



Hodgetts Estates

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# **LAND AT JUNCTION 10 M42, DORDON, WARWICKSHIRE**

Written Scheme of Investigation for an  
Archaeological Geophysical Survey





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Written Scheme of Investigation for an Archaeological  
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# LAND AT JUNCTION 10 M42, DORDON, WARWICKSHIRE

Written Scheme of Investigation for an Archaeological  
Geophysical Survey

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# CONTENTS

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## EXECUTIVE SUMMARY

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1	PROJECT BACKGROUND	1
1.2	AIMS AND OBJECTIVES	1
1.3	SITE INSPECTION	2
1.4	PROJECT ROLES	2
1.5	STATEMENT OF LIABILITY	2
<b>2</b>	<b>HISTORIC ENVIRONMENT BASELINE SUMMARY</b>	<b>3</b>
2.1	SITE LOCATION	3
2.2	TOPOGRAPHY	3
2.3	GEOLOGY	3
2.4	ARCHAEOLOGICAL AND HISTORICAL BACKGROUND	3
<b>3</b>	<b>SURVEY METHODOLOGY</b>	<b>5</b>
3.1	INTRODUCTION	5
3.2	METHODOLOGY	5
3.3	DATA PROCESSING	7
3.4	GEOPHYSICAL INTERPRETATION	7
3.5	CHANCE ARCHAEOLOGICAL FINDS	8
<b>4</b>	<b>REPORTING, DISSEMINATION &amp; ARCHIVING</b>	<b>9</b>
4.1	REPORTING	9
4.2	PUBLICATION AND DISSEMINATION	10
4.3	ARCHIVING	10
<b>5</b>	<b>PROGRAMME, STAFFING AND ATTENDANCES</b>	<b>11</b>

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5.1	INITIAL TIMETABLE AND STAFFING	11
5.2	PROJECT TEAM	11
5.3	PROGRESS REPORTS	11
<b>6</b>	<b>HEALTH AND SAFETY</b>	<b>13</b>
6.1	INTRODUCTION	13
6.2	RISK ASSESSMENT AND METHODOLOGY STATEMENT (RAMS)	13
6.3	PERSONAL PROTECTIVE EQUIPMENT (PPE)	13
6.4	WELFARE	13
6.5	SITE SECURITY	13
6.6	ACCESS	14
6.7	COVID 19	14
<b>7</b>	<b>MONITORING AND ASSURANCE</b>	<b>15</b>
7.1	ON SITE FIELDWORK	15
7.2	POST-EXCAVATION DELIVERABLES	15

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## ***APPENDICES***

APPENDIX A

REFERENCES

APPENDIX B

FIGURES

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## **FIGURES**

Figure 1 – Site location

Figure 2 – Proposed archaeological geophysical survey area





# EXECUTIVE SUMMARY

Hodgetts Estates ('the Client') is seeking to obtain planning permission for the development of predominantly industrial premises (hereinafter referred to as the 'Proposed Development') at Land at Junction 10 M42, Dordon in Warwickshire. The Proposed Scheme comprises the provision of warehousing and light industry premises (comprising up to 100,000sqm employment floorspace), an overnight lorry parking facility (up to 150 parking spaces with amenity block) and ancillary infrastructure and works including new vehicular and pedestrian access and landscaping.

WSP has been commissioned by the Client to produce a Written Scheme of Investigation (WSI) for an archaeological geophysical (gradiometer) survey to investigate the potential for archaeological remains within the Proposed Development.

The proposed development site (the 'Site') comprises 32ha and the geophysical survey will comprise a gradiometer survey across the Site (totalling an area of 32ha).

This WSI provides the scope and method statement for the proposed archaeological geophysical survey, to be carried out week commencing 26th October 2020. It sets out the survey aims, scope and methodology, reporting and archival requirements, along with the role of WSP in managing and assuring the works on behalf of the Client. The work is pre-construction and not subject to Construction (Design and Management) Regulations (CDM 2015). The geophysical survey sub-contractor, AOC Archaeology Group, will be the main contractor responsible for Health and Safety, for ensuring that all access points are secured (e.g. field gates closed and locked as applicable) following the survey and for the security of equipment during the survey, and for the provision of welfare facilities

