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REVISED AND UPDATED

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

for

PROPOSED SAND AND GRAVEL QUARRY, BLACK CAT ISLAND, ROXTON BEDFORDSHIRE
TL 1625 5515/D1

In connection with a proposal for minerals extraction

3133/D1

On behalf of :

Lafarge Aggregates Ltd
The Horse Shoe
Mountsorrel Quarry
Mountsorrel
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by
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status: for presentation to the client

17 October 2005

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ILLUSTRATIONS

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1.0 BACKGROUND

1.1 Introduction

1.1.1 Archaeologica Ltd is a limited company providing archaeological consulting services. It is committed to ensuring that the client receives an effective service while maintaining the highest professional standards.

1.1.2 All projects are managed in accordance with and in the light of English Heritage's MAP2 Guidelines (1991), the recommendations of PPG16 and the Institute of Field Archaeologists' guidelines (1999).

1.1.3 Dr Richard J Ivens holds a BA and PhD in archaeology. He has held posts in the Milton Keynes Archaeology Unit and The Queen's University of Belfast (in the Department of Archaeology and in the Institute of Irish Studies). He is a Member of the Institute of Field Archaeologists and a Fellow of the Society of Antiquaries. Dr Ivens has lectured and published widely and carried out numerous archaeological and historical survey, excavation and research projects for, amongst others: English Heritage, the Department of the Environment (N.I.), the Office of Public Buildings and Works (Republic of Ireland), The Commission for New Towns, Oxford University Press, Bradford University, The Queen's University of Belfast and numerous private developers.

1.1.4 Dr Isabel Lisboa holds a BA and a PhD in Archaeology from the University of Cambridge. She was a Fellow in Archaeology for two years at the University of London. She worked full-time for four years as Consultant and Project Manager with Tempvs Reparatvm prior to forming Archaeologica eight years ago. She has written numerous desk-based reports and WSI's for evaluations, excavation and watching briefs for rural and urban sites, in Bedfordshire, Buckinghamshire, Cambridgeshire, Gloucestershire, Hereford and Worcester, Hertfordshire, London, Northamptonshire, Nottinghamshire and Oxfordshire.

1.2 Reasons for and circumstances of the project

1.2.1 It is proposed to extract mineral from the Application Site. This development would necessarily negatively affect potentially buried archaeology.

1.3 Policy background

PPG16

1.3.1 Planning Policy Guidance note No 16 (DoE 1990) '*Archaeology and Plan*ning' gives Local Planning Authorities guidance on the management of the archaeology within the planning process. It states that local authority development plans should include policies for the protection, enhancement and preservation of archaeological sites and their settings.

1.3.2 The main thrust of the guidance in PPG16 is that where development is proposed important archaeological sites should be protected and wherever possible preserved *in situ*. Where this is not possible, preservation by record through excavation should be effected. The desirability of preserving important archaeological remains and their

settings is a material consideration in determining planning applications, whether those remains are scheduled or unscheduled.

CBI Code of Practice for Minerals Operators

1.3.3 The guidelines within PPG16 are repeated in the CBI's Code of Practice for Mineral Operators (1991). It provides advice on how minerals operators should consult archaeological interests in formulating planning applications, to ensure that archaeological factors are fully taken into account in the planning decision process.

EIA

1.3.4 The nature and the size of the Proposed Development falls within the remit of projects requiring an Environmental Impact Assessment. Archaeology and heritage must be considered within the impact of the proposed development.

Bedfordshire County Council Minerals and Waste Plan 2005

1.3.5 Section 6.1 l) of the Bedfordshire County Council Minerals and Waste Plan 2005 states that any impact (s) on archaeological features, ancient monuments buildings of other areas of architectural or historic interest together with their settings must be addressed while m) states that the restoration and aftercare of the monument must be secured. It follows the guidance provided by PPG16 which sees archaeological remains as a finite, non-replaceable resource.

1.3.6 Policy *G14* states that the Applicant will be required in the first instance to provide sufficient information to evaluate the importance of sites and assess the impact of development proposals, as well as ensure that provision is made for an appropriate level of investigation and recording in advance of the destruction of those sites which do not merit permanent preservation, and refusing applications where such provision is not made refusing where there is an unacceptable adverse effect on sites, and requiring a long-term management plan from developers.

1.4 The commission

1.4.1 Mr Jim Meadowcroft of David Jarvis Associates Ltd appointed Archaeologica Ltd to undertake this revised desk-based assessment.

1.5 In connection with the commission

1.5.1 A desk-based archaeological study of the area (of which this report is a revision) was prepared by Bedfordshire County Archaeology Service in 1998 (BCAS 1998). It was considered necessary to revise the original work in light of recent archaeological findings and significant changes to the area of the proposed Application Site since 1998.

1.5.2 A site visit was undertaken by Bedfordshire County Archaeology Service on 18 August 1998 and by Dr Lisboa in October 2005. Contemporary notes on the site use and topography were made.

1.5.3 David Jarvis Associates provided information on the location of the Site of Proposed Extraction, a copy of the original archaeological desk-based study, and detailed surveys of the site and borehole and test-pit data.

1.5.4 Mr S. Coleman of Bedfordshire County Council Historic Environment Office provided assistance in accessing data held in the Bedfordshire County Council Historic Environment Record.

1.5.5 The libraries consulted for this desk-based assessment included the University of Cambridge (geological and archaeological background), Bedfordshire County Archive and Bedford Library. The sources for the desk-based assessment are listed in the references **attached** to the end of this document. The plans of the proposed development were provided by the client.

1.5.6 Borehole data was provided by Lafarge Aggregates Ltd.

1.6 Aims and objectives

1.6.1 The objectives of the desk-based assessment are: summarise the documented archaeology of the study area, identify any standing building of potential historic interest, identify potential designated legal and planning constraints and historically important hedgerows; summarise the topography, geology and current land-use of the land, identify areas of ground disturbance, analyse and map the landscape history of the area, assess the likely state of preservation and depth of buried archaeological remains across the area, make an initial assessment of the relevant historical documentation available for the site, assess the reliability of currently available information and potential for new discoveries and assess the likely archaeological impact of the development, and provide strategy options for dealing with the archaeology in the future.

1.6.2 The present report draws on IFA 1999 The Institute of Field Archaeologists (IFA) Standard and Guidance for Archaeological Desk-based Assessments.

2.0 THE SITE

2.1 Location

2.1.1 The Site of Proposed Extraction covers *c.* 35ha but the Archaeological Study Area is substantially larger, encompassing an area *c.* 1km radius around the Application Site. It is centred at TL 1625 5515 (**Fig 1**).

2.1.2 The Application Site is delimited to the east by the River Great Ouse, to the west by the A1, to the south by Rockham Ditch and to the north by a field hedge, beyond which is Riverside Farm, and further north the site of former gravel workings.

2.1.3 The Application Site is situated in the parish of Roxton.

2.2 Geology and soils

2.2.1 The Application Site is set in the River Great Ouse corridor characterised by shallow, gently undulating valley sides, intensive generally arable farming and flood plain pasture. Mature hedgerow and riverside trees feature strongly as do occasional roadside plantings and other small woodland groups.

2.2.2 Sheet 204 (Geological Sheet Drift) issued by the Geological Survey, shows the Application Site to consist of a drift geology of alluvium along the eastern side adjacent to the River Great Ouse and 1st and 2nd Terrace gravel over the western part of the site.

2.2.3 The higher ground in the west, centre and south of the Application Site has soils developed over gravels and two soil types have been identified, those which are relatively shallow over gravel (Soil Type A) and those developed in a deeper covering of drift (Soil Type B). On the lower land adjacent to the River Great Ouse, in the east of the Application Site, the soils are developed in clayey alluvium and both calcareous (Soil Type C) and non-calcareous (Soil Type D) varieties can be recognised. The calcareous clays are poorly drained. For a more detailed description of the soils see McRae 1998.

2.2.4 Borehole survey information provided by Lafarge Redland Aggregates Ltd indicates the presence and absence of gravel deposits, as well as the depth of overburden. A detailed soil survey was undertaken by Dr McRae. It identifies three types of soil within the Application Site: Soil *A* consists of shallow, well drained soil with topsoil, and subsoil totalling 0.5m depth over gravel. Soil *B* consists of deep well drained chalky loam soil with topsoil, clay loam (0.7m thick) and gravel. Alluvium is encountered in soil types *C* and *D*. Soil type *D* showed alluvial subsoil of at least 0.65m. soil. *D* shows 0.6m if top and subsoil over a lower subsoil of less clayey alluvium. This soil type is mapped in the BSG sheet as alluvium.

2.2.5 The overburden is likely to be a combination of topsoil, alluvium and possibly archaeological deposits. Overburden varies from 0.45m to 3.6m . It is likely that the greater depths, mainly located adjacent to the modern river course, reflect increased depths of alluvial deposits. These may represent deposition within a river floodplain, although the greater depths may suggest former river channels. The shallower depths of overburden may reflect the locations of gravel islands situated within a meandering river in a floodplain.

2.3 Topography and landform

2.3.1 The Application Site is located adjacent to and in the floodplain of the River Great Ouse. Two streams cross the area, one, Rockham Ditch, forming the southern boundary of the Site, while the other, South Brook, lies to the north of the Application Site. The land is generally fairly flat sloping gently down from c. 20.5m AOD in the west to 15.5m in the east. Within this general gently sloping topography minor slight variations may be detected, probably the result of past changes in the course of the Great Ouse (palaeochannels) and consequent intervening islands. The ancient landforms so fossilised may be of significance in understanding past human use of the area, and perhaps in predicting likely sites of archaeological interest (**Fig. 9**).

2.4 Current land-use

2.4.1 The entire Application Site is currently under an agricultural regime.

Wood and Streams

2.4.2 There is no woodland within the Application Site, nor has any been recorded on historic maps. The only watercourses are the River Great Ouse and Rockham Ditch which form the eastern and southern boundaries of the site.

Hedges

2.4.3 The Site is bounded on all sides by hedgerows and is crossed by a somewhat sinuous hedgerow from north to south and a straight east to west field boundary. All of these may be of historic interest, see for example the Enclosure Map of 1818 and Estate Map of 1810-13 **(Figs 5-6).**

Houses and Farms

2.4.4 No standing buildings are located within the Application Site. A house and garden, Green Acres, is sited close to the south-west corner of the Site, but is excluded from the proposed development.

2.5 Recent ground disturbance

2.5.1 There are no known modern ground disturbances within the Application Site, apart from a small gravel quarry recorded on the Ordnance Survey plan of 1880 **(Fig. 7).**

2.6 Services and Public Rights of Way

2.6.1 A pipeline runs N-S in the Northwest corner of the Site.

2.6.2 No known Public Rights of Way cross or enter the Application Site.

3.0 KNOWN ARCHAEOLOGY

3.1 Relevant background information on known archaeological sites

3.1.1 The main source of information for the archaeology of the Application Site and its surrounds is the Historic Environment Record held by Bedfordshire County Council.

3.1.2 The Historic Environment Record contains information on the known and reported archaeology **(Appendix 1).** The absence of sites from that record does not signify the absence of archaeological sites, but may indicate the lack of fieldwork, the lack of reporting, or post-depositional factors such as alluvium or colluvium.

