CgMs HERITAGE
PART OF RPS

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

PLOT SGR1
BICESTER
OXFORDSHIRE

MARCH 2018
Updated September 2018

Local Planning Authority:
Cherwell District Council

Site centred at:
SP 57917 25122

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Executive Summary

This archaeological desk-based assessment considers approximately 5.03 hectares of land (Plot SGR 1) at Caversfield, Bicester, Oxfordshire, which is proposed for residential development.

It reviews existing information held in the Oxfordshire Historic Environment Record, Historic England's National Heritage List for England, Oxfordshire History Centre and on-line resources. New information from a programme of archaeological field evaluation of the site in Summer 2018 has also been incorporated to provide a description of the significance of archaeological heritage assets within the site and an assessment of the potential impact of the proposed development.

Oxfordshire County Council's Pre-Application Advice (17/00363/PREAPP) noted potential earthworks within the eastern part of the site (not recorded on the Oxfordshire County Council Historic Environment Record) which it is suggested may relate to a shrunken Medieval settlement to the east of the site. However the evaluation through Geophysical Survey, Aerial Photographic Survey and Trial Trenching of the site has established that the earthworks are a product of modern activity and do not relate to the Medieval settlement at Caversfield.

The evaluation also revealed that below the earthworks a hollow way and two enclosure ditches dating to the 11th-12th centuries survive as buried archaeological features. Within the rest of the site only field boundaries of possible Medieval date were uncovered. These appeared to respect the natural change between the plateau above the stream bed and the adjacent alluvial banks. No evidence of settlement remains were found within the trenches.

The results of the archaeological evaluation identify that there is some archaeological interest with regard to the hollow way found in the eastern part of the site. The development of the site will impact upon the hollow way and enclosure ditches which will result in the loss of these assets. However, this interest is not such that it would constrain or prevent development and the archaeological interest in the hollow way can be safeguarded by a condition placed on planning.

1.0 INTRODUCTION AND SCOPE OF STUDY

1.1 This archaeological desk-based assessment of Plot SGR 1, Caversfield, Bicester, Oxfordshire, has been researched and prepared by CgMs Heritage (part of RPS Group) on behalf of the applicant – SGR (Bicester 1) Limited.

1.2 The site, also referred to as the study site, is located to the west of the B4100, to the west of Caversfield. It comprises approximately 5.03 hectares of land centred at National Grid Reference SP 57917 25122 (Figure 1). The study site is bounded to the northwest and southwest by recent development along Cranberry Avenue, to the south by Home Farm, and to the east by the B4100, Caversfield House Estate, and the Grade II* Listed Church of St Laurence.

1.3 This assessment has been prepared in accordance with the National Planning Policy Framework, to identify and provide a description of the significance of archaeological assets on the site and the likely effects of future development. This study concentrates on identifying any archaeological interest in the site and assessing the potential impact of development on the archaeological significance of any identified assets.

1.4 The assessment comprises an examination of evidence in the Oxfordshire County Council Historic Environment Record (HER), Oxfordshire History Centre, and online resources. Information regarding Scheduled Monuments, Registered Parks and Gardens, Registered Battlefields and Listed Buildings was obtained from Historic England's National Heritage List for England. Information on Conservation Areas was obtained from Cherwell District Council. The assessment incorporates published and unpublished material and charts historic land-use through a map regression exercise.

1.5 The assessment also considers new survey data for the site, obtained through programmes of aerial photograph assessment, geophysical survey, and archaeological trial trenching conducted in May-August 2018.

1.6 A site inspection was undertaken on the 30th January 2018, as well as during the trial trenching in July 2018.

1.7 The study provides an assessment of the archaeological potential of the site and the significance of any archaeological heritage assets within and around the site. As a result, the assessment enables relevant parties to identify and assess the impact of the proposed development.

2.0 PLANNING BACKGROUND AND DEVELOPMENT PLAN FRAMEWORK

2.1 In considering the proposed planning application for development, the local planning authority will be guided by the policy framework set by government planning policy, by current Development Plan policy and by other material considerations.

National Planning Policy Framework

2.1.1 On 24th July 2018, the Government published the revised National Planning Policy Framework (NPPF), which replaced previous national policy relating to heritage and archaeology. The revised NPPF supersedes the earlier version (NPPF 2012).

2.1.2 Section 16 of the NPPF, entitled *Conserving and enhancing the historic environment* provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of Section 16 of the NPPF can be summarised as seeking the:

- Delivery of sustainable development
- Understanding the wider social, cultural, economic and environmental benefits brought by the conservation of the historic environment, and
- Conservation of England's heritage assets in a manner appropriate to their significance.

2.1.3 Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 189 states that local planning authorities should require an applicant to describe significance of the heritage asset, including any contribution made by their setting, and that the 'level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance'.

2.1.4 *Heritage Assets* are defined in Annex 2 of the NPPF as: a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).

2.1.5 Annex 2 also defines *Archaeological Interest* as a heritage asset which holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.

2.1.6 A *Designated Heritage Asset* comprises a World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area.

2.1.7 *Significance* is defined as: The value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.

2.1.8 In short, government policy provides a framework which:

- Protects nationally important designated Heritage Assets (which include World Heritage Sites, Scheduled Ancient Monuments, Listed Buildings, Registered Parks and Gardens, Registered Battlefields or Conservation Areas)
- Protects the settings of such designations
- In appropriate circumstances seeks adequate information (from desk-based assessment and field evaluation where necessary) to enable informed decisions
- Provides for the excavation and investigation of sites not significant enough to merit *in-situ* preservation.

Planning Practice Guidance

2.1.9 The NPPG is a web-based resource which is to be used in conjunction with the NPPF. It is aimed at planning professionals and prescribes best practice within the planning sector. The relevant section is entitled Conserving and enhancing the historic environment.

Local Plan

2.1.10 The relevant Development Plan framework is provided by the Local Plan 2011-2031 (Part 1) which was adopted by Cherwell District Council on 20th July 2015 (and re-adopted with a reincorporated section '13' in December 2016), with further guidance provided by the North West Bicester Supplementary Planning Document 2016. The Local Plan provides the strategic planning policy framework and sets out strategic site allocations for the district to 2031. The Local Plan Part 1 will in due course be supported by a Part 2 which will contain detailed planning policies used for considering planning applications.

2.1.11 In the meantime, the existing statutory Development Plan relies upon the Cherwell Local Plan 1996 and policies which were saved on the 27 September 2007. The policy which related to the requirement for archaeological evaluation of proposed development sites to inform applications, Policy C26, was not saved however.

2.1.12 A Non-Statutory Cherwell Local Plan 2011 had been intended to replace the 1996 Local Plan, but due to changes by the Government to the planning system, it was discontinued prior to adoption. This non-statutory plan was approved as an interim planning policy for development control purposes and its policies are a material consideration. The policy which relates to the management of historic environment features in the planning process is EN47 below:

EN47 THE COUNCIL WILL PROMOTE SUSTAINABILITY OF THE HISTORIC ENVIRONMENT THROUGH CONSERVATION, PROTECTION AND ENHANCEMENT OF THE ARCHAEOLOGICAL HERITAGE AND ITS INTERPRETATION AND PRESENTATION TO THE PUBLIC. IN PARTICULAR IT WILL:

(i) SEEK TO ENSURE THAT SCHEDULED ANCIENT MONUMENTS AND OTHER UNSCHEDULED SITES OF NATIONAL AND REGIONAL IMPORTANCE AND THEIR SETTINGS ARE PERMANENTLY PRESERVED;

(ii) ENSURE THAT DEVELOPMENT WHICH COULD ADVERSELY AFFECT SITES, STRUCTURES, LANDSCAPES OR BUILDINGS OF ARCHAEOLOGICAL INTEREST AND THEIR SETTINGS WILL REQUIRE AN ASSESSMENT OF THE ARCHAEOLOGICAL RESOURCE THROUGH A DESK-TOP STUDY, AND WHERE APPROPRIATE A FIELD EVALUATION;

(iii) NOT PERMIT DEVELOPMENT THAT WOULD ADVERSELY AFFECT ARCHAEOLOGICAL REMAINS AND THEIR SETTINGS UNLESS THE APPLICANT CAN DEMONSTRATE THAT THE ARCHAEOLOGICAL RESOURCE WILL BE PHYSICALLY PRESERVED IN-SITU, OR A SUITABLE STRATEGY HAS BEEN PUT FORWARD TO MITIGATE THE IMPACT OF DEVELOPMENT PROPOSALS;

(iv) ENSURE THAT WHERE PHYSICAL PRESERVATION IN- SITU IS NEITHER PRACTICAL NOR DESIRABLE AND SITES ARE NOT SCHEDULED OR OF NATIONAL IMPORTANCE, THE DEVELOPER WILL BE RESPONSIBLE FOR MAKING APPROPRIATE PROVISION FOR A PROGRAMME OF ARCHAEOLOGICAL INVESTIGATION, RECORDING, ANALYSIS AND PUBLICATION THAT WILL ENSURE THE SITE IS PRESERVED BY RECORD PRIOR TO DESTRUCTION. SUCH MEASURES WILL BE SECURED EITHER BY A PLANNING AGREEMENT OR BY A SUITABLE PLANNING CONDITION

Local Plan 2011-2031 (adopted July 2015)

2.1.13 The policy which is relevant to the management of historic environment features in the Cherwell District Council Local Plan 2011-2031 (Part 1), (Adopted, July 2015), is as follows:

POLICY ESD 15: THE CHARACTER OF THE BUILT AND HISTORIC ENVIRONMENT

SUCCESSFUL DESIGN IS FOUNDED UPON AN UNDERSTANDING AND RESPECT FOR AN AREA'S UNIQUE BUILT, NATURAL AND CULTURAL CONTEXT. NEW DEVELOPMENT WILL BE EXPECTED TO COMPLEMENT AND ENHANCE THE CHARACTER OF ITS CONTEXT THROUGH SENSITIVE SITING, LAYOUT AND HIGH QUALITY DESIGN. ALL NEW DEVELOPMENT WILL BE REQUIRED TO MEET HIGH DESIGN STANDARDS. WHERE DEVELOPMENT IS IN THE VICINITY OF ANY OF THE DISTRICT'S DISTINCTIVE NATURAL OR HISTORIC ASSETS, DELIVERING HIGH QUALITY DESIGN THAT COMPLEMENTS THE ASSET WILL BE ESSENTIAL.

NEW DEVELOPMENT PROPOSALS SHOULD:

- **BE DESIGNED TO DELIVER HIGH QUALITY SAFE, ATTRACTIVE, DURABLE AND HEALTHY PLACES TO LIVE AND WORK IN. DEVELOPMENT OF ALL SCALES SHOULD BE DESIGNED TO IMPROVE THE QUALITY AND APPEARANCE OF AN AREA AND THE WAY IT FUNCTIONS**
- **DELIVER BUILDINGS, PLACES AND SPACES THAT CAN ADAPT TO CHANGING SOCIAL, TECHNOLOGICAL, ECONOMIC AND ENVIRONMENTAL CONDITIONS**
- **SUPPORT THE EFFICIENT USE OF LAND AND INFRASTRUCTURE, THROUGH APPROPRIATE LAND USES, MIX AND DENSITY/DEVELOPMENT INTENSITY**
- **CONTRIBUTE POSITIVELY TO AN AREA'S CHARACTER AND IDENTITY BY CREATING OR REINFORCING LOCAL DISTINCTIVENESS AND RESPECTING LOCAL TOPOGRAPHY AND LANDSCAPE FEATURES, INCLUDING SKYLINES, VALLEY FLOORS, SIGNIFICANT TREES, HISTORIC BOUNDARIES, LANDMARKS, FEATURES OR VIEWS, IN PARTICULAR WITHIN DESIGNATED LANDSCAPES, WITHIN THE CHERWELL VALLEY AND WITHIN CONSERVATION AREAS AND THEIR SETTING**
- **CONSERVE, SUSTAIN AND ENHANCE DESIGNATED AND NON DESIGNATED 'HERITAGE ASSETS' (AS DEFINED IN THE NPPF) INCLUDING BUILDINGS, FEATURES, ARCHAEOLOGY, CONSERVATION AREAS AND THEIR SETTINGS, AND ENSURE NEW DEVELOPMENT IS SENSITIVELY SITED AND INTEGRATED IN ACCORDANCE WITH ADVICE IN THE NPPF AND NPPG. PROPOSALS FOR DEVELOPMENT THAT AFFECT NON-DESIGNATED HERITAGE ASSETS WILL BE CONSIDERED TAKING ACCOUNT OF THE SCALE OF ANY HARM OR LOSS AND THE SIGNIFICANCE OF THE HERITAGE ASSET AS SET OUT IN THE NPPF AND NPPG. REGENERATION PROPOSALS THAT MAKE SENSITIVE USE OF HERITAGE ASSETS, PARTICULARLY WHERE THESE BRING REDUNDANT OR UNDER USED BUILDINGS OR AREAS, ESPECIALLY ANY ON ENGLISH HERITAGE'S AT RISK REGISTER, INTO APPROPRIATE USE WILL BE ENCOURAGED**
- **INCLUDE INFORMATION ON HERITAGE ASSETS SUFFICIENT TO ASSESS THE POTENTIAL IMPACT OF THE PROPOSAL ON THEIR SIGNIFICANCE. WHERE ARCHAEOLOGICAL POTENTIAL IS IDENTIFIED THIS SHOULD INCLUDE AN APPROPRIATE DESK BASED ASSESSMENT AND, WHERE NECESSARY, A FIELD EVALUATION.**
- **RESPECT THE TRADITIONAL PATTERN OF ROUTES, SPACES, BLOCKS, PLOTS, ENCLOSURES AND THE FORM, SCALE AND MASSING OF BUILDINGS. DEVELOPMENT SHOULD BE DESIGNED TO INTEGRATE WITH EXISTING STREETS AND PUBLIC SPACES, AND BUILDINGS CONFIGURED TO CREATE CLEARLY DEFINED ACTIVE PUBLIC FRONTAGES**
- **REFLECT OR, IN A CONTEMPORARY DESIGN RESPONSE, RE-INTERPRET LOCAL DISTINCTIVENESS, INCLUDING ELEMENTS OF CONSTRUCTION, ELEVATIONAL DETAILING, WINDOWS AND DOORS, BUILDING AND SURFACING MATERIALS, MASS, SCALE AND COLOUR PALETTE**
- **PROMOTE PERMEABLE, ACCESSIBLE AND EASILY UNDERSTANDABLE PLACES BY CREATING SPACES THAT CONNECT WITH EACH OTHER, ARE EASY TO MOVE THROUGH AND HAVE RECOGNISABLE LANDMARK FEATURES**
- **DEMONSTRATE A HOLISTIC APPROACH TO THE DESIGN OF THE PUBLIC REALM TO CREATE HIGH QUALITY AND MULTI-FUNCTIONAL STREETS AND PLACES THAT PROMOTES PEDESTRIAN MOVEMENT AND INTEGRATES DIFFERENT MODES OF TRANSPORT, PARKING AND SERVICING. THE PRINCIPLES SET OUT IN THE MANUAL FOR STREETS SHOULD BE FOLLOWED**
- **CONSIDER THE AMENITY OF BOTH EXISTING AND FUTURE DEVELOPMENT, INCLUDING MATTERS OF PRIVACY, OUTLOOK, NATURAL LIGHTING, VENTILATION, AND INDOOR AND OUTDOOR SPACE**
- **LIMIT THE IMPACT OF LIGHT POLLUTION FROM ARTIFICIAL LIGHT ON LOCAL AMENITY, INTRINSICALLY DARK LANDSCAPES AND NATURE CONSERVATION**
- **BE COMPATIBLE WITH UP TO DATE URBAN DESIGN PRINCIPLES, INCLUDING BUILDING FOR LIFE, AND ACHIEVE SECURED BY DESIGN ACCREDITATION**
- **CONSIDER SUSTAINABLE DESIGN AND LAYOUT AT THE MASTERPLANNING STAGE OF DESIGN, WHERE BUILDING ORIENTATION AND THE IMPACT OF MICROCLIMATE CAN BE CONSIDERED WITHIN THE LAYOUT**
- **INCORPORATE ENERGY EFFICIENT DESIGN AND SUSTAINABLE CONSTRUCTION TECHNIQUES, WHILST ENSURING THAT THE AESTHETIC IMPLICATIONS OF GREEN TECHNOLOGY ARE APPROPRIATE TO THE CONTEXT (ALSO SEE POLICIES ESD 1 - 5 ON CLIMATE CHANGE AND RENEWABLE ENERGY)**
- **INTEGRATE AND ENHANCE GREEN INFRASTRUCTURE AND INCORPORATE BIODIVERSITY ENHANCEMENT FEATURES WHERE POSSIBLE (SEE POLICY ESD 10:**

PROTECTION AND ENHANCEMENT OF BIODIVERSITY AND THE NATURAL ENVIRONMENT AND POLICY ESD 17 GREEN INFRASTRUCTURE). WELL DESIGNED LANDSCAPE SCHEMES SHOULD BE AN INTEGRAL PART OF DEVELOPMENT PROPOSALS TO SUPPORT IMPROVEMENTS TO BIODIVERSITY, THE MICRO CLIMATE, AND AIR POLLUTION AND PROVIDE ATTRACTIVE PLACES THAT IMPROVE PEOPLE'S HEALTH AND SENSE OF VITALITY

- **USE LOCALLY SOURCED SUSTAINABLE MATERIALS WHERE POSSIBLE.**

THE COUNCIL WILL PROVIDE MORE DETAILED DESIGN AND HISTORIC ENVIRONMENT POLICIES IN THE LOCAL PLAN PART 2.

THE DESIGN OF ALL NEW DEVELOPMENT WILL NEED TO BE INFORMED BY AN ANALYSIS OF THE CONTEXT, TOGETHER WITH AN EXPLANATION AND JUSTIFICATION OF THE PRINCIPLES THAT HAVE INFORMED THE DESIGN RATIONALE. THIS SHOULD BE DEMONSTRATED IN THE DESIGN AND ACCESS STATEMENT THAT ACCOMPANIES THE PLANNING APPLICATION. THE COUNCIL EXPECTS ALL THE ISSUES WITHIN THIS POLICY TO BE POSITIVELY ADDRESSED THROUGH THE EXPLANATION AND JUSTIFICATION IN THE DESIGN & ACCESS STATEMENT. FURTHER GUIDANCE CAN BE FOUND ON THE COUNCIL'S WEBSITE.

THE COUNCIL WILL REQUIRE DESIGN TO BE ADDRESSED IN THE PRE-APPLICATION PROCESS ON MAJOR DEVELOPMENTS AND IN CONNECTION WITH ALL HERITAGE SITES. FOR MAJOR SITES/STRATEGIC SITES AND COMPLEX DEVELOPMENTS, DESIGN CODES WILL NEED TO BE PREPARED IN CONJUNCTION WITH THE COUNCIL AND LOCAL STAKEHOLDERS TO ENSURE APPROPRIATE CHARACTER AND HIGH QUALITY DESIGN IS DELIVERED THROUGHOUT. DESIGN CODES WILL USUALLY BE PREPARED BETWEEN OUTLINE AND RESERVED MATTERS STAGE TO SET OUT DESIGN PRINCIPLES FOR THE DEVELOPMENT OF THE SITE. THE LEVEL OF PRESCRIPTION WILL VARY ACCORDING TO THE NATURE OF THE SITE.

North West Bicester Supplementary Planning Document (2016)

2.1.14 The Supplementary Planning Document (SPD) expands upon Policy Bicester 1 of the adopted Cherwell Local Plan 2011-2031. The SPD provides further detail to the policy and a means of implementing the strategic allocation at North West Bicester.

2.1.15 The North West Bicester SPD is guided by a number of site specific design and place shaping principles. Of relevance to this assessment is the following principle:

Consideration should be given to maintaining visual separation with outlying settlements. Connections with the wider landscape should be reinforced and opportunities for recreational use of the open countryside identified. Development proposals to be accompanied and influenced by a landscape/ visual and heritage impact assessment.

2.1.16 This assessment looks to assess the potential for the development to impact upon below ground heritage assets within the site. The built heritage impact is dealt with in a separate built heritage report

2.1.17 In addition, the following Eco Towns PPS policy, as included in Appendix III of the SPD, is of relevance to this assessment:

ET 15 LANDSCAPE AND HISTORIC ENVIRONMENT

ET 15.1 PLANNING APPLICATIONS FOR ECO-TOWNS SHOULD DEMONSTRATE THAT THEY HAVE ADEQUATELY CONSIDERED THE IMPLICATIONS FOR THE LOCAL LANDSCAPE AND HISTORIC ENVIRONMENT. THIS EVIDENCE, IN PARTICULAR THAT GAINED FROM LANDSCAPE CHARACTER ASSESSMENTS AND HISTORIC LANDSCAPE CHARACTERISATION SHOULD BE USED TO ENSURE THAT DEVELOPMENT COMPLEMENTS AND ENHANCES THE EXISTING LANDSCAPE CHARACTER. FURTHERMORE, EVIDENCE CONTAINED IN RELEVANT HISTORIC ENVIRONMENT RECORDS, SHOULD BE USED TO ASSESS THE EXTENT, SIGNIFICANCE AND CONDITION OF KNOWN HERITAGE ASSETS (AND THE POTENTIAL FOR THE DISCOVERY OF UNKNOWN HERITAGE ASSETS) AND THE CONTRIBUTION THAT THEY MAY MAKE TO THE ECO-TOWN AND SURROUNDING AREA. ECO-TOWN PROPOSALS SHOULD SET OUT MEASURES TO CONSERVE AND, WHERE APPROPRIATE, ENHANCE HERITAGE BOTH ASSETS AND THEIR SETTINGS THROUGH THE PROPOSED DEVELOPMENT.

2.1.18 Therefore in considering the heritage implications of the proposed planning application for development, the local planning authority will be guided by the policy framework set by government policy, by Policy ESD 15 of the Cherwell District Council Local Plan 2011-2031 (Part 1), Policy EN47 in the non-statutory Cherwell Local Plan 2011, and by the guidance set out in the North West Bicester Supplementary Planning Document 2016.

3.0 GEOLOGY AND TOPOGRAPHY

3.1 Geology

3.1.1 The British Geological Survey (BGS) 1:50,000 mapping records the solid geology of the northern part of the site as Cornbrash Formation limestone, giving way to Forest Marble Formation interbedded limestone and mudstone to the south, along the course of the stream. The superficial deposits comprise alluvial deposits along the stream course, comprising mixed clays, silts, sand, and gravel. (http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html).

3.1.2 The Cranfield Soil and Agrifood Institute Soilscapes website records the site as having type '5' free-draining lime-rich loamy soils. These soils belong to the Aberford Association (511a), described as calcareous loamy or clayey subsoils without significant clay enrichment. (http://www.landis.org.uk/soilscapes/index.cfm)

3.2 Topography

3.2.1 The study site lies within the eastern end of Natural England Character Area 107: Cotswolds. The Cotswolds area is described as a landscape of 'steep scarp crowned by a high, open wold... limestone creates a strong sense of place and unity which carries through to the buildings and walls which have been built using local limestone…'. The area is noted for its rich history, with important evidence of prehistoric, Roman, and medieval settlement.

3.2.2 The historic landscape character (HLC) data included with the HER records the site as an area of planned enclosure, dating to c.1798-1810, which replaced the former open field system.

3.2.3 The site is located to the west of the B4100, to the west of Caversfield. The site is situated on a slope, descending from approximately 90mAOD at its northwest, to 83mAOD to its southeast. A stream runs along the southern margin of the site.

3.3 LiDAR

3.3.1 A review of LiDAR data was conducted in preparation of the DBA for general observations with regard to modern field patterns. The LiDAR data has been more fully assessed in the aerial photographic survey (AirPhoto Surveces).

3.3.2 For the purpose of this DBA the LiDAR data was collected from Open Survey Data composite 1m spatial resolution dataset for the site. The latest imagery covering

dating to 2011. The data was processed in Relief Visualization Toolbox (RVT version 1.3) and ArcGIS. The data was visualised into Hillshade, Multi directional Hillshade, PCA of Hillshading, Simple Local Relief Model (SLRM), Slope Gradient, Sky View Factor (SVF), Anisotropic Sky View Factor (A-SVF), Open Positive and Open Negative - with the best results achieved using Slope Gradient, from 16 directions, at an angle of 35° (Figure 5). The same processing was used to produce both a Digital Surface Model (DSM) and Digital Terrain Model (DTM) in turn. A DSM is calculated from the first return and shows the highest points in the survey area - picking up the tops of features, buildings and vegetation. A DTM filters features from the last return that are above the natural ground surface, revealing features hidden by vegetation.

4.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND, INCLUDING ASSESSMENT OF SIGNIFICANCE

4.1 Timescales used in this report are as follows.

Prehistoric			
Palaeolithic	450,000 BC	-	10,001 BC
Mesolithic	10,000 BC	-	4,001 BC
Neolithic	4,000 BC	-	1,801 BC
Bronze Age	1,800 BC	-	601 BC
Iron Age	600 BC	-	AD 42
Historic			
Romano-British	AD 43	-	409 AD
Saxon/Early Medieval	AD 410	-	1065 AD
Medieval	AD 1066	-	1485 AD
Post-Medieval	AD 1486	-	1799 AD
Modern	AD 1800	-	Present

4.2 Introduction

4.2.1 This chapter reviews existing archaeological evidence for the study site and the archaeological/historical background of the general area, based on a consideration of evidence in the National Heritage List for England, Oxfordshire County Council HER, Oxfordshire History Centre, Cherwell District Council website and various on-line sources. Data was obtained for the study site and a surrounding 2km search area. The data is summarised in Appendix 1.

4.2.2 It also summarises the results of new aerial photograph assessmet, geophysical survey and trial trenching programmes commissioned in May-August 2018 to evaluate the site's archaeological potential more fully. The survey reports are included as Appendices 2 – 4.

4.3 Designated Heritage Assets

4.3.1 Data obtained from Historic England and the Local Planning Authority confirms that there are no designated heritage assets (Listed Buildings, Scheduled Monuments, Conservation Areas, Registered Battlefields or Parks and Gardens etc.) within the study site (Figures 2 and 3).

Listed Buildings

4.3.2 There are 19 Listed Buildings within the search area (Figure 2). Within close proximity to the site are two listed buildings: the Church of St Lawrence (Grade II*, Report ref. 5106,. 1046533) and Home Farmhouse (Grade II, Report ref. 19256, Listed Building ref. 1193268). The potential impact of the proposed development upon these designated heritage assets is subject to a separate historic building assessment (CgMs 2018), and is therefore not discussed further within this report.

4.3.3 There are no other designated heritage assets in the search area.

4.4 Non-Designated Heritage Assets and previous archaeological investigations

Introduction

4.4.1 Oxfordshire County Council's Pre-Application Advice noted potential earthworks within the eastern part of the site (not recorded on the HER, see figure 4 LiDAR image) which were suggested to have the potential to relate to a shrunken Medieval settlement situated to the east of the 10th/11th-century Church of St. Lawrence, c.300m east of the site.

4.4.2 In consultation with the planning archaeologist, a programme of archaeological evaluation was undertaken in May-August 2018, including geophysical survey (Magnitude Surveys 2018, Appendix 2), aerial photographic survey (AirPhoto Services 2018, Appendix 3) and trial trenching (MoLA 2018, appendix 4).In the east part of the site, the evaluation investigated the earthworks as well as looking for any potentially earlier archaeology masked by the earthworks. The rest of the site was investigated to assess the potential for Prehistoric features as discovered in the wider landscape and in excavations adjacent to the site (See "Bicester Eco Town" below).

Site Evaluation

4.4.3 A geophysical survey of the site was undertaken in May 2018 (Magnitude Surveys 2018, Appendix 2). The results of the survey were primarily interpreted as natural or agricultural. Distinct bands of curvilinear trends were identified perpendicular to the stream and related to alluvial deposition, corresponding with BGS data. In the eastern part of the site, in the area of the earthworks, the survey detected disturbance.

4.4.4 The aerial photographic survey (AirPhoto Services 2018, Appendix 3) concurred with the findings of the geophysical survey. It concluded that the earthworks in the east of the site are the result of modern disturbance and that other features within the site are likely to be geological. It did also note that there was some potential for features that were identified in the surrounding landscape during the Bicester Eco Town project (AirPhoto Services 2010 and Oxford Archaeology 2010) to continue into the site. It

therefore stated the site had some potential for limited Late Prehistoric agricultural features.

4.4.5 To test the conclusions of the geophysical and aerial photographic surveys, 20 trial trenches were excavated in June 2018 (MoLA 2018, Appendix 4). The trenching concluded in agreement with the previous surveys in that the earthworks were the result of modern disturbance and that the rest of the site mainly contained features of geological origins.

4.4.6 The trenching did uncover a field boundary following the edge of the alluvium along the edge of the stream. The field boundary was dated it to the Late Saxon/Early Medieval period on the basis of a small artefact assemblage, although a later, Medieval, date is also considered possible. The trenching also revealed a hollow way and enclosure ditches of Medieval date beneath the modern disturbance in the east of the site. No evidence of settlement remains were uncovered within the site and it is likely that the B4100 is a relict Medieval route forming the western edge of Medieval Caversfield, and the results suggest that the site formed immediate hinterland to Medieval Caversfield and may have been formed by paddocks or similar along the uncovered hollow way and agricultural land beyond.