# 1 INTRODUCTION

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## 1.1 PROJECT BACKGROUND

- 1.1.1. WSP has been commissioned by the Client to produce a Written Scheme of Investigation (WSI) for a geophysical (gradiometer) survey to investigate the potential for archaeological remains at the Proposed Development site 'Land at Junction 10 M42, Dordon, Warwickshire. The archaeological geophysical survey will comprise 32ha of land centred on National Grid Reference/NGR 424816 300926 (see **Figure 1** in **Appendix B**).
- 1.1.2. The Client are seeking to obtain planning permission for a Proposed Scheme to comprise the provision of warehousing and light industry premises (comprising up to 100,000spm employment floorspace), an overnight lorry parking facility (up to 150 parking spaces with amenity block) and ancillary infrastructure. The proposed works will also include new vehicular and pedestrian access and landscaping.
- 1.1.3. The WSI provides the scope and method statement for the archaeological geophysical survey. It sets out the survey aims, scope and methodology, reporting and archival requirements, along with the role of WSP in managing and assuring the work on behalf of the client. Section 2 of this WSI provides a brief summary of the archaeological and historical background. References are provided in **Appendix A**. The results of the investigation will be used to inform the forthcoming Environmental Statement for the Proposed Development and any subsequent intrusive archaeological investigation that may be required (e.g. archaeological trial trenches and any subsequent mitigation).
- 1.1.4. The geophysical survey will be undertaken prior to the determination of the granting of planning consent. The work will be carried out pre-construction and is not therefore subject to Construction (Design and Management) regulations (CDM 2015). The geophysical survey sub-contractor, AOC Archaeology Group, will be the main contractor responsible for Health and Safety, for ensuring that all access points are secured (e.g. field gates closed and locked as applicable) following the survey and for the security of equipment during the survey, and for provision of welfare facilities.

## 1.2 AIMS AND OBJECTIVES

- 1.2.1. The aim of the archaeological geophysical survey is to clarify the archaeological potential within the areas of proposed impact in order to inform the forthcoming Environmental Statement and the likely requirements for any further site-based surveys.
- 1.2.2. The purpose of the archaeological geophysical survey, in compliance with the ClfA Standards and guidance for archaeological geophysical survey (ClfA 2014a), is as follows:
- To determine, as far as is reasonably possible, the nature of the detectable archaeological resource using appropriate methods and practices; and
  - To inform either the scope and nature of any further site-based archaeological work that may be required to inform assessment of the development proposals.
- 1.2.3. In order to achieve the above aims, the objectives of the archaeological geophysical survey comprise:

- **Objective 1:** Conduct the archaeological geophysical survey of the proposed survey area, covering as much of the specified area as possible, allowing for on-site obstructions.
- **Objective 2:** Provide fully-illustrated survey report which will set out the project background, identify the presence of any geophysical anomalies of possible archaeological nature, and where possible provide an archaeological interpretation and commentary on potential and significance.
- **Objective 3:** Provide accompanying digital survey data.

### 1.3 SITE INSPECTION

- 1.3.1. No site inspection thought necessary as part of the preparation of this WSI. There is sufficient information from desk-based sources and from the Client to inform site access and non-archaeological constraints visible on the ground.

### 1.4 PROJECT ROLES

- 1.4.1. The '*WSP Cultural Heritage and Archaeology Team*' is responsible for managing the scope and for monitoring and assuring the work on behalf of the client. The team will liaise directly with the LPA Archaeological Advisor. Section 7 sets out the role and responsibilities in detail.
- 1.4.2. The '*LPA Archaeological Advisor*' provides the development control and planning advice to the LPA and has the final decision on the scope of work and signs off the evaluation when it is complete, in consultation with the WSP Cultural Heritage and Archaeology Team.
- 1.4.3. The '*geophysical survey subcontractor*' is responsible for carrying out the survey, post-survey reporting, deposition of the archive and dissemination. All reporting by AOC Archaeology Group will be via the WSP Cultural Heritage and Archaeology Team. AOC Archaeology Group is the sole contractor on the Site and is responsible for Health and Safety (in accordance with WSP standards), site management, security and welfare.
- 1.4.4. '*The Client*' is the developer, who is the current landowner.

### 1.5 STATEMENT OF LIABILITY

- 1.5.1. This document is for the exclusive benefit of the Client (Hodgetts Estates). It may not be assigned to or relied upon by a third party without the agreement of WSP UK Limited ('WSP') in writing. WSP retains all copyright and other intellectual property rights in the document and its contents unless transferred by written agreement between WSP and the Client.
- 1.5.2. The findings and opinions expressed are based on the conditions encountered and/or the information reasonably available at the date of issue of this document (or other date e.g. date of inspection) and shall be applicable only to the circumstances envisaged herein.
- 1.5.3. No person except the Client shall have the benefit of this document by virtue of the *Contracts (Rights of Third Parties) Act 1999*.

## 2 HISTORIC ENVIRONMENT BASELINE SUMMARY

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### 2.1 SITE LOCATION

- 2.1.1. The site is located on the land to the east of junction 10 M42, Dordon, Warwickshire (NGR 424823, 300962: Figure 1). The site comprises a single field which is under arable cultivation. The site is bounded by the M42 to the west and A5 Watling Street to the south, agricultural fields to the east and housing to the north.
- 2.1.2. The site falls within the historic parish of Dordon and is located within the county of Warwickshire; the site lies 230m east of the Warwickshire–Staffordshire county boundary.
- 2.1.3. The closest watercourse is the Kettle Brook in Staffordshire, a small tributary of the River Tame, located 715m to the south west of the Site.