3.1.3 The main sources for the Historic Environment Record for this area consist of cropmarks identified on aerial photographs, artefact scatters identified through fieldwalking and excavation.

3.1.4 The information contained in the Historic Environment Record for an area of *c.* 1 square km surrounding the Application Site is summarised in **Appendix 1**, and the distribution of the finds, sites and monuments plotted by period on **Fig. 3.**

3.2 Previous work in the Application Site

3.2.1 No archaeological investigations have been carried out within or immediately adjacent to the Application Site but a desktop was undertaken by M Luke of BCAS (1998).

3.3 Aerial Photographic assessment

3.3.1 A review of the available aerial photographs of then Application Site was carried out by Bedfordshire County Archaeology Service in 1998 (BCAS 1998

3.3.2 The basis for detecting archaeological sites as cropmarks rests on the fact that in suitable cultivated soils, sub-surface features – including archaeological ditches, banks, pits, walls or foundations – may be recorded from the air in different ways in different seasons. In spring and summer these may show through their effect on differential crop maturity and growth. The extent of the success depends on the substratum, gravels, being prone to showing cropmarks. On the other hand, alluvium often associated with fluvial gravels, as is the case with the Site, masks cropmarks.

3.3.3 The Aerial Assessment carried out by Bedfordshire County Archaeology Service covered the present Application Site and additional areas immediately to the north and south (this larger area is referred to as the Aerial Photograph Study Area). Their findings may be summarised as follows:

- *River Channels:* A number of dark linear cropmarks curving north-east to south-west probably represent former river channels. On some of the gravel 'islands' in between these channels, cropmarks indicative of patterned ground and solifluction hollows are visible e.g. HSL UK 76 25, 25 June 1976, 6/1821-2, in the area marked BCAS Cropmarks on **Fig. 2.** Towards the north-east of the Aerial Photograph Study Area a dark linear cropmark orientated east to west may be a previous channel of the South Brook.
- *Archaeology:* Cropmarks suggestive of ditches are visible in the north-west part of the Aerial Photograph Study Area (marked BCAS Cropmarks on **Fig. 2,** to the north of the present Application Site). These may be related to an enclosure or a field system, which is on a different alignment to the current layout. To the south of the present Application Site are a series of linear cropmarks probably relating to enclosures or a field system, one of which measures 75m west to east. Although the alignments are similar to the current layout it is likely they are Iron Age, Roman or possibly even medieval in date. This set of cropmarks are those identified as HER 1832.
- *Modern:* To the north-east of the Aerial Photograph Study Area are two parallel north to south aligned cropmarks. Although this appears as a cropmark it runs from one gap in the hedge to another and is likely to represent an oil pipeline. East of this feature is a north-west to south-east aligned cropmark which may represent some form of field boundary, but could equally be related to modern agricultural activity.

3.3.4 The cropmarks identified by Bedfordshire County Archaeology Service to the north-west of the present Application Site (here marked BCAS Cropmarks on **Fig. 2**) were reasonably assumed by them to be related to a known cropmark site (HER 2664) which lies some 300-400m to the south (**Figs 2-3**), within the present Application Site, and were referred to as HER 2664. They correctly noted a discrepancy in the National Grid co-ordinates between HER 2664 and BCAS Cropmarks. Regrettably, the location of HER 2664 as documented in the Bedfordshire Historic Environment Record was not plotted on the maps prepared as part of the 1998 study, leading, perhaps unwisely, to the assumption that this cropmark was located entirely, or at least substantially, outside of the present Application Site.

3.3.5 Further investigation of the data held by Bedfordshire Historic Environment Record revealed a 1:10000 scale sketch plot of cropmark HER 2664 centred on NGR: TL 162556. This plan shows an approximately rectangular enclosure containing several curvilinear features (illustrated on **Figs 2 and 9** as HER 2664). The whole complex extends over an area of *c.* 2.4ha.

3.3.6 It therefore seems highly probable that the present Application Site contains an extensive archaeological site, most probably of Iron Age or Roman date.

3.4 Walkover survey

3.4.1 A walkover survey by Dr Lisboa in October 2005 was undertaken and contemporary notes on the site use and topography were made. No surviving earthworks were noted.

3.5 Known archaeology within the Application Site

3.5.1 The Application Site contains a single certain archaeological site, HER 2664 (**Fig. 3** and **Appendix 1**). This is a cropmark site identified from aerial photographic analysis and consists of an approximately rectangular enclosure containing several curvilinear features (illustrated on **Figs 2 and 9** as HER 2664). The whole complex extends over an area of *c.* 2.4ha and is set on the slightly higher land to the west of the lowest alluviated area and appears to straddle at least one palaeochannel. It is most probably of Iron Age or Roman date.

3.5.2 A gravel pit (at TL 161553) has also been identified within the Application Site. This feature was recorded on the 1880-82 Ordnance Survey Map, but is absent from the 1902 survey (**Appendix 1** and **Figs 3, 7 and 8**).

3.5.3 A number of linear cropmarks curving north-east to south-west across the Application Site probably represent former river channels (**Fig. 2**). On some of the gravel 'islands' in between these channels, cropmarks indicative of patterned ground and solifluction hollows are visible.

3.5.4 Minor variations within the general gently sloping topography of the Application Site probably also indicate the presence of past changes in the course of the Great Ouse (palaeochannels) with intervening islands. The ancient landforms so fossilised may be of significance in understanding past human use of the area, and perhaps in predicting likely sites of archaeological interest (**Fig. 9**).

3.5.5 Soil depth varies from 0.45m to 3.6m across the Application Site. It is likely that the greater depths, mainly located adjacent to the modern river course, reflect increased depths of alluvial deposits. These may represent deposition within a river floodplain, although the greater depths may suggest former river channels. The shallower depths of overburden may reflect the locations of gravel islands situated within a meandering river in a floodplain.

3.5.6 Although no archaeological sites have been established in the alluviated areas of the site the probable presence of palaeochannels and intervening 'islands' does indicate an environment likely to have been utilised in the past.

3.6 Archaeology of the surrounds of the Application Site (Fig. 3)

3.6.1 The Application Site is located within the valley of the Great Ouse, an area of extensive and intensive human settlement from the earliest prehistoric period to the present time. The overall picture for the area surrounding (1km radius) the Application Site is shown in **Fig. 3** and the sites are summarised in **Appendix 1.**

3.6.2 The dominant monument type recorded in this area is field systems and associated enclosures and settlements, mainly of Iron Age and Romano-British date.

3.6.2 Immediately south of the Application Site is a of a group of rectilinear cropmarks, representing a field system and/or enclosures (HER 1832).

3.6.3 Further rather fragmentary linear cropmarks have also been identified immediately north of the Application Site (**Figs 2 and 3**, marked BCAS cropmarks).

3.6.4 To the west of the Application Site several moderately dense areas of mainly linear cropmarks have been identified. These sites (HER 745, 1651, 1833 1836 and 8818) appear to form one or more field systems and associated settlement enclosures consisting of a series of sub-rectangular enclosures, some containing possible circular house sites, with droveways and field boundary ditches and are probably of Iron Age or Roman date. Recent Trial Trench excavations on the line of the proposed Great Barford By-pass have revealed marginal activity peripheral to HER 745 consisting of shallow ditches and gullies (Maull 2005). This all suggests the complex of field systems and dispersed settlement is more extensive than has so far been established; HER 2664, BCAS cropmark and perhaps HER 1832 could also be part of the same broad pattern.

3.6.5 Three cropmark sites (HER 627, 628 and 1671) are situated to the south-east and appear to be part of a larger complex of cropmarks (see AEROFILMS/96C/565, 18 Jul 96, 1661-2.). Excavated features and finds suggest Romano-British settlement and pottery production at HER 1671. These cropmarks appear to represent an extensive area of field systems and enclosures.

3.6.6 Further cropmarks site are known to the east of the Study Area (HER 1387 and 9072).

3.6.7 Immediately north of the Study Area the HER records a number of sites which have since been quarried away. Although there are cropmarks (HER 1793)

immediately to the north there is no record of any archaeological investigations prior to quarrying. Even further afield *c.* 2km to the north is an area of dense Romano-British activity (including settlement) is known to have been destroyed by quarrying (HER 476 and 479).

3.6.8 South-west of the Study Area further undated cropmarks (HER 8802 and 1653).

3.6.9 The remaining archaeological site identified within the Study Area (HER 13413) consists of a group of 3 parallel gullies, a line of 11 small pits/postholes (a fence ?) and a possible *Grubenhaus*. Although no firm dating evidence was found during excavation the character of the features suggests a Saxon date; a Saxon sherd and bead were also found 80m away during fieldwalking (Maull 2005, Trench 47). Middle Saxon occupation has been established beneath a moated site in Tempsford Park, to the south of the Study Area. In the late Saxon period a more organised landscape was established at Tempsford, with ditched boundaries defining a series of rectilinear plots and in the twelfth century a timber hall was constructed; this long-lived settlement was replaced by the construction of a moated manorial complex in the 13th century. (Shotliff 1996; Maul 1999).

3.6.10 Beyond the Study Area, to the south, lie two sites (HER 1653 and 2025). Although the former represents a cropmark of indeterminate age, it may be associated with the neighbouring HER site. This (HER 2025) produced Roman, late Saxon and Saxo-Norman pottery, a possible Iron Age currency ring and red deer faunal remains.

3.6.11 Finally extensive areas of substantial Bronze Age activity have been identified to the north and south-west of the study area (HER 480, 617, 14844 and east of 14844) (Taylor and Woodward 1975 (CBA Group 7 Newsletter); 1983; 1985. These complexes include numerous ring-ditches in some instances sealed beneath alluvial clays. The excavated complex at Roxton (HER 607) also produced evidence of Neolithic/early Bronze Age utilisation of the site as well as clear evidence of the destruction of the Bronze Age mounds in the Iron Age and the establishment of field and defensive ditches. Later a Roman-British habitation and field system was created. There is also a little evidence of early post-Roman activity on the site.

3.6.12 Ceremonial landscapes of the type found at HER 480 and 617 tend to be exclusively used for ritual, with settlements located away from these sacred areas. With the end of the Late Bronze Age the social elaboration of the landscape changed, away from religious ritual, towards the construction of larger settlements and the delimitation of the surrounding landscape with extensive boundary systems, as power was no longer invested in the religious world. The earlier ceremonial landscape often retained its ritual significance; note the defensive ditch at HER 617. From the Late Bronze Age the settlements become the new centres of power. They tend to be spatially close to, though rarely overlying, important Late Prehistoric ceremonial centres.

3.6.13 The Late Iron Age settlements are characterised by complex enclosures, compounds and hut circles. The Iron Age also sees an expansion of settlement in this area with numerous, smaller closely set settlements.

3.6.14 Late Saxon and medieval settlement seems to be confined to the nucleated settlements of Roxton, Chawston and Tempsford.

3.7 Historical background

3.7.1 Bedfordshire County Archaeology Service consulted documentary sources in the County Record Office, but with the exception of the Enclosure Award (**Fig. 6** and legend) and Domesday Book, no relevant records were encountered. All of the historic maps for this area held by the County Record Office were also consulted.