4.4.7 The trenching did reveal a small quantity of Saxon/Early Medieval pottery from later features in the eastern part of the site. This is not surprising given the location of Early Medieval remains to the immediate east of the site – on the other side of the B4100. It adds to the existing knowledge base and further corroborates that the settlement at Caversfield is likely to have had a Saxon/Early Medieval phase. The lack of finds dating to beyond the 13th century supports the evidence of Caversfield shrinking during the Medieval period – as evidenced to the east of the site by earthwork remains of form Medieval structures (see section 4.7).

Eco Town

4.4.8 Adjacent to the north and west of the site archaeological field work was conducted ahead of development for the Bicester Eco Development (EOX3147 and EOX5589). The works involved an examination of aerial photographs and a geophysical survey. The geophysical survey confirmed and expanded upon the previous examination, identifying a feature c.500m west-southwest of the site (ref.15958), interpreted as a possible later-Prehistoric enclosure. Further Late Iron Age/Romano-British enclosures were posited c.1.30km west of the site (ref.27989). No features of Later Prehistoric date were uncovered within the site during the evaluation.

Summary

4.4.9 The 2018 evaluation of the Site has established that the earthwork remains within the eastern part of the Site are the result of modern disturbance. However, underlying the disturbance were a hollow way and enclosure ditches dating to the 10th-12th centuries. No settlement remains were uncovered. The rest of the site was largely blank save for a Late Saxon/Early Medieval ditch that followed the edge of the alluvium along the stream.

4.4.10 Archaeological fieldwork within the search area which is relevant to assessing the archaeological potential of the site is discussed below. A gazetteer of all monuments and events is provided in Appendix 1, and shown on Figures 2 and 3 (relevant events only).

4.5 HER DATA

The following provides a summary of information contained within the HER to provide background to the site.

Prehistoric

4.5.1 There are no archaeological assets dating from the Prehistoric period recorded on the HER within the study site nor were any found during the evaluation.

4.5.2 There are five HER records of Prehistoric activity in the wider 2km search area.

4.5.3 The closest recorded Prehistoric site comprises a possible ring ditch identified from aerial photography to the east of Caversfield (ref.17461), c.450m east of the site. !km to the south of the site tentative evidence of seasonal Mesolithic activity; an irregular sub-rectangular feature containing two microliths.

4.5.4 A possible late-Prehistoric enclosure (ref.15958), was identified during geophysical survey just over 500m west-southwest of the study site (EOX3147 and EOX5589). The same project recorded a possible Late Iron Age/Romano-British site c.1.30km west of the site (ref.27969).

4.5.5 Approximately 1km south of the site, in Bicester, is an Iron Age linear ditch, with associated oval ditches and possible palisade gullies. (ref.16025 and 16026). Further features included two ring gullies, and a number of stock enclosures. Later Iron Age evidence included a number of pits and an oven or kiln.

4.5.6 There is a general background spread of Prehistoric activity recorded within the study area. However, no Prehistoric remains were found within the Site during the evaluation.

Romano-British

4.5.7 There are no archaeological assets dating from the Romano-British period recorded on the HER within the study site nor were any found during the evaluation.

4.5.8 The closest Romano-British activity comprises the Roman enclosures and finds southwest of South Farm (ref.9984), c.1.10km south of the site, which has been assessed as a possible villa site.

4.5.9 At a similar distance from the site, to the southeast, Romano-British inhumations (ref.1611) were recorded in 1813. Within close proximity to the inhumations is the projected line of the Alchester to Towcester Roman road (ref.8922).

4.5.10 Within the vicinity of the site there are no recorded sites, and the site has been ploughed flat. Roman material often appears in HERs because of the volume of cultural material relative to most other periods and because much of that material is readily identifiable. No Roman features were uncovered during the evaluation.

Saxon/Early Medieval

4.5.11 The evaluation uncovered features of Medieval date that contained residual sherds of Saxon/Early Medieval pottery. There are no archaeological assets dating from the Saxon/Early Medieval period recorded on the HER within the study site.

4.5.12 Bainton shrunken Medieval village is situated c.1.70km north of the site (ref.856). The site is recorded as being of Saxon/Early Medieval date. An evaluation to the north of the village found evidence of two stone houses with pottery finds of 10th- to 12th-century date.

4.5.13 Caversfield is mentioned in the Domesday Book of 1086 as a moderately large settlement of 21 households. That the settlement was well established implies that it had been established by at least the late Saxon period. The deserted Medieval village c.300m northeast of the site (ref.1016 and 13743) is therefore likely to be of at least late Saxon origin.

4.5.14 The study site lies on the periphery of the Saxon/Early Medieval core of settlement activity, although it does lie on its periphery. Thus it is not surprising that later features contained the odd residual sherd of Saxon/Early Medieval Pottery.

Medieval

4.5.15 The evaluation has revealed a hollow way and enclosure ditches as well as agricultural remains and a field boundary of Medieval date within the site. These point to the site being on the periphery of the Medieval settlement at Caversfield and within its immediate agricultural hinterland. The hollow way may connect the church to Home Farm. The lack of finds post-dating the 13th century further attests to the shrinkage of the Medieval settlement at Caversfield. As noted in the Aerial photographic survey, and picked up in both the geophysical survey and trenching, it is likely that the entire site was then under the plough as part of the open field system.

4.5.16 There are six entries of Medieval activity recorded in the search area. In addition there are three extant Medieval Listed Buildings within the study area (ref.5103, 5014, 5106). The Church of St. Lawrence (ref.5106) is situated c.50m east of the site. Built Heritage assets are assessed in a separate report (CgMs 2018).

4.5.17 As noted above, by the 13th/14th century, the site would have formed a part of the open field system associated with the settlement of Caversfield during the Medieval period (as per the HLC data included in the HER).

Post-Medieval/Modern

4.5.18 A modern quarry pit was discovered during the evaluation as well as other dumps of material in the eastern part of the site associated with the construction of the modern trackway and the disturbance here.

4.5.19 Within the wider search area there are nine recorded Post-Medieval sites, as well as sixteen Listed Buildings of Post-Medieval date. These are dealt with in the Built heritage report (CgMs 2018).

4.5.20 The Post-Medieval fishponds (ref.5107), c.50m east of the site, form a part of the Caversfield House estate. The potential impacts of the proposed development to the significance Caversfield House estate is considered in a separate report (CgMs 2018). It is therefore not considered further in this report.

Historic Map Regression

4.5.21 The earliest mapping reviewed during this study was the 1574 Saxton's Map (Figure 5). The mapping is of limited detail, though it shows Caversfield as an established settlement. Likewise, the 1759 Thomas Kitchin's *A New Improved Map of Oxfordshire* shows Caversfield with its associated church (Figure 6). The mapping shows how, at that time, Caversfield formed an exclave of Buckinghamshire isolated within

Oxfordshire. In 1844, the *Counties (Detached Parts) Act* eliminated most exclaves within the UK, including Caversfield – which became a part of Oxfordshire.

4.5.22 William Stanley's Map of Bicester, 1815 (Figure 7), shows the site in greater detail, with Caversfield House to its east, and Home Farm to its south. The field system of large regular fields demonstrates that systematic enclosure of the former open field system was well underway by this time, having been set in motion by Act of Parliament in 1780.

4.5.23 By 1854, the Caversfield Parish Tithe Map (Figure 8) shows the site in far greater detail, forming part of a single large field. The field was bound to the east by the main road (recorded as 'Part of Turnpike Road', now the B4100), south by a small stream and Home Farm, north by a field boundary, and west by a continuation of the field. The field within which the site is situated is recorded in the Tithe Award as Lot 86, an area of arable land known as 'The Home Ground'.

4.5.24 The 1885 Ordnance Survey (OS) mapping (Figure 9) shows no change to the site from the mid-19th Century. The north, south, and east boundaries of the site are shown to feature hedgerows.

4.5.25 By 1900, the OS mapping (Figure 10) shows a small rectilinear filter bed adjacent to the south of the site. The 1947 aerial photograph, although grainy, and the 1982-5 mapping (Figures 11 and 12) show no changes to the site, which remained a part of the same field enclosure.

4.5.26 A review of the most recent GoogleEarth aerial photography shows the site in its present form, with an access track within its east, leading to Home Farm, and ongoing residential development to north and west. Within the site a northwest-southeast aligned field margin had been introduced by the early 21st Century, as well as a fence-line/treeline within the southeast corner of the field defining the limit of the site. A rectangular filter bed is visible just south of the site. For a detailed account of the aerial photography of the site please see Appendix 3

4.5.27 The site has been shown to have comprised a single large field until the late 20th-century. The map review demonstrates that the study site has remained undeveloped through the later Post-Medieval period.

4.6 Assessment of Significance

4.6.1 Paragraph 189 of the NPPF states that local planning authorities should require an applicant to describe , and that the level of detail supplied by an applicant should be proportionate to the importance of the asset and should be no more than sufficient to review the potential impact of the proposal upon the significance of that asset.

4.6.2 There are no designated heritage assets within the study site. The setting of the nearby Listed Buildings is subject to a separate report (CgMs 2018), and is not considered herein.

4.6.3 Oxfordshire County Council's Pre-Application Advice noted potential earthworks within the eastern part of the site (not recorded on the HER), suggesting that they may relate to a shrunken Medieval settlement situated to the east of the 10th/11th-century Church of St. Lawrence, c.300m east of the site (17/00363/PREAPP). The evaluation of the site has proven these to be related to modern disturbance in this area. Beneath the disturbance, the trenching revealed a Medieval hollow way (possibly linking the Church to Home Farm) as well as ditches that may have formed enclosures off it. No structural remains were uncovered. The hollow way and enclosures do retain archaeological interest and are significant for their evidential value. They would be able to provide evidence relating to the immediate hinterland surrounding the former Medieval settlement at Caversfield and further attest to the abandonment and shrinkage of the settlement by the 13th/14th century based on the apparent lack of material dating to after the 13th century.

4.6.4 The rest of the site is dominated by agricultural remains of Medieval date, although these fields may have been laid out in the Saxon period, before being supplanted by open field agriculture. A discernible ditch appears to utilise the natural change from the higher Cornbrash that covers the majority of the Site, with the alluvial slopes and terraces that form the edges of the stream in the southern part of the Site. This did produce a sherd of Saxon/Medieval pottery. The Medieval field system is of limited archaeological interest and its significance is vested in its evidential value. However, the evaluation has provided information sufficient to understand its function. Very little survived of the ridge and furrow within the trial trenching which may be a result of the plough running over the Cornbrash and eroding the soils down slope.

5.0 SITE CONDITIONS, THE PROPOSED DEVELOPMENT & IMPACT ON ARCHAEOLOGICAL ASSETS

5.1 Site Conditions

5.1.1 A site visit was undertaken on 30th January 2018. The whole site was accessible and comprises part of a rectangular field (Plates 1 - 3). Primary access to the site is from the west, via new road infrastructure at the Exemplar site off Cranberry Avenue, with secondary access to the west of the B4100 via an access road to Home Farm (Plate 4) and a farm gate in the northeast corner of the site.

5.1.2 The site is enclosed to the north and west by hedgerows and ongoing residential development associated with the adjacent Exemplar site. The site's eastern margin, along the B4100 is defined by a length of patchy hedgerow and estate fencing.

5.1.3 The southern margin of the site comprises hedgerow and self-sown vegetation along the banks of a small stream, and the rear garden of Home farm (Plates 5 and 6). To the eastern end of the southern boundary is a parcel of land, bound by fencing and a recent treeline, which is excluded from the site. The parcel contains a filter bed/soakaway to its northwest, fed by drainage from within the site (Plates 7 and 8). The drainage appears to run in a northerly direction.

5.1.4 Internal boundaries comprise a northwest-southeast aligned fence-line to the west of the site (Plate 9), and wooden post-and-rail fencing along the access road to Home Farm. The recent treeline demarcating the excluded area to the south of the site continues east across the southeast of the site.

5.1.5 A walkover survey was undertaken across the site; no significant finds, earthworks, or archaeological features were identified within the site. Within the east of the site, the earthworks were investigated, and found to be indistinct, and of modern date (Plates 10 and 11); coinciding with the treeline, historic and modern filter beds, and associated drainage.

5.2 The Proposed Development

5.2.1 The study site is proposed for residential development to the western corner, with open green space, including orchard and allotments, to the northern, southern and eastern areas.. An Illustrative Masterplan will be submitted to the Local Planning Authority with the Outline Planning Application.

5.3 Impact on Archaeological Assets

5.3.1 There are no designated heritage assets on the study site. The potential impact of the proposed development to the nearby Listed Buildings is subject to a separate Built Heritage Statement (CgMs 2018).

5.3.2 The site has been recently evaluated through geophysical survey, aerial photographic survey and trial trenching. The results of the evaluation have confirmed that there is no settlement activity within the site and that the Site likely sat in the immediate hinterland of the Medieval settlement at Caversfield. However, the trial trenching did reveal a hollow way and enclosure ditches which are of some archaeological interest.

5.3.3 The construction techniques employed in modern development are such that any buried archaeological remains within the area proposed for development would not survive the development process. However, the eastern part of the site is proposed to be a community orchard. The impact here will be through rooting and excavation of holes for planting.

6.0 CONCLUSIONS

6.1 This Archaeological Desk-Based Assessment draws together the results of the recent evaluation works and available archaeological, historic, topographic and land-use information in order to clarify the heritage significance and archaeological potential of Land at Caversfield, Bicester, Oxfordshire.

6.2 It addresses the information requirements set out in Section 16 of the National Planning Policy Framework (NPPF) and Policy ESD 15 of the Cherwell District Council Local Plan 2011-2031 (Part 1).

6.3 The assessment has established that there are no designated heritage assets on the study site.

6.4 Oxfordshire County Council's Pre-Application Advice noted potential earthworks within the eastern part of the site (not recorded on the HER) which it was suggested may relate to a shrunken Medieval settlement, c.300m east of the site (17/00363/PREAPP). Recent evaluation work within the site has established that the earthworks relate to modern disturbance.

6.5 However, below the earthworks a Medieval hollow way and enclosure ditches were uncovered. No structural remains were uncovered. It is likely that the site lay in the immediate hinterland to the Medieval Settlement as Caversfield. There is some archaeological interest in the hollow way and enclosure ditches, although the interest is not such that it would preclude or constrain development. The hollow way and enclosures are significant for their evidential value and would be lost to the development of the site.

6.6 Mitigation of that loss could be adequately provided for by a condition placed on planning permission.

SOURCES CONSULTED

General

Historic England National Heritage List for England (list.historicengland.org.uk)

Heritage Gateway (www.heritagegateway.org.uk)

British Geological Survey (http://mapapps.bgs.ac.uk/geologyofbritain/home.html)

Soilscapes (http://www.landis.org.uk/soilscapes/index.cfm)

Oxfordshire Historic Environment Record (HER)

Cherwell District Council

North West Bicester Supplementary Planning Document, 2016

Local Plan 2011-2031 (Part 1), 2015

Cherwell Local Plan, 1996

Oxfordshire History Centre

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HISTORIC ENGLAND, 2008. *Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment.*

HISTORIC ENGLAND, 2015. *Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment*

HISTORIC ENGLAND, 2017. *Historic Environment Good Practice Advice in Planning: Note 3 (Second Edition) – The Setting of Heritage Assets*

MAGNITUDE SURVEYS 2018, *Geophysical Survey report of Caversfield, Bicester, unpublished client report MSS292*

MoLA 2018, *Archaeological trial trenching evaluation at Plot SGR1, Caversfield, Bicester, Oxfordhsire, unpublished client report 18/101*

Cartographic

1574 Saxton's Map of Oxonii, Buckinghamiae et Berceriae Comitatum

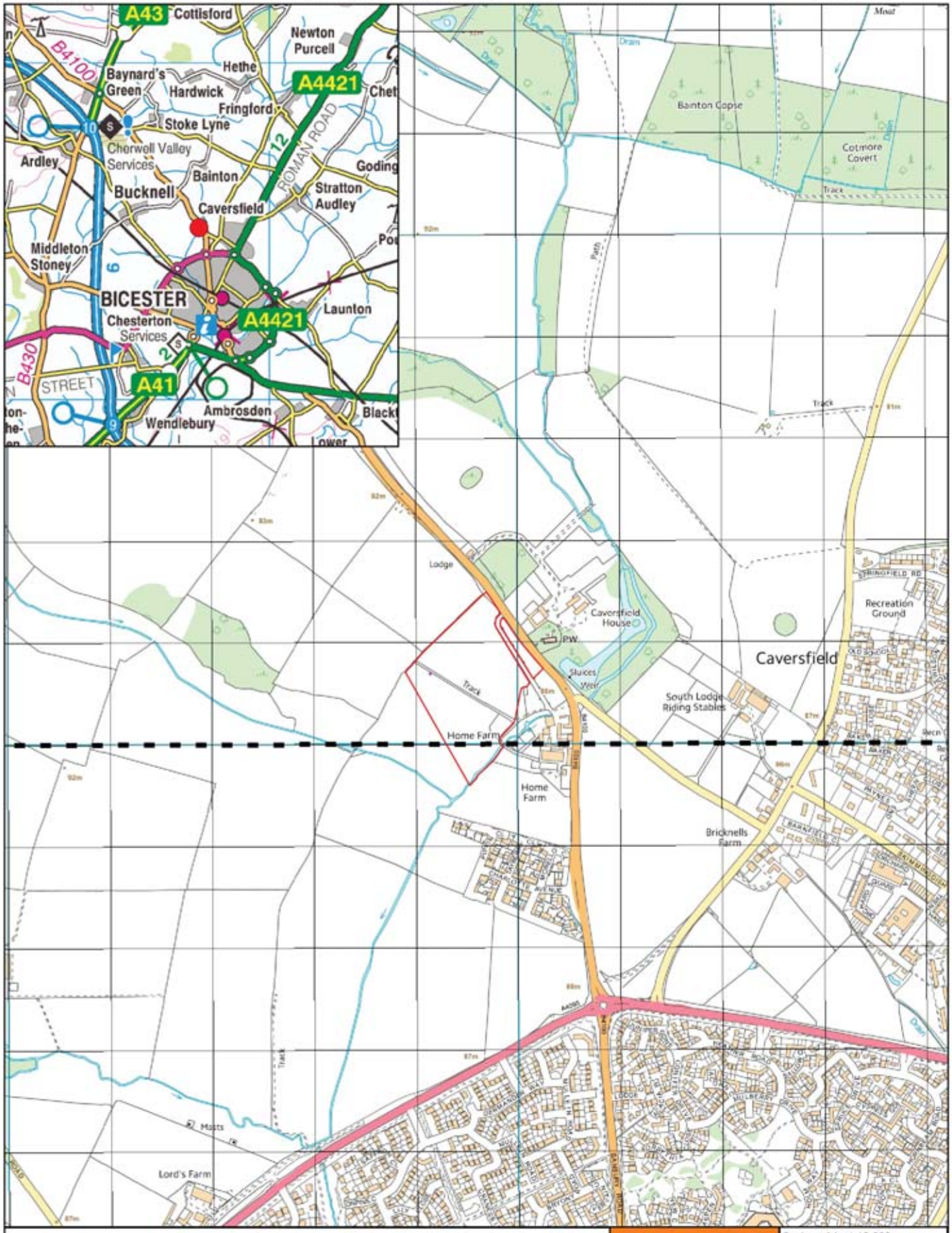
1749 Thomas Kitchin's A New Improved Map of Oxfordshire

1815 William Stanley's Map of Bicester

1854 Caversfield Parish Tithe Map

1885 Ordnance Survey Map

1900	Ordnance Survey Map
1909-10	District Valuation Survey Map (DV-VIII-228_Oxfordshire_XXIII-2)
1923	Ordnance Survey Map
1938/52	Ordnance Survey Map
1947	Aerial Photograph
1982-5	Ordnance Survey Map



Site

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Scale at A4: 1:10,000

0 50 100 150 200 250 m

Fig. 1: Site Location

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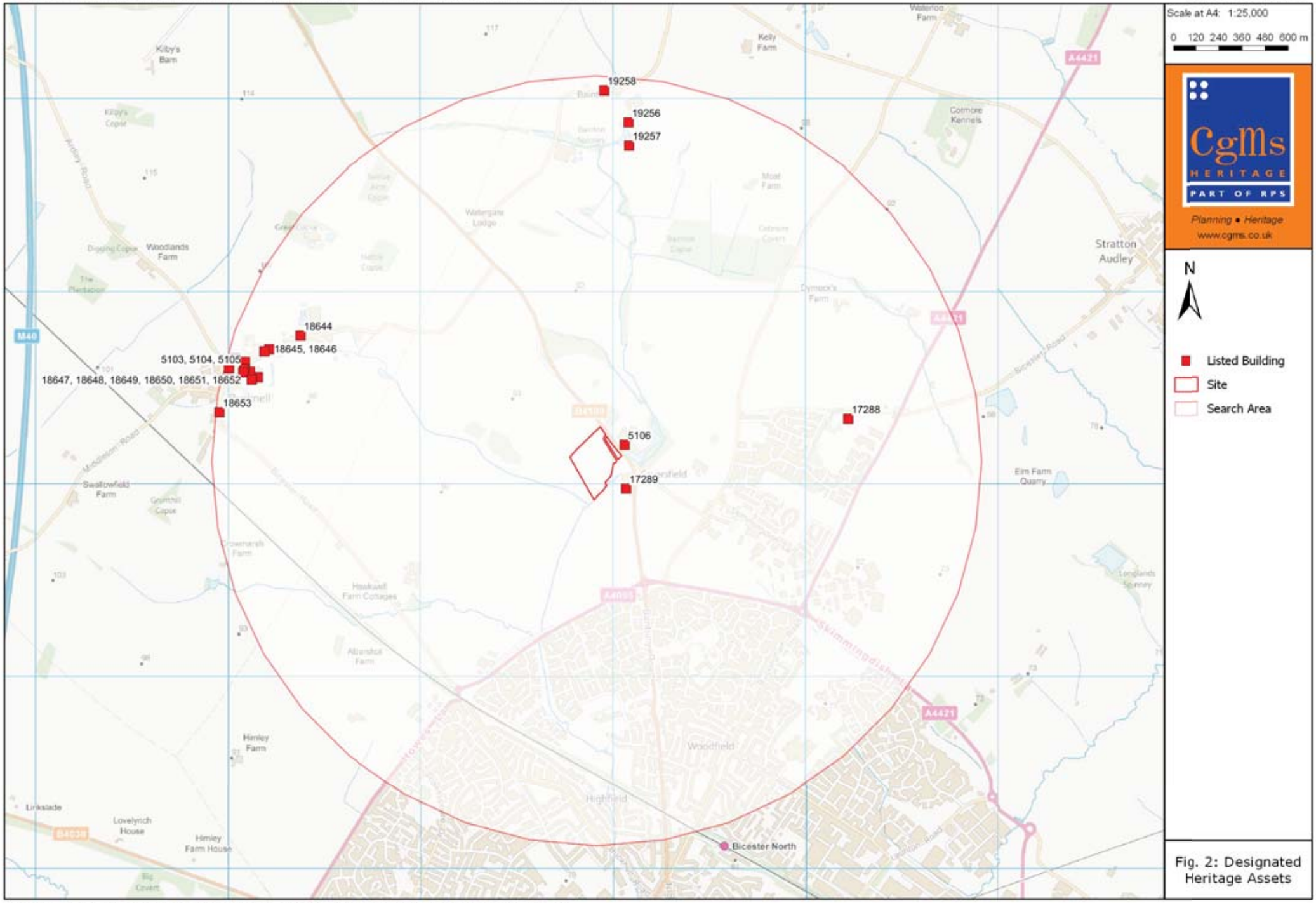

Fig. 2: Designated Heritage Assets

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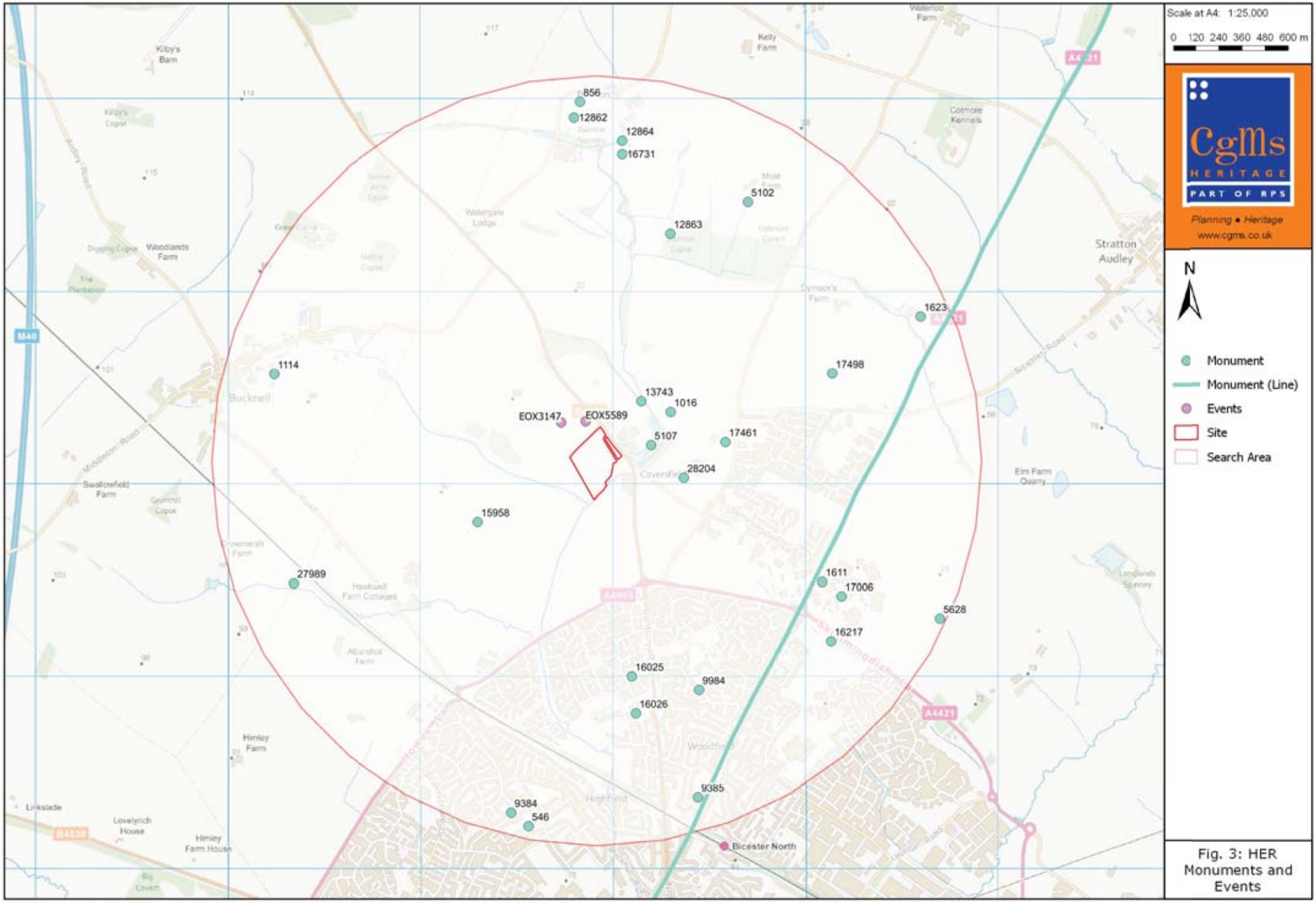

Fig. 3: HER Monuments and Events

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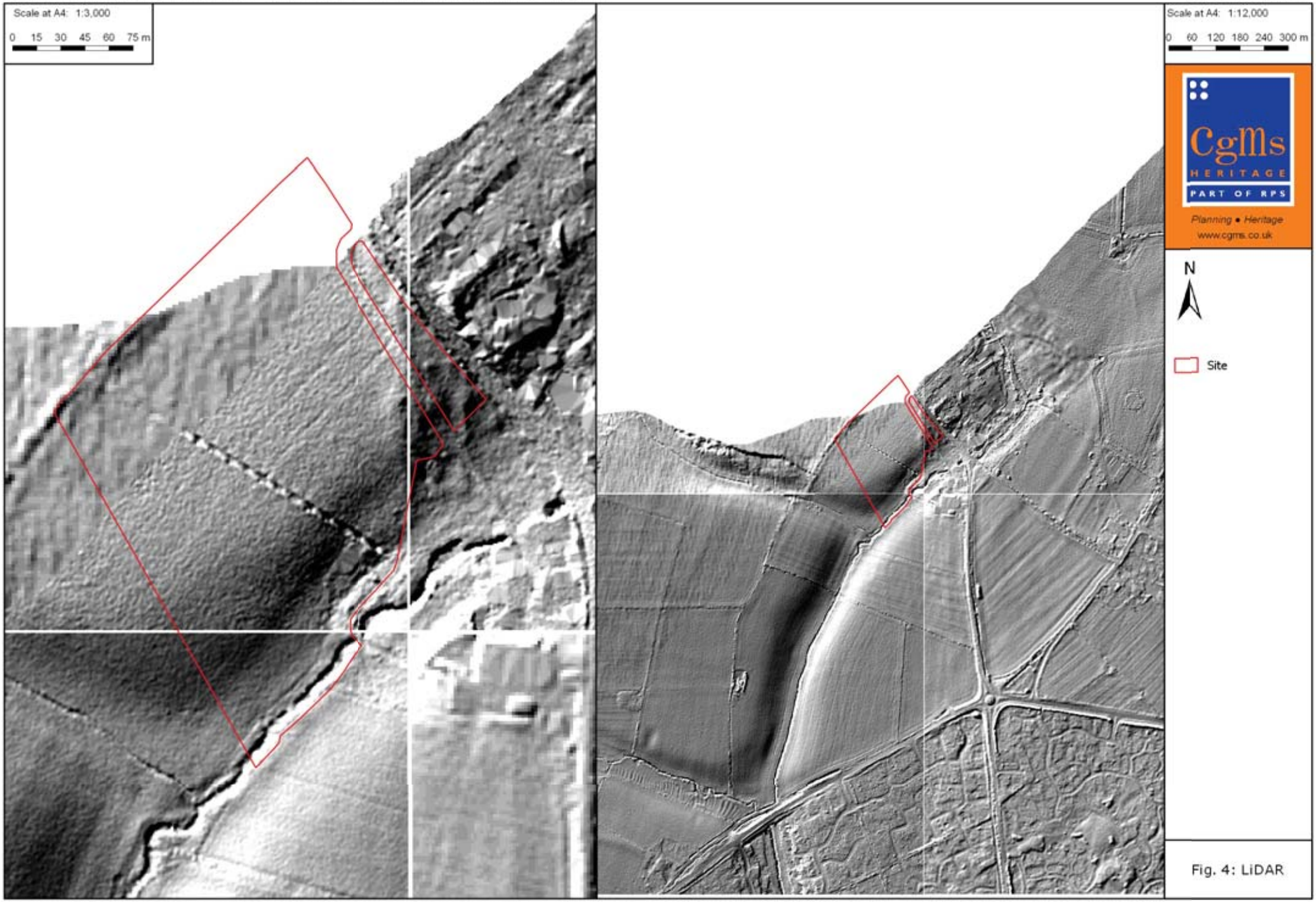