### 2.2 TOPOGRAPHY

- 2.2.1. The Site is located on a slight, gradual incline from 92.4m aOD in the south west to 105.1m aOD in the north east. The surrounding area is relatively flat with some undulating areas.

### 2.3 GEOLOGY

- 2.3.1. Geology can provide an indication of suitability for early settlement, and potential depth of remains.
- 2.3.2. The geology comprises of Halesowen Formation bedrock which comprises of mudstone, siltstone and sandstone. It is a sedimentary bedrock formed approximately 308 – 310 million years ago in the Carboniferous Period and it is thought the local environment was previously dominated by rivers.
- 2.3.3. There is no superficial geology recorded in this area.

### 2.4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

#### KNOWN ASSETS

- 2.4.1. A summary of the archaeological and historical background is provided below pending the completion of the HEDBA and is based upon a 500m study area.
- 2.4.2. No designated heritage assets, such as scheduled monuments, listed buildings, registered parks and gardens or registered battlefields, are located within the Site.
- 2.4.3. There is one non-designated heritage asset, the site of a 19th century barn, within the Site.

#### PAST INVESTIGATIONS

- 2.4.4. There has been no previous investigation within the Site. Few past investigations have been undertaken in the vicinity of the Site, and consequently current understanding of the nature and extent of human activity, in particular for the prehistoric and Roman periods for which there is no written record, is very limited. Two past investigations have been carried out to the south of the A5 Watling Street:
  - Geophysical survey in 2014 and trial trenching in 2017 on land to the south east of Junction 10 M42, immediately to the south of the Site, found evidence for two undated linear features, one of which contained a ring ditch and gullies as well as evidence for a field system. The features were interpreted as likely to indicate Iron Age activity.

- Geophysical survey in 2014 on land to the south west of Junction 10 M42 (250m south west of the Site) identified a series of linear features, which may have been geological in origin.

### **PREHISTORIC PERIOD (800,000 BC–AD 43)**

- 2.4.5. *There is uncertain but probably moderate to high potential for prehistoric activity.* Whilst there is limited evidence within the 500m study area as recorded on the HER, this may simply reflect the limited past archaeological investigation as noted above. Undated enclosures, a ring ditch and field system recorded during geophysical survey and trial trenching in 2014 and 2019 to the immediate south of the Site was interpreted as probably representing Iron Age activity (WHER MWA30377).

### **ROMAN PERIOD (AD 43–410)**

- 2.4.6. *There is uncertain but potentially moderate to high potential for Roman activity.* The line of the modern A5 which form the southern boundary to the Site follows the alignment of Watling Street a major Roman road which linked London and Wroxeter, in Shropshire. Archaeological observations during the construction of Junction 10 of the M42 in the 1980s reported three Romano-British post holes 75m to the west of the Site. Whilst the evidence was limited this suggested the potential for settlement in the vicinity albeit of unknown type and extent.

### **MEDIEVAL PERIOD (AD 410–1540)**

- 2.4.7. *There is moderate to high potential for later medieval agricultural activity.* The principal centres of historic settlement lie some distance from the Proposed Scheme, and in all likelihood the majority of the area was open fields in a landscape likely to have been dominated by dispersed farmsteads. This includes the site of a possible late medieval or early post manor house, Hall End Hall, recorded 440m to the east of the Site (WHER MWA230) which may be associated with settlement along Watling Street further to the south where medieval pottery has been found (WHER MWA13161). The nature and extent of settlement in the vicinity of Watling Street is currently unknown.

### **POST-MEDIEVAL (AD 1540–PRESENT)**

- 2.4.8. *There is moderate to high potential for post-medieval agricultural activity.* The site of a probable 19th century small field barn, known as Leisure Barn, is recorded within the Site (WHER HWA16506). The remainder of the Site is thought to have been agricultural fields during this period.
- 2.4.9. Hall End Hall, located 440m to the east of the Site, existed by the late 16th century possibly associated with a small garden (WHER MWA12541). The Hall was demolished circa 1945.
- 2.4.10. Birch Coppice Colliery and associated tramway existed by the late 19th century 400m to the north of the Site. The small settlement of Birchmoor immediately to the north of the Site may have originated as a miners' settlement associated with the colliery.

## 3 SURVEY METHODOLOGY

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### 3.1 INTRODUCTION

- 3.1.1. All archaeological geophysical survey work will be carried out in accordance with recommended good practice specified in guideline documents published by Historic England (David *et al.* 2008), the European Archaeological Council (Schmidt *et al.* 2015) and the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance for archaeological geophysical survey* (2014) and the *CIfA Technical Paper No.6, The use of geophysical techniques in archaeological evaluations* (2002).