3.7.2 The Application Site is situated within Roxton parish. In addition to Roxton itself, two other present-day villages in the parish (Chawston and Wyboston) appear to have been recorded as separate townships during the 1086 Domesday survey. In both cases the land was held mainly by Eudo (son of Hubert), Hugh of Beauchamp and William Speke. Chawston's meadow land was assessed at 8 ploughs and 2 oxen, Wyboston's at 2 ploughs. A mill is recorded at Chawston. The meadow land and mill are likely to have been situated adjacent to the River Great Ouse.

3.7.3 The place-name evidence for the parish is not especially informative, as the modern names largely derive from Old English personal names. Ekwall (1960) believed the Domesday spelling of Roxton (Rochesdone) might refer to 'Hroc's Tun' although it could also be interpreted as 'Rookhill'. The spelling of Wyboston (Wiboldestone) is interpreted as "Wighealds Tun". Chawston (Calnestorne) can be interpreted as "Cealf's thornbush" but whether this is a personal name or a nickname is unclear. Mawer and Stenton (1926) shared these interpretations, although believed "Hroc's Hill" was more plausible than 'Rookhill'.

Historical Map Regression Analysis

3.7.4 *The 1765 Jeffrey 's Bedfordshire Map* (**Fig. 4**). This map shows the Application Site but with no detail. The Great North Road and the River Great Ouse are clearly shown, both in similar positions to later maps. A single brook, probably South Brook, crosses the area. from east to west.

3.7.5 *The 1810-1813 Estate Map* (**Fig. 5**). The estate belonging to Charles James Metcalfe Esq is shown on this map which includes the whole parish of Roxton (X.1/66). It shows some field names and details of ownership. The brook visible on Jeffrey's map is only partially visible but is presumably represented by field boundaries within the area. Another brook (Rockham Ditch)is located to the south running east-west towards the River Great Ouse. At the north the field is called Chawston Great Meadow. South of this, Greenway field straddles the Great North Road and is presumably named for a green lane that either bordered or crossed the field. This field is bordered, outside the study area, by the road that runs from Roxton to Chawston. The Application Site lies in Greenway field. The owners of the fields are, from north to south, Charles James Metcalfe, Susanna Rugeley, Trinity College and the Vicar of Roxton.

3.7.6 *The 1818 Enclosure Map* (**Fig 6**). This map (P28/26/I) has additional detail to the earlier maps and includes field names size and ownership. The brook crossing the northern part of the area is named as Chawston Brook, and that at the south as Rockham Ditch. The River Great Ouse is bordered by Chawston Great Meadow, Chawston Little Meadow, and Bridge field at the south is situated in the vicinity of Tempsford bridge. Greenway field lies to the east of Chawston Little Meadow. The Application Site is situated within the southern parts of Greenway Field and Chawston Little Meadow. A gravel pit is shown adjacent to the Great North Road in

the vicinity of the bridge. The names of owners are unchanged from the 1810-1813 map.

3.7.7 *The 1850 Map.* This map (X475/20) was prepared for the sale of an estate situated to the west of the study area, the whole of the parish was however mapped. It is unchanged from the 1818 map other than the change in ownership from Susanna Rugeley to Mrs Manning.

3.7.8 *The 1880-82 1st Edition Ordinance Survey Map, 25" to a mile* **(Fig. 7).** This map shows an increasing subdivision of the fields. The bridge carrying the Great North Road across the Chawston Brook is called Brookhouse Bridge. The house of the same name lies to the west of the road, outside the study area. A gravel pit is shown within the Application Site, situated approximately 150m to the south-east of the present Black Cat roundabout.

3.7.9 *The 1902 2nd Edition Ordinance Survey Map, 6" to a mile* **(Fig. 8).** This map is largely unchanged from the 1880-82 survey. The brook referred to as Chawston Brook on the 1818 map is now named as South Brook. Where this brook discharges into the Great Ouse a small boathouse is indicated, straddling the brook. The gravel pit on the first edition map is not shown on this second edition.

3.8 Scheduled Monuments, Listed buildings and Parks and Gardens

3.8.1 There are no known Scheduled Monuments within or immediately adjacent to the Application Site.

3.8.2 There are no standing buildings in the Application Site.

3.8.3 There are no parks or gardens within or adjacent to the Application Site.

3.9 Important Hedges

3.9.1 The Hedgerows Regulations 1997 defines a hedgerow as important according to five criteria including: it has existed for thirty years or more, marks the boundaries of a historic parish, marks the boundary, and is recorded in a document as an integral part of a field system pre-dating the Enclosure Acts. In accordance with these criteria most of the surviving hedges within the Extraction and Study area are important.

3.9.2 The Application Site is bounded on all sides by hedgerows and is crossed by a somewhat sinuous hedgerow from north to south and a straight east to west field boundary. All of these may be of historic interest, see for example the Enclosure Map of 1818 and Estate Map of 1810-13 **(Figs 5-6).**

4.0 SYNTHESIS

4.1 Early Prehistoric Period (c.150,000BC-700BC)

4.1.1 The evidence of aerial photographs, boreholes and topography suggest the locations of former river channels. It is not possible to ascertain if these represent the braided course of one river or if they represent a succession of river channels over a

considerable period of time. Locating and understanding these features may assist in establishing likely areas of human activity. A study of their sediments could reveal details of the environment including human activity. The varying depth of overburden revealed in the boreholes suggests the presence of alluvial deposits. Where the depth is shallow this may reflect the presence of gravel 'islands' within the active river plain. In other river plains (notably the Thames Valley) such islands acted as foci for occupation or other activities.

4.1.2 The absence of any known early prehistoric sites or artefacts within the Application Site is perhaps not surprising given the depths of alluvial deposits indicated by the boreholes. Robinson (1992) has argued on the basis of excavations at Warren Villas (Dawson and Maul 1996) and Bromham (Tilson 1973) that alluviation increased for the late Iron Age. Burial monuments tend to dominate the archaeological record for the Bronze Age especially in river flood plains. Several have been recorded *c.* 1.5km to the north (HER 480) and another group *c.* 2km to the S (HER 617); a possible funerary monument was recorded at Warren Villas (south of Sandy) and aerial photography has revealed a group of ring ditches in the Ivel valley, to the N of Warren Villas (Dawson and Maul 1996). All were situated in similar topographical locations and some sealed by alluvial deposits. Excavations ahead of gravel extraction indicated the Roxton cemetery (HER 617) was located on a site of a Neolithic or early Bronze Age settlement (Taylor and Woodward 1985). Evidence for settlement of this period is still fairly rare in this area.

4.2 The Iron Age (700BC-AD43)

4.2.1 The cropmarks interpreted as fields or enclosures (HER 2664) situated in the Application Site may have their origins in the Iron Age. Similar cropmarks exist to the south, west and north, but only HER 2025 has produced Iron Age artefacts (a currency ring).

4.2.2 During excavations in Tempsford Park (Shotliff 1996) a number of features including ditches and pits were tentatively assigned to the Iron Age. Undated postholes and early Iron Age pottery within the upper fills of the ring ditches is suggestive of settlement at Roxton during this period (Taylor and Woodward 1983). Here a systematic arrangement of fields was established later, possibly during the late Iron Age. At Warren Villas a small settlement enclosure and associated fields were located in a similar topographical location to the present Application Site. Knight (1984) has suggested that settlement density was increasing towards the end of the Iron Age. Whilst this can clearly be seen to be true in the river plain between Bedford and Milton Keynes, it is less clear in the area between Bedford and St. Neots.

4.3 The Roman Period (AD43-AD4 10)

4.3.1 Although it is possible the enclosure or field cropmarks within the Application Site (HER 2664) originated in the Iron Age they are likely to have been maintained into the Roman period. Similar enclosure and field systems existed to the north (HER 476 and 479) in similar topographical locations, and to the south (HER 2025). On the opposite side of the River Great Ouse cropmarks, artefacts and excavated features suggest settlement, including pottery manufacture (HER 1671). The excavations at Tempsford (Shotliff 1996) located a gravel surface tentatively assigned to the Roman period. The field system established at Roxton during the late Iron Age was substantially modified to include an area of Romano-British habitation at the centre

of the system. The structural and artefactual evidence suggested that this habitation was temporary, and of short or seasonal nature (Taylor and Woodward 1983).

4.3.2 It appears that during the Roman period farmsteads and associated field systems were located as close as possible to the river flood plain. The Roman farmstead at Farmoor (Lambrick and Robinson 1979) was designed to exploit the rich pasture and river resources provided by its location. At Warren Villas a farmstead with small fields/enclosures was located in the floodplain from the 1st Century until the late 4th when flooding returned to this area (Dawson and Maul 1996).

4.4 The Saxon - Norman Periods (AD41O-AD1066)

4.4.1 No Saxon artefacts are known from the Application Site. A possible Saxon site has been identified to the west of the Application Site (Maull 2005) while to the south adjacent to the River Great Ouse Saxon and Saxo-Norman pottery has been recovered (HER 2025). In 1934 a large collection of St. Neots-type pottery was dredged from the river at the site of a former ford (Hurst 1956). The large assemblage of Middle and Late Saxon pottery from excavations in Tempsford Park (Shotliff 1996; Maull 1999), approximately 300m south-east of the ford, provide clear evidence for the settlement of the river gravel terrace during this period.

4.4.2 It appears from the late pre-Conquest period that terraces of the river valleys were favoured for settlement. Many parishes with land in the valleys had settlements located close to the river, for example Tempsford, Roxton and Chawston. The small farm and fields of this period discovered at Warren Villas suggest the land in between the villages could also be settled even if it was within the floodplain (Dawson and Maul 1996).

4.5 The Medieval Period (AD 1066 – 16th Century)

4.5.1 No medieval artefacts have been recovered from the Application Site . The nearest settlement would probably have been Chawston, although the Application Site is situated in Roxton parish. The village of Tempsford was originally connected to Roxton by a ford across the River Great Ouse. The meadow lands recorded in Domesday Book for Chawston and Wyboston were probably located adjacent to the river. Moated sites are relatively uncommon in parishes containing land in the river valleys, but where present they usually occur in settlements, like Chawston, Tempsford and Wyboston, close to rivers (Shotliff 1996). Excavations at Tempsford clearly indicated this moat was constructed both within and over an earlier settlement.

4.6 The Post-Medieval Period (16th Century onwards)

4.6.1 The earliest map (Jeffrey's 1765) show the Great North Road (present A1) and the River Great Ouse in similar positions to today. The map regression study indicates that the arrangement of small fields has gradually given way to the present large fields. One rectangular gravel pit was located on the 1880 map 150m east of the Great North Road. It, like the gravel pit shown on the 1818 map close to Tempsford Bridge, probably served periodic major repairs to the road.

5.0 POTENTIAL ARCHAEOLOGY

5.1 Summary of the archaeological potential of the Application Site

5.1.1 Three main sources of evidence were considered (HER, aerial assessment and historical maps).

51.2 The potential archaeology of the Application Site and the surrounding area have been assessed. It was concluded that the Application Site has good potential for the existence of significant archaeology from the Iron Age and Roman periods Less probably evidence of small scale early prehistoric and Saxon utilisation might exist. At a less important level evidence of medieval agriculture (ridge-and-furrow, headlands and other boundary features) might survive.