Fig. 4: LiDAR

Site

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Scale at A4: Not to 50,000

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Fig. 5: Saxton's Map of Oxonii, Buckinghamiae et Berceriae Comitatum, 1574

Fig. 6: Thomas Kitchin's New Improved Map of Oxfordshire, 1759

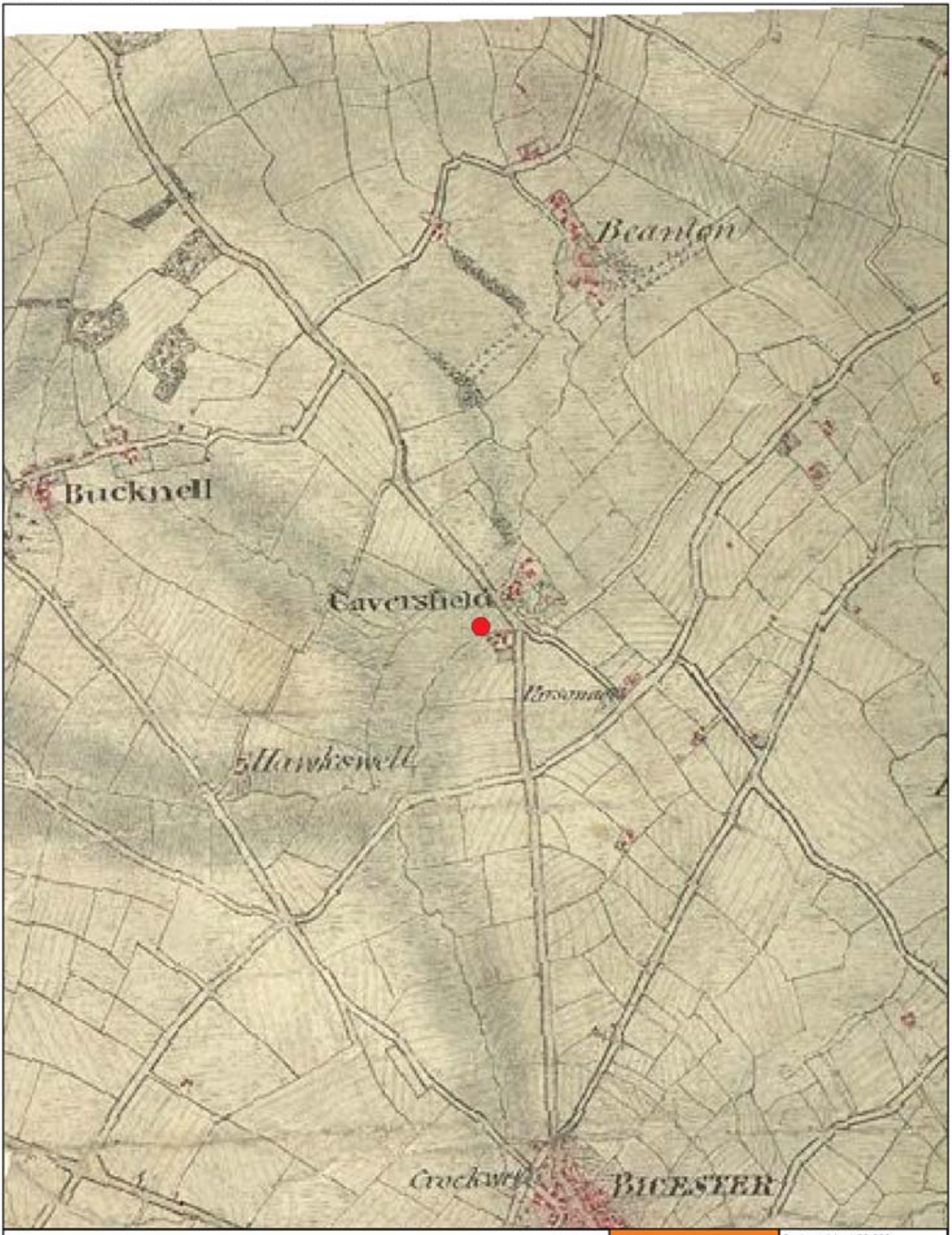

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Fig. 7: William Stanley's Map of Bicester. 1815

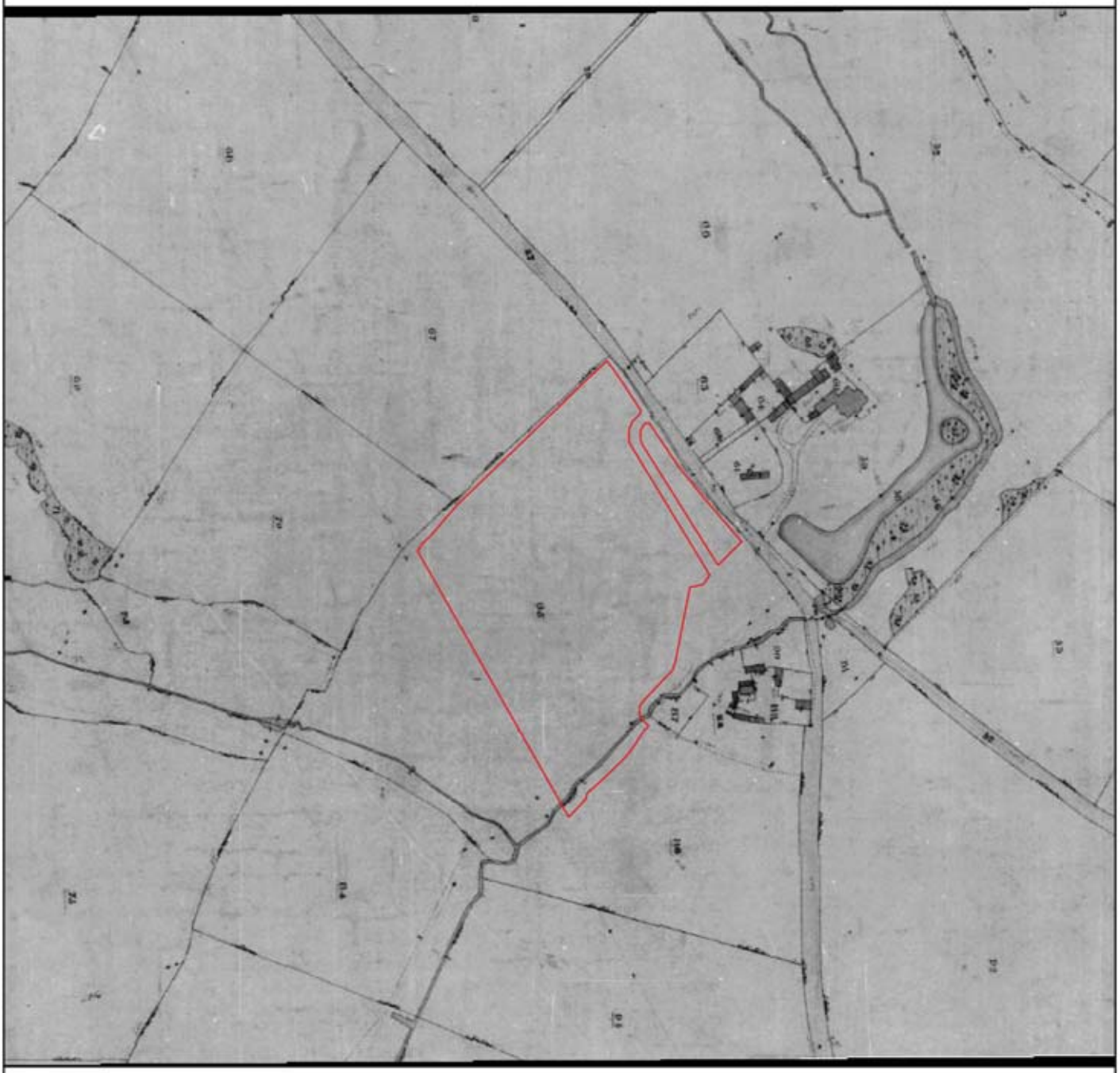

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Fig. 8: Caversfield Parish Tithe Map, 1854

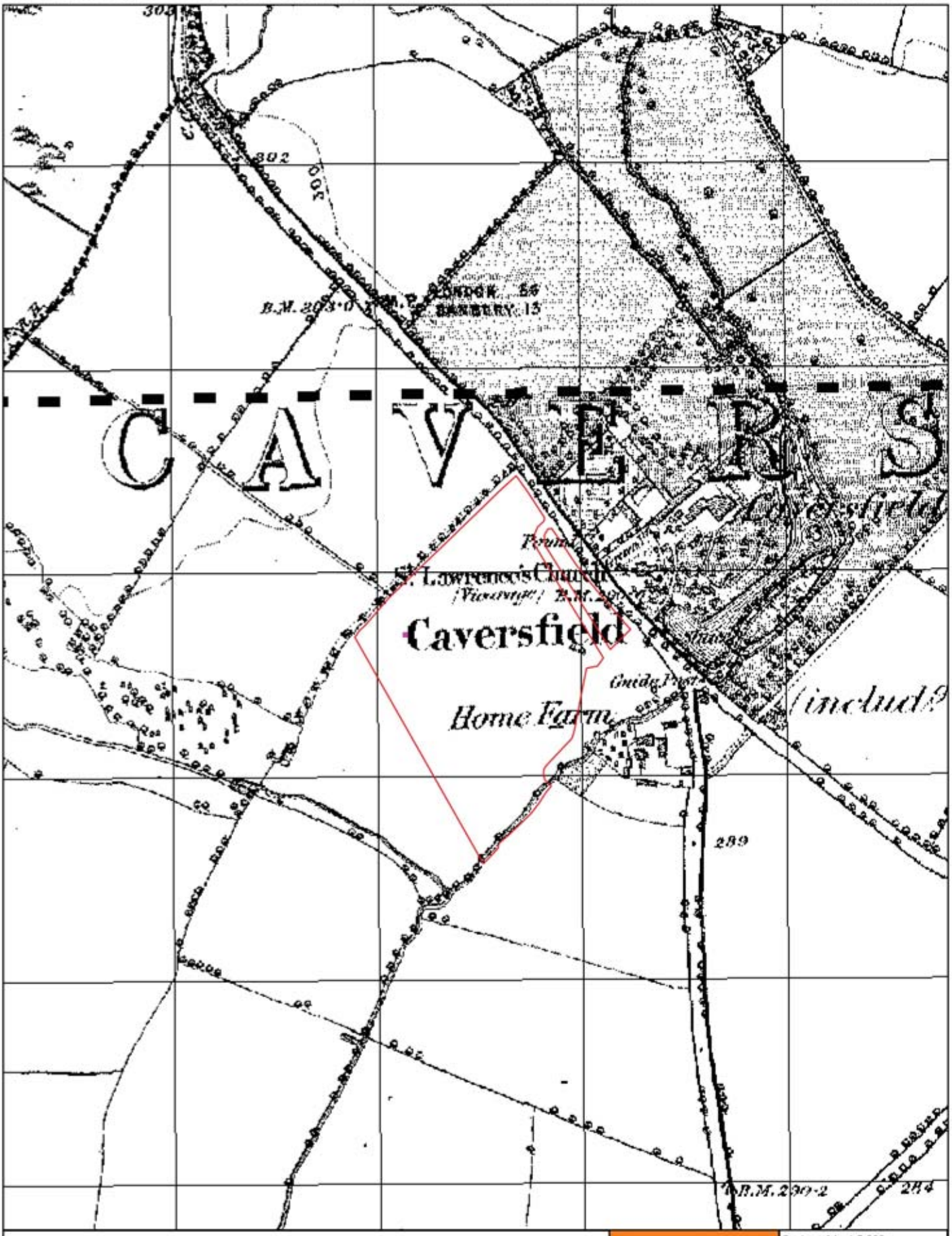

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Fig. 9: Ordnance Survey Map, 1885

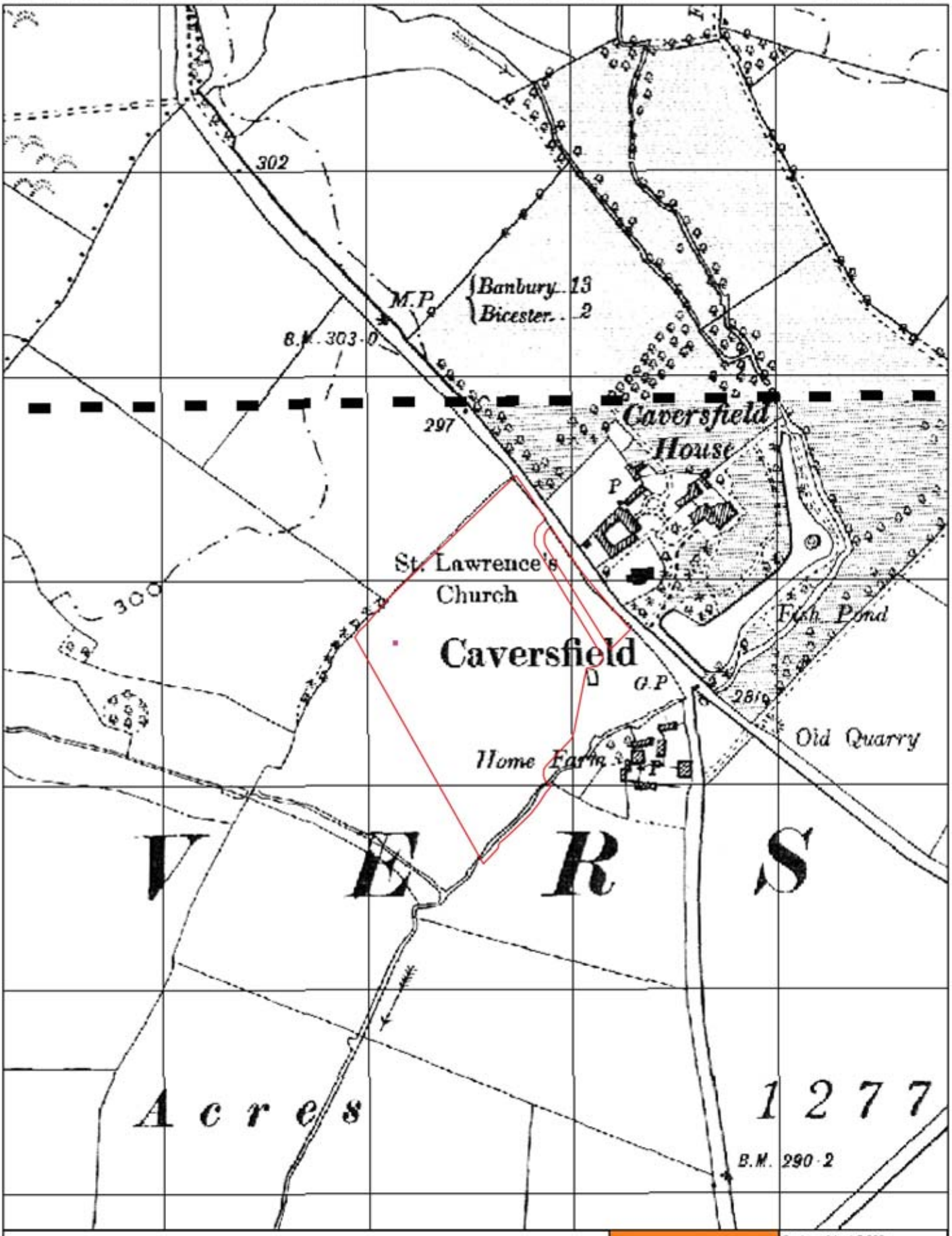

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Fig. 10: Ordnance Survey Map, 1900

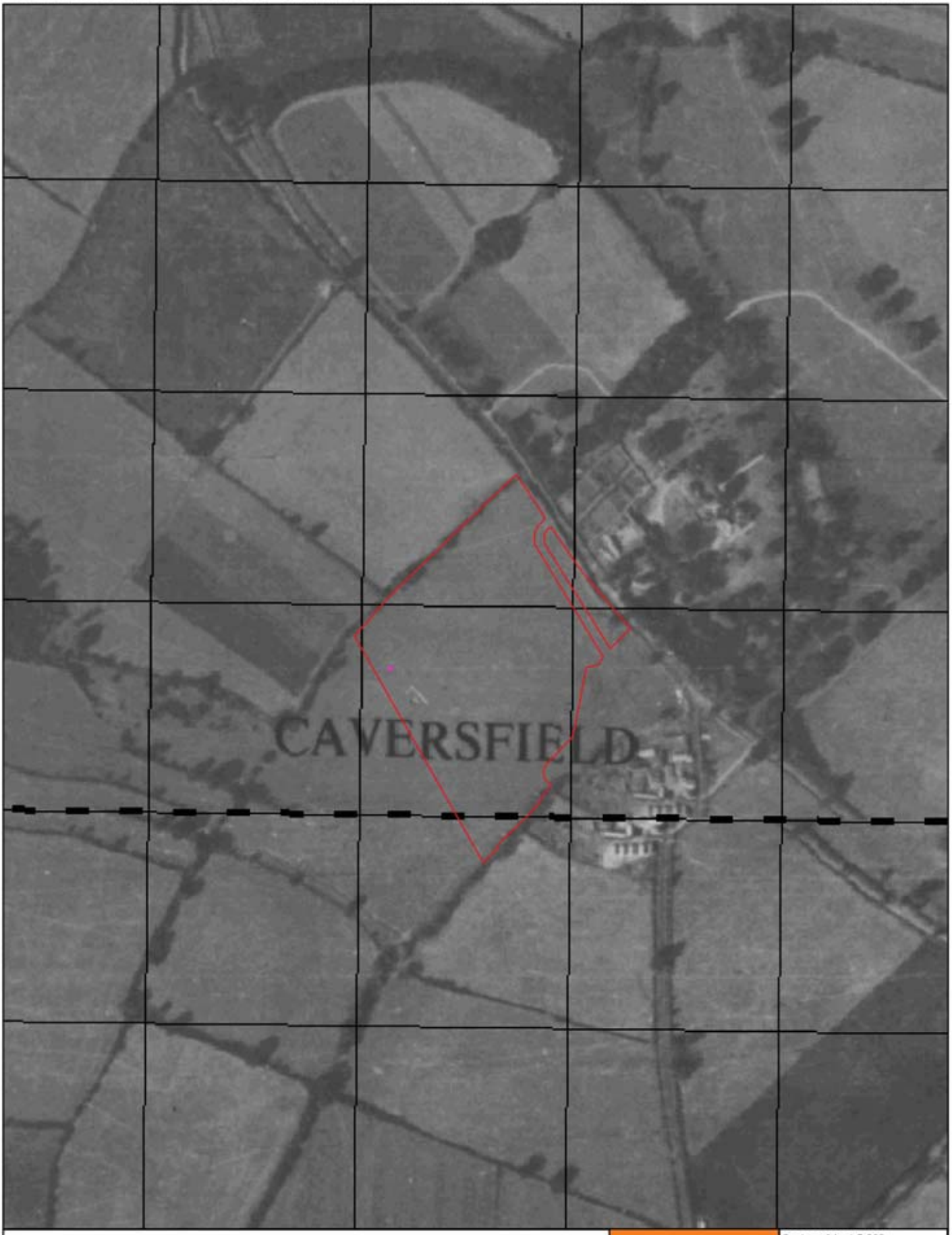

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Fig. 11: Aerial Photograph, 1947

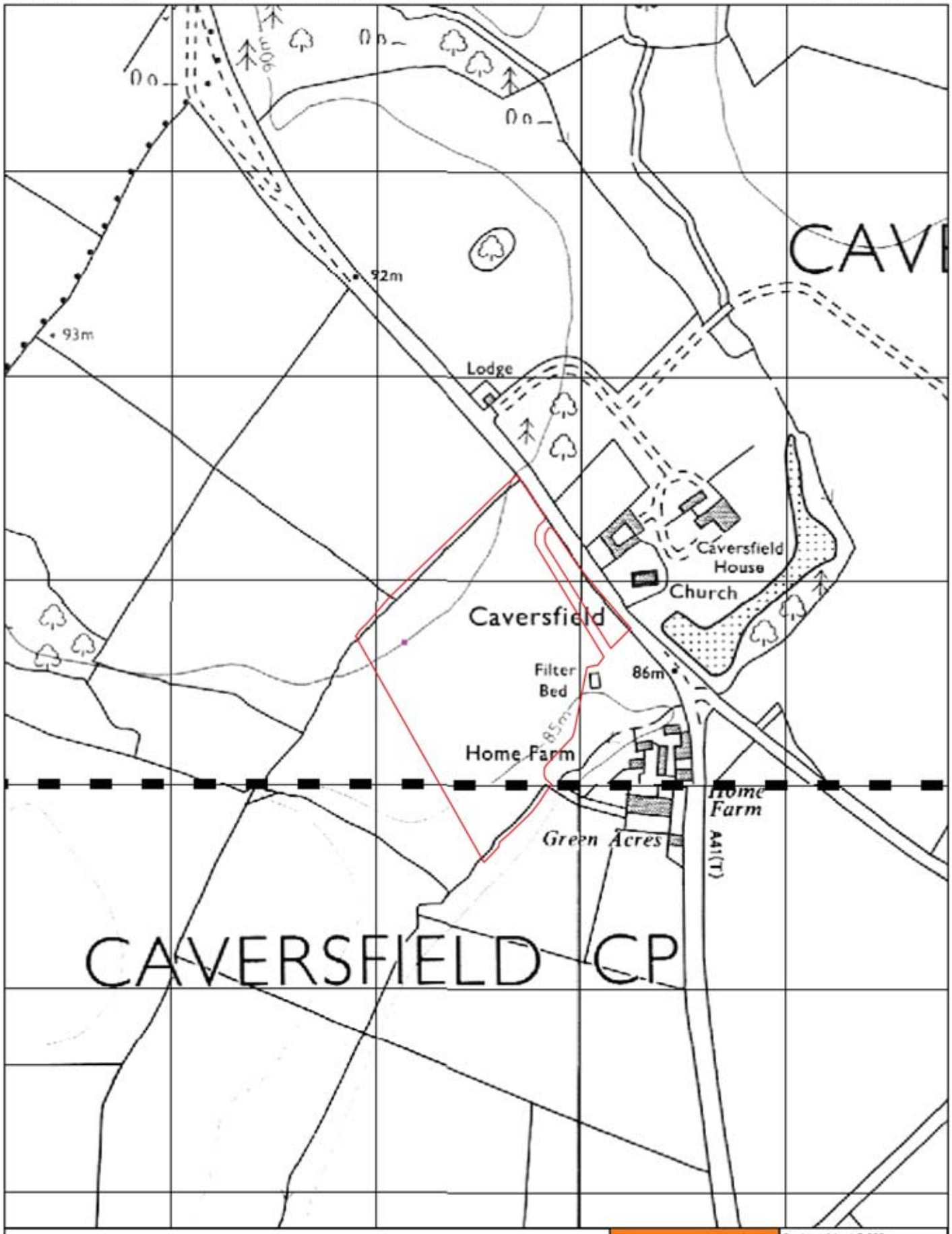

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Fig. 12: Ordnance Survey Map, 1982-5

Plate 1: Overview of the eastern part of the site, facing north.

Plate 2: Overview of the site from its northeast corner, facing southwest.

Plate 3: View of the western part of the site, facing south.

Plate 4: View south along the access road to Home Farm.

Plate 5: View west along a part of the site's southern boundary.

Plate 6: View south into the rear garden of Home Farm.

Plate 7: View south across the modern filter bed.

Plate 8: Manhole seen within the site, for drainage to the filter bed.

Plate 9: View northwest along the internal field boundary.

Plate 10: View south of potential earthworks in the east of the site.

Plate 11: Overview, facing south, of the area of earthworks seen on the LiDAR imagery in the east of the site.