### 3.2 METHODOLOGY

- 3.2.1. Survey will be conducted using a cart-based system wherever possible. If site conditions are not suitable for cart survey (uneven ground, areas under 0.5 ha) a hand-held system will be deployed.
- 3.2.2. The navigation display on cart-based system provides real time positioning enabling full site coverage without the need to set up individual grid nodes across the site. In order to ensure survey accuracy, the boundaries of the survey extent will be established using a Leica Viva RTK GNSS surveying instrument.
- 3.2.3. For hand-held systems survey grid nodes will be established at 30 m x 30 m intervals using a Leica Viva RTK GNSS surveying instrument or using dGPS equipment (Trimble R8 or R10) to an accuracy of <2cm.
- 3.2.4. All survey data will be recorded in OS National Grid coordinates and heights above Ordnance Datum (OD) (Newlyn), as defined by OSGM15 and OSTN15, with a horizontal precision of at least 50 mm.
- 3.2.5. Digital mapping and archaeological information from any relevant previous archaeological investigations work will be used where readily accessible, to support the interpretation of the geophysical data.
- 3.2.6. An interpretation of the geophysical anomalies will be presented identifying likely and possible archaeological features, along with linear trends and areas of increased magnetic response.

#### **INSTRUMENT SPECIFICATION (GRADIOMETER SURVEY)**

- 3.2.7. The detailed gradiometer survey will be conducted using Bartington Grad-01-1000L gradiometers mounted at 1.0 m intervals on either a non-magnetic cart or on a hand-held frame with an effective sensitivity of 0.03 nT.
- 3.2.8. Data will be collected at intervals no greater than 0.25 m along transects spaced 1.0 m apart, in accordance with European Archaeologiae Consilium recommendations (Schmidt *et al.* 2015). Data will be collected in the zigzag method.
- 3.2.9. Where necessary, data from the survey will be subject to minimal correction processes. The precise steps required will be determined after data collection but would typically comprise a zero-mean traverse function ( $\pm 5$  nT thresholds) to correct for variations in the calibration between the Bartington sensors used and, for hand-held data, a de-step function to account for variations in traverse position due to varying ground cover and topography. The data will be processed using

commercially available and in-house software which allows greyscale and trace plots to be produced. All efforts will be made during data collection to limit required processing and no further filtering will be applied.

#### **Bartington Cart-based Gradiometer Survey**

- 3.2.10. The gradiometer survey will be carried out using a Bartington non-magnetic cart-based system, utilising two Bartington Grad601-2 fluxgate gradiometers, using four Bartington Grad-01-1000L sensors mounted at 1m separation. Data will be collected using parallel zig-zag traverses and each datapoint's position will be recorded by a Trimble R10 GNSS using a VRS configuration. The data will be collected and stored using MLGrad601 v1.11 (Geomar) software on a weatherproof laptop whilst surveying. Parameters will be selected that are suitable for the prospective aims of the survey and in accordance with recommended professional good practice.
- 3.2.11. Following data collection, the data will be downloaded from MLGrad601 v1.11 and converted into an .xyz file in MultiGrad601 v1.16 (Geomar). The data will then be visualised and processed using TerraSurveyor v3.0.36.0 (DW Consulting) and the resultant image exported in .grd file format. This image will then be interpreted, and appropriate point, polyline and polygon layers will be created either in AutoCAD LT 2019 in DWG format, or in ArcGIS Pro software as shapefiles. The interpretation of the data will be produced and presented alongside the data in a full report.

#### **Sensys Cart-based Gradiometer Survey**

- 3.2.12. The survey will be carried out using a Sensys Magneto MXPDA cart-based system and Trimble R10 GNSS equipment. Works consist of laying out systematic grids, marked by plastic cones, which are walked systematically in a zig-zag pattern pushing the Sensys Cart, each datapoint's position will be recorded by a Trimble R10 GNSS and the measured tracks are recorded on the systems PDA, which acts as the systems control unit. The data is stored on a SD memory card. The Sensys MXPDA push-cart magnetometer system is used for the detection of ferromagnetic objects in small and medium sized areas. Parameters will be selected that are suitable for the prospective aims of the survey and in accordance with recommended professional good practice (Schmidt et al. 2016).
- 3.2.13. Following data collection, the SD will be removed, and the data transferred onto a PC for processing and visualisation using the bespoke Magneto (Sensys) software. The resultant image will then be interpreted, and appropriate point, polyline and polygon layers will be created either in AutoCAD LT 2019 in DWG format, or in ArcGIS Pro software as shapefiles. An interpretation of the data will be produced and presented alongside the data in a full report.

#### **Handheld Gradiometer Survey**

- 3.2.14. If necessary, hand-held data will be acquired using a handheld Bartington Grad601-2 instruments which utilise high-stability fluxgate magnetic gradient sensors. The Grad601-2 is an ideal instrument for prospective survey of large areas as well as detailed surveys of known archaeology. The instrument stores the data collected on an on-board data-logger, which is then downloaded as a series of survey grids for processing. Temporary survey grids measuring 30m by 30m will be set out across the Site using dGPS equipment (Trimble R8 or R10) to an accuracy of <2cm. Data will be collected in these grids in a zigzag fashion, with a sample reading of 0.25m and a traverse interval of 1m.

