley and Holt primary school, Grimley	Fagan 1993
1995	Survey of Grimley Ponds	Cook 1995
1995	Salvage recording at the Wagon Wheel, Grimley, Worcestershire	Hurst, Pearson and Ratkai 1995
1998	Dark Lane, Grimley. An archaeological watching brief	Archaeological Investigations Ltd 1998
1999	Watching brief at Riverdale, Grimley, Worcestershire	Cook 1999
1999	Mapping and interpretation of grassmarks north of Riverdale, Grimley, Worcestershire	Glyde 1999
2001	Archaeological evaluation at Church Farm, Grimley, Worcestershire	Lockett 2001
2001	Watching brief at Grimley sewage treatment works, Worcestershire	Lockett & Jones 2001



#### Appendix 4 Excavated sites in the vicinity (after AS 2001)

Excavation/Year	Summary	Terrace	Soil cover	Landuse	Cropmarks	Ridge and furrow	Survival-general	Surfaces/ earthworks	Structures	Truncated features	Ploughsoil finds	Plough damage
Jackson 1991	Evaluation on cropmark. Roman ditch corresponded to cropmark. Also possible prehistoric enclosure ditch corresponding to cropmark	2 <sup>nd</sup>	0.30 – 0.40m thick ploughsoil	Arable	Yes	Not recorded	Poor/moderate. Prehistoric ditches up to 0.80m. Roman ditch up to 0.60m	Nil	Yes-undated postholes	Yes	Present	Yes-truncation noted
Fagan 1992	Evaluation on cropmark. Late Neolithic boundaries corresponding to some of the cropmarks. However, other investigated cropmarks (of trackway) did not survive as sub-surface feature	2 <sup>nd</sup>	0.30 – 0.50m thick ploughsoil	Arable	Yes	Not recorded	Poor. Ditches between 0.15m and 0.30m deep	Nil	Nil	Yes	Present – flint recovered in field walking concentrating in one area	Yes-truncation noted
Hurst, Pearson and Ratkai 1995	Watching brief on cropmark. Three Roman ditches co-inciding with cropmarks of Roman fort. One internal feature	2 <sup>nd</sup>	0.30m thick ploughsoil	Arable	Yes	Not recorded	Moderate. Enclosure ditches and internal feature but no horizontal Roman or earlier stratigraphy. Roman ditches 0.90m plus deep	Nil	Yes	Yes	None recorded	Yes-absence of banks and/or contemporary surfaces
Cook 1999	Watching brief adjacent to cropmark. Pit? Within fort area	2 <sup>nd</sup>	Not recorded	Not recorded	No	Not recorded	Poor. Only one pit 0.80m deep	Nil	Nil	Yes	None recorded	N/A