APPENDIX 1: GAZETTEER OF HER DATA

PREFREF	NAME	GRID REF	PERIOD
	Listed Buildings		
5103	Church of St Peter, Bainton Road ***Grade I Listed Building***	SP 5608 2559	Medieval
5106	Church of St Lawrence, A41 ***Grade II* Listed Building***	SP 5806 2520	Early Medieval/Dark Age to Medieval
5104	Medieval Cross, Church of St Peter ***Grade II Listed Building***	SP 5607 2557	Medieval
19257	MANOR FARMHOUSE, HETHE ROAD, BAINTON ***Grade II Listed Building***	SP 58086 26755	Post Medieval
18646	NOS 5 AND 6, BAINTON ROAD ***Grade II Listed Building***	SP 56188 25689	Post Medieval
18648	OLD RECTORY, BAINTON ROAD ***Grade II Listed Building***	SP 56087 25635	Post Medieval
18649	BROCK MEMORIAL APPROXIMATELY 3 METRES SOUTH EAST OF PORCH OF CHURCH OF ST PETER, BAINTON ROAD ***Grade II Listed Building***	SP 56082 25585	Post Medieval
19256	HOME FARMHOUSE, HETHE ROAD, BAINTON ***Grade II Listed Building***	SP 58083 26875	Post Medieval
19258	BARN AT SP 5798 2707, HETHE ROAD, BAINTON ***Grade II Listed Building***	SP 57957 27042	Post Medieval
18647	NOS 8/9, BAINTON ROAD ***Grade II Listed Building***	SP 56038 25651	Post Medieval
18650	OUTBUILDING APPROXIMATELY 30 METRES EAST OF MANOR HOUSE, BAINTON ROAD ***Grade II Listed Building***	SP 56154 25553	Post Medieval
18652	NUMBER 13 AND ATTACHED OUTBUILDING, BAINTON ROAD ***Grade II Listed Building***	SP 56004 25599	Post Medieval
17288	BRASHFIELD HOUSE AND BRASHFIELD LODGE, A421 ***Grade II Listed Building***	SP 59225 25337	Post Medieval
18651	OUTBUILDING APPROXIMATELY 50 METRES NORTH OF MANOR HOUSE, BAINTON ROAD ***Grade II Listed Building***	SP 56113 25584	Post Medieval
18644	MANOR FARMHOUSE, BAINTON ROAD ***Grade II Listed Building***	SP 56375 25771	Post Medieval
17289	HOME FARMHOUSE, A41 ***Grade II Listed Building***	SP 58070 24974	Post Medieval
18653	THE TRIGGER POND PUBLIC HOUSE, BICESTER ROAD ***Grade II Listed Building***	SP 55955 25371	Post Medieval
5105	Manor House, Bainton Road ***Grade II Listed Building***	SP 5612 2554	Post Medieval
18645	LANESIDE HOUSE, BAINTON ROAD ***Grade II Listed Building***	SP 56213 25700	Post Medieval to Modern
	Monuments		
5628	Possible Bronze Age Round Barrow Cemetery	SP 5970 2430	Prehistoric
15958	Later Prehistoric Rectilinear Enclosures	SP 573 248	Prehistoric
16025	Iron Age Settlement, Slade Farm	SP 5810 2400	Prehistoric
16026	Mesolithic Gully with possible postholes & artefacts at Slade Farm	SP 5812 2380	Prehistoric
28327	Iron Age Features	SP 5651 2316	Prehistoric
17461	Possible ring ditch east of Caversfield	SP 5858 2523	Prehistoric
27989	Late Prehistoric or Roman features at Bicester Eco-development	SP 5664 2445	Prehistoric to Romano-British
9984	Roman Enclosures and finds (SW of South Farm between A41 and A421)	SP 5844 2393	Romano-British
1611	Roman Inhumations	SP 5909 2449	Romano-British
8922	Roman Road	SP 6117 2736	Romano-British
1623	Roman Possible Villa at Fringford Lodge	SP 5960 2587	Romano-British
16217	Possible Roman Settlement (land adj to Skimmingdish Lane)	SP 5913 2418	Romano-British
856	Bainton Shrunken Medieval Village	SP 578 269	Saxon/Early Medieval to Post

			Medieval
13743	Medieval Fishpond (NE of Caversfield House)	SP 5814 2542	Medieval
1016	Caversfield Deserted Medieval Village	SP 583 253	Medieval
1114	Medieval Moat and Site of Manor House	SP 562 255	Medieval
5102	Medieval Moat, Cotmore Farm	SP 5870 2646	Medieval
16731	Site of Bainton Manor	SP 5805 2671	Medieval to Post Medieval
546	Site of Union Workhouse	SP 5756 2322	Post Medieval
9384	Site of Post Medieval Quarry Kiln	SP 5747 2329	Post Medieval
9385	Site of Post Medieval Windmill	SP 5844 2337	Post Medieval
12862	Bainton Park	SP 578 269	Post Medieval
12863	Post Medieval Wood - Fox Covert (Bainton Copse)	SP 583 263	Post Medieval
12864	Post Medieval Fishponds, Bainton Manor	SP 5805 2678	Post Medieval
5107	Post Medieval Fishpond	SP 5820 2520	Post Medieval
17006	RAF Bicester: World War II Airfield	SP 59190 24415	Post Medieval
17463	Rectagular enclosure south of Glebe Farm	SP 5905 2695	Undated
17498	Linear features and possible pits at Dymock's Farm	SP 59142 25574	Undated
28204	Linear features at South Lodge Stables	SP 5837 2503	Undated
Events			
EOX54	Slade Farm	SP 578 240	1992
EOX55	Slade Farm II	SP 581 244	1993-1995
EOX42	Southwold County Primary School	SP 5844 2401	1993
EOX2930	Land North of Fringford Lodge	SP 59538 25929	1993
EOX1866	Evaluation and Watching Brief at Fringford Lodge	SP 5960 2587	1994
EOX2284	Interim Note on Geophysical Survey at Fringford Lodge	SP 5959 2583	1994
EOX35	Evaluation at Slade Farm	SP 580 240	1996
EOX41	Slade Farm	SP 580 240	1996
EOX2524	Slade Farm	SP 5811 2401	1996
EOX37	Land adjacent to Skimmingdish Lane	SP 591 242	2000
EOX849	The Churchyard, St Peter's Church	SP 5609 2560	2001
EOX953	RAF Bicester, Oxon 2002	SP 5925 2450	2002
EOX3099	Land at Bicester	SP 59853 23530	2002
EOX1104	Archaeological watching Brief at Bucknell Sewage Pumping Station	SP 563 250	2003
EOX2035	Dymock's Farm	SP 59142 25573	2006-2007
EOX1310	Skimmingdish Lane, Bicester: archaeological watching brief	SP 591 242	2004
EOX2292	An Archaeological Evaluation at The Woodyard, Bainton	SP 5769 2705	2008
EOX2425	Watching Brief: The Old Rectory, Bainton Road	SP 5609 2562	2009
EOX3414	Archaeological geophysical survey for the proposed Bicester Eco Development Oxfordshire	SP 5661 2448	2011-2012
EOX3147	Bicester Eco Town - review of aerial photography	SP 57733 25318	2010
EOX5589	Bucknell Road	SP 5786 2532	2012
EOX3465	Land at South Lodge Stables	SP 5837 2503	2013
EOX5575	Land Off Skimmingdish Lane	SP 5983 2355	2014
EOX5650	Bicester Eco Development	SP 56698 24202	2014
EOX6260	Land S of Skimmingdish Lane	SP 5976 2361	2017

Appendix 2: Aerial Photographic Survey

AIR PHOTO SERVICES

Archaeology • Research • Law • Environment • Planning

PLOT SGR1, CAVERSFIELD, BICESTER, OXFORDSHIRE

Assessment of
Aerial Imagery for Archaeology
Co-ordinates 457917, 225122

APS 218 05 01
June 2018

Plot SGR1, Caversfield, Bicester, Oxfordshire
Assessment of Aerial Imagery for Archaeology

Client CgMs Ltd

Planning Authority Cherwell District Council

Air Photo Services document reference 218 05 01/ 01

Air Photo Services project number 218 05 01

Site centred at SP 57917 25122, co-ordinates 457917 225122

Report status	FINAL
Issue date	13th June 2018
Report prepared by	Charlotte Willis MSc ACIfA
Air photo interpretation and mapping	Charlotte Willis MSc ACIfA
Lidar visualisations processed and image interpretations by	Charlotte Willis MSc ACIfA
QA checked by	Chris Cox MA MCIfA FSA Pippa Griffiths BA ACCA

Disclaimer

Contents

SUMMARY

S1 This assessment of aerial imagery considers land at Plot SGR1 at Caversfield near Bicester in Oxfordshire. The site is centred at UK National Grid Reference (NGR) SP 57917 25122, co-ordinates 457917 225122. The report considers pre-application advice relating to the site provided by Oxfordshire Council (17/00363/PREAPP). This is particularly in regard to potential earthworks in the east part of the site which may relate to modern filter beds or possibly to residual features associated with a relict medieval landscape.

S2 The object of this assessment was to provide information on the location and nature of buried and upstanding archaeological features which are visible on historic aerial photographs, modern aerial and satellite imagery and visualised Airborne Laser Scan (ALS) which is also known as Light detection and ranging (Lidar) data to assess the topographic and micro topographic features within the site and a 250m buffer.

S3 Aerial and satellite images displayed at all the timelines at www.google.com/earth (1945, 2000, 2004, 2006, 2009, 2013, 2017), aerial and 'birdseye' oblique imagery at www.bing.com/maps, and the 'satellite' layer displayed at www.google.co.uk/maps in May 2018 were consulted, alongside vertical aerial photographs held as prints at the Historic England Archive in Swindon which were taken between 1946 and 2004. Lidar data were gathered by the UK Environment Agency (EA) in 2003 at 2m resolution and 2011 at 1m resolution and were downloaded from the EA website and processed in May 2018. Composite datasets which covered the site were also downloaded and processed for completeness. The Cambridge University Collection of Aerial Photographs (CUCAP) was not open for consultation during the timescale of this assessment.

S4 Aerial imagery evidence supports the data and interpretation presented by the 2018 Magnitude Surveys geophysical survey (Harris, 2018), that the area beside the road has been subject to soil accumulation and disturbance from the road and more modern development in the area.

S5 Aerial imagery analysis has not identified any features at the east of the site that correspond to the earthwork feature(s) discussed in Oxfordshire Council's Pre-application advice (17/00363/PREAPP). This does not preclude the presence of buried features but only confirms that in the sources available to this study the cited feature(s) is/are not visible beside the road or within the site as heritage assets.

S6 In 1946 residual earthwork Medieval/Post Medieval ridge and furrow (aligned north west - south east) is visible across the whole of the site, except the eastern side, but can no longer be seen by 1952. The ridge and furrow forms part of the Medieval landscape which surrounds the church of St Lawrence (MOX4898) and the deserted Medieval Settlement to the east of the site (MOX4882). It indicates that the site lay within the outfields to this settlement and there is thus no potential for Medieval settlement in the site.

S7 In 1975 there are cropmarks visible at the west and centre of the site which are most likely geological, but could indicate some archaeological activity, which concur with the results of the 2018 Magnitude Surveys report (Harris, 2018). There are some ditches in this area that were previously identified as archaeological features by the Air Photo Services Bicester Eco Village project

(Cox, 2010).

S8 Outside of and adjacent to the site, to the south east, there is a rectangular fenced enclosure which is visible on all available images and appears to enclose modern filter beds.

S9 The area to the immediate south east of the site is disturbed by animal and vehicular access in most years. In 1946 undefined residual ground disturbance is visible in this area but this cannot be securely identified as archaeological in origin and is likely to be connected with livestock and vehicular access to and from a farming area.

S10 Whilst all available aerial images have been consulted, it is always possible that further survey or intrusive investigations will discover additional buried features to those recorded from airborne sources.

1 INTRODUCTION

1.1 This assessment of aerial imagery considers land at Plot SGR1 at Caversfield near Bicester in Oxfordshire. The site is centred at UK National Grid Reference (NGR) SP 57917 25122, co-ordinates 457917 225122. The report considers pre-application advice relating to the site provided by Oxfordshire Council (17/00363/PREAPP). This is particularly in regard to potential earthworks in the east part of the site which may relate to modern filter beds or possibly to residual features associated with a relict medieval landscape.

1.2 The object of the assessment was to provide information on the location and nature of archaeological features which are visible on historic aerial photographs, modern aerial and satellite imagery and visualised Airborne Laser Scan (ALS), which is also known as light detection and ranging (Lidar) data to assess the topographic and micro topographic features within the site and a 250m buffer.

1.3 Aerial and satellite images displayed at all the timelines at www.google.com/earth (1945, 2000, 2004, 2006, 2009, 2013 and 2017), aerial and 'birdseye' oblique imagery at www.bing.com/maps, and the 'satellite' layer displayed at www.google.co.uk/maps in May 2018 were consulted, alongside vertical aerial photographs held as prints at the Historic England Archive in Swindon which were taken between 1946 and 2004. Lidar data were gathered by the UK Environment Agency (EA) in 2003 at 2m resolution and in 2011 at 1m resolution, there were also two composite datasets at 1m and 2m resolution. All available datasets were downloaded from the EA website and processed in May 2018.

1.4 The Cambridge University Collection of Aerial Photographs (CUCAP) was not open for consultation during the timescale of this assessment. The cover search, available by searching the online database, suggests that there are three photographs around the site, however these are between 500m and 1km away and so are unlikely to add relevant detail to the study. Nevertheless, if the Cambridge collection should reopen to the public, it is advised that the photographs are examined.

1.5 It is important to note that aerial imagery usually only shows part of the horizontal and vertical extent of buried and upstanding features. Their capacity to reveal features as crop marks, vegetation marks, soil marks or as shadows cast by banks, ditches and walls, depends upon a number of environmental, lighting and agricultural factors prevalent at the time of the photographic survey.

1.6 Stereoscopic pairs of vertical aerial photos were viewed using a magnifying mirror stereoscope to allow three-dimensional viewing and checked to single photos and differently visualised Lidar data. This increased the reliability of the interpretations and identification of different feature types, as comparative analysis is good practice when considering multiple data sets.

1.7 Visualised Lidar data were used alongside the historic and modern aerial photographs and were particularly useful for testing the presence of discrete earthworks using the profiling tool.

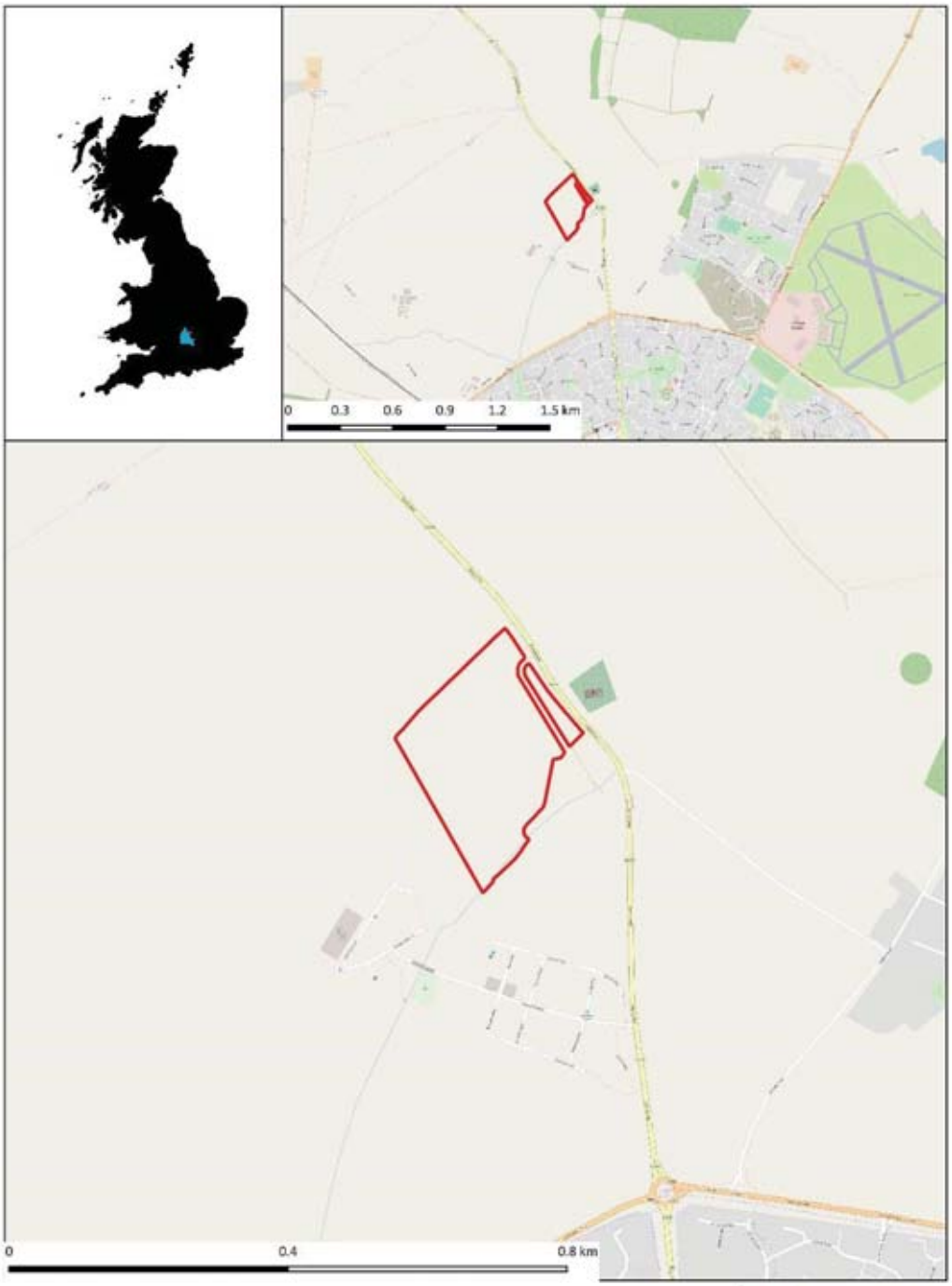

Figure 1: Site Location

Client: CgMs
Date: May 2018
Project: APS 218 05 01
By: Charlotte Willis

2 THE SITE

2.1 The site is located at UK National Grid Reference NGR SP 57917 25122, co-ordinates 457917 225122. Figure 1 above shows the site location.

Topography, land use, geology and soils

2.2 The site is located on a gentle slope with the highest point in the northwest, sloping downwards towards the southeast. The site is bounded by the B4100 on its eastern side and a small stream on its southern edge. To the north and west are new-build estates and the main settlement at Caversfield is to the East. Bicester is circa 550m to the south of the site.

2.3 There are no superficial geologies recorded for the site on the British Geology of Britain Viewer (BGS, 2018). The viewer records two bedrock geologies within the site. The majority of the site is Cornbrash Formation – Limestone. This is a sedimentary bedrock which is indicative of an area previously dominated by shallow seas (BGS, 2018). The western edge of the site is described as Forest Marble Formation – Limestone and Mudstone. Similarly, to the rest of the site, this is a sedimentary bedrock indicative of previously being an area of shallow seas (BGS, 2018).

2.4 Soilscapes defines the soil across the entire site as freely draining lime-rich loamy soil which drains to chalk or limestone groundwater (Cranfield, 2018).

Previously recorded heritage assets and previous events

2.5 There are no heritage assets recorded in the OHER within the site. The site and its immediate environs have not been previously surveyed from aerial photographs by the Historic England National Mapping Programme (NMP).

2.6 The site and its wider environs lie within an area which was previously assessed from aerial photographs by Air Photo Services (Cox 2010, EOX3147) during the planning process associated with the Bicester Eco Town project. This assessment identified buried enclosures, tracks and other features which indicate a buried likely prehistoric or Roman farming, settlement landscape with indications of overlying medieval fields and some geological features in the vicinity and partially within the site. Buried linear and more fragmentary features recorded within the site maybe geological.

2.7 The HER records a second event, EOX5589, within the 250m buffer to the site. This magnetometry survey was undertaken by Northamptonshire Archaeology (2012) at Bucknell Road as part of the Eco Town assessment project.

2.8 There are four monuments points within the 250m buffer for the site. Two of these points are buildings including the Church of St Lawrence (MOX4898) and Home farmhouse (MOX14450). The remaining monuments points relate to two fishponds dating to the Medieval period (MOX4899 & MOX4917).

2.9 There are two further monuments points within the 500m buffer of the site. These points are located to the northeast of the site and include a deserted medieval settlement (MOX4882) and linear features which were identified by Thames Valley Archaeological Services during a magnetometer survey (MOX24734).

2.10 There is one event recorded within 500m of the site relating to land at South Lodge stables (EOX3465). Thames Valley Archaeological Services completed a magnetometry survey in 2013.

2.11 Within 750m of the site there are two recorded heritage assets. There is a later prehistoric rectilinear enclosure (MOX5633) to the south west of the site and a possible ring ditch of unknown date to the north east of the site (MOX23344).

2.12 There is one event recorded within 750m of the site which is a countryside planning and management plan (1993-1995) at Slade Farm (EOX55).

2.13 Overall, the HER demonstrates the range of the archaeological resource in this area and has served as an important indication of the type of sites likely to be visible through aerial imagery within the site and its immediate environs.

3 ARCHAEOLOGICAL AND NATURAL FEATURES FROM AERIAL IMAGERY

3.1 In suitably cultivated soils, subsurface 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 grass and crops growing above them.

3.2 Upstanding features, which may survive in unploughed grassland are also best recorded in winter months when vegetation is sparse, and the low angle of the sun helps pick out slight differences of height and slope.

Limitations of the aerial photographic data

3.3 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 from the air.

3.4 The visibility of archaeological features may differ from year to year, dependent on the type of crop or land use, prevailing weather and levels of moisture in the soil over the grass or crop growing season. Differences in the intensity and angle of the light also assist greatly in seeing the nuances of slightly upstanding earthwork features, as are present on this site. Individual photographs often record only a small percentage of the actual extent of buried or upstanding features, and a wide range of photos taken over a long timescale may be needed to reveal the extent of extant and any buried features from the air.

Lidar data

3.5 Airborne Laser Scan (ALS) data, otherwise known as Light Detection and Ranging (Lidar) data, have been collected from airborne survey platforms in recent years at varying resolutions, and are available for download, processing, visualising and interpretation via the Environment Agency for England website, http://environment.data.gov.uk/ds/survey/index.jsp#/survey

3.6 Lidar data indicates variation in the height of the ground surface. Data is collected by an active laser beam fired in pulses which scans the ground surface. The reflected pulses are recorded by the sensor on board a geo-located airborne survey platform, fitted with an inertial measurement unit to record the roll, pitch and yaw of the aircraft.

3.7 The point cloud data derived from the survey are processed into a series of Digital Elevation Models (DEM) usually in American Standard Code for Information Interchange (ASCII) format. These include Digital Surface Models (DSM) which contain tree cover and buildings, and Digital Terrain Models (DTM) which remove tree cover and can reveal features beneath the tree canopy (Bennett et al 2012, Hesse 2010, Stular et al 2012).

3.8 These data are of assistance in recording micro and macro topographic features which may indicate relict or extant archaeological features and historic landscapes alongside more modern features.

Lidar data are best interpreted and used in conjunction with modern and historic aerial photographs and maps to provide ground truth information for features and sites recorded via this prospection method.

3.9 The data needed were identified by using the EA timestamp shapefile detailing the Lidar file names within the area of interest and the Ordnance Survey 10km and 5km grid square to identify the grids and quarter sheets. Digital Terrain Models were selected as the primary data source as the ability to remove the tree canopy makes it ideal for prospection. All available Lidar data for this site were downloaded for completeness of evidence. This included 2m and 1m DSM, DTM and composite datasets. Further information regarding these datasets can be seen in the associated table which is appended to this report. The data were downloaded on the 2nd May 2018 and visualised on the same day.

3.10 The data were visualised into Hillshade, Multi directional Hillshade, Simple Local Relief Model (SLRM), Slope, Sky View Factor, Anisotropic Sky View Factor, Open Positive and Open Negative using the Relief Visualisation Toolkit (RVT) Version 1.2. These visualisations where chosen as they are of most use for archaeological prospection. The multiple ASCII tiles were merged before being visualised for ease of use in the GIS. The data were analysed alongside the APs and base mapping to double check the topography and nature of features interpreted from Lidar data.

3.11 The SP52 2m DTM and DSM data provided coverage for the majority of the site excepting the north east corner. The SP52 1m DTM and DSM covers the southern two thirds of the site. Two composite datasets at 1m and 2m resolution were also downloaded and visualised. Analysis of the data proved useful in testing the presence of potential earthwork features through the use of the profiling tool.

4 AIR PHOTO INTERPRETATION AND MAPPING

Photographs examined for this assessment

4.1 In this instance the vertical aerial photographs held at the Historic England Archive in Swindon proved instrumental to the mapping for this project.

4.2 Vertical aerial photographs have been taken over the whole of Britain since the 1940s and provide information on a series of dates between 1940 and the present. Many of these vertical surveys were not flown at times of the year that are best to record the archaeological features sought for this assessment and may have been taken at inappropriate dates to record crop and soil responses that may be seen above subsurface features.

4.3 Vertical photographs are taken by a camera fixed inside an aircraft and with its exposures timed to take a series of overlapping views that can be examined stereoscopically. This technique was useful in this assessment in assisting to identify the topographic details which were demonstrated by the processing, visualisation and analysis of Lidar data.

4.4 The Photographs and Lidar data which were consulted are listed in the Appendix to this report.

Methodology

4.5 All photographs were interpreted and mapped at a level compatible with a 1:2500 scale base map.

4.6 The photographs were closely examined by eye and under 1.5x and 3x magnification and interpreted with the aid of a mirror stereoscope where appropriate, or in detail on screen when consulted as digital files.

4.7 Aerial photographs were digitally rectified to an OS base map using the QGIS rectification tool. This was done to remove perspective distortion and ensure correct rectification of aerial photographs to the OS map (Scollar 2002 and 2014). Images from Google Earth were also interpreted and rectified to OS map bases and used in accordance with observations made by Scollar and Palmer, 2008.

4.8 In all transformations prepared for this assessment the mean mismatches were less than ± 2.5m. The rectified files were set as background layers in QGIS where features were interpreted and drawn over the rectified photographs

4.9 Layers from this final drawing have been used to prepare the illustration for this report and are provided digitally for import to a Geographic Information System, in ESRI Shapefile format.

RESULTS

Year	AP REF	Landuse	The Site	250m Buffer
1900	Ordnance Survey Map	N/A	The site is shown as open field.	There is a rectangular feature to the immediate south east of the site.
1946	RAF/CPE/UK/1897 3153 & 3154	Pasture/Arable	The site is partially within the frame with only the north east clearly visible. There are animals grazing within the site and plough lines are visible. There is a faint curved cropmark at the north east of the site which is likely related to agriculture. There is residual earthwork ridge and furrow across the site orientated roughly north west – south east. The ridge and furrow is not visible at the eastern side of the site.	To the immediate south east of the site boundary there is an area of disturbed ground which has the appearance of an access or feeding point for animals. There is also a rectangular fenced enclosure in this area which abuts the site boundary. The photographs clearly show the Church of St Lawrence and its associated grounds (MOX4898) to the immediate east of the site. The fields to the north of the site are visible and are all in agricultural use.
1946	RAF/CPE/UK/1897 4153 & 4154	Pasture/Arable	The site is an open field which has been ploughed and there are animals grazing. There is very residual earthwork remains of ridge and furrow visible across the site, orientated approximately north west – south east. The ridge and furrow is not visible at the eastern side of the site.	To the immediate south east of the site there is an area of disturbance which is likely caused by access for animals. To the immediate south east of the site the rectangular structure is present and there is evidence of animal feeder rings as marks in grass.

1952	RAF/540/673 4448 & 4449	Pasture/grass	This stereopair is poorly lit but shows the site as laid to pasture with no animals present. At the west of the site there is a small section of field which is fenced off. Across the site there are round marks in grass which are consistent in appearance with marks left by animal feeders.	To the immediate south east of the site the rectangular enclosed area is still present. There is also clear interaction between this area and the farm to the south. The immediate environs of the site are agricultural fields and the poor lighting is not conducive to identifying archaeological sites and features.
1961	FSL/6125 13115 & 13116 & 13117	Pasture	The site is laid to pasture and there are no animals present. To the central west of the field there are three small square structures which are likely animal shelters. The centre and north east of the site are disturbed and the underlying geology is clearly visible as marks in vegetation in these frames.	The rectangular area is present to the immediate south east of the site. The ground surface in this area is disturbed which may be where animal houses have previously been sited. There is clear interaction with the farm to the south as the trackway between them is well worn and defined. There is also evidence for agricultural activity in this area.

1966	OS/66042 36 & 37 & 38	Arable	This stereopair is very clear and shows the site under plough with no visible animals within the site. At the south west corner there are three small structures which are likely chicken coops. At the north of the site there are chalky marks which are likely caused by an agricultural process.	The rectangular structure that bounds the south east boundary is present. To the immediate south east of the site the ground is disturbed as seen in previous years in this area.
1970	OS/70023 016	Pasture	The site is only partially visible at the extreme corners of frame.	There is clear disturbance to the south east of the site caused by vehicles and interaction with the farm to the south.
1973	OS/73252	Arable	The site is shown under the plough and is split into two areas by an internal division running north west – south east at the approximate centre of the site. There are animals grazing at the western side of the field. At the west of the site, there are curvilinear marks in grass which are consistent with marks left by feeder rings.	The area to the immediate south east of the site has been stripped back to bare earth in places. The rectangular structure is still present and is partially obscured by trees. There are also two small rectangular structures in this area.

1975	OS/75312 031 & 032	Pasture	The previous field divisions are faintly visible. There are cropmarks across the central part of the site which are likely to be caused by geological features.	To the immediate south east of the site the area is disturbed which may be the remnants of disturbed residual earthworks but may also be as a result of the disturbance seen in previous years in this area. The rectangular feature is present but is mostly obscured by trees and vegetation. In the wider environs there are numerous cropmark sites including a rectilinear enclosure to the north west of the site. These cropmarks have previously been mapped by APS as part of the Bicester Eco Town project.
1981	POX0452870 - ASTRAL1981:0016/1370 & POX0452871 - ASTRAL1981:0016/1371 (Available online through Oxfordshire History Centre) N.B. Viewed online only – not viewed as prints or in stereo		The site is laid to grass with a central internal division – nothing else of note observed.	

1982-1985	Ordnance Survey Map	N/A	There are no field divisions visible.	The rectangular feature is labelled as a filter bed.
1984	OS/84243 1024 & 1025	Pasture	The site is largely laid to pasture. There are some bare earth areas along the southern boundary which are likely related to agriculture. There is what appears to the remnants of an envelope pattern caused by mechanised modern ploughing visible to the north west.	The rectangular structure to the immediate south east is present and now forms part of a fenced boundary between the site and the area to the immediate south east of the site.
1989	OS/89440 10 & 11	Pasture	The western half of the site is now divided East-West by a fence. There is a trackway (Modern) visible as a mark in grass in the west field.	
1994	OS/94214 28 & 29	Pasture	There are marks in grass visible within the site which are likely geological in origin. There is an animal feed trough at the central east of the site.	There are animals grazing at the immediate south east and the ground surface appears heavily disturbed.

1996	OS/96634 50 & 51	Pasture	This stereo pair is poorly lit which impedes the visibility of earthworks and archaeological features. The western half of the site has animals grazing. At the centre of the southern boundary there are two small rectangular structures with bare earth around them which are likely chicken coops.	
1996	OS/96633 78 & 79	Pasture	As in OS/96634 50 & 51.	The cropmarks to the west of the site which were mapped by Cox in 2010 for the Bicester Eco Town Project are clearly visible in these frames.

DTM 2003 2m	Environment Agency Lidar		These data cover the majority of the site however there are no data available for the north east corner. The data is at 2m resolution and as such is relatively coarse. The 2003 DTM data shows a field boundary at the approximate centre of the site. There is some ground disturbance at the central east of the site, but these do not form any clear features, when profiled there is minimal difference in terrain. The northern half of the site appears more disturbed than the south however similarly to the east there are no discernible features.	
DSM 2003 2m	Environment Agency Lidar		As 2003 1m DTM.	As 2003 1m DTM.
2004	Google Earth	Pasture/Arable	There are animals grazing. To the west of the site there are marks in grass caused by animal huts likely chicken coops. There are haybales at the centre of the south boundary.	The rectangular structure to the south east is present but partially masked by trees.

2006	Google Earth	Pasture	The area that was previously haybales is now enclosed and has more haybales. The rest of the site is laid to grass.	
2009	Google Earth	Pasture	As before.	As before.
DTM 2011 1m	Lidar		The 2011 1m DTM dataset covers the southern two thirds of the site, there is no data available for the northern third of the site. At the approximate centre of the site there are two parallel ditches which run north west – south east which are not visible as earthworks when using the profiling tool. These ditches are likely the internal field boundary and are not likely to be heritage assets.	The disturbed area to the south east of the site is more visible in this dataset than in the 2003 2m data. There are small banks which are not clearly defined but are present as very residual earthworks when profiled. These may be caused by animal disturbance and cannot be securely identified as archaeological through aerial imagery analysis.
DSM 2011 1m	Lidar		As 2011 DTM.	As 2011 DTM.
2013	Google Earth	Pasture	As before.	
2017	Google Earth	Pasture	Geological markings are visible across the site.	
2017	Ordnance Survey Map	N/A	As before.	

	SP52 2m Composite Environment Agency Data	N/A	This dataset only covers the southern corner of the site and is a 2m composite model. There is no clear evidence for archaeological features discernible from these data.	
	SP52 1m Composite Environment Agency Data	N/A	This dataset only covers the southern corner of the site and is a 1m composite model. There is no clear evidence for archaeological features discernible from these data.	