- 3.2.15. The survey data will be transmitted electronically to the archaeological fieldwork contractor's office at least once a day, for back-up and quality control. Should any dataset be found to be seriously flawed (for instance due to a failed datalogger), the affected area will be re-surveyed.
- 3.2.16. A digital photographic record will be taken before, during and after geophysical survey to show any changes field conditions following the programme of works. The photos will be downloaded and stored off site.
- 3.2.17. Data will be downloaded using Grad601 and processed using Geoplot v.4 software. The grids of data will be aligned and enhanced for presentation as 'Minimally Processed' and 'Processed' Greyscale images. The images will be presented on georeferenced drawings created in AutoCAD LT 2019 or ArcGIS Pro software. An interpretation of the data will be produced and presented alongside the data in a full report.

### **3.3 DATA PROCESSING**

- 3.3.1. The magnetic data collected during the detail survey are downloaded from the Bartington system for processing and analysis using both commercial and geophysical survey subcontractor in-house software. This software allows for both the data and the images to be processed in order to enhance the results for analysis; however, it should be noted that minimal data processing is conducted so as not to distort the anomalies.
- 3.3.2. As the scanning data are not as closely distributed as with detailed survey, they are georeferenced using the GPS information and interpolated to highlight similar anomalies in adjacent transects. Directional trends may be removed before interpolation to produce more easily understood images.
- 3.3.3. Typical data and image processing steps may include:
  - Destripe – Applying a zero-mean traverse in order to remove differences caused by directional effects inherent in the magnetometer;
  - Destagger – Shifting each traverse longitudinally by a number of readings. This corrects for operator errors and is used to enhance linear features;
- 3.3.4. Typical displays of the data used during processing and analysis:
  - Greyscale – Presents the data in plan view using a greyscale to indicate the relative strength of the signal at each measurement point. These plots can be produced in colour to highlight certain features but generally greyscale plots are used during analysis of the data.
  - XY Plot – Presents the data as a trace or graph line for each traverse. Each traverse is displaced down the image to produce a stacked profile effect. This type of image is useful as it shows the full range of individual anomalies.

### **3.4 GEOPHYSICAL INTERPRETATION**

- 3.4.1. The interpretation methodology will separate the anomalies into four main categories: archaeological, modern, agricultural, and uncertain or geological origin.
- 3.4.2. The archaeological category is used for features when the form, nature, and pattern of the anomaly are indicative of archaeological remains. Further sources of information such as aerial photographs may also have been incorporated in providing the final interpretation. This category is further subdivided into two groups, implying a decreasing level of confidence:
  - Archaeology – used when there is a clear geophysical response and anthropogenic pattern.



- Possible archaeology – used for features which give a response, but which form no discernible pattern or trend.

3.4.3. The modern category is used for anomalies that are presumed to be relatively modern in date:

- Ferrous – used for responses caused by ferrous material. These anomalies are likely to be of modern origin.
- Modern service – used for responses considered relating to cables and pipes; most are composed of ferrous/ceramic material although services made from non-magnetic material can sometimes be observed.

3.4.4. The agricultural category is used for the following:

- Former field boundaries – used for ditch sections that correspond to the position of boundaries marked on earlier mapping.
- Agricultural ditches – used for ditch sections that are aligned parallel to existing boundaries and former field boundaries that are not considered to be of archaeological significance.
- Ridge and furrow – used for broad and diffuse linear anomalies that are considered to indicate areas of former ridge and furrow.
- Ploughing – used for well-defined narrow linear responses, usually aligned parallel to existing field boundaries.
- Drainage – used to define the course of ceramic field drains that are visible in the data as a series of repeating bipolar (black and white) responses.

3.4.5. The uncertain origin/geological category is used for features when the form, nature and pattern of the anomaly are not sufficient to warrant a classification as an archaeological feature. This category is further sub-divided into:

- Increased magnetic response – used for areas dominated by indistinct anomalies which may have some archaeological potential.
- Trend – used for low amplitude or indistinct linear anomalies
- Superficial geology – used for diffuse edged spreads considered to relate to shallow geological deposits. They can be distinguished as areas of positive, negative, or broad bipolar (positive and negative) anomalies.

## 3.5 CHANCE ARCHAEOLOGICAL FINDS

3.5.1. Whilst the recovery of finds is not an aim of archaeological geophysical survey, the incidental discovery of finds during survey sometimes occurs.

3.5.2. If finds of significant value or archaeological interest are recovered, these will be noted in the archaeological geophysical survey report and the Applicant and/or landowner(s) will be notified as appropriate. The position in relation to national grid will be identified via the archaeological geophysical survey GPS.

3.5.3. Where relevant, the landowner will be invited to complete a 'Transfer of Title' form to allow AOC Archaeology Group to deposit significant finds with an appropriate museum or other repository.

3.5.4. Any finds constituting 'treasure' under the *Treasure Act 1996* and the *Treasure (Designation) Order 2002* will be stored in a safe place and reported to the local Coroner following the provisions of the Act.