Early Prehistoric

5.1.3 The determinants of early prehistoric settlement from the Mesolithic through to the Middle Bonze Age are: the availability of light, easy to clear soils, namely gravels, on low ground by water courses which provide an easy communication route as well as a necessity. The Application Site meets all these conditions. The settlement sites of this period are small in size, consisting of a multiplicity of small pits and occasional ditches. The pits would not be expected to show through geophysics, even through detailed magnetometry. Settlements from these periods tend to favour gravel islands and peninsulas, where soils are light and easy to clear, there is the widest range of natural resources, and water affords easy communication. One peninsula, jutting out into the river is shown in **Fig 9**, and to the East, where the land is higher there is also potential for such settlements.

5.1.4 In general terms, the worked flint can be divided into manufacture or production debris (cores, flakes and waste) and finished tools (scrapers, knives arrowheads). Settlement sites are likely to produce both types of material. Burial sites can be identified through specific types of tools (e.g. plano-convex knives) but are better identified through aerial photographs.

5.1.5 Burial monuments are a dominant form of archaeological monument in the Bronze Age, especially in river flood plains and are usually sited on the false crest of slopes as seen from the major watercourses along which they are aligned since the monuments were meant to be seen and watercourses were the major routes of communication in the early prehistoric period. The barrows in the Middle Ouse aggregate on the false ridges of the river gravel terraces, particularly to the north and west of the River Great Ouse and survive as ring-ditches and are usually easily recognised through aerial photography. However, given the proximity of two groups of ring ditch ritual centres (HER 480 and 617) to the application site it seems unlikely that another should be located within the Application Site; Malim (2000)has suggested that such ritual centres are located *c.* 6km apart.

5.1.5 Floodplain areas close to river and stream confluences seem to have been important as ritual centres. They are set on the higher levels of land, where they protruded prominently as seen from the river. In general they can show as cropmarks, even for the less alluviated sites as shown by the cropmarks in the present site (Fig 9) and in Dairy Farm (Lisboa 2005). However not all the monuments may show up as cropmark.

Iron Age/Romano British

5.1.6 The large crop mark site (HER 2664) identified within the Application Site may probably be attributed to the Iron Age/Romano-British period, and consequently there is clear evidence to suggest that significant remains of this period will survive, though probably in a somewhat plough-damaged condition.

5.1.7 If the site extends to the riverside then well preserved remains might be expected, especially if the deposits extend beneath the alluvium. Should this prove to be the case then organic remains within the archaeological features would be likely to be very well preserved.

Saxon

5.1.8 There is no known evidence of Saxon occupation from the Application Site and Saxon sites tend to be slightly on higher ground, away from the floodplains though there is some evidence for utilisation of the river gravel terrace. One might expect the ditches and gullies associated with these sites to show up as cropmarks or on geophysics on unalluviated gravels, but Saxon sites have generally proved difficult to identify with confidence.

Medieval and Post-medieval

5.1.9 There is no evidence of any occupation of the Application Site during these periods. Settlement was probably largely confined to the neighbouring nuclear villages. However, it is possible that the remains of agricultural activities and small scale quarrying might survive.

Palaeochannels

5.1.10 Palaeochannels (**Appendix 3**) can, providing on the presence and types of organic material and the degree of the oxidation of their fills, provide evidence on the past environments.

5.2 Factors increasing and decreasing potential

Factors increasing potential

5.2.1 On the basis of the settlement determinants known for the Ouse valley, the possibility of undetected archaeological sites cannot be totally discounted. The gravel substrate of the site could potentially be used for the siting of later prehistoric settlement or for Romano-British settlement while the topography near watercourses is particular favourable where water levels are not a threat.

5.2.2 Alluvium can mask sites from Aerial Photographs. This masking can vary from total to partial, so sites tend not to show or only show marginally. A significant portion of the Application Site is covered in alluvium, particularly adjacent to the River Great Ouse.

5.2.3 Alluvium protects sites from plough damage, medieval and modern. Sites under alluvium tend to have features which are very well preserved and much more substantial than ploughed unalluviated sites.

5.2.4 Where sites are overlain by alluvium the organic content of the features may be well preserved, depending on the degree of oxidation.

5.2.5 Aerial Photographs tend to show large features and cannot be expected to reveal small pits so that for settlements the actual number of features is greater than is apparent from the air.

Factors decreasing potential

5.2.5 Medieval (and later) cultivation has a very negative effect on earlier archaeological deposits, especially where they are fragile, as is the case with Neolithic and Early Bronze Age features which are by nature slight in the absence of alluvium.

5.2.6 Activities such as small scale quarrying which is known to have occurred in the Application Site have a totally destructive, though localised effect on any archaeological deposits.

5.2.7 Drainage and other service trenches (pipelines, etc.) have a totally destructive, though localised effect on any archaeological deposits.

6.0 IMPACT ASSESSMENT OF THE PROPOSED DEVELOPMENT

6.1 Impact on buried archaeological deposits

6.2.1 Any activities involving topsoil stripping, whether for soil storage or directly for extraction will negatively impact buried archaeological deposits and upstanding historical landscape. Where no topsoil is removed preservation *in situ* ensues.

6.2 Impact on the Historic Landscape

6.4.1 Any activities involving direct ground clearance whether for extraction or access would affect any surviving historic hedge boundaries and water courses.

7.0 MITIGATION

7.1 Mitigation

7.2.1 No archaeological site investigations have been carried out.

7.2.2 It is therefore proposed to carry out a programme of Geophysics of the areas away from the main body of palaeochannels to determine the presence features associated with the sketch cropmark followed by sampling trial trenching. For the palaeochannels trenching would establish the date, quality and extent of any deposits. This programme will take into account the location of the documented cropmarks, and geomorphological evidence relating to the likely locations of alluvial deposits, palaeochannels and intervening 'gravel' islands which might have formed foci for early settlement or other activities.

7.2.3 Detailed proposals will be presented in separate Written Scheme of Investigation.

Acknowledgements

We thank Mr S Coleman of Bedfordshire HER for providing access to the data and MR J Meadowcroft r David Jarvis for the background information and Mr Tim Deal of Lafarge Aggregates Ltd for the commission.

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FIGURES

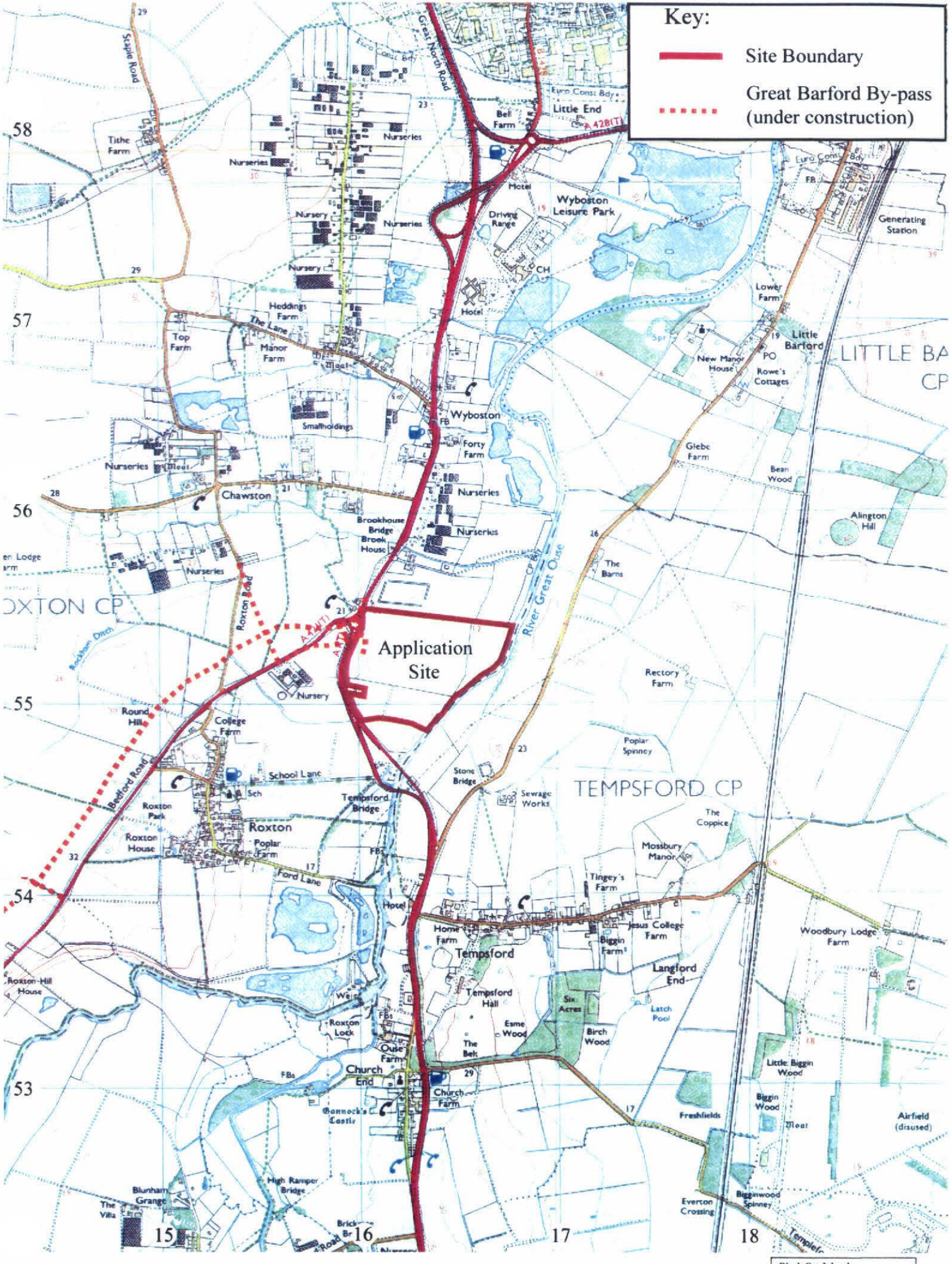


Fig. 1 Black Cat Island, Roxton Bedfordshire: Location Plan
Scale 1:25000

Black Cat Island
Roxton
Bedfordshire

Archaeologica, 7 Fosters Lane, Bradwell, Milton Keynes MK13 9HD.
tel: 01908 31300
AC3089/D1