4.10 The interpretation of the aerial imagery is illustrated in overview by Plan 1 which shows the site and buffer zones.

4.11 The site has been under a mixture of pastoral and arable landuse during the whole period that it has been observed from the air.

Within the site

4.12 Geophysical survey which was completed over the site by Magnitude Surveys (Harris, 2018) identified a variety of geological features and an accumulation of soil against the side of the B4100. The mapping provided by the geophysics was a useful additional source of information alongside the HER to assist our mapping from aerial imagery. In most cases the geophysics supported, and in areas augmented, the findings from aerial photographs. Aerial imagery evidence supports the data and interpretation presented by the 2018 Magnitude Surveys geophysical survey (Harris, 2018), that the area beside the road has been subject to soil accumulation from the road and more modern development in the area.

4.13 The earthworks at the east of the site discussed in the pre-application advice and photographed by CgMS as part of their forthcoming DBA were not observed in the sources available to this study which are summarised in the results table. This includes aerial photographs, Google Earth imagery, historic maps and Lidar data. A profile was placed over the area of the proposed earthworks using the Lidar data and no clear earthwork remains were identified. It is likely that there is a build up of soil at the interface of the site and the B4100, which is related to the construction of that road and the interface of the natural and built environment along this part of the road.

4.14 In the 1946 aerial imagery there is very residual earthwork ridge and furrow visible across the site (except at the eastern side) which is orientated approximately north west – south east. The ridge and furrow were not observed in the 1952 aerial photographs, by which time it had been eroded by ploughing.

4.15 The site is seen with animals grazing across multiple frames and curvilinear marks in grass are visible across the site in 1961 and 1973. It is likely that these marks in grass relate to animal feeder rings rather than archaeological features.

4.16 In 1975 there are linear cropmarks visible across the central part of the site which are most likely geological in origin rather than archaeological – these largely follow the contours shown on OS mapping. The 2018 Magnitude Surveys geophysics interpretation (Harris, 2018) also records these features as natural. There are five ditches mapped in this area by APS as part of the Bicester Eco Town project (Cox, 2010).

4.17 The Lidar data and aerial photos show a disturbed area at the interface of the site and the farmyard area to its south, where differences in terrain are likely a result of agriculture.

4.18 In the 2011 1m DTM data there are two ditches which run north west – south east at the approximate centre of the site. These are not visible as earthworks when using the profile tool and likely relate to the former internal field boundary.

4.19 The 2017 Google Earth layer shows the site under pasture with the underlying geology of the site clearly visible as marks in the vegetation.

Within the 250m buffer

4.20 To the immediate south east of the site there is a rectangular fenced enclosure which is visible in all available aerial imagery, which is the site of Modern filter beds, photographs of which were made available by CgMs and will be included in their forthcoming DBA.

4.21 The area to the immediate south east of the site shows slight evidence of residual earthworks in the form of small banks and mounds which do not appear to form any coherent features, these are most visible in 1946. In all frames after 1946 the area is disturbed by animal and vehicular access which renders the ground surface difficult to interpret from aerial imagery. The Lidar data does not clearly show earthworks in this area and the profile tool shows disturbed ground which cannot be securely attributed to archaeological features. This is highly likely to be caused by livestock entering and leaving the field.

4.22 In all years the immediate environs of the site are agricultural and pastoral fields.

4.23 The 1975 stereo pair is well lit and shows multiple cropmark sites within the 250m buffer. All of the cropmark sites seen in the 1975 frames have been previously mapped by APS as part of the Bicester Eco Town project (Cox, 2010). The sites include a rectilinear enclosure to the north west of the site and ditches to the west of the site some of which continue into the site boundary. Some of these cropmark sites were investigated as part of the Bicester Eco Town Evaluation undertaken by Oxford Archaeology in 2010 (Dean, 2010). The evaluation included trenches to the immediate west of the site which cut cropmark features mapped by APS in 2010. The evaluation report does not identify any heritage assets within the trenches in this area.

6 CONCLUSION

6.1 The site has been under a mixture of pastoral and arable use for the duration of its observation and recording from the air.

6.2 Aerial imagery analysis has not identified any features at the east of the site that correspond to the earthwork feature(s) discussed in the pre-application advice provided by Oxfordshire county Council.

6.3 Aerial imagery evidence supports the data and interpretation presented by the 2018 Magnitude Surveys geophysical survey (Harris, 2018) which records soil accumulation adjacent to the B4100 which is not indicative of a heritage asset.

6.4 Medieval/Post Medieval ridge and furrow (north west - south east) was present in 1946 within the site as residual earthworks but can no longer be seen by 1952. The ridge and furrow forms part of the Medieval landscape which surrounds the church of St Lawrence (MOX4898) and the deserted Medieval Settlement to the east of the site (MOX4882).

6.5 There are no visible traces of earthworks associated with medieval settlement within or adjacent to this site.

6.6 In 1975 there are cropmarks visible at the west and centre of the site which indicate likely geological features which pre-date the ridge and furrow in this area. This evidence concurs with the Magnitude Surveys report on the geophysical survey which was undertaken recently (Harris, 2018). There are some ditches in this area that were identified as potentially archaeological by the APS Bicester Eco Village project (Cox, 2010).

6.7 Outside of the site, to the south east, there is a rectangular fenced enclosure which is visible on all available images which encloses modern filter beds.

6.8 The area to the immediate south east of the site is disturbed by animal and vehicular access in most years. In 1946 areas of disturbed ground are visible but these cannot be securely identified as archaeological in origin and is likely caused by livestock movement and farm access.

7 ACKNOWLEDGEMENTS

7.1 Many thanks to the Archive at Historic England, to our clients, CgMs Ltd, and to OHER for provision of research materials for this assessment.

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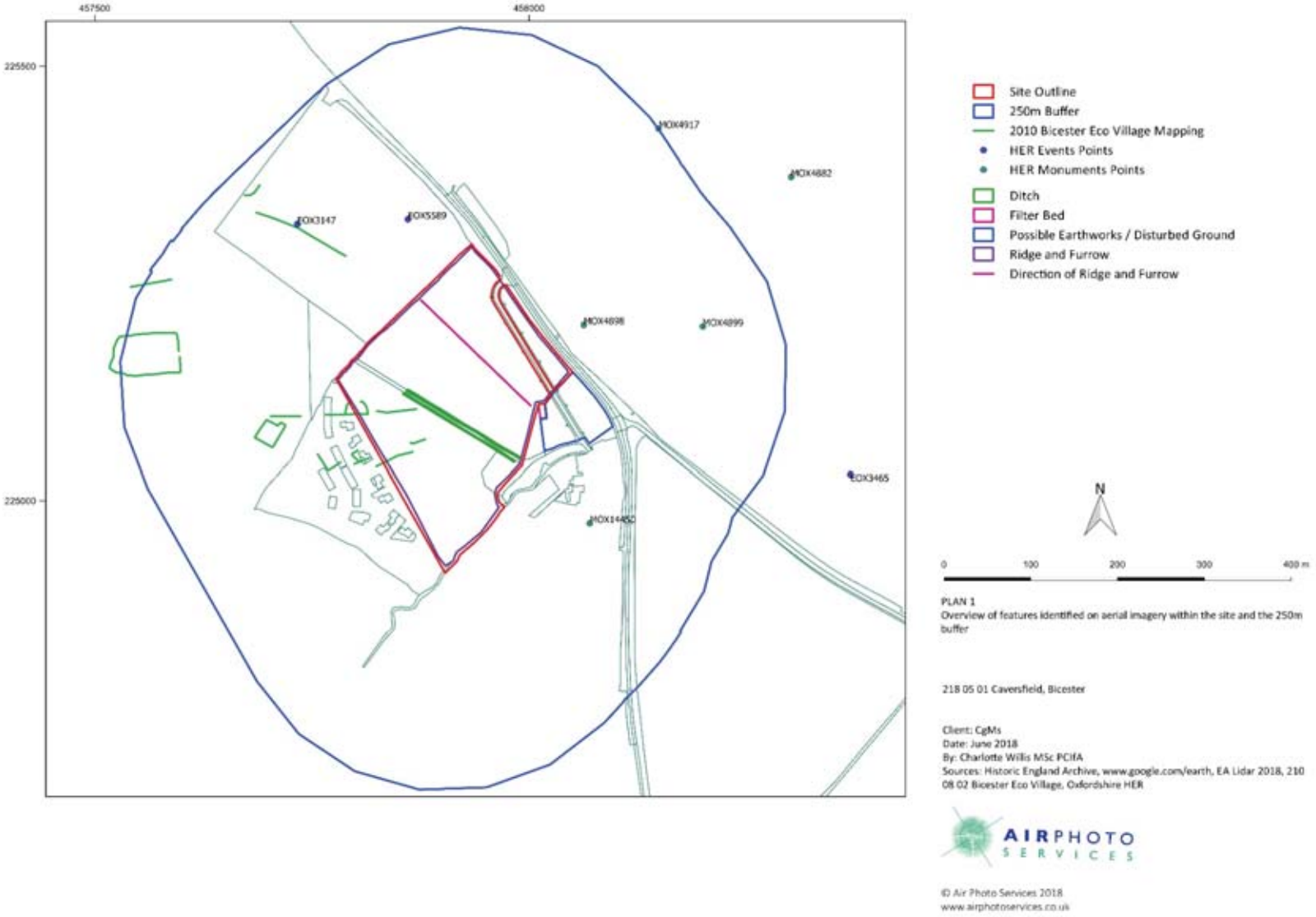
MAPPING



PLAN 1
Overview of features identified on aerial imagery within the site and the 250m buffer

218 05 01 Caversfield, Bicester

Client: CgMs
Date: June 2018
By: Charlotte Willis MSc PCIfA
Sources: Historic England Archive, www.google.com/earth, EA Lidar 2018, 210 08 02 Bicester Eco Village, Oxfordshire HER

AIR PHOTO SERVICES

APPENDIX

Aerial photographs consulted for this assessment

Historic England Archive, enquiry reference 113203.

Verticals

Sortie number	Library number	Held	Centre point	Date	Sortie quality	Scale 1:
RAF/CPE/UK/1897	562	P	SP 574 258	12 DEC 1946	AB	9800
RAF/CPE/UK/1897	562	P	SP 583 259	12 DEC 1946	AB	9800
RAF/CPE/UK/1897	562	P	SP 578 243	12 DEC 1946	AB	9800
FSL/6125	1118A	P	SP 574 251	1961	A	8000
FSL/6125	1118A	P	SP 581 251	1961	A	8000
RAF/58/4627	2195	N	SP 582 243	16 AUG 1961	AB	11000
RAF/58/4627	2195	N	SP 574 243	16 AUG 1961	AB	11000
OS/73252	10419	P	SP 576 249	06 JUN 1973	A	7700
OS/73252	10419	P	SP 583 249	06 JUN 1973	A	7700
OS/70023	10537	P	SP 583 247	23 MAR 1970	A	5000
OS/66042	11626	P	SP 574 251	29 APR 1966	A	7500
OS/66042	11626	P	SP 579 252	29 APR 1966	A	7500
OS/66042	11626	P	SP 584 252	29 APR 1966	A	7500
OS/75312	12174	P	SP 576 243	05 JUL 1975	A	10600
OS/75312	12174	P	SP 584 243	05 JUL 1975	A	10600
OS/84243	12669	P	SP 575 249	26 NOV 1984	A	10000
OS/84243	12669	P	SP 575 258	26 NOV 1984	A	10000
OS/89440	13628	P	SP 583 248	23 SEP 1989	A	8100
OS/89440	13628	P	SP 584 255	23 SEP 1989	A	8100
OS/94214	14692	P	SP 579 247	28 JUN 1994	A	6500
OS/94214	14692	P	SP 579 252	28 JUN 1994	A	6500
OS/96633	15201	P	SP 575 255	15 JUN 1996	A	7900
OS/96633	15201	P	SP 580 255	15 JUN 1996	A	7900
OS/96634	15202	P	SP 579 245	15 JUN 1996	A	7900
OS/96634	15202	P	SP 574 245	15 JUN 1996	A	7900
RAF/540/673	15636	P	SP 573 246	12 FEB 1952	A	10000
RAF/540/673	15636	P	SP 573 253	12 FEB 1952	A	10000
OS/99329	23032	N	SP 580 253	03 SEP 1999	A	5300
OS/99329	23032	N	SP 576 253	03 SEP 1999	A	5300
OS/04982	24582	N	SP 573 253	14 JUN 2004	A	7500
OS/04982	24582	N	SP 580 253	14 JUN 2004	A	7500

Obliques

There are no oblique aerial images that covered the site which are held at the Historic England Archive.

The Cambridge University Collection of Aerial Photographs (CUCAP) is currently unavailable for consultation.
Oxfordshire History Centre online
http://pictureoxon.com/2-0-3-aerial.php

POX0452870 - ASTRAL1981:0016/1370
POX0452871 - ASTRAL1981:0016/1371

www.Bing.com/maps consulted in May 2018
www. google.com/earth consulted in May 2018

1945	The Geoinformation Group
2004	Infoterra Ltd & Bluesky
2006	Getmapping Plc
2009	Infoterra Ltd & Bluesky
2009	Getmapping Plc
2013	DigitalGlobe
2017	Unattributed

Lidar Metadata

Lidar Name	Tile Name	Date Flown	Resolution (m)
D0141899	SP5624	Jan-March 2011	1
D0027186	SP5624	15.03.03	2
D0141902	SP5824	Jan-March 2011	1
D0027194	SP5824	15.03.03	2
D0027186	SP5624	15.03.03	2
D0027194	SP5824	15.03.03	2
D0141899	SP5624	Jan-March 2011	1
D0141902	SP5824	Jan-March 2011	1

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Appendix 3: Geophysical Survey

magnitude surveys

Geophysical Survey Report

of

Caversfield, Bicester

For

CgMs Heritage (Part of RPS Heritage Plc)

On Behalf Of

Quod

Magnitude Surveys Ref: MSSP292

May 2018

magnitude surveys

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Report Checked by:

Finnegan Pope-Carter BSc MSc FGS

Report Issued:

14 May 2018

Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 5.03ha area of land at Caversfield, Bicester. A cart-based fluxgate magnetometer survey was successfully completed and no anomalies of an archaeological origin have been identified. The geophysical results primarily reflect natural variations, the majority of which are likely associated with fluvial processes. Other responses relate to agricultural and modern activity, particularly in the northern half, along the eastern end. Several anomalies are ambiguous in origin, but are considered more likely to relate to modern, agricultural or natural processes—as opposed to an archaeological origin.

Contents

List of Figures

1. Introduction

1.1. Magnitude Surveys Ltd (MS) was commissioned by CgMs Heritage (Part of RPS Group Plc) on behalf of Quod to undertake a geophysical survey on a c. 5.03ha area of land to the north-west of Caversfield, near Bicester (SP 5792 2512).

1.2. The geophysical survey comprised hand-pulled, cart-mounted fluxgate magnetometer survey.

1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David et al., 2008), the Chartered Institute for Archaeologists (CIfA, 2014) and the European Archaeological Council (Schmidt et al., 2015).

1.4. The geophysical survey was conducted in-line with a written scheme of investigation (WSI) approved by Richard Oram of the local planning authority.

1.5. The survey commenced on 30 April and was completed on 01 May 2018.

2. Quality Assurance

2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society of Archaeological Prospection).

2.2. Director Graeme Attwood is a Member of CIfA, as well as the Secretary of GeoSIG, the CIfA Geophysics Special Interest Group. Director Finnegan Pope-Carter is a Fellow of the London Geological Society, the chartered UK body for geophysicists and geologists, as well as a member of GeoSIG, the CIfA Geophysics Special Interest Group. Director Chrys Harris has a PhD in archaeological geophysics from the University of Bradford and is the Vice-Chair of the International Society for Archaeological Prospection.

2.3. All MS managers have relevant degree qualifications to archaeology or geophysics. All MS field and office staff have relevant archaeology or geophysics degrees and/or field experience.

3. Objectives

3.1. The geophysical survey aimed to assess the subsurface archaeological potential of the survey area.

4. Geographic Background

4.1. The site is located to the north-west of Caversfield, a village at the northern end of Bicester (Figure 1). Survey was undertaken over three pasture fields, which were bounded by the B4100 to the north-east, development works to the north and west, further agricultural land and a farm to the south (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Tall grass with patches of nettles, thistles and cow parsley. Sloped down to the south-east from the centre of the field.	Bounded by wire fencing to the east and west, with a hedge with wire to the north and north-east. The field continued slightly farther to the south where a concrete pad (filter bed) was located outside of the survey area, but a manhole cover was noted in the south-eastern corner. A wire fence separated Areas 1 and 2. Deep tractor ruts immediately east of the fence precluded survey on the narrow strip immediately adjacent to the fence
2	Tall grass with patches of nettles, thistles and cow parsley. Sloped down to the south from the centre of the field.	Bounded by a wire fenced and a stream to the south, a hedge with wire to the north, and a wire fence separated Areas 1 and 2. Two troughs were located to the south. An electric fence in the south-eastern corner enclosed a pile of metal debris and rubble (old trailers, etc), which could not be surveyed.
3	Tall grass with patches of nettles, thistles and cow parsley. Generally flat.	A track and wire fencing separated Areas 1 and 3. The B4100 was located to the east with further land to the south.

4.1. The underlying geology is recorded as limestone from the Cornbrash formation across most of the site, except for a band of limestone, and mudstone interbedded from the forest marble formation, running in the south of the area. No superficial deposits are recorded for most of the site, except for an alluvial band of clay, silt, sand and gravel extending through the south-eastern end (British Geological Survey, 2018). This follows the line of a river recorded on the current OS map.

4.2. The soils are recorded as freely draining lime-rich loamy soils (Soilscapes, 2018).

5. Archaeological Background

5.1. Evidence for prehistoric activity within the vicinity of site is limited. A cropmark feature c. 450m east of site has been interpreted as a possible ring ditch from aerial photography (17461). A previous geophysical survey c. 500m south-west of site detected anomalies that were interpreted as possible late-prehistoric enclosure (15958). Further from site, c. 1km to the south in Bicester, further Iron Age activity and possible seasonal Mesolithic activity were identified (16025-6).

5.2. Evidence for Roman activity within the vicinity of site is also limited. The records located closest to site occur c. 1.10km to the south (9984) and south-east (1611; 8922).

5.3. The village of Caversfield is mentioned in the Domesday Book (1086). It may have been established by the late Saxon period. The deserted medieval village is recorded c. 300m north-east of site (1016; 13743). Pre-application advice with Oxfordshire County Council (17/00363/PREAPP) noted earthworks within the eastern part of the site. These earthworks are at present not defined or dated. They lie on a similar alignment to filter beds depicted on 20th century mapping immediately to the south and partially within the extents of the known earthworks. However, until tested, any interpretation of the earthworks is speculative.

5.4. The site is located immediately to the west of Caversfield House. Historic and Ordnance Survey maps record the site as single field.

6. Methodology

6.1. Data Collection

6.1.1. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.3. The magnetic data were collected using MS' bespoke hand-pulled cart system

6.1.3.1. MS' cart system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a Hemisphere S321 GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The Hemisphere S321 GNSS Smart Antenna is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.3.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.3.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2. Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to Historic England's standards for "raw or minimally processed data" (see sect 4.2 in David et al., 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen et al. (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3. Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the upper and/or lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figure 8). XY trace plots visualise the magnitude and form of the geophysical response, aiding in anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historic maps, LiDAR data, and soil and geology maps. Google Earth (2018) was consulted as well, to compare the results with recent land usages.

7. Results

7.1. Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports as well as reports of further work in order to constantly improve our knowledge and service.

7.2. Discussion

7.2.1. The geophysical results are presented in consideration with satellite imagery (Figure 6) and historic maps (Figure 7).

7.2.2. The fluxgate magnetometer survey has responded well to the conditions of the site. The majority of the anomalies have been classified as 'Natural' in origin and are indicative of fluvial processes and subtle variations in the soil. Interference and disturbances from modern activity are generally limited to the edges of the fields; however, the entirety of Area 3, to the east of site, is compromised by ferrous anomalies and debris, along with the south-eastern end of Area 1, in the centre. These areas of disturbance occur near the built-up area (i.e. towards the farm, filter bed and track), which could account for this waste material. As these disturbances also occur within the vicinity of the earthwork features (see Section 5), the magnitude of the response (see Figure 8) would mask any weaker underlying features, should any be present. A buried service is also evident running NW-SE through the centre of the site, across Area 1. Several linear and rectilinear anomalies appear to terminate at this service and may relate to agricultural or modern activity. Several other anomalies and weak trends have been classified as 'Undetermined' as they do not conform to the more distinct agricultural and natural patterns detected within the site; however, the responses are not unique enough to attribute an archaeological origin.

7.3. Interpretation

7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

7.3.1.2. **Undetermined** – Anomalies are classified as Undetermined when the anomaly origin is ambiguous through the geophysical results and there is no supporting or correlative evidence to warrant a more certain classification. These

anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally not ferrous in nature.

7.3.1.3. **Ferrous (Discrete/Spread)** – Discrete ferrous-like, dipolar anomalies are likely to be the result of modern metallic disturbance on or near the ground surface. A ferrous spread refers to a concentrated deposition of these discrete, dipolar anomalies. Broad dipolar ferrous responses from modern metallic features, such as fences, gates, neighbouring buildings and services, may mask any weaker underlying archaeological anomalies should they be present.

7.3.2. Magnetic Results - Specific Anomalies

7.3.2.1. **Natural** – A series of parallel, strong and weak curvilinear anomalies extend across the centre of the site on a NE-SW alignment [**1a & 2a**]. The location of these responses occurs at the noticeable change in slope recorded by the surveyors (see Section 4.2 and Figure 6) and follow the alignment of the alluvium band to the south. It is therefore likely that these responses are resultant from similar fluvial processes.

7.3.2.2. **Agricultural** – Distinct from the natural responses is another series of weak, parallel linear anomalies on a NE-SW alignment in the centre and north of Area 2 (see Figure 3 for best clarity). The uniform regularity of these responses is characteristic of ploughing. Less regular, weak linear trends running NW-SE correspond with previous modern ploughing regimes visible in recent satellite imagery (Google Earth, 2018).

7.3.2.3. **Modern & Agricultural** – A buried service has been detected through the centre of Area 1. Several distinct linear and curvilinear anomalies extend between the north-eastern end of the field and terminate at the service [**1b**]. Despite the different curves, [**1b**] are relatively consistent in response: c. 1.0-1.5m in width with a crisp edge that indicates a likely anthropogenic origin. The termination of [**1b**] is curious; drainage would not be implausible. The two responses in the middle [**1b**] also occur in-line with the agricultural responses. While a specific origin for [**1b**] is not entirely clear, an 'Agricultural' origin has been classified due to this potential. A natural origin for [**1b**] is considered less likely due to its situation within the surrounding natural environment; furthermore, the nature of the response is different from the more evident natural responses to the south [**1a & 2a**].

7.3.2.4. **Undetermined** – Several other ambiguous responses have been classified as 'Undetermined', but these are considered more likely to be associated with modern, agricultural, or natural processes—rather than an archaeological origin.

8. Conclusions

8.1. A fluxgate magnetometer survey has been successfully completed across the site and has revealed a range of different types of anomalies from natural and anthropogenic origins. No anomalies of an archaeological origin have been identified. Several distinct linear and curvilinear anomalies towards the north of site, around the vicinity of the earthworks, but these have been interpreted as potentially agricultural in origin, rather than archaeological.

8.2. The results are primarily characterised by natural responses. A particularly distinct band of curvilinear responses through the southern half of site run in-line with the stream immediately to the south. Other natural responses are characteristic of hill wash, topographic effects, and subtle changes in the soil.

8.3. Agricultural activity has been identified in the form of weak trends indicative of former ploughing regimes. Linear and curvilinear anomalies to the north may relate to drainage, ploughing, or some other type of agricultural feature.

8.4. Modern activity is demonstrated by a buried service extending through the centre of the site, along with broad ferrous anomalies produced by the adjacent wire fencing. The north-eastern and south-eastern ends of site, towards the built-up areas, appear to have been disturbed by ferrous and other highly magnetic debris. The magnitude of this response will mask any weaker underlying features, should any be present.

9. Archiving

9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.

9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to the any dictated time embargoes.

10. Copyright

10.1. Copyright and the intellectual property pertaining to all reports, figures, and datasets produced by Magnitude Services Ltd. is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

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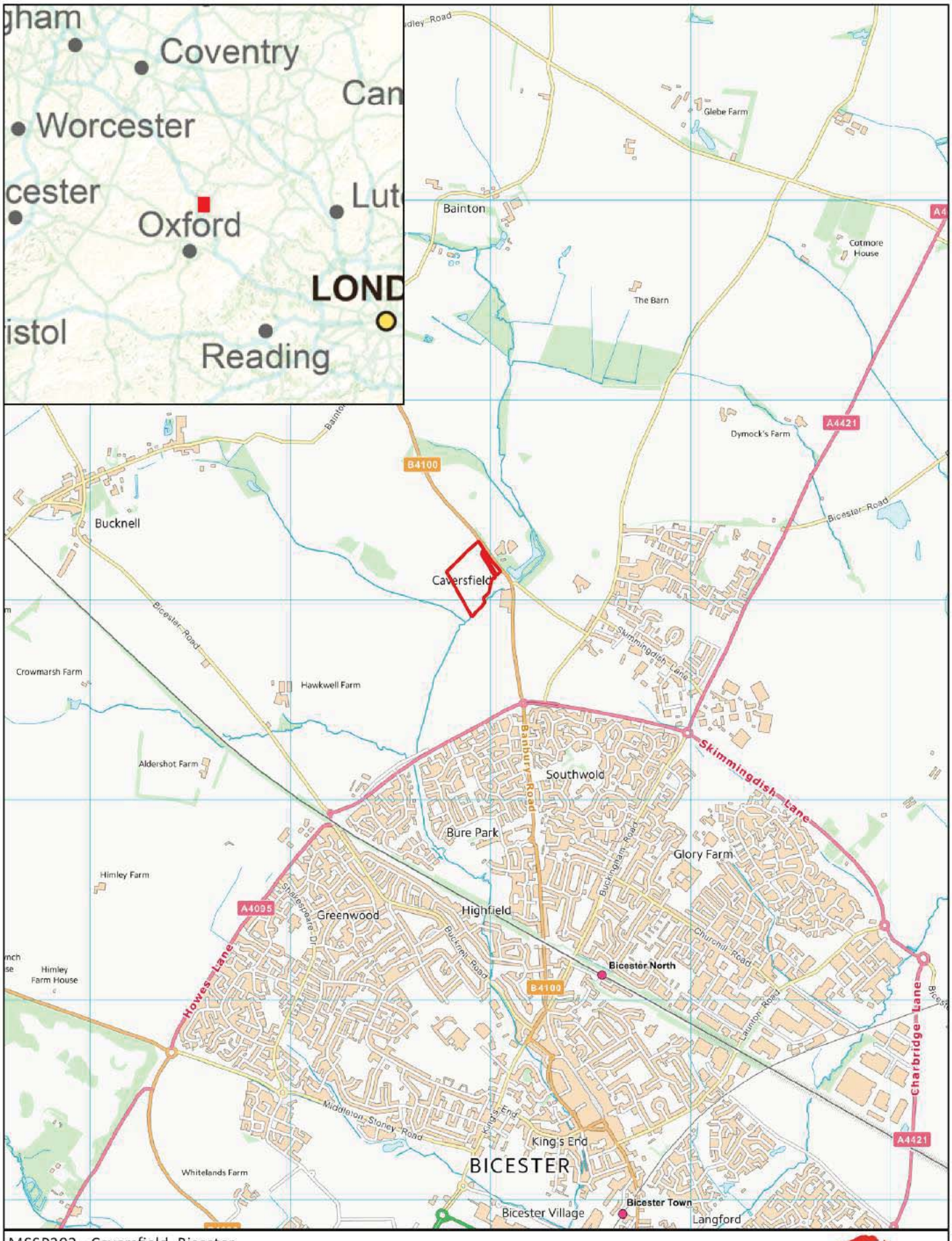
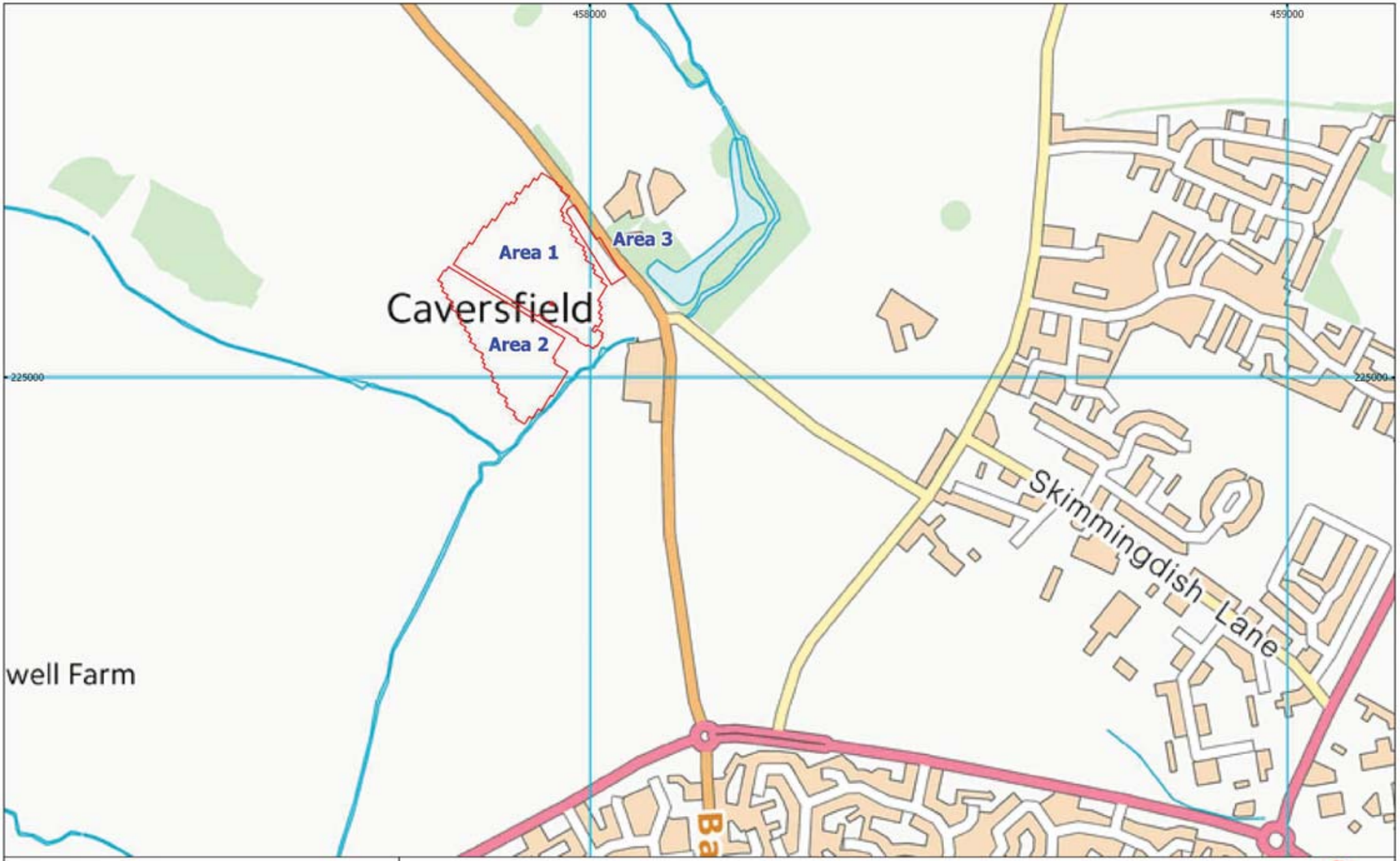