## 4 REPORTING, DISSEMINATION & ARCHIVING

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### 4.1 REPORTING

- 4.1.1. Interim plots of survey results will be supplied by AOC Archaeology Group to WSP's Archaeology and Heritage Team during the fieldwork stage when the specified survey areas are completed. An interim plot of survey results for the whole site, together with brief interpretive comments, will be provided to the Applicant within two working days of the fieldwork being completed.
- 4.1.2. A fully illustrated archaeological geophysical survey report will be made available to the Applicant and the LPA Archaeological Advisor within four weeks of the completion of fieldwork. In accordance with the ClfA standards and guidance (2014) this will include as a minimum, the following:
- *Non-technical summary.* One-page summary outlining the Proposed Scheme's background, the scope and objectives for the geophysical archaeological survey, when it was undertaken and by whom, main results, and where appropriate, recommendations.
  - *Introduction.* This will set out the Proposed Scheme's background and the scope for the geophysical archaeological survey and will include the aims and specific research objectives reflected or reiterated in this WSI.
  - *Archaeological and historical background.* A brief summary with the Site (including size, geology and topography, location) and archaeological and historical background. In most cases this will be derived from the desk-based assessment report.
  - *Survey methodology.* This will outline in detail the methods used in the archaeological geophysical survey. This will include the detail of any variation to the agreed WSI and the reasons for such.
  - *Results.* A description of the survey results along with professional expert interpretation of the likely nature of the anomalies, i.e. whether these are of an archaeological nature or modern. This will be qualified with 'known', 'probable', 'possible'. A discussion of the form, possible function and significance of potential archaeological anomalies will be included.
  - *Conclusions.* Summary and interpretation the results and their likely significance. Other elements might include a confidence rating on the results and limitations (e.g. weather or problems of access). Recommendations on further work may also be included.
  - *References and bibliography* A list of all sources used will be provided. The final destination of the archive (records and finds) will be noted along with the site code assigned by the relevant project archive repository.
  - *Appendices.* Essential technical and supporting details will be included.
  - *Illustrations.* All text will be crossed referenced with plans, photographs and other illustrative material. Illustrations will include the following:
    - A site location map identifying the Site at national, regional and street level.
    - Data plots of processed and unprocessed geophysics survey data.
    - An overall plan of the Site, showing potential archaeological remains.
    - A composite figure of the geophysics plot, so that the known archaeology can be extrapolated.
    - Copies of relevant survey photographs.

## 4.2 PUBLICATION AND DISSEMINATION

- 4.2.1. In order to fulfil the planning condition, the results of the investigation will need to be published and disseminated at a level that is appropriate to the significance of the remains recorded.
- 4.2.2. Three hard copies of the report should be deposited with the Historic Environment Record (HER), on the understanding that it will be made available as a public document after an appropriate period (not exceeding 6 months from the completion of fieldwork); a further hard copy to be sent to the client. Electronic (PDF) copies of the report will also be provided alongside the hard copies.
- 4.2.3. A summary account of the work should be submitted to the editor of the local archaeological journal Archaeology Round-up and any relevant period journals (e.g. Medieval Archaeology, Proceedings of the Prehistoric Society) no later than March 31st of the year following completion of fieldwork.
- 4.2.4. Further publication may range from a 'grey literature' archaeological report, to a short journal article in local and period-based archaeological journals as appropriate (as above), to a full monograph (in the event that the evaluation resulted in further excavation). The level of dissemination would be determined in consultation with the LPA Archaeological Advisor.
- 4.2.5. In all cases a short summary of the results of the work will be submitted to the HER, and National Record for the Historic Environment (NHRE), as maintained by Historic England, via a standard OASIS archaeological report form.

## 4.3 ARCHIVING

- 4.3.1. The archive will be produced in line with standards referenced in the following documents:
  - ClfA Standard and Guidance for archaeological geophysical survey (2014).
  - Historic England MoRPHE Project Planning recommendations.
  - A Guide to Good Practice: Geophysical Data in Archaeology (Schmidt et al. 2001).
  - ADS guidelines (ADS 2015).
  - Historic Environment Record (HER) requirements.
  - Archaeological Archive Forum guidelines (AAF 2011)
- 4.3.2. This will contain all the data collected during the archaeological geophysical survey, including all digital records. It will be quantified, ordered, indexed and shall be internally consistent. Adequate resources will be provided during survey work to ensure that all records are checked and are internally consistent.
- 4.3.3. A high quality geo-rectified TIFF will be produced from the processed data, with the raw data stored in a mutually agreed format with the depository. The archive will usually be deposited within 6–12 months of the project's completion.
- 4.3.4. Information relating to the Proposed Scheme will be deposited with the Historic Environment Record (HER) where it can be freely copied without reference to AOC Archaeology Group for the purposes of archaeological research, or development control within the planning process.
- 4.3.5. A copy of all field notes and survey data will be held in AOC Archaeology Group archive. A copy of the field notes and survey data may be supplied to any appropriate county repository upon reasonable request.