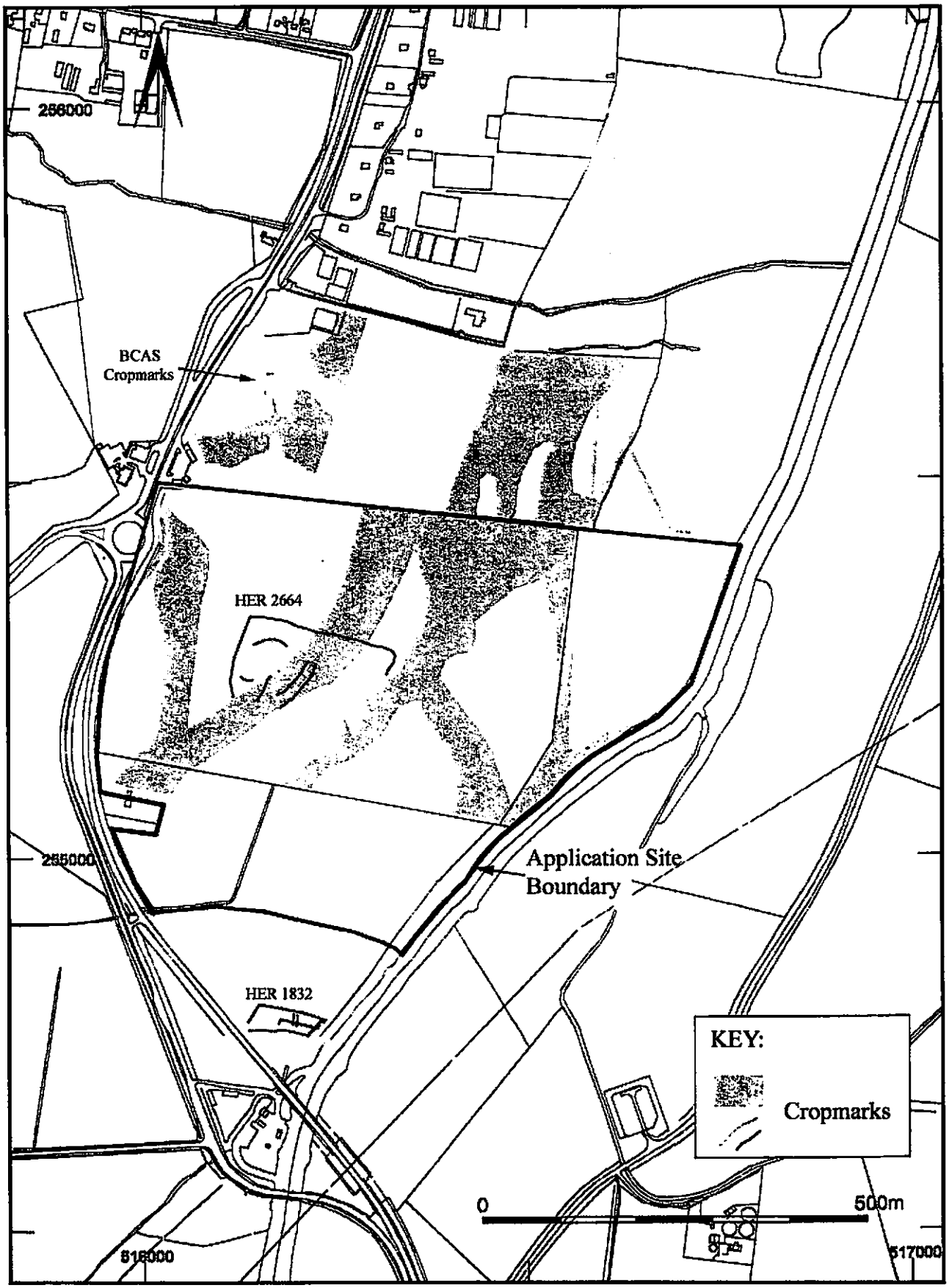


Fig. 2 Black Cat Island, Roxton Bedfordshire:
Plan showing cropmarks within and adjacent to the Application Site

Black Cat Island
Roxton
Bedfordshire

Archaeologica, 7 Fosters Lane, Bradwell,
Milton Keynes MK13 0HD.
tel: 01908 31300
AC3089/01

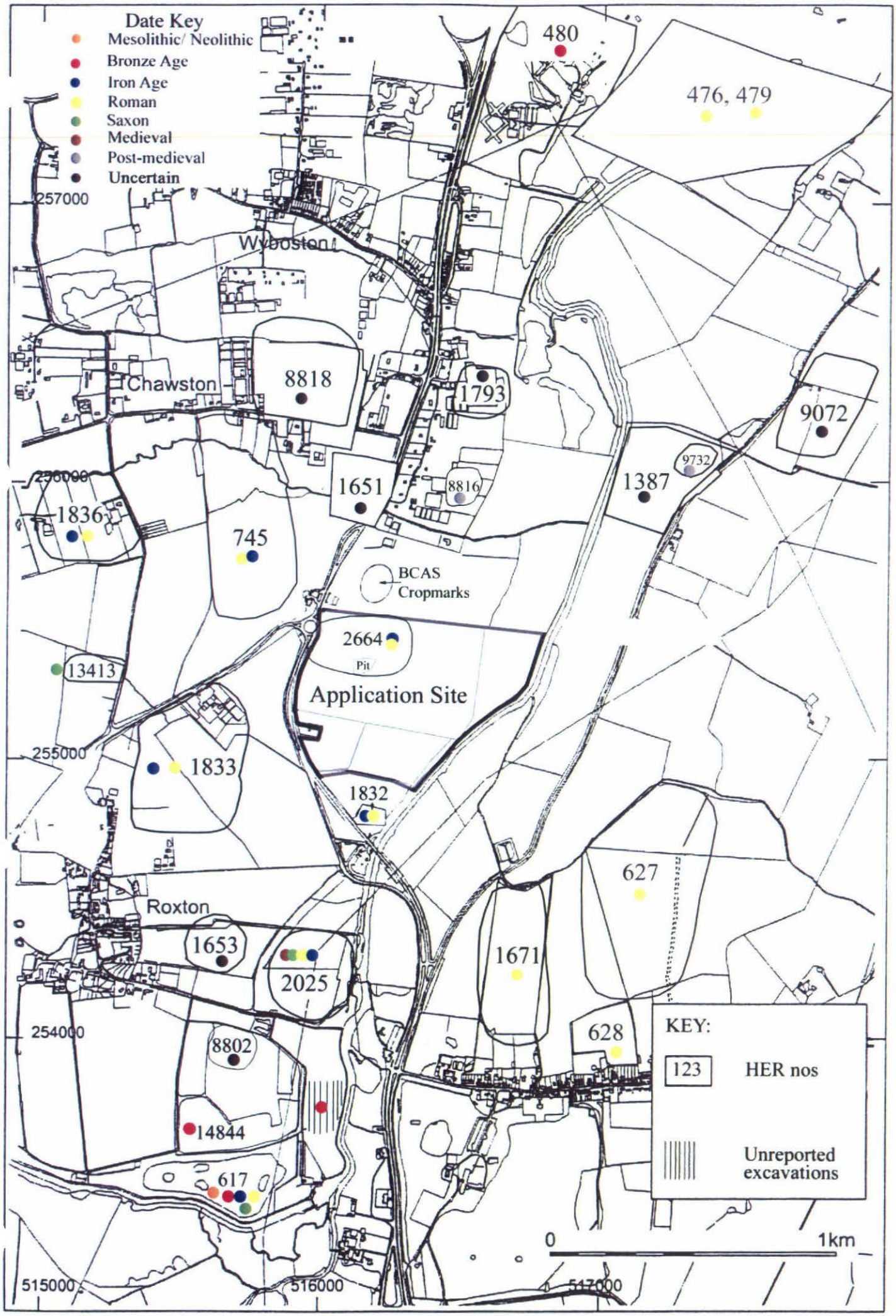


Fig. 3 Map showing the location of known archaeological sites in the vicinty of the Application Site

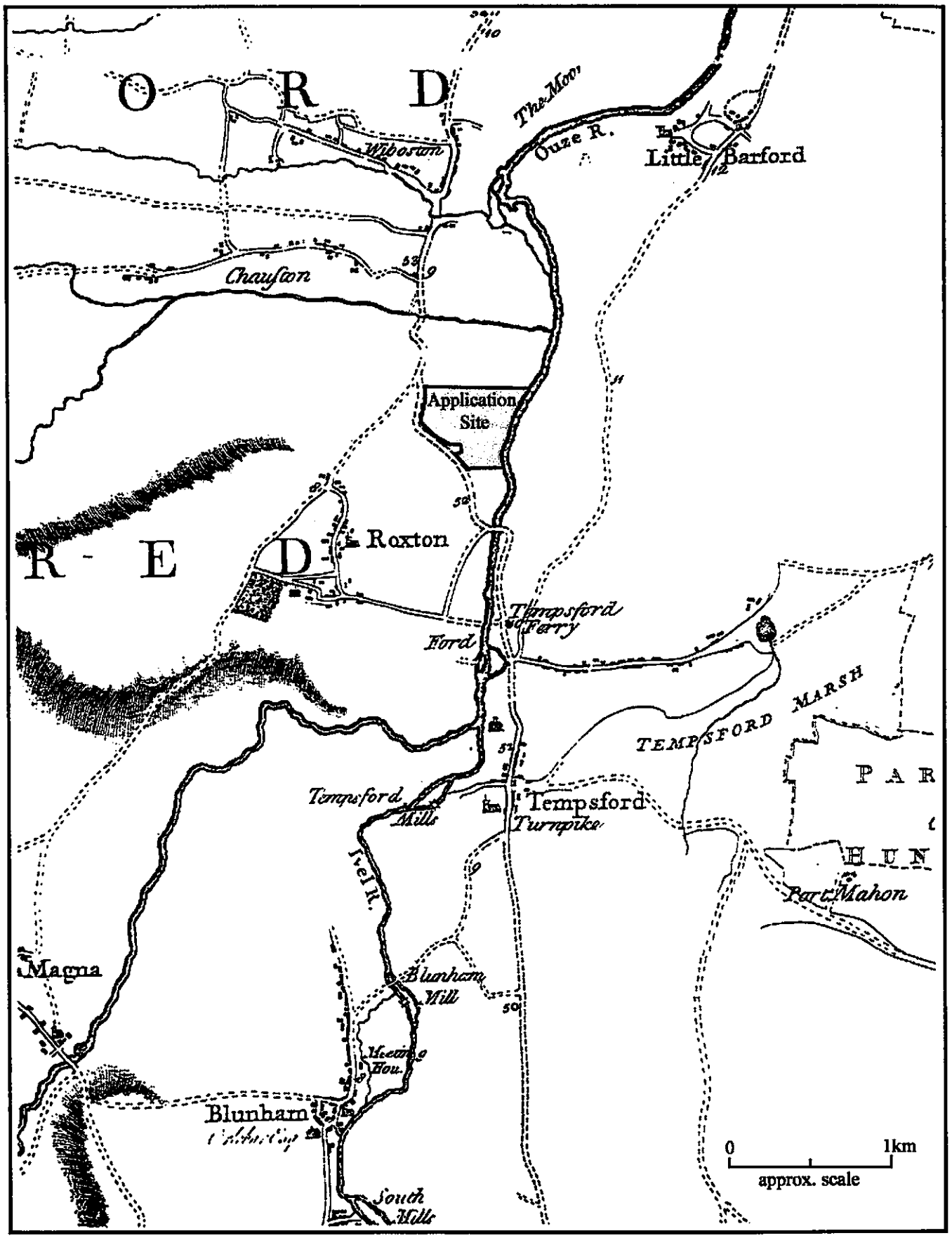


Fig. 4 Black Cat Island, Roxton Bedfordshire:
Jeffrey's Map of Bedfordshire

Black Cat Island
Roxton
Bedfordshire

Archaeological, 7 Fosters Lane, Bradwell, Milton Keynes MK13 9HD.
tel: 01908 31300
AC3989A01