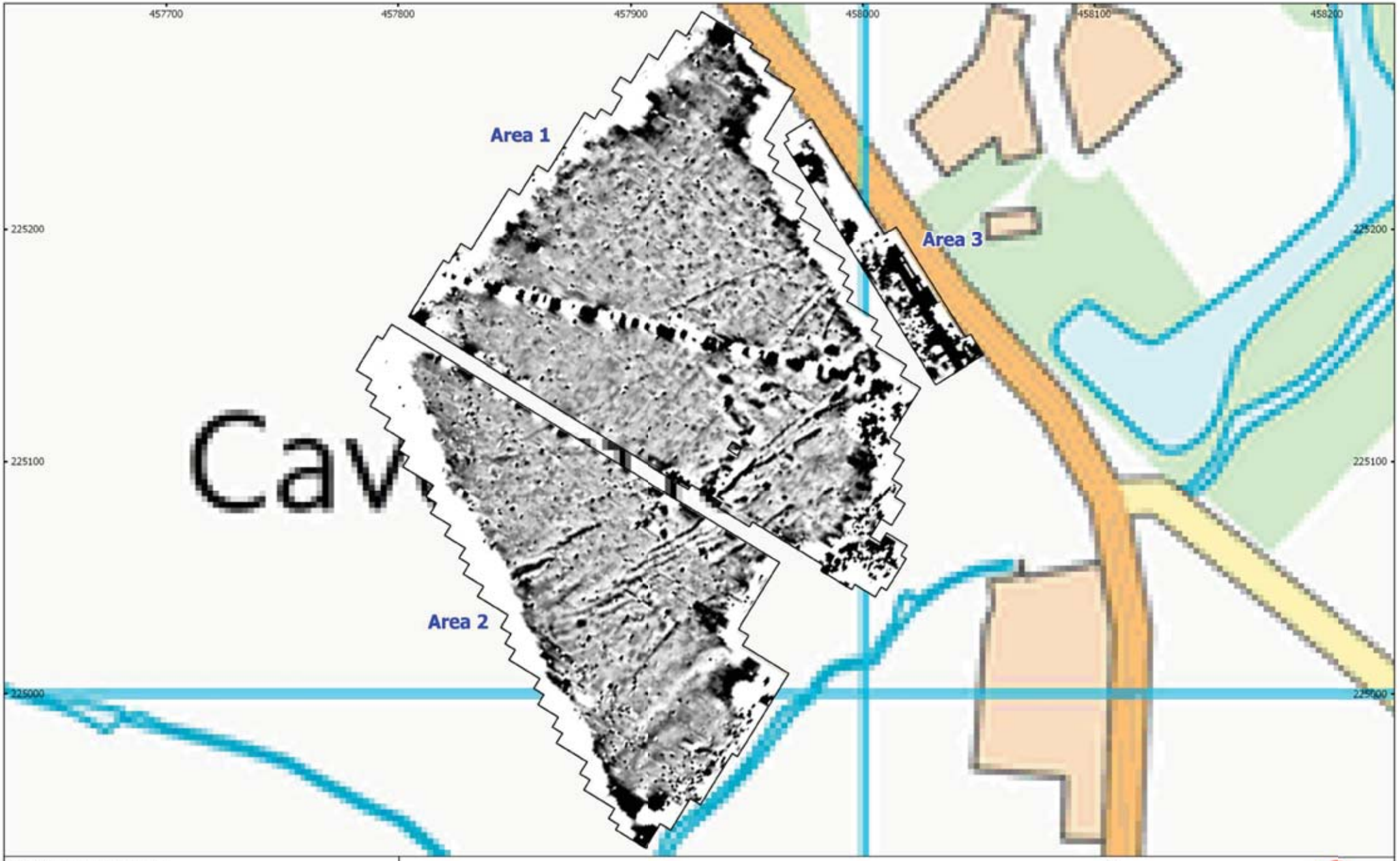
MSSP292 - Caversfield, Bicester
Figure 1 - Site Location
1:25,000 @ A4

Site Boundary

magnitude surveys

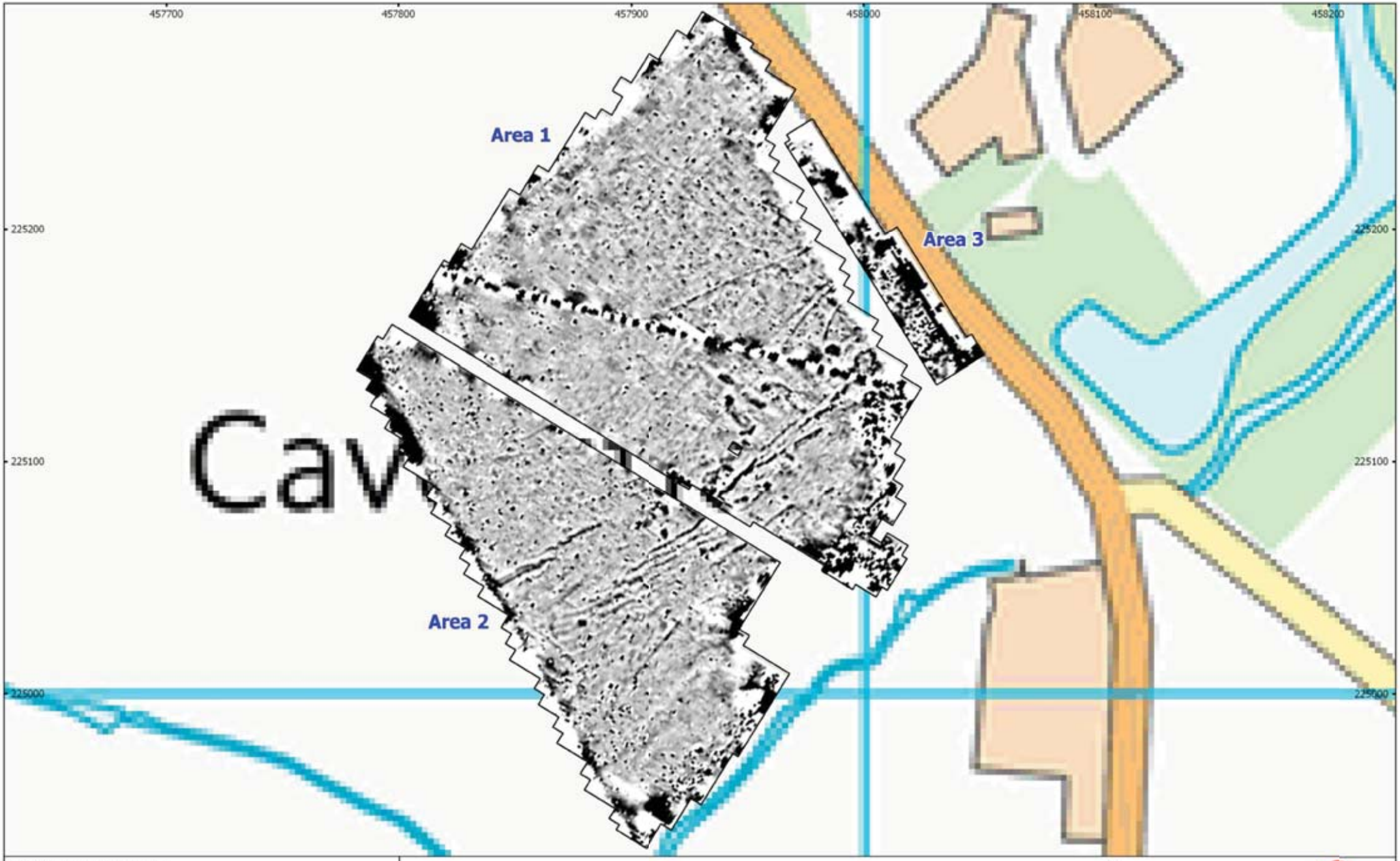


MSSP292 - Caversfield, Bicester
Figure 2 - Location of Survey Areas
1:5000 @ A3



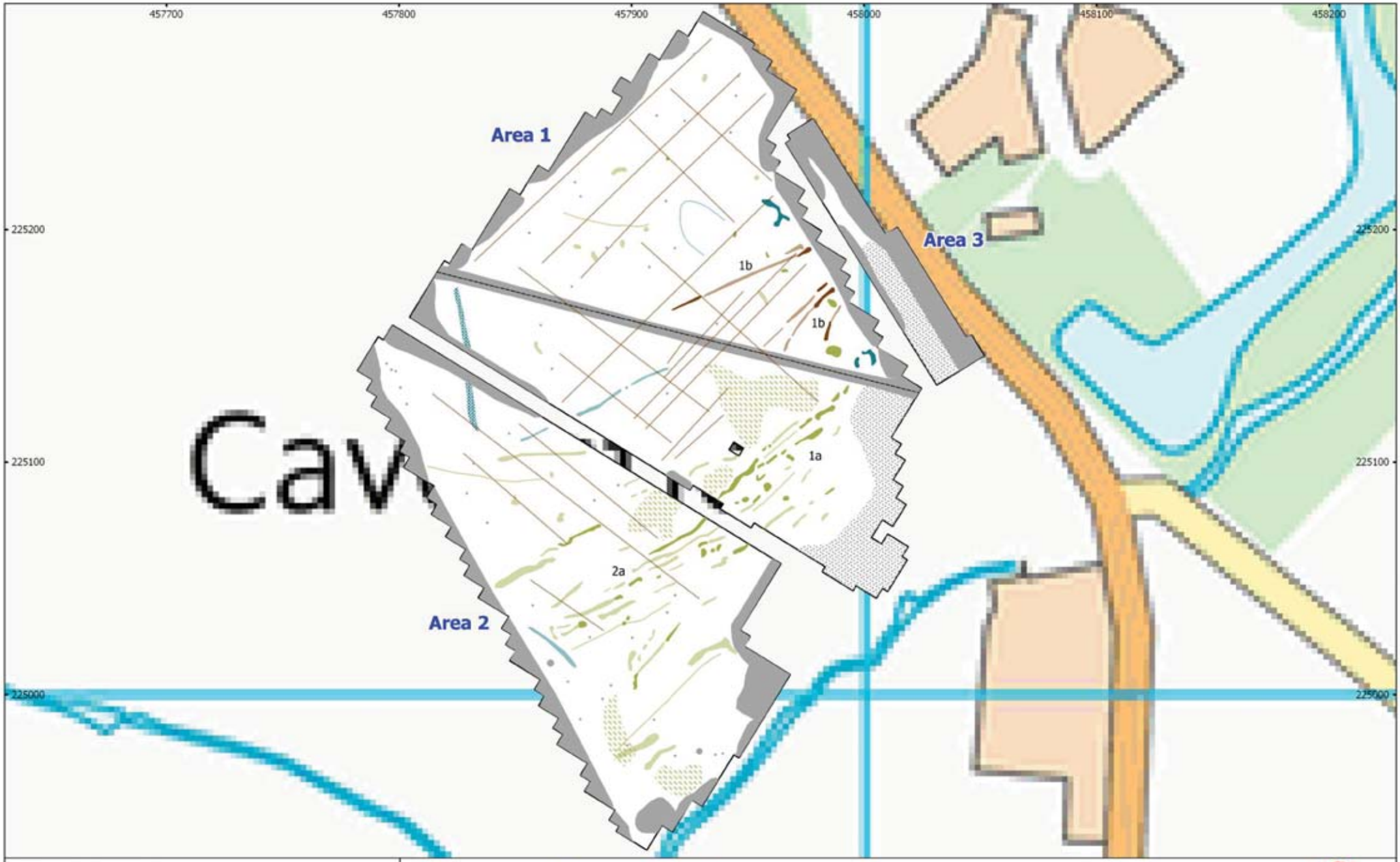
MSSP292 - Caversfield, Bicester
Figure 3 - Magnetic Total Field (Lower Sensor)
1:1500 @ A3

magnitude surveys



MSSP292 - Caversfield, Bicester
Figure 4 - Magnetic Gradient
1:1500 @ A3

magnitude surveys



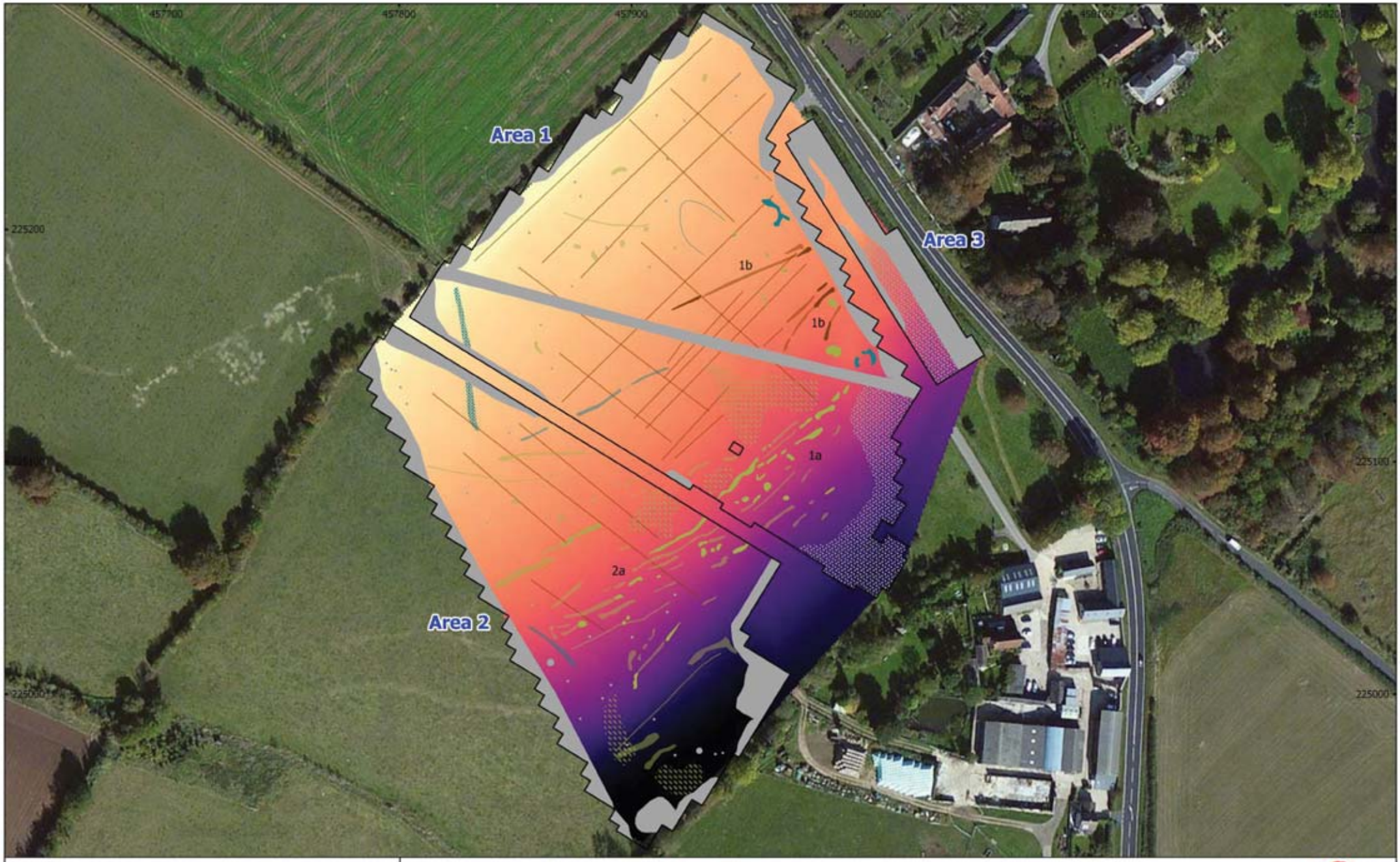
MSSP292 - Caversfield, Bicester
Figure 5 - Magnetic Interpretation
1:1500 @ A3

- Ferrous (Spike)
- Ferrous (Dipolar)
- Ferrous (Spread)
- Service
- Natural (Strong)
- Natural (Weak)
- Natural (Spread)
- Natural (Trend)
- Undetermined (Strong)
- Undetermined (Weak)
- Undetermined (Trend)
- Agricultural (Trend)

N

0 25 50 75 m

magnitude surveys



MSSP292 - Caversfield, Bicester
Figure 6 - Magnetic Interpretation Over DEM and Satellite Imagery
1:1500 @ A3

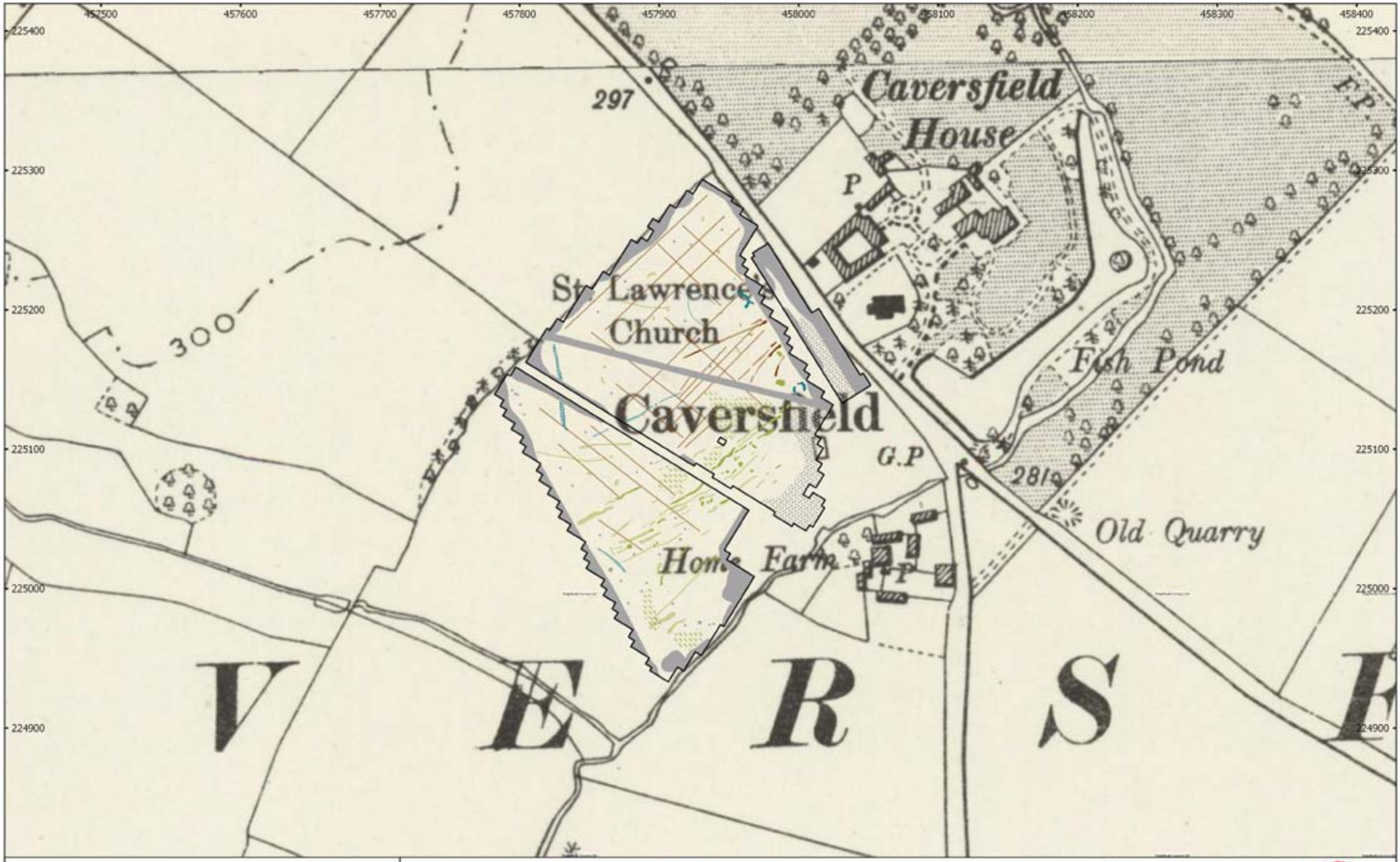
DEM derived from cart GPS height data

- Ferrous (Spike)
- Ferrous (Dipolar)
- Ferrous (Spread)
- Service
- Natural (Strong)
- Natural (Weak)
- Natural (Spread)
- Natural (Trend)
- Undetermined (Strong)
- Undetermined (Weak)
- Undetermined (Trend)
- Agricultural (Trend)

N

0 25 50 75 m

magnitude surveys



MSSP292 - Caversfield, Bicester
Figure 7 - Magnetic Interpretation over Historic Maps
1:2500 @ A3

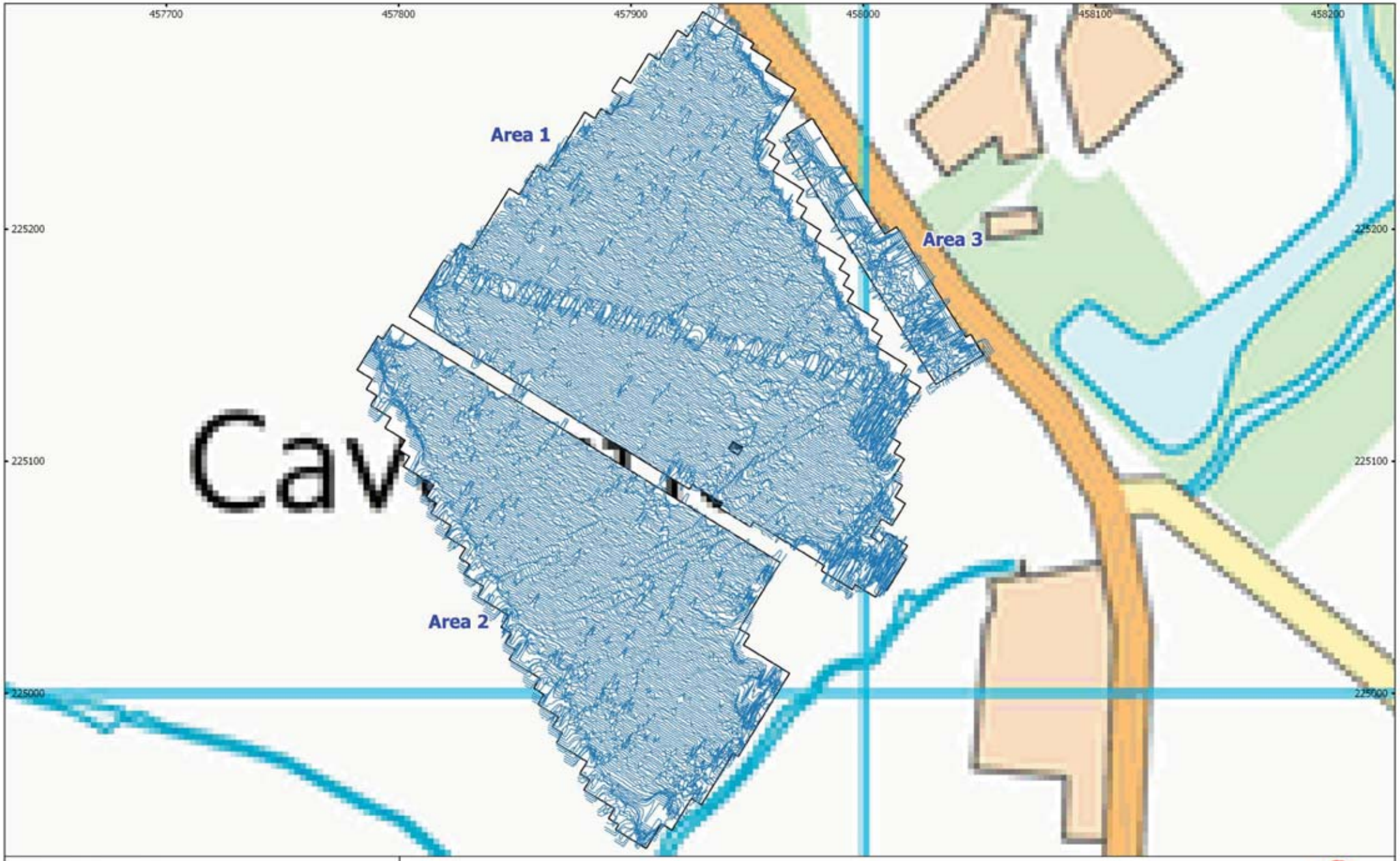
Contains historic maps: Ordnance Survey, 6" 2nd edition c. 1882-1913 © National Library of Scotland

- Ferrous (Spike)
- Ferrous (Dipolar)
- Ferrous (Spread)
- Service
- Natural (Strong)
- Natural (Weak)
- Natural (Spread)
- Natural (Trend)
- Undetermined (Strong)
- Undetermined (Weak)
- Undetermined (Trend)
- Agricultural (Trend)

N

0 50 100 150 m

magnitude surveys



MSSP292 - Caversfield, Bicester
Figure 8 - Magnetic XY Trace Plot
30nT/cm at 1:1500 @ A3

N

0 25 50 75 m

magnitude surveys

Appendix 4: Trial Trenching

Archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester Oxfordshire August 2018

Report No. 18/101
Accession No. OXCMS 2018.78
Planning Ref. 17/00363/PREAPP

Project Manager: Paul Thompson

Author: Liam JS Powell
Illustrator: Joanne Clawley

Project Manager: Paul Thompson
Accession No. OXCMS 2018.78
OS NGR: SP 57917 25122

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Archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester Oxfordshire August 2018

Report No. 18/101
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Planning Ref. 17/00363/PREAPP

Project Manager: Paul Thompson

Quality control and sign off:

Issue No.	Date approved:	Checked by:	Verified by:	Approved by:	Reason for Issue:
1	24.08.2018	R. Atkins	A. Bassir	P. Thompson	Draft for client review
2	13.09.2018	R. Atkins	C. Finn	P. Thompson	Final draft

Author: Liam JS Powell
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	Raúl Gómez Hernández BA
Text:	Liam JS Powell
Illustrations:	Joanne Clawley BA MSc

OASIS REPORT FORM

PROJECT DETAILS Oasis ID: Molanort1-326704		
Project title	Archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester, Oxfordshire, August 2018	
MOLA (Museum of London Archaeology) undertook a scheme of archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester, Oxfordshire. This formed part of a scheme of pre-application archaeological works to inform planning. The trenching was undertaken to test the origin of earthwork features in the east of the site near to a 10th – 11th century church and Medieval Shrunken Village as well as geophysical anomalies and crop mark features. The trenching corroborated the results of the geophysical and SP survey in that the earthworks did not relate to archaeological features. Instead they most likely relate to modern surface disturbance within the eastern area of the site. The trenching did reveal that this modern disturbance masked early medieval remains in the form of a Holloway and two ditches. These likely sat outside of the settlement and on the western side of the B4100 (a Medieval Road) that appears to have formed the boundary to the settlement. Pottery recovered from these features dates from 11th to 13th century indicating the field system did not continue into the later Medieval period.		
Project type	Trial trench evaluation	
Previous work	Geophysical survey (Magnitude Surveys Ltd 2018) Aerial photographic assessment (Air Photo Services Ltd 2018)	
Future work	Unknown	
Monument type and period	Pre 13th century, undated, and late Saxon linear features and pits	
Significant finds	None	
PROJECT LOCATION		
County	Oxfordshire	
Site address	Plot SGR1, Banbury Road, Caversfield, Bicester, Oxfordshire, OX27 8TG	
OS co-ordinates	SP 57917 25122	
Area hectares	5ha	
PROJECT CREATORS		
Organisation	MOLA (Museum of London Archaeology) Northampton	
Project brief originator	Oxfordshire County Council	
Project Design originator	CgMs Ltd Heritage	
Project Supervisor	Liam JS Powell (MOLA Northampton)	
Director/Managers	Paul Thompson (MOLA Northampton)	
Sponsor or funding body	CgMs Ltd Heritage	
PROJECT DATE		
Start date	9 July 2018	
End date	13 July 2018	
ARCHIVES	**Location**	**Content (eg pottery, animal bone etc)**
Physical	**OXCMS 2018.78** Oxfordshire Museum Service Fletcher's House Park Street Woodstock	Pottery and Animal bone
Paper		Pro-forma sheets, plans, sections digital photograph contact sheets
Digital		Report, map and site data, digital images
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (MOLA report)	
Title	Archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester, Oxfordshire, August 2018	
Report No.	18/101	
Author(s)	Liam JS Powell (MOLA Northampton)	
Page numbers	I–iv, 1–37 + front cover, title/quality control page, back cover	
Date	13th September 2018	

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Archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester Oxfordshire August 2018

ABSTRACT

MOLA (Museum of London Archaeology) undertook a scheme of archaeological trial trench evaluation at Plot SGR1, Caversfield, Bicester, Oxfordshire. This formed part of a scheme of pre-application archaeological works to inform planning. The trenching was undertaken to test the origin of earthwork features in the east of the site near to a 10th – 11th century church and Medieval Shrunken Village as well as geophysical anomalies and crop mark features. The trenching corroborated the results of the geophysical and SP survey in that the earthworks did not relate to archaeological features. Instead they most likely relate to modern surface disturbance within the eastern area of the site. The trenching did reveal that this modern disturbance masked early medieval remains in the form of a Holloway and two ditches. These likely sat outside of the settlement and on the western side of the B4100 (a Medieval Road) that appears to have formed the boundary to the settlement. Pottery recovered from these features dates from 11th to 13th century indicating the field system did not continue into the later Medieval period.