## 5 PROGRAMME, STAFFING AND ATTENDANCES

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### 5.1 INITIAL TIMETABLE AND STAFFING

- 5.1.1. The archaeological geophysical survey is anticipated to start on 26th October 2020 with a duration of approximately 1 week, assuming favourable weather and ground conditions, and a rolling programme of access to the survey areas.
- 5.1.2. A plot showing the provisional results will be supplied to WSP's Cultural Heritage and Archaeology Team in advance of the completion of the main archaeological geophysical survey report together with a brief overview of the initial interpretation. A full Archaeological Geophysical Survey Report will be technically assured by WSP's Cultural Heritage and Archaeology Team.

### 5.2 PROJECT TEAM

- 5.2.1. The work will be undertaken by an archaeological fieldwork subcontractor that is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA) and approved by the WSP Cultural Heritage and Archaeology Team.
- 5.2.2. Details of the archaeological fieldwork subcontractor staff including post-excavation specialists will be provided once the archaeological fieldwork subcontractor has been appointed.
- 5.2.3. The WSP Cultural Heritage and Archaeology Team staff will comprise:
- *Debbie Taylor, BA, MA, Senior Consultant.* Debbie has over 15 years' experience in the heritage sector principally as a historic environment advisor and landscape archaeologist in local government, which including providing archaeological advice to local planning authorities. For the last five years she has worked as a heritage consultant on a variety of infrastructure and utilities schemes.
  - *Matt Jackson, BA, MSc, Assistant Consultant.* Matt was previously a team leader of a geophysical survey team at Sumo Services, as such Matt has knowledge and practical experience of a range of survey techniques including magnetometry, Ground Penetrating Radar, Electric Magnetic Locators, GNSS, Total stations, and Earth Resistivity. This includes extensive experience of software, processing and interpreting data.
  - *Jon Chandler, BA PGDip MCIfA, Associate Director.* Jon is highly experienced with deep and broad expertise derived from a career that spans over two decades in commercial archaeology, primarily as a heritage consultant. Jon has managed and worked on thousands of public and private sector development schemes, including some of the largest infrastructure projects in the country. This has included airport, rail, road, port, pipeline, energy, business park, urban and greenfield development, and complex deeply stratified archaeological sites in the City of London.
- 5.2.4. CVs of the key members of staff will be made available upon request.

### 5.3 PROGRESS REPORTS

- 5.3.1. The WSP Cultural Heritage and Archaeology Team will provide the client and, if appropriate, the LPA Archaeological Advisor, with a weekly summary progress memo (1–2 pages). This will:
- Summarise the work undertaken during the week and the key findings
  - Report on site attendance, where appropriate



- Confirm that the work will be completed to programme and identify any potential issues to programme.
- Identify any health and safety issues (including near miss)

## **6 HEALTH AND SAFETY**

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### **6.1 INTRODUCTION**

- 6.1.1. The work will be carried out pre-construction and is not therefore subject to Construction (Design and Management) regulations (CDM 2015).
- 6.1.2. The main contractor on site in charge of site management is the geophysical survey subcontractor. The geophysical survey subcontractor will supply trained, competent, and suitably qualified staff to perform the tasks and to operate the equipment used on site.
- 6.1.3. Health and Safety will take priority over all other requirements. A conditional aspect of all archaeological work is both safe access to the area of work and a safe working environment. The project will be carried out in accordance with safe working practices under the Health and Safety at Work Act 1974 and the Management of Health and Safety at Work Regulations 1999, and all other applicable Health and Safety legislation, regulations, and codes of practice in force at the time.
- 6.1.4. The following sections outline the health and safety aspects of the survey work along with known constraints which may be subject to change following consultation with the Client, and the Geophysical Survey Subcontractor (Main Contractor).

### **6.2 RISK ASSESSMENT AND METHODOLOGY STATEMENT (RAMS)**

- 6.2.1. The archaeological fieldwork subcontractor will produce a site-specific Risk Assessment and Methodology Statement (RAMS) to cover the onsite fieldwork and will supply a copy of the company's Health and Safety Policy. These will be reviewed by the WSP Cultural Heritage and Archaeology Team to ensure that the policy and measures are appropriate.
- 6.2.2. The RAMS will have been read, understood, and signed by all staff attending the site before any fieldwork commences.

### **6.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

- 6.3.1. Staff present on site will be required to wear the appropriate Personal Protective Equipment (PPE), as identified in the RAMS. As a minimum this will be appropriately robust footwear suitable to the ground conditions, high-visibility vest and suitable clothing to match the weather conditions. The requirement for any additional PPE will be identified in the RAMS.

### **6.4 WELFARE**

- 6.4.1. The archaeological fieldwork subcontractor will be responsible for ensuring suitable welfare provision including toilet facilities and water for washing which will be detailed within the RAMS.