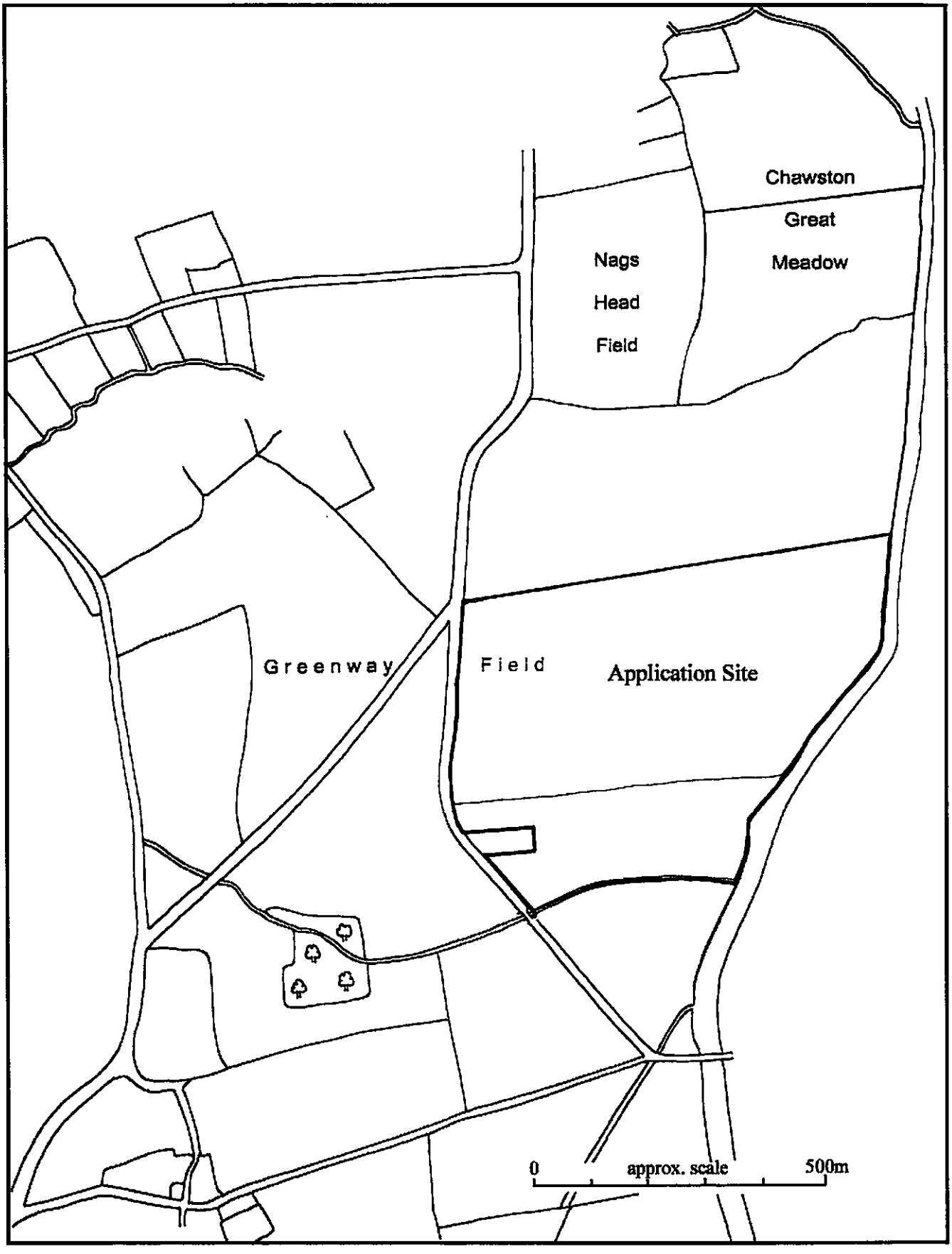
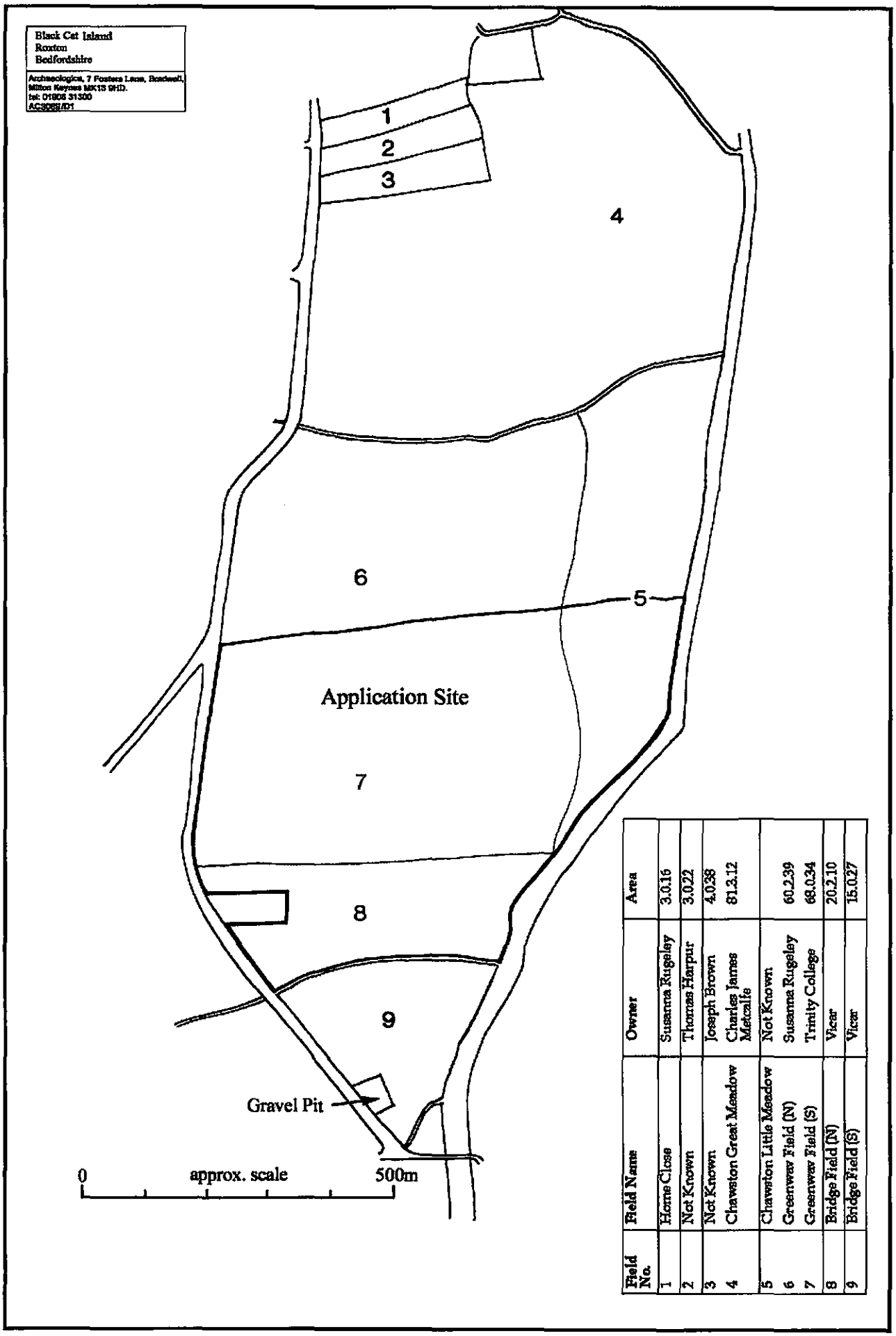


Fig. 5 Black Cat Island, Roxton Bedfordshire:
1810-1813 Estate Map

Black Cat Island
Roxton
Bedfordshire

Archaeologica, 7 Foxtace Lane, Bradwell,
Milton Keynes MK13 9HD.
tel: 01908 313300
AC3089/01



Field No.	Field Name	Owner	Area
1	Home Close	Susanna Rugeley	3.0.16
2	Not Known	Thomas Harpur	3.0.22
3	Not Known	Joseph Brown	4.0.38
4	Chawston Great Meadow	Charles James Metcalfe	81.3.12
5	Chawston Little Meadow	Not Known	
6	Greenway Field (N)	Susanna Rugeley	60.2.39
7	Greenway Field (S)	Trinity College	68.0.34
8	Bridge Field (N)	Vicar	20.2.10
9	Bridge Field (S)	Vicar	15.0.27