1 INTRODUCTION

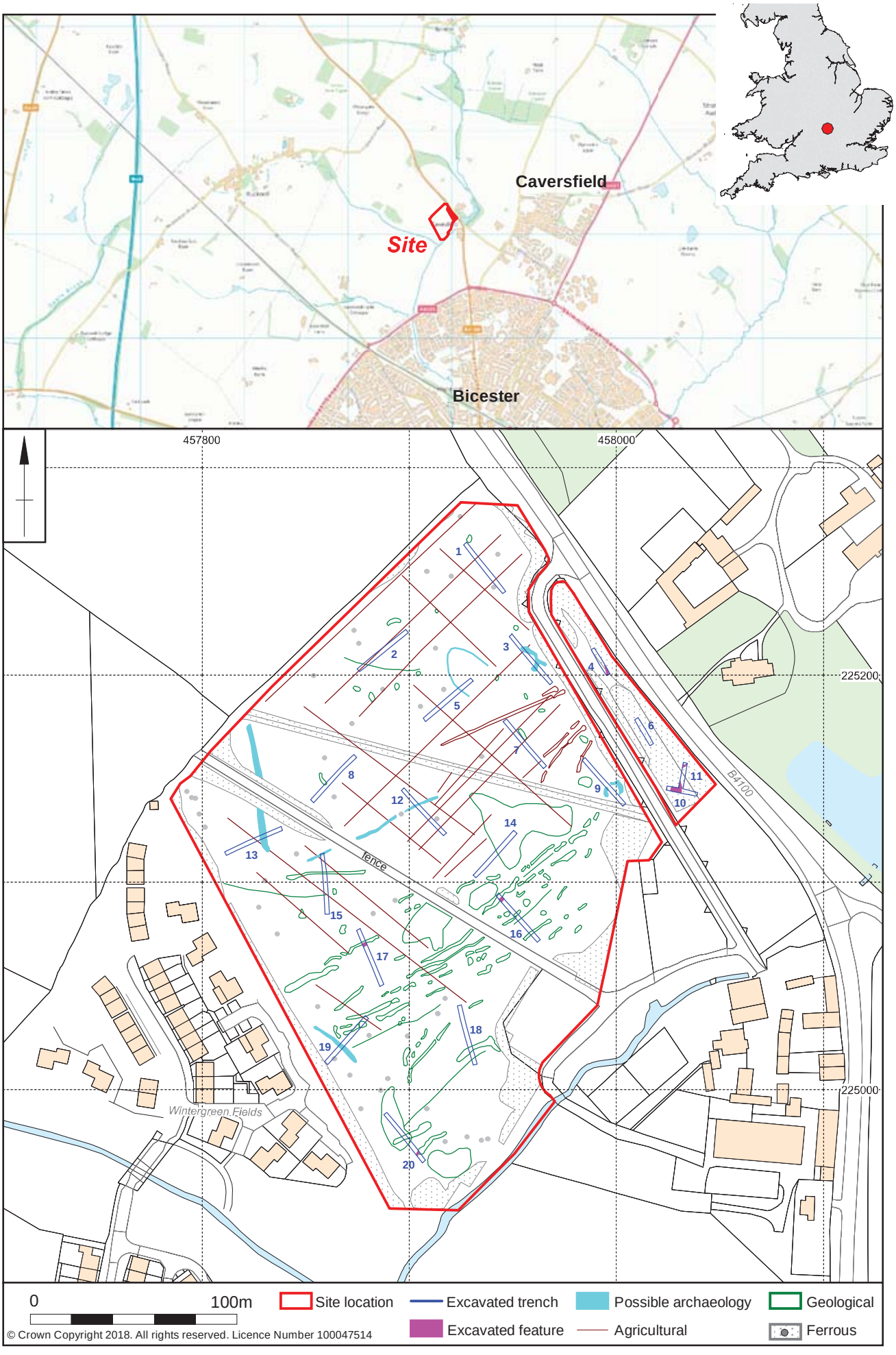
MOLA was commissioned by CgMs Ltd Heritage, part of RPS Group, on behalf of Quod Limited to undertake an archaeological trial trench evaluation at Plot SGR1, near Caversfield, Oxfordshire (Ordnance Survey National Grid Reference SP 57917 25122, Fig 1). It comprised the excavation of sixteen 30m x 1.8m trenches and four 15m x 1.8m trenches. Outline planning consent is being sought for residential development of the site.

Section 12 of the *National Planning Policy Framework* (DCLG 2012) requires that local planning authorities enact positive strategies for the conservation and enjoyment of the historic environment. The *NPPF* states that opportunities to capture evidence from the historic environment, to record and advance the understanding of heritage assets, and to make this publicly available, are a requirement of development management. Archaeological monitoring and mitigation works are therefore required by the *NPPF* to ensure that any archaeological remains within the area of proposed ground works are appropriately located, defined, characterised, and recorded in a manner proportionate to the significance of a heritage asset and to the impact of the proposal, particularly where a heritage asset is to be lost.

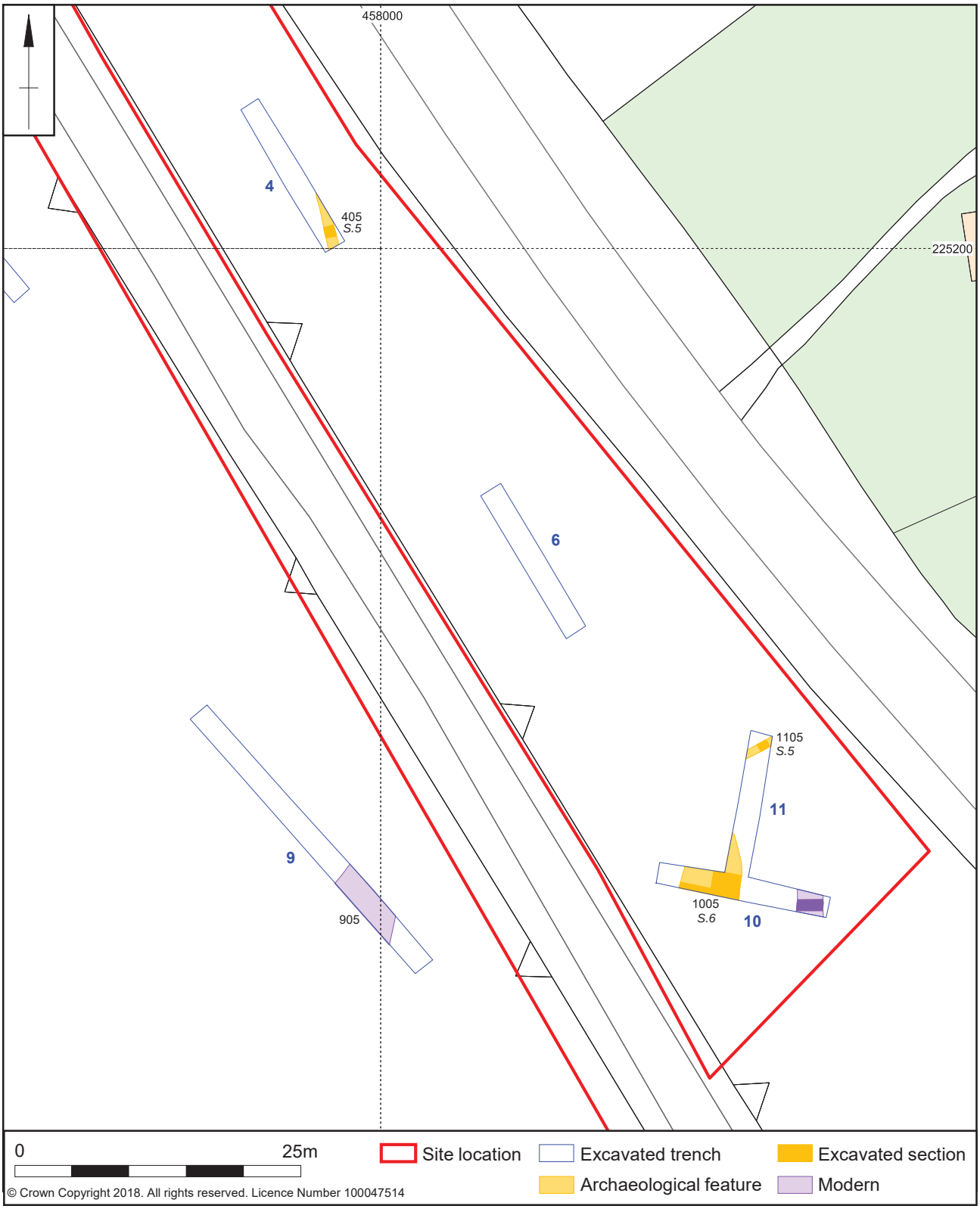
Pre-Application Advice provided by Oxfordshire County Council (OCC Planning Ref. 17/00363/PREAPP) recommended that a programme of archaeological investigation of the proposed development site be undertaken, including an archaeological desk-based assessment (DBA), a desk-based aerial photographic assessment, geophysical survey, and archaeological trial trench evaluation, in compliance with Section 12 of the *NPPF*. Evaluation of the potential archaeological resource of the site was advised, in particular, to investigate noted possible earthworks within the

eastern part of the proposed development site not recorded by the Oxford Historic Environment Record (OHER), identified as potentially being related to a shrunken medieval settlement.

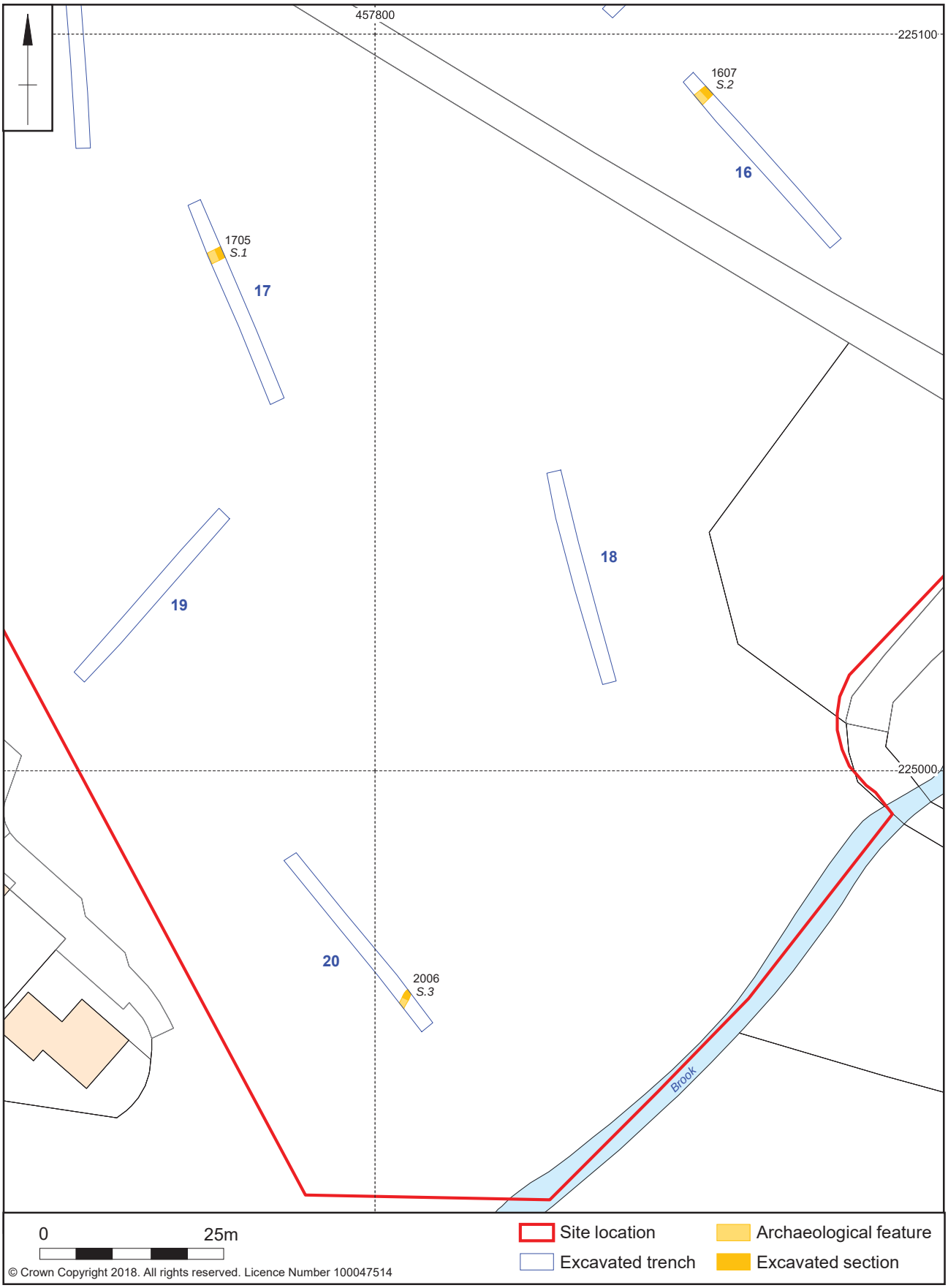
Subsequent to completion of the geophysical survey (Magnitude 2018) and aerial photographic assessment (APS 2018) recommended by the Pre-Application Advice (17/00363/PREAPP), a Written Scheme of Investigation (WSI) was prepared by CgMs Ltd Heritage (CgMs 2018) in consultation and agreement with Oxfordshire County Council, to specify the aims and objectives, methodology, resources, observed standards, and programme of works for archaeological trial trench evaluation as required by Section 12 of the *NPPF*.



Scale 1:2500 Site location and excavated trenches with geophysical interpretation Fig 1



Scale 1:500 Excavated features:Trenches 4, 6, 9, 10 and 11 Fig 2



Scale 1:750

Excavated features: Trenches 16, 17, 18, 19 and 20 Fig 3

2 BACKGROUND

2.1 Location, topography and geology

The proposed development site comprises a total area of approximately 5ha pastoral agricultural land, located approximately 1km north-west of the centre of Caversfield in Oxfordshire, and approximately 2.5km north of Bicester town centre, centred on Ordnance Survey National Grid Reference (OS NGR) SP 57917 25122 (Fig 1). The site is currently divided by a fence line into two main fields. A third paddock, comprising a thin strip of agricultural land along the north-east edge of the site, is divided from the main agricultural fields by a driveway leading from the B4100 Banbury Road, to the Home Farm business park at the south-east corner of the site.

The proposed development site is bounded to the north-west and south-west by former agricultural land along Charlotte Avenue, under residential development at time of writing. To the north-east the site is bounded by the B4100 Banbury Road, running north-west from the A43 Baynards Green roundabout to south-west towards Bicester, and to the south-east by the Home Farm business park and associated agricultural farmland. St Laurence's Church and Caversfield House Estate lie on the other side of the B4100 directly opposite the site to the north-east.

The site is situated on a shallow slope overlooking Home Farm business park to the south-east. The ground level declines gently from approximately 92m above Ordnance Datum (aOD) at the northern corner of the site, to approximately 86m aOD to the south, with a moderate slope towards the south-east edge of the site corresponding with geological change. A stream runs south-west to north-east long the south-east edge of the site.

The underlying bedrock geology of the site has been mapped primarily as sedimentary limestone bedrock belonging to the Cornbrash Formation, formed approximately 164–168 million years ago. This bedrock also had a band of interbedded sedimentary limestone and mudstone belonging to the Forest Marble Formation, formed approximately 166–168 million years ago running north-east to south-west along the south-west edge of the site, corresponding with the change in incline of the surface slope at this edge of site. This Forest Marble Formation band is overlain by an alluvial band of clay, silt, sand and gravel, formed up to 2 million years ago by fluvial detrital sedimentation (BGS 2018).

2.2 Historical and archaeological background

Unless otherwise stated, the following historical and archaeological background is derived from the WSI (CgMs 2018), informed by the geophysical survey (Magnitude 2018) and aerial photographic assessment (APS 2018).

Prior to commencement of works, Oxfordshire County Council Planning Archaeologist (OCC PA) Richard Oram advised that the site lay within an area of archaeological interest immediately south-west of the 10th/11th-century Church of St Laurence, north-east of which the earthwork remains of the shrunken medieval village of Caversfield have been identified. A series of possible earthworks have been identified within and adjacent to the eastern edge of the site, close to the church.

In 2007 Bicester was announced as one of four Government designated eco-towns in the UK. Creating the eco-town as an exemplar to achieve zero carbon development. Work began in April 2014 to create up to 6000 new eco-friendly homes.

Aerial photographs show a series of crop marks interpreted as rectangular enclosures 400m south-west of the proposed site. These are likely to be Iron Age in date associated with a settlement, recorded 680m south of the present site, in advance of residential construction at Slade Farm in 1996 (Dean 2010 and Cromarty & Forman 2000).

2.3 Previous archaeological investigation

Evaluation (2010)

During September 2010 archaeological evaluation comprising 70 trial trenches (each 50m x 2m) were excavated immediately north, west and south of the present site. Just six trenches contained features, all linear and interpreted as possible agricultural ditches with the caveat that they could be natural as no finds were recovered. The results suggest that the site lies in an area devoid of significant archaeological activity (Dean 2010).

Geophysical survey (2018)

A geophysical survey of the site was undertaken in May 2018. The results of the geophysical survey (Magnitude 2018) are largely reflective of naturally occurring geological variation associated with fluvial erosive and depositional processes (Fig 1). Geophysical responses in the northern half of the site primarily related to agricultural and modern activity. A large ferrous anomaly was identified in the east of the site, indicative of a large modern disturbance targeted by Trench 9. Other anomalies across the site were ambiguous, and characteristic of responses recorded by surveying on Cornbrash Formation geology.

Aerial photographic assessment (2018)

The results of the geophysical survey were supported by aerial photographic assessment, which indicated that the area to the east of the site beside the B4100 Banbury Road has been subject to soil accumulation from the road and modern development in the area. Medieval/post-medieval ridge and furrow earthworks were noted on aerial photographs taken in 1946, but were no longer visible by 1952, potentially having been ploughed out.

Possible prehistoric crop marks, including a possible late-prehistoric enclosure have also been identified near to the site, although features excavated during trial trenching works in advance of construction of the Bicester Eco Town Exemplar Site (Dean 2010), immediately adjacent to the west of the proposed development site, produced no securely stratified dating evidence. The features have, however, been interpreted as belonging to a wider landscape of late prehistoric remains (OA 2010).

3 AIMS AND METHODOLOGY

With due regard to the CIfA *Standard and guidance for archaeological field evaluation* (CIfA 2014b), the principle aim of a programme of archaeological trial trench evaluation is to determine the presence or absence of archaeological remains and to record the location, extent, date, character, condition, significance, and quality of any surviving archaeological remains within the proposed development site, and to determine and understand the nature, function and character of an archaeological site in its cultural and environmental setting, using appropriate methods and practices, and in compliance with the *Code of Conduct* (CIfA 2014a) and other relevant by-laws of CIfA.

In order to examine the archaeological resource within the proposed development area the primary aims were;

- To determine the nature, date and significance of the earthwork features, if possible;
- To determine whether the modern disturbance within the east of the site is masking earlier archaeological remains;
- To test for the potential for Prehistoric remains as indicated by findings within the wider landscape;
- To test the veracity of the geophysical survey and aerial photographic assessment;
- To ensure that the presence, extent, level of significance and degree of preservation of surviving buried archaeological remains within the development site are reliably established;
- To allow agreement upon the need for and scope of any further archaeological mitigation required within the development site.

The aims were realised through the following specific objectives:

- To seek to establish if surviving archaeological remains of any period are observed within the proposed trial trenches;
- To seek evidence to inform the interpretation of the possible earthworks within the east of and whether they mask earlier features, through excavating part of them;
- To interpret the nature of human activity at the site and to place the site within its local, regional and national context as appropriate;
- To produce a site archive for deposition with Oxfordshire Museums Service and to provide information for the local Historic Environment Record to ensure the long-term survival of the excavated data.

3.1 Research framework

The research objectives for this programme of informative trial trenching were informed by national research frameworks and the regional research agenda established by Hey and Hind (eds) (2014).

3.2 Methodology

The works were carried out in accordance with the approved Written Scheme of Investigation (WSI) (CgMs 2018), as well as with national standards given the Chartered Institute for Archaeologists *Code of Conduct* (CIfA 2014a), and *Standard and guidance for archaeological field evaluation* (CIfA 2014b). All works were carried out in accordance with the Historic England procedural document *Management of*

Research Projects in the Historic Environment (MoRPHE) (HE 2015). All site recording procedures were carried out in accordiance with standard MOLA practice, as detailed in MOLA Northampton's in-house manual (MOLA 2014) which is issued to all staff.

MOLA ensured that all constraints on archaeological fieldwork at the proposed site of development were identified and that appropriate measures to avoid damaging or illegal impacts were enacted prior to commencement of any and all works for which MOLA is legally responsible. MOLA undertakes as standard practise a service search of underground services including phone and internet, electrical, gas, and clean and waste water within the investigation area and immediately surrounding vicinity. A live underground electrical service was identified prior to commencement of works. The layout of trial trenching works was designed to avoid known services. Cable Avoidance Tool and Signal Generator (CAT & Genny) equipment was used by an appropriately trained member of MOLA staff to confirm the location of known services, and to assist in identifying unknown live underground services on site prior to commencement of excavation works. No other underground services were identified.

Archaeological mitigation comprised the continuous observation of removal of overburden, followed by the investigation and recording of archaeological features revealed in 16 trenches, each measuring 30m length x 1.8m width, and four trenches, each measuring 15m length x 1.8m width, providing representative sample coverage of approximately 2% of the total area of the proposed development site.

The layout of trenching works was designed to target areas of higher archaeological potential within the proposed development area (Fig 2), as identified by the geophysical survey (Magnitude 2018) and aerial photographic assessment (APS 2018), and to test a representative sample of areas with no identified geophysical anomalies as a control against survey results.

The trenches were set out prior to commencing excavation using a Leica Viva Survey Grade RTK Global Positioning System (GPS) using SMARTNET real-time corrections, operating to a 3D tolerance of ± 0.05m to Ordnance Survey National Grid and Datum.

Removal of topsoil and subsoil deposits was undertaken by a 360 degree mechanical excavator equipped with a toothless grading bucket measuring 1.8m width under the direction and supervision of suitably qualified and experienced MOLA archaeological field staff. Excavation proceeded carefully in spits, terminating at the upper surface of any archaeological deposit or geological horizon, whichever was encountered first. Spoil from excavated deposits was visually scanned for the purposes of artefact retrieval.

Topsoil and subsoil was stored separately, at least 1m from the trench edges. The trenches were backfilled subsequent to completion of investigation works, in accordance with the requirements of the client.

Excavation did not proceed beyond safe working depths. No extra contingencies to ensure safe working at depth were required.

Each trench was cleaned sufficiently to enhance the definition of features. Slots excavated through linear features were generally a minimum of 1m in length, except where agreed in advance with the OCC PA.

All archaeological deposits and artefacts encountered during the course of evaluation were fully recorded following standard MOLA fieldwork procedures (MOLA 2014). All archaeological features were given a separate context number (Appendix 1).

Deposits were described on pro-forma context sheets to include details of the context, its relationships, interpretation and a checklist of associated finds.

Archaeological features were plotted on trench plans at a scale of 1:50. Trenches not containing archaeological features were recorded using a Leica Viva Survey Grade RTK Global Positioning System (GPS) using SMARTNET real-time corrections, operating to a 3D tolerance of ± 0.05m to Ordnance Survey National Grid and Datum, or planned at a scale of 1:100 as appropriate. Sections or profiles through features and areas of complex stratigraphy were drawn at a scale of 1:10 or 1:20 as appropriate. All levels are related to Ordnance Datum, and were recorded using a Leica Viva Survey Grade RTK Global Positioning System (GPS) using SMARTNET real-time corrections, operating to a 3D tolerance of ± 0.05m to Ordnance Survey National Grid and Datum.

A full photographic record was maintained by high resolution digital photography of 18.1 megapixels. Overall shots of the site were taken prior to excavation. Overall shots and representative shots of the stratigraphic profile of each trench were taken, together with detailed shots of individual features and feature groups as appropriate. All trenches were photographed subsequent to backfilling. All photographs, except general site shots or specific shots for publication include a north arrow and suitable photographic scale.

Finds were collected from individual deposits and appropriately packed and stored in stable conditions, by context. Artefacts were collected by hand and retained, receiving appropriate care prior to removal from site (CIfA 2014c; Walker 1990; Watkinson and Neal 2001). Unstratified animal bones and modern materials were not collected.

4 RESULTS

The following section provides a summary of the information held in the site archive. Detailed descriptions of individual archaeological contexts can be found in the context index appended at the end of this document (Appendix 1).

4.1 General stratigraphy

The majority of the site lay on a plateau of Cornbrash Formation which descends into a stream valley with alluvial deposits of clay, silt, sand and gravel. These alluvial deposits resulted in deep archaeological trial trenches for example trench 18 and 20. See section 4.2 below.

The soil stratigraphy recorded across all 20 trenches represented a broadly homogeneous stratigraphic sequence (Fig 4), comprising a dark grey-brown loamy sand agricultural topsoil, generally measuring around 0.20m thickness within a recorded range of 0.15–0.35m thickness, which directly overlay a mid-grey-brown loamy sand subsoil or interface layer, also generally measuring around 0.10m thickness within a recorded range of 0.10–0.27m thickness.

The upper geological horizon was typically encountered at around 0.30m below ground level (bgl), within a range of 0.23–0.50m bgl. The geological bedrock across the site was typical of Cornbrash Formation limestone, comprising varied stone content of 25–75% small to large <0.10m limestone gravels and brash, with a soil matrix comprising loose patchy mid-brown, mid-orange-brown, and mid-yellow-brown sands, becoming increasingly stony, densely packed and bedded towards the west of the site. Some geological variation comprising patchy mid-blue-grey and light yellow sandy clays containing occasional limestone and mudstone gravels and cobbles was recorded in Trenches 19 and 20, characteristic of the interface between Cornbrash

Formation and Forest Marble Formation geologies, and congruent with British Geological Survey information (BGS 2018).

South-west-facing representative section of Trench 7, illustrating typical soil stratigraphy at the site, 1 x 1m scale, looking north-east
Fig 4

4.2 Trench 16

Trench 16 revealed a north-east to south-west orientated ditch [1607] at its north-west end (Figs 3 and 10). The ditch measured 1.23m wide x 0.42m depth, with moderately-sloping, convex sides, breaking to a narrow concave base, and contained three identifiable fill events (Fig 13, Section 2). A basal fill [1606] comprised a firm mid-red-brown sandy clay loam, containing occasional small limestone gravels, and occasional charcoal flecking, and was formed by a gradual process of erosion and sedimentation during the earliest part of the feature's use-period. This was overlain by an intermediate fill (1605) of similar composition, but containing a higher proportion of larger limestone cobbles, likely caused by a period of higher-energy erosion/stabilisation of the ditch sides, or collapse of a section of bank material, potentially caused by a flooding event or period of higher rainfall. The ditch was finally filled by an upper deposit (1604), comprising a firm mid-grey-brown sandy clay loam, from which a single pot sherd of St Neots Ware dated as late Saxon to early medieval, along with fragmentary animal bones comprising three Cow bones, 15 sheep or goat and a single duck bone were recovered. This upper fill likely formed through ongoing erosion and sedimentation of the ditch remnant once the feature had fallen into disuse.