### **6.5 SITE SECURITY**

- 6.5.1. The landowner will have ultimate responsibility for the security of the main survey site. For the period of time that AOC Archaeology Group requires site access, they will follow the protocols agreed in the RAMS and be responsible for ensuring that site security requirements are adhered to. For example, all access points should be secured as required by the landowner (eg gates closed and locked) during and after the survey. AOC Archaeology Group is responsible for the security of its own survey equipment on site.

6.5.2. As no intrusive works are proposed, fencing is not required.

## **6.6 ACCESS**

6.6.1. Site access from the relevant landowners will be arranged by client or their representative before site works commence. The WSP Cultural Heritage and Archaeology Team and archaeological fieldwork subcontractor shall be notified if access arrangements change prior to or during the evaluation programme.

6.6.2. Any areas that are not accessible or which are unsuitable for survey, due to lack of access, the presence of crops or livestock, or because they are deemed by AOC Archaeology Group staff to be unsafe to access, will not form part of this survey work. Any such areas will be documented for future reference

## **6.7 COVID 19**

6.7.1. All parties (the Client, WSP Cultural Heritage and Archaeology team and AOC Archaeology Group) shall comply with the travel, health and working practices, advice and requirements of public health agencies, governments or other public bodies, internal and external advisors and insurers in relation to COVID-19 and any other health and safety related issues.

6.7.2. It will be AOC Archaeology Group's responsibility to comply with social distancing measures as required, the detail of which will be outlined in the site-specific RAMS.

## 7 MONITORING AND ASSURANCE

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### 7.1 ON SITE FIELDWORK

- 7.1.1. The WSP Cultural Heritage and Archaeology Team will monitor and assure all elements of the archaeological fieldwork and will ensure that the work is carried out in accordance with this WSI, professional standards and the requirements of the LPA Archaeological Advisor. Any variance in the scope of work shall be made by the WSP Cultural Heritage and Archaeology Team acting on behalf of the client, in consultation with the LPA Archaeological Advisor.
- 7.1.2. The WSP Cultural Heritage and Archaeology Team will undertake monitoring visits of the fieldwork where required. This will review the following:
- Compliance by the archaeological contractor with the agreed health and safety arrangements as set out in the RAMS;
  - The agreed numbers and levels of fieldwork staff attendance;
  - The agreed number and type of plant;
  - Appropriate provision of welfare;
  - Work is being undertaken in accordance with the requirements of this WSI;
  - Work is being undertaken to programme; and
  - Project risk (cost and programme).
- 7.1.3. Any non-compliance will be pointed out by the WSP Cultural Heritage and Archaeology Team at the earliest opportunity and steps agreed and put in place to resolve any issues.
- 7.1.4. Any key decisions (such as excavation strategy or work scope changes) that are made on site shall be noted during the monitoring visits and communicated by the WSP Cultural Heritage and Archaeology Team to relevant parties. Visits by the LPA Archaeological Advisor will be arranged so that they are satisfied that the works are being conducted to proper professional standards.

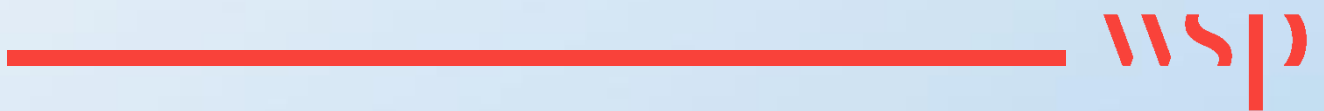
### 7.2 POST-EXCAVATION DELIVERABLES

- 7.2.1. The WSP Cultural Heritage and Archaeology Team will technically assure the deliverables conform to the format and scope agreed with the LPA Archaeological Advisor, and that the reporting is accurate and clear and with sound conclusions, and that it has been produced to professional standards and the requirements of the LPA Archaeological Advisor. This will be the case whether the agreed deliverables take the form of an archaeological report for the HER, journal article or monograph.
- 7.2.2. The WSP Cultural Heritage and Archaeology Team will liaise with the archaeological fieldwork subcontractor to ensure that the work is carried out to an agreed delivery programme.



# Appendix A

## REFERENCES





## PUBLISHED AND DOCUMENTARY SOURCES

Archaeological Archive Forum, 2011, *Archaeological Archives: a guide to best practice in creation, compilation transfer and curation*

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Museum of London, 1994, Archaeological Site Manual

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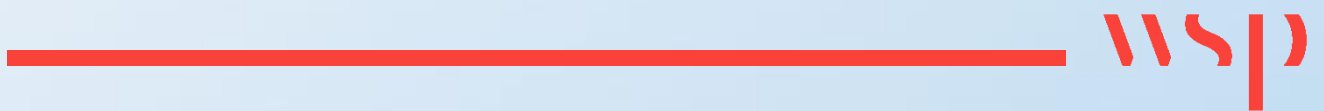
Treasure Act 1996 *Code of Practice (2nd Revision)* 1996, DCMS