Fig. 6 Black Cat Island, Roxton Bedfordshire:
1818 Enclosure Map

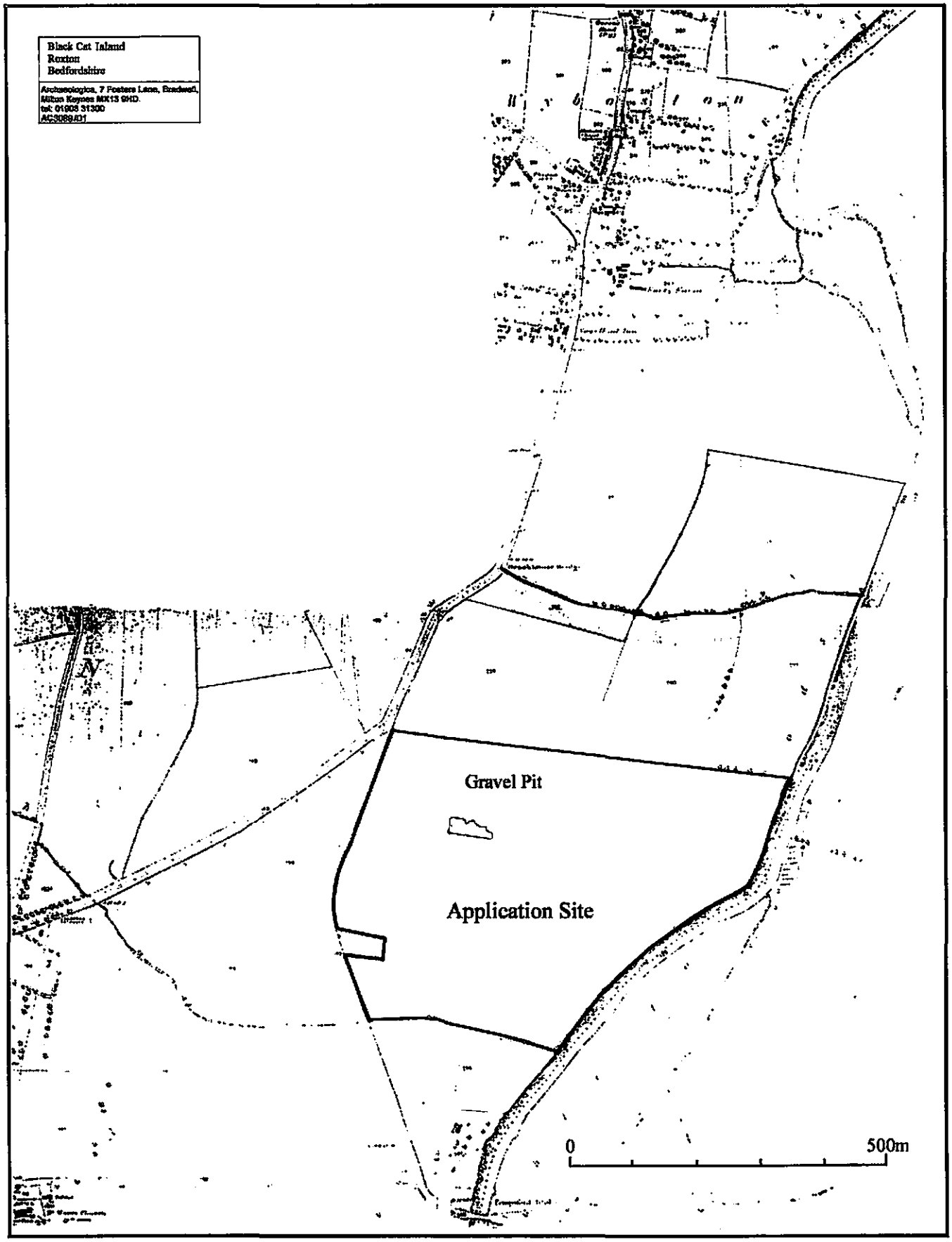
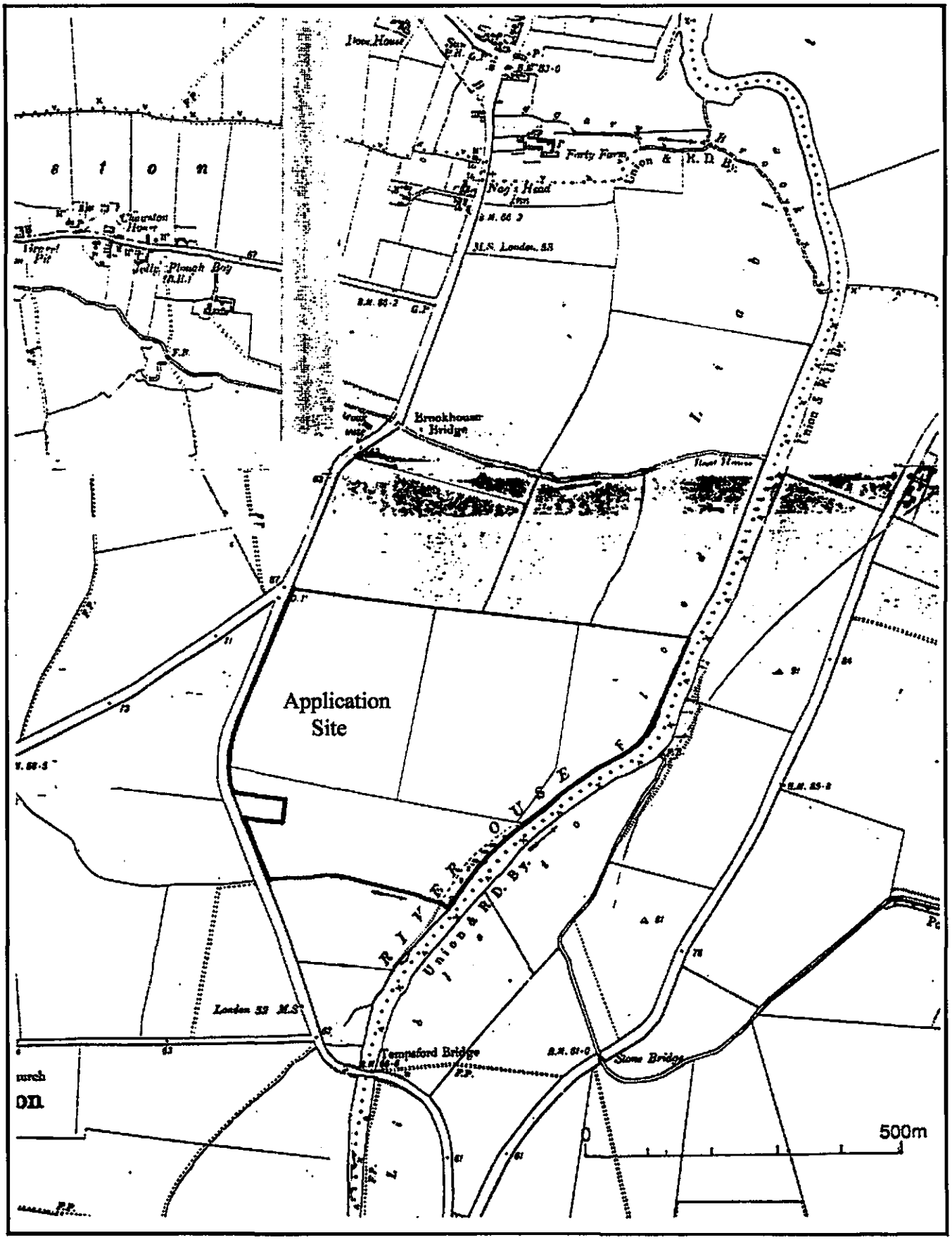


Fig. 7 Black Cat Island, Roxton Bedfordshire:
1880 1st edition Ordnance Survey Map



Black Cat Island
Roxton
Bedfordshire

Archaeologica, 7 Fosters Lane, Bradwell, Milton Keynes MK13 9HD. tel: 01908 31320 AO3033/D1

Fig. 8 Black Cat Island, Roxton Bedfordshire:
1902 2nd edition Ordnance Survey Map

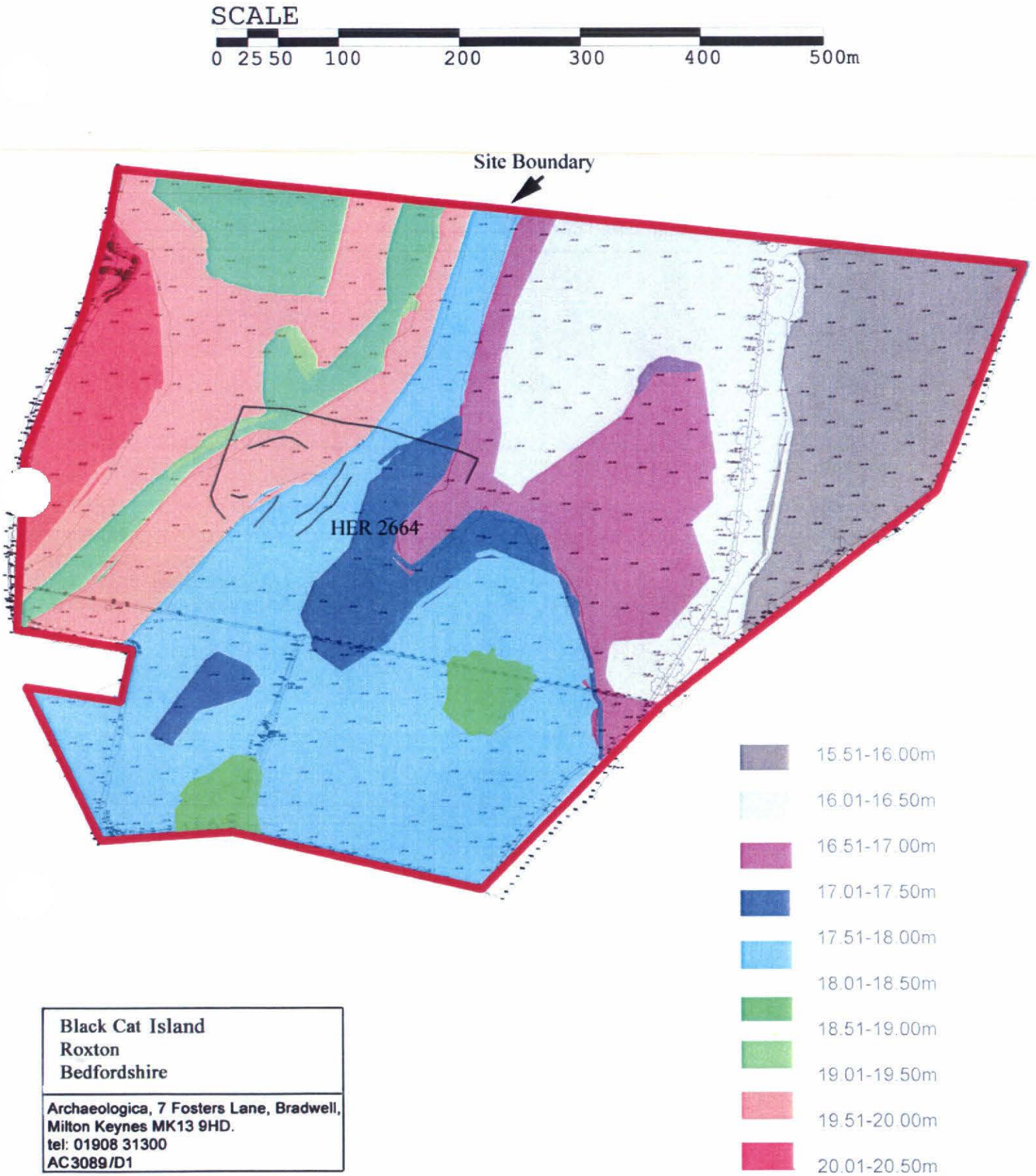


Fig. 9 Black Cat Island, Roxton Bedfordshire:
Plan showing the topography of the Application Site and the approximate location of cropmark HER 2664

APPENDIX 1

Appendix 1

Sites and Monuments within the area of and surrounding the Application Site.

1: Sites within the Application Site

HER No	Location	Description	References
2664	TL 162553	Cropmarks: parts of large rectangular enclosure with internal features.	BNJ 50. Cambridge Index. 1:10000 sketch plot in HER archive (Simco).
-	TL 161553	Gravel Pit Shown on 25" OS 1880-82 1st ed but not on 6" 1902 2nd ed..	25" OS first edition map 1880-82.

2: Summary of HER sites in the vicinity of the Application Site

HER No.	Location	Description	References
476	TL 173572 TL 172571 TL 17185711	Cropmarks, enclosure. Romano-British remains found.	LZ 30-3. Cambridge Index. JRS St Joseph 900/PR. 14. 15\8270-2 Hunting AP. CBA group 7 1974. Tebbut 1957. RCHM 1960. Dyer 1964. Simco 1973 & 1984. Liversidge 1973. Field 1974. Dyer 1976. Rodwell 1973.
479	TL 17165766	Roman Pottery Find.	Simco 1984.
480	TL 167575 TL 172575 TL 170575 TL 170575	Cropmarks, ring ditch, Bronze Age	VC 26-8, Cambridge Index. WO 21-3, Cambridge Index. WO 24, Cambridge Index. WO 25-6, Cambridge Index. YR 4, Cambridge Index. UK/1490, RAF AP. Beds Arch J. 16. 1983.
617	TL157535	Neolithic/early Bronze Age postholes and flint scatter. Beaker burial, Bronze Age ring ditches, Iron Age field and defensive ditches, Romano-British fields and occupation. Roman burial. Slight evidence of early Saxon re-use	Beds. Arch. J. 16. 1983, 7-28 Archaeol. J. 142, 1985 CBA Group 9 Newsletter 1975, 12
627	TL 171545 TL 172543 TL 172545	Cropmarks.	BXZ 62. Cambridge Index. BXU 83. Cambridge Index 2506/3-4. Northants CC. AP. 2506/6-7. Northants CC. AP. 2714/23. Ken Field AP.
628	TL 169540	Cropmarks.	BJP 83. Cambridge Index. BXZ 63-4. Cambridge Index. EMW 90-1, Cambridge Index.
745	TL 158557	Cropmarks. three groups of	LZ 27-9. Cambridge Index.

		rectangular enclosures.	BBY 49-52, Cambridge Index. ABE 21-2, Cambridge Index. BCP 60-4. Cambridge Index. BCP 68-70, Cambridge Index. BIX 62-4. Cambridge Index. BJF 72-4. Cambridge Index. 6/1822. Hunting '76 AP. 7/2297. Hunting '76 AP. 2506/15-22, Northants CC. AP. 2714:22. Ken Field AP.
			HSL UK 76 31: 7/2297-8. HSL UK 76 31: 8/7359-60. Beds Arch J. 12, 1977.
1387	TL 172560	Cropmarks. Called Friars Pit on 1829 map	BNJ 49, Cambridge Index.
1651	TL 162560 TL 162562	Cropmarks.	YK 12-3, Cambridge Index. BIX 59-6 1, Cambridge Index. BJF 69-70, Cambridge Index TL 1656/3/441, NMR AP.
1653	TL 155544	Cropmarks.	YK 14-15, Cambridge Index.
1671	TL 167543 TL 167545	Cropmarks, enclosure Romano-British settlement and possible pottery production remains. Romano-British rubbish pit.	YT 12-4. Cambridge Index. YW 66, Cambridge Index. BNJ 54-6. Cambridge Index. BJP 84-6. Cambridge Index. TL 1654/2/241-5, NMR AP. TL 1654/3/6-8, NMR AP. TL 1654/4/9-10, NMR AP. TL 1754/1/13-4, NMRAP. TL 1754/2/412-4, NMR AP. TL 1757/3/415-7. NMR AP. 2506/2 Northants CC. AP. Simco 1984.
1793	TL 166563	Cropmarks (now quarried).	AAN 39. Cambridge Index. AAN 40-1. Cambridge Index 1968: 15/8271-2. Hunting AP.
1832	TL 163548	Cropmarks.	AAN 42-3. Cambridge Index. EMW 92-4, Cambridge Index. HSL UK 86: 8/7360-1.
1833	TL 156551 TL 157459	Cropmarks.	BCP 71-2. Cambridge Index. BJF 71. Cambridge Index.

	TL 155549		ABE 20. Cambridge Index. 1554/1/475, NMR AP. 1554/3/70. NMR AP. 1554/2/67 NMR AP. 1554/4/73. NMR AP.
1836	TL 151558	Cropmarks	-
2025	TL 161543 TL 16655385	Saxo-Norman pottery. Loom.weight, possibly Roman. *Lower (sic)* Saxon pottery. Red deer antler. Roman pottery. Iron age currency ring.	Tebbut 1979, PCAS 33.
8802	TL157540	Cropmarks.	-
8816	TL 165558	Gravel Pit. Present on 1" OS map, c.1835. Not on OS drawing. c.1817. Not on 6" OS map .c.1882.	1" OS first edition map . c.1835
8818	TL 157564 TL 162562	Cropmarks.	BGD 29-30, Cambridge Index. TL 1656/3/441, NMR AP.
9072	TL177562	Cropmarks.	-
9732	TL 173560	Osier ground on 1829 map.	
13413	152553	3 parallel gullies, line of 11 small pits/postholes, ? Grubenhaus. Saxon sherd and bead found 80m away during fieldwalking.	Maull 2005, Trench 47
14844	TL 156537	Bronze Age flint scatter.	-

APPENDIX 2

Appendix 2

Catalogue of aerial photographs consulted

1: Vertical Photographs held by Bedfordshire County Council

Reference	Scale	Date	Run	Ref No	Repository
HSL UK BED 68 807	n/a	17 Oct 68	15	8273	Beds C.C.
HSL UK BED 68 807	n/a	17 Oct 68	15	8274	Beds C.C.
HSL UK 76 25	n/a	25 Jun 76	6	1821	Beds C.C.
HSL. UK 76 25	n/a	25 Jun 76	6	1822	Beds C.C.
HSL BEDS 81 1	n/a	13 Jun 81	7	8720	Beds C.C.
HSL BEDS 81 1	n/a	13 Jun 81	7	8721	Beds C.C.
HSL UK 86 065	n/a	5 Aug 86	7	7336	Beds C.C.
HSL UK 86 065	n/a	5 Aug 86	7	7337	Beds C.C.
AEROFILMS/91/COL/114	1:10000	20 Aug 91	18	1347	Beds C.C.
AEROFILMS/91/COL/114	1:10000	20 Aug 91	18	1348	Beds C.C.
AEROFILMS/96C/565	1:10000	18 Jul 96	18	1661	Beds C.C.
AEROFILMS.96C/565	1:10000	18 Jul 96	18	1662	Beds C.C.

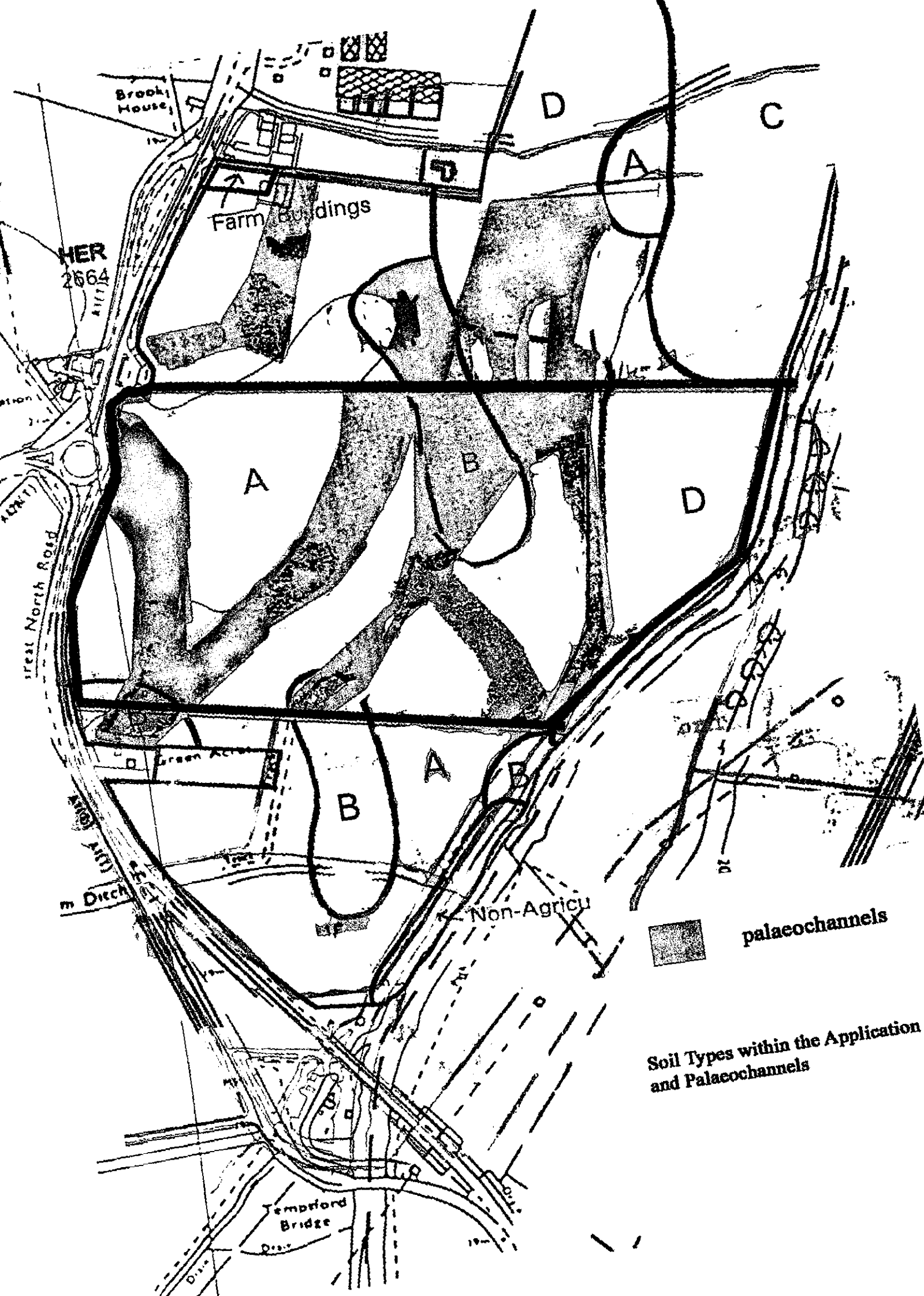
2: Summary of vertical aerial photographs of the area held by RCHME

Sortie Number	Library Number	Date	Repository
106/UK/635	37	10 Aug 45	MOD
106G/UK/635	37	10 Aug 45	MOD
106G/UK/969	123	01 Nov 45	MOD
106G/UK/1490	326	09 May 46	MOD
CPE/UK/1952	554	25 Mar 47	MOD
541/483	1062	07 Apr 50	MOD
541/483	1062	07 Apr 50	MOD
82/1006	1520	31 Aug 54	MOD
540/1737	2772	01 Nov 55	MOD
540/1737	2772	01 Nov 55	MOD
CPE/UK/2272	2793	29 Aug 47	MOD
CPE/UK/2272	2793	29 Aug 47	MOD
58/1900	3880	17 Oct 55	MOD
MAL/73045	7106	22 Aug 73	NMR
MAL/73045	7106	22 Aug 73	NMR
MAL/73045	7106	22 Aug 73	NMR
FNO/193	9170	13 Oct 42	FDM
OS/68031	9313	09 Apr 68	NMR
OS/71276	10176	02 Jun 71	OS
OS/71276	10176	02 Jun 71	OS
OS/75175	12121	06 Jun 75	OS

3: **Summary of specialist aerial photographs of the area held by RCHME**

Index Number	Accession Number	Date	Repository
TL1555/1	NMR 1811	04 Jul 84	NMR
TL 1555/10	NMR 4456	29 Jun 89	NMR
TL1555/11	NMR 4456	29 Jun 89	NMR
TL 1555/12	NMR 4456	29 Jun 89	NMR
TL 1555/13	NMR 4456	29 Jun 89	NMR
TL1555/14	NMR 4456	29 Jun 89	NMR
TL 1555/22	RXP 13625	22 Jul 91	RXP
TL 1555/23	RXP 13625	22 Jul 91	RXP
TL 1654/6	NMR 311	22 Jul 71	NMR
TL1655/1	NHC 2506	20 Jul 84	NMR
TL 1655/2	NMR 4456	29 Jun 89	NMR
TL 1655/3	NMR 4456	29 Jun 89	NMR
TL 1655/4	NMR 4456	29 Jun 89	NMR
TL 1655/5	NMR 4456	29 Jun 89	NMR
TL 1655/6	NHC 2506	20 Jul 84	NMR

APPENDIX 3



Soil Types within the Application and Palaeochannels