South-west-facing section of ditch [1607], 1 x 1m scale, looking north-east Fig 10

4.3 Trench 17

A linear, north-east to south-west orientated feature [1705] was identified near the north-west end of Trench 17 (Figs 1, 3 and 11), corresponding with a linear cropmark identified at this location by the aerial photographic assessment (APS 2018), and a linear trend which had been identified by the geophysical survey (Magnitude 2018) as a geological variation. It had a broad, shallow, u-shaped profile, measuring 1.50m width x 0.18m depth, and contained a single erosive fill (1704) comprising a densely stony, friable, mid-brown loamy sand, measuring 0.26 maximum thickness, extending above the top of the ditch cut visible in section (Fig 13, Section 1). The fill contained no artefactual dating evidence and no organic remains were found, and therefore cannot be securely dated. This linear feature is believed to be a ditch utilizing the geological variation as a possible field boundary.

South-west-facing section of ditch [1705], 1 x 1m scale, looking north-east Fig 11

4.4 Trenches 20 and 18

The only substantial variation from the stratigraphic sequence across the site was recorded in Trench 20, at the southernmost corner of the site (Fig 3). The trench was located at the steepest point of the sloped ground at this end of the site, at the bottom of which was a small brook. While the topsoil (2001) and subsoil/interface (2002) deposits corresponded with those recorded in all other trenches, the geological horizon sloped away relatively steeply to the south, and was overlain by a friable, light yellow-grey and mid-orange-brown thinly banded sandy silt (2003), formed by repeated flooding and associated alluvial sedimentation of the lower-lying area of the site (Fig 5). This deposit was present from around 9.90m south-east of the north-west end of Trench 20, and extended across the full remainder of the trench. It became gradually thicker to a maximum thickness of 0.90m at the base of the slope in the geological bedrock at 1.25m bgl. This alluvial deposit (1803) was also intermittently present in Trench 18, measuring to a maximum of 0.15m thickness.

A linear feature [2006] (Fig 6 and Fig 13, Section 3) was found beneath the alluvial deposits and probably relate to flooding of the area and channels cut as a result. This feature follows the trend on the geophysical survey mapping of alluvial bands, depicted as sinuous bands of deposits.

This feature was filled by friable, mid-grey silt (2005) containing occasional, very small, aquatic snail shells and shell fragments. Given the sterility of the fill, the comparative softness of the surrounding geological material and the location at the base of a fluvial valley, running parallel to the existing watercourse to the south-east and sealed by alluvial silt (2003), collectively indicates that it is a natural fluvial erosive feature.

North-east-facing representative section of Trench 20, 1 x 1m scale, looking south-west Fig 5

North-east-facing section of gully [2006], 1 x 1m scale, looking south-west Fig 6

4.5 Trenches 10 and 11

A possible large shallow Hollow way [1005] was identified in Trenches 10 and 11 close to the north-east edge of the site, near the B4100 Banbury Road (Fig 2). It comprised a shallow, flat-based feature, which was only partly within the trenches, continuing to the south beyond the excavation area (Fig 7). The exposed section is aligned south-west to north-east and is likely to have originally joined the B4100 Banbury Road and led from the church to Home Farm. It measured more than 5.3m long, 5.20m wide, and 0.12m deep, and contained a single, mid-brown-grey sandy loam fill. It was clearly stratigraphically separate to, but similar in composition and consistency to the overlying subsoil/interface layer (1002). A small assemblage of 14 pottery sherds (0.152kg) dated to the 12th and 13th century, and fragmentary animal bones, were recovered from this fill.

North-east-facing section of possible pit [1005], 2 x 1m scales, looking south-west Fig 7

In the subsoil layer/interface layer above the Hollow way [1005] were 12 pottery sherds (73g) dating to the 13th century.

A small gully or ditch [1105] orientated north-east to south-west was identified at the north-east end of Trench 11 (Figs 2 and 8). It measured 0.60m width x 0.25m depth (Fig 13, Section 4), and contained a single, mid-brown-grey, stony sandy loam fill (1104), from which a single sherd (4g) of pottery was recovered dating to the late 11th century.

South-west-facing section of ditch [1105], 1 x 0.5m scale, looking north-east Fig 8

A modern intrusion was identified at the east end of Trench 10, containing a fill comprising a mixture of topsoil, limestone, and modern refuse including red brick, aerated concrete, plastic and glass.

4.6 Trench 4

Ditch [405], orientated north to south, was identified at the southern end of Trench 4, to the north of Trenches 10 and 11 (Figs 2 and 9). The ditch was 0.92m wide, 0.34m deep with moderately sloping sides and a concave base (Fig 13, Section 5).

South-facing section of ditch [405], 1 x 0.5m scale, looking north Fig 9

It contained a single, firm, mid-grey-brown sandy loam secondary fill (404), with larger limestone inclusions concentrated towards the base of the feature, formed by the gradual erosion of the ditch sides and possible bank erosion/collapse over the course of the use-period of the feature. A small assemblage of eight pottery sherds (25g) was recovered from this fill, and dated up to 13th century and included a sherd of early to middle Saxon pottery. In this deposit there were also fragmentary animal bones identified as horse, sheep or goat, pig and rabbit.

4.7 Trench 9

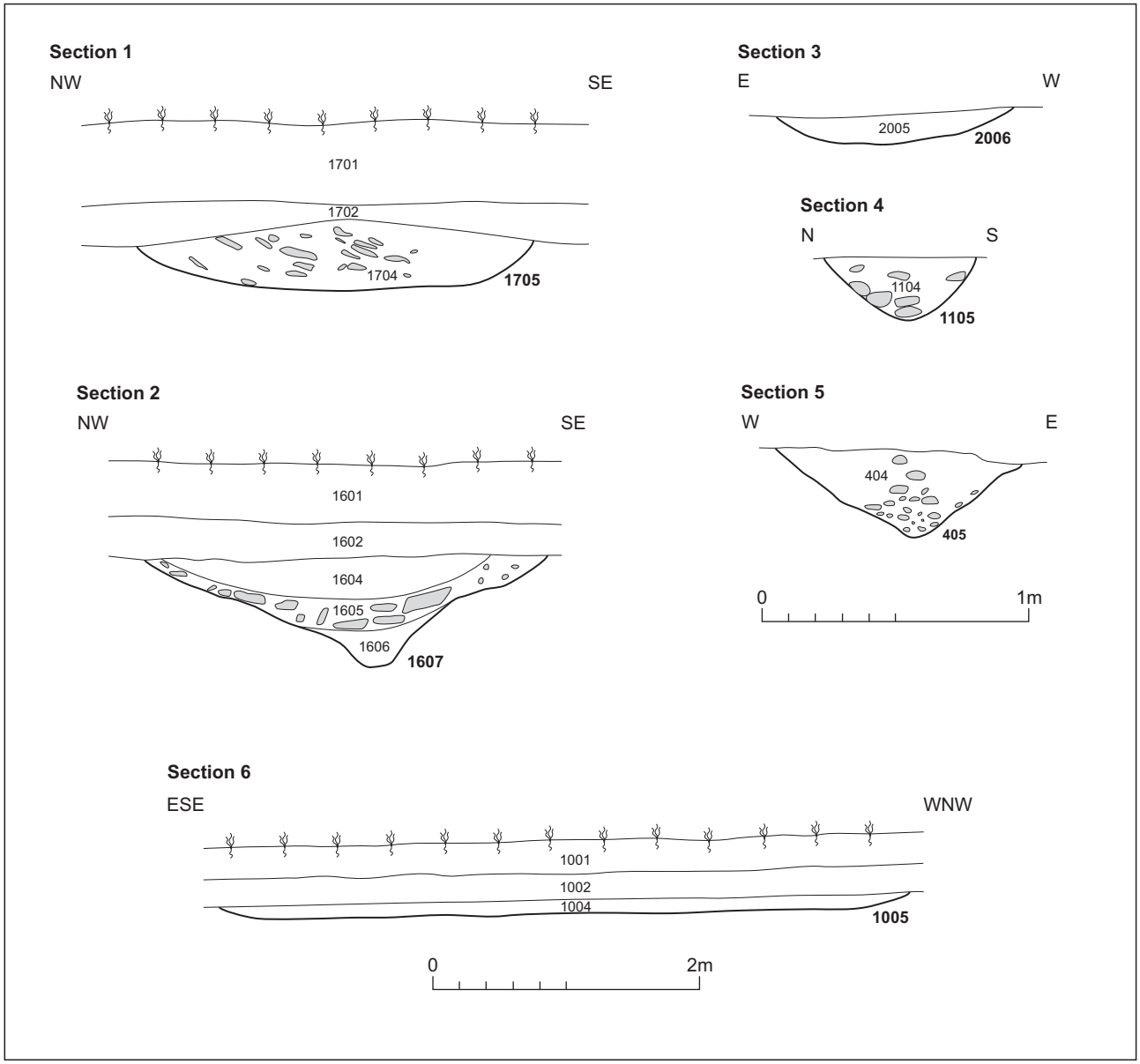
A substantial modern intrusion [905] was present at the south-east end of Trench 9, corresponding with the pronounced anomaly identified at this location by the geophysical survey (Magnitude 2018) (Figs 2 and 12).

Overview of modern rubble pit [905], 1 x 1m scale, looking south
Fig 12

It contained a single fill (904), comprising loose limestone rubble with no substantial soil matrix. It was mechanically excavated to a maximum depth of 1m in order to ensure safe working conditions. This feature had been cut into the natural geology.

4.8 Negative results

No other archaeological features were uncovered, although geological variation and features were uncovered and displayed a high level of concordance with the geophysical and Aerial Photographic survey.



Scale 1:25, 1:50 (Section 6) Excavated sections Fig 13

5 FINDS

5.1 **Pottery** by Paul Blinkhorn

The pottery assemblage comprised 36 sherds with a total weight of 267g. It was largely of earlier medieval date, and was recorded using the conventions of the Oxfordshire County type-series (Mellor 1994), as follows:

OXR: **St. Neots Ware**, AD850-1200. 2 sherds, 15g.

OXAC: **Cotswold-type Ware**, AD975-1350. 2 sherds, 5g.

OXBF: **North-East Wiltshire Ware**, AD1050–1400. 2 sherds, 21g,

OXY: **Medieval Oxford Ware**, AD1075–1350. 15 sherds, 150g.

OXBK: **Medieval Shelly Coarseware**, AD1100-1350. 5 sherds, 40g.

OXAM: **Brill/Boarstall Ware**, AD1200 – 1600. 9 sherds, 31g.

The following, not included in the type-series, was also noted:

E/MSAX: **Early/Middle Anglo-Saxon Ware**, 5th – 9th century. 1 sherd, 5g

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*. The range of fabric types is typical of sites in the region.

The sherd of E/MSAX pottery from context (404) has an organic temper which is typical of the tradition in the region. It is somewhat abraded. The rest of the assemblage is in reasonably good condition and appears reliably stratified. The sherds of OXR and OXAC are a little abraded, but they are somewhat under-fired and soft, so it is probably due to burial conditions rather than redeposition.

The bulk of the assemblage consists of bodysherds from unglazed jars and glazed jugs and pitchers, which is typical of the period in the region. The assemblage of OXY from context (1004) includes a fragment of a decorated, glazed tripod pitcher, a typical product of the tradition (Mellor 1994, pl.4). All the sherds of OXBK from that context are from a single vessel.

	E/MSAX		**OXR**		**OXAC**		**OXBF**		**OXY**		**OXBK**		**OXAM**		
Ctxt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
404	1	5			1	1			2	11			4	8	13thC
1002					1	4	2	21	4	25			5	23	13thC
1004			1	2					8	110	5	40			12thC
1104									1	4					L11thC
1604			1	13											LSAX
Total	**1**	**5**	**2**	**15**	**2**	**5**	**2**	**21**	**15**	**150**	**5**	**40**	**9**	**31**	

Table 1: Pottery occurrence by number and weight (in g) of sherds per context by fabric type

5.2 **Animal bone** by Sander Aerts

A total of 96 animal bone fragments were collected over the course of the excavation from four different contexts. All remains were manually washed prior to analysis at MOLA Northampton. Identifications were carried out using the MOLA Northampton mammalian reference collection and Schmid (1972).

The bones were recorded following an all fragment method, implying that identification was attempted on all remains with diagnostic features. Due to similarities in skeletal morphology, sheep and goat were grouped together. Unidentifiable remains were grouped in size categories where possible: large mammal (cattle, horse), medium mammal (sheep, goat, pig, large dog), small mammal (small dog, cat, rabbit, rodents). All identifiable fragments were examined for taphonomy, including butchering marks, gnawing marks, root etching and traces of burning. Due to the limited size of the assemblage, ageing or sexing of the remains was not attempted.

Results

The animal bone is in a moderately well-preserved state. A total of 31 fragments, or 32% of the assemblage, could be identified. Although the assemblage is small, it has proven to be diverse. The results are summarised in table 2. The skeletal elements per taxon are given in Table 3.

Ctxt	Cut	Type	Cattle	Horse	Sh/G	Pig	Rabbit	Duck	LM	MM	Unid	Wt (g)
404	405	Pit		1	2	6	2		5	3	7	156
1002	-	Subsoil	1									9
1004	1005	Pit							2			21
1604	1607	Ditch	3		15			1	18	5	25	594
		Total	**4**	**1**	**17**	**6**	**2**	**1**	**25**	**8**	**32**	**780**

Table 2: Summary of hand-collected animal bone

LM=Large mammal

MM=Medium sized mammal

The assemblage mainly comprises of remains of common economic domesticates cattle, horse, sheep/goat and pig. Notable is the presence of rabbit and duck, observed from (404), fill of pit [405] and (1604), fill of ditch [1607] respectively.

No butchering marks were observed on any of the elements, but carnivore gnawing was visible on a cattle metapodial and first phalanx from (1604). A small unidentified bone fragment from the same context showed traces of burning. Most remains are affected by root etching.

Element	Cattle	Horse	Sh / G	Pig	Rabbit	Duck
Tooth	1	1	11	4		
Maxilla				1		
Mandible			2	1		
Scapula					1	
Humerus			1			
Radius						1
Pelvis			1			
Tibia					1	
Femur			1			
Metatarsus	1		1			
Metapodial	1					
Phalanx 1	1					
Total	4	1	17	6	2	1

Table 3: Representation of skeletal element per taxon

Discussion

The Caversfield animal bone is a small assemblage of moderately well-preserved bone. Sheep/goat remains were most commonly observed, although a large number of teeth from presumably one animal may contribute to overrepresentation. Other observed economic species include cattle, horse and pig.

Duck was identified from late Anglo-Saxon/early medieval ditch [1607]. It is possible that poultry was kept close to the site. Carnivore gnawing on cattle remains from the same ditch indicates that the bones were exposed for at least some time. A rabbit tibia and scapula were observed from 13th century ditch [405]. It is possible that rabbits were kept around the site as well.

The preservation and diversity of this animal bone assemblage show potential for further analysis if additional excavation were to take place at the site. Especially the possibility of domesticated poultry and rabbits on site is something that could be explored further.

6 DISCUSSION

6.1 Summary

The trial trench evaluation has determined that the visible earthwork features do not relate to Medieval settlement and was likely caused by modern disturbance therefore the earthworks were not archaeological features. No features corresponded with the earthworks which themselves did not form any meaningful or cohesive pattern. Earlier features were found below the modern disturbance indicated by the geophysical and aerial photographic survey. No prehistoric features were identified. The evaluation has proved the geophysical and aerial photographic survey to be accurate.

The results are not indicative of settlement within the site, rather that the site lies on the fringe in the hinterland with no evidence of buildings or structures. The B4100 Banbury Road forming the boundary of settlement. The findings are not of such

interest as to prohibit or constrain development, although further works may be required to safeguard the archaeological interest in the Hollow Way. Any such works could be secured by condition.

The archaeological trial trench evaluation uncovered a low density of medieval features along the easternmost part of the site within Trenches 4, 10 and 11. These trenches were located adjacent to the B4100 and also lay opposite the Church of St Laurence which dates to at least the 10th to 11th century (See Section 2.1 above). A single early to middle Saxon pottery sherd from a medieval ditch within Trench 4 hints there may have been earlier remains close by. This is not surprising given the proximity of the church and the shrunken village to the east. It is noticeable that all the pottery from the site (except one sherd) was recovered from three features and a layer in these three trenches.

In these three trenches were 34 pottery sherds which dated from *c*11th to the 13th centuries and there was also a small quantity of animal bone found. The end date for the pottery may suggest that this part of the hinterland or agricultural field system did not continue into the late medieval period. This would tie in with other evidence that the village of Caversfield is known to be a shrunken settlement. Earthworks are recorded very close by near to the church as well as in other parts of this former settlement (See Section 2.2). The majority of the pottery came from the Hollow Way in Trench 10.

A medieval ditch, [1105], lay perpendicular to and ditch [405] roughly parallel to the B4100 and both were *c*10m west of its present western extent. This road runs directly to the west of the medieval church and is likely to be a medieval road. On the balance of the evidence, the site was outside of the settlement activity to the east of the B4100 Banbury Road. It would have been part of the immediate hinterland of the settlement probably associated with paddocks and agricultural land. By the late Medieval period the site was most likely fully under the plough as part of the strip fields associated with Caversfield as indicated on the AP survey.

In the middle and western part of the site a single ditch [1607] was identified containing a single sherd of late Saxon/ early medieval pottery and some animal bone fragments. An undated ditch or erosive channel [2006] was identified at the south-eastern end of Trench 20, located within the valley of a watercourse at the south-eastern edge of the site, and sealed by a thick alluvial deposit next to an existing watercourse.

These features relate directly to the flood plain or alternatively represent either a formalisation of the flood plain edge or fluvial channels within the flood plain / alluvial accretion. They are either within or mark the edge of alluvium and likely separate it from the high ground which was most likely agricultural land.

The interpreted geophysical survey (Magnitude 2018) carried out prior to excavation works at the site has been demonstrated to be accurate, negative results were returned at locations corresponding with possible crop mark features identified by the aerial photographic assessment (APS 2018). Trench 9 confirmed the presence of a substantial modern intrusion [905] corresponding with that identified by the geophysical survey (Magnitude 2018).

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MOLA

24th August 2018

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APPENDIX 1: CONTEXT INVENTORY

Trench 1	**OS NGR: SP 57936 25252**		**Height aOD: 88.91m**
Length: 30m	**Width: 1.8m**	**Depth: 0.25–0.34m**	**Alignment: NW–SE**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
101	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.20m thickness	-
102	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.14m thickness	-
103	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 2	**OS NGR: SP 57887 25212**		**Height aOD: 89.23m**
Length: 30m	**Width: 1.8m**	**Depth: 0.30–0.33m**	**Alignment: NE–SW**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
201	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.22m thickness	-
202	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.13m thickness	-
203	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 3	**OS NGR: SP 57958 25208**		**Height aOD: 88.57m**	
Length: 30.5m	**Width: 1.8m**	**Depth: 0.26–0.30m**	**Alignment: NW–SE**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
301	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30.5m length >1.8m width <0.20m thickness	-
302	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30.5m length >1.8m width <0.11m thickness	-
303	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 4	**OS NGR: SP 57992 25205**		**Height aOD: 88.41m**	
Length: 14.5m	**Width: 1.8m**	**Depth: 0.35–0.50m**	**Alignment: NW–SE**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
401	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>14.5m length >1.8m width <0.24m thickness	-
402	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>14.5m length >1.8m width <0.27m thickness	-
403	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-
404	Deposit – fill of ditch 405 Secondary fill	*Firm mid-brown sandy loam*. Moderate ~10% small to large <0.08m angular/sub-angular limestone gravels and cobbles, concentrated towards base. Very occasional charcoal flecking.	>1.00m length 0.92m width 0.34m thickness	Pottery Iron nails Animal bone

405	Cut – ditch	*Linear N–S ditch*. V-shaped. Moderate, near-straight sides. Moderate break of slope to narrow, concave base, flat along axis.	>4m length 0.92m width 0.34m depth	-

Trench 5	**OS NGR: SP 57920 25189**		**Height aOD: 88.72m**
Length: 30m	**Width: 1.8m**	**Depth: 0.32–0.33m**	**Alignment: NE–SW**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
501	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.20m thickness	-
502	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.15m thickness	-
503	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 6	**OS NGR: SP 58013 25172**		**Height aOD: 87.38m**
Length: 14.5m	**Width: 1.8m**	**Depth: 0.40–0.50m**	**Alignment: NW–SE**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
601	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>14.5m length >1.8m width <0.38m thickness	CBM
602	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>14.5m length >1.8m width <0.18m thickness	-
603	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 7	**OS NGR: SP 57954 25167**		**Height aOD: 88.18m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.30–0.36m**	**Alignment: NW–SE**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
701	Layer – topsoil	*Loose dark grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.23m thickness	-
702	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.13m thickness	-
703	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 8	**OS NGR: SP 57863 25150**		**Height aOD: 88.98m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.30–0.34m**	**Alignment: NE–SW**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
801	Layer – topsoil	*Loose dark grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.25m thickness	-
802	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.10m thickness	-
803	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

Trench 9	**OS NGR: SP 57993 25148**		**Height aOD: 87.69m**
Length: 30m	**Width: 1.8m**	**Depth: 0.23–1.00m**	**Alignment: NW–SE**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
901	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.15m thickness	-
902	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.15m thickness	-
903	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-
904	Deposit – fill of pit 905 Intentional backfill	*Loose medium to large 0.05–0.15m angular/aub-angular limestone rubble*. No soil matrix. Terminated at 1m depth bgl.	>1.8m length 6.5m width >1m thickness	-
905	Cut – pit	*Large pit*. Full extent unknown. Moderate straight sides.	>1.8m length 6.5m width >1m depth	-

Trench 10	**OS NGR: SP 58030 25144**		**Height aOD: 86.05m**
Length: 15m	**Width: 1.8m**	**Depth: 0.40–0.55m**	**Alignment: WNW–ESE**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1001	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>15m length >1.8m width <0.25m thickness	-
1002	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>15m length >1.8m width <0.25m thickness	-
1003	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-

1004	Deposit – fill of possible pit 1005 Secondary fill	*Friable mid-brown-grey sandy loam.* Moderate ~10% small to large <0.10m angular/sub-angular hard limestone brash and gravels and cobbles.	>1.8m length 5.2m width >0.12m thickness	Pottery Animal bone
1005	Cut – possible pit	*Linear NNE–SSW feature.* Wide, very shallow. Very gently-sloping, slightly concave sides. Imperceptible break of slope to wide, flat base, flat along axis.	>5.5m length 5.2m width >0.12m depth	-

Trench 11	**OS NGR: SP 58032 25151**		**Height aOD: 86.33m**
Length: 12.5m	**Width: 1.8m**	**Depth: 0.35–0.50m**	**Alignment: NNE–SSW**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1101	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>12.5m length >1.8m width <0.35m thickness	Pottery Animal bone
1102	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>12.5m length >1.8m width <0.15m thickness	Pottery
1103	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~25% small to large <0.10m angular/sub-angular hard limestone brash and gravels	-	-
1104	Deposit – fill of ditch 1105 Secondary fill	*Friable mid-brown-grey sandy loam*. Moderate ~10% small to large <0.08m angular/sub-angular limestone gravels and cobbles.	>1.00m length 0.60m width 0.25m thickness	Pottery
1105	Cut – ditch	*Linear NE–SW ditch*. Concave V-shaped. Moderate, concave sides. Moderate break of slope to narrow, concave base, flat along axis.	>1.00m length 0.60m width 0.25m depth	-

Trench 12	**OS NGR: SP 57906 25135**		**Height aOD: 88.51m**
Length: 30m	**Width: 1.8m**	**Depth: 0.30m**	**Alignment: NW–SE**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1201	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.20m thickness	-

1202	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.10m thickness	-
1203	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-

Trench 13	**OS NGR: SP 57824 25120**		**Height aOD: 89.24m**
Length: 30m	**Width: 1.8m**	**Depth: 0.30m**	**Alignment: NE–SW**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1301	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.20m thickness	-
1302	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.10m thickness	-
1303	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-

Trench 14	**OS NGR: SP 57941 25113**		**Height aOD: 87.71m**
Length: 30m	**Width: 1.8m**	**Depth: 0.28–0.33m**	**Alignment: NE–SW**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1401	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.25m thickness	-
1402	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.08m thickness	-

1403	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-

Trench 15	**OS NGR: SP 57859 25099**		**Height aOD: 88.63m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.30m**	**Alignment: N–S**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1501	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.20m thickness	-
1502	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.10m thickness	-
1503	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-

Trench 16	**OS NGR: SP 57952 25083**		**Height aOD: 86.85m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.29–0.30m**	**Alignment: N–S**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1601	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.21m thickness	-
1602	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.12m thickness	-
1603	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-

1604	Deposit – fill of ditch 1607 Upper secondary fill	*Firm mid-grey-brown sandy clay loam*. Moderate ~10% small <0.03m angular/sub-angular limestone gravels.	>1.00m length 1.23m width 0.16m thickness	Pottery Animal bone
1605	Deposit – fill of ditch 1607 Intermediate secondary fill	*Firm mid-brown sandy clay loam*. Frequent ~25% medium to large <0.15m angular/sub-angular limestone gravels and cobbles.	>1.00m length 1.51m width 0.12m thickness	-
1606	Deposit – fill of ditch 1607 Basal secondary fill	*Firm mid-red-brown sandy clay loam*. Very occasional <1% small <0.01m angular/sub-angular limestone gravels. Very occasional <1% charcoal flecking.	>1.00m length 0.54m width 0.14m thickness	-
1607	Cut – ditch	*Linear NE–SW ditch*. Convex V-shaped. Moderate, convex sides. Sudden break of slope to narrow, concave base, flat along axis.	>1.00m length 1.51m width 0.42m depth	-

Trench 17	**OS NGR: SP 57880 25063**		**Height aOD: 87.87m**
Length: 30m	**Width: 1.8m**	**Depth: 0.40–0.41m**	**Alignment: NNW–SSE**

Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1701	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.31m thickness	-
1702	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.10m thickness	-
1703	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-
1704	Deposit – fill of ditch 1705 Secondary fill	*Friable mid-brown loamy sand.* Very frequent ~50% small to large <0.10m angular/sub-angular limestone gravels and cobbles.	>1.00m length 1.50m width 0.26m thickness	-
1705	Cut – ditch	*Linear NE–SW ditch*. U-shaped. Gentle, concave sides. Very gradual break of slope to wide, concave base, flat along axis.	>1.00m length 1.50m width 0.18m depth	-

Trench 18	**OS NGR: SP 57927 25026**		**Height aOD: 85.14m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.32–0.43m**	**Alignment: NNW–SSE**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1801	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.23m thickness	-
1802	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.17m thickness	-
1803	Layer – alluvium	*Friable mid-orange-brown sandy silt*. Moderate ~10% poorly sorted small to medium <0.04m angular/sub-angular limestone gravels. Very occasional <1% larger angular/sub-angular limestone cobbles <0.10m. Deposited in patches/bands across SSE end of trench.	Unknown length Unknown width <0.15m thickness	-
1804	Natural – geology Cornbrash Formation	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~50% small to large <0.10m angular/sub-angular hard limestone brash/bedrock	-	-

Trench 19	**OS NGR: SP 57869 25023**		**Height aOD: 87.08m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.29–0.35m**	**Alignment: NE–SW**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
1901	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.22m thickness	-
1902	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.13m thickness	-

1903	Natural – geology Cornbrash Formation/Forest Marble Formation interface	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash and gravels. Frequent ~15% patches mid-blue-grey and light yellow sandy clay towards SW. Occasional ~5% small to large <0.10m angular/sub-angular mudstone and limestone gravels and cobbles.	-	-

Trench 20	**OS NGR: SP 57901 24972**		**Height aOD: 82.68m**	
Length: 30m	**Width: 1.8m**	**Depth: 0.30–1.25m**	**Alignment: NW–SE**	
Context	*Type*	*Description*	*Dimensions*	*Artefacts/ Samples*
2001	Layer – topsoil	*Loose dark grey-brown loamy sand*. Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels. Frequent turf rootlets.	>30m length >1.8m width <0.22m thickness	-
2002	Layer – subsoil/interface	*Loose mid-grey-brown loamy sand.* Frequent ~15% poorly sorted small to medium <0.06m angular/sub-angular limestone gravels.	>30m length >1.8m width <0.16m thickness	-
2003	Layer – alluvium	*Friable light yellow-grey and mid-orange-brown banded sandy silt*. Occasional ~1% small to large <0.10m angular/sub-angular limestone gravels and cobbles. Deposited downhill of slope across SE two-thirds of trench.	Unknown length Unknown width <0.90m thickness	-
2004	Natural – geology Cornbrash Formation/Forest Marble Formation interface	*Loose patchy mid-brown/mid-orange-brown/mid-yellow-brown sand.* Very frequent ~75% small to large <0.10m angular/sub-angular hard limestone brash and gravels. Occasional ~5% patches mid-blue-grey and light yellow sandy clay towards NW. Occasional ~5% small to large <0.10m angular/sub-angular mudstone and limestone gravels and cobbles.	-	-
2005	Deposit – fill of ditch 2006 Secondary fill	*Friable mid-grey silt.* Very occasional <0.05% very small <0.003m aquatic snail shells and shell fragments	>1.00m length 0.90m width 0.11m thickness	-

2006	Cut – ditch	*Linear NE–SW ditch*. Shallow U-shaped. Very gentle, concave sides. Very gradual break of slope to concave base, flat along axis.	>1.00m length 0.90m width 0.11m depth	-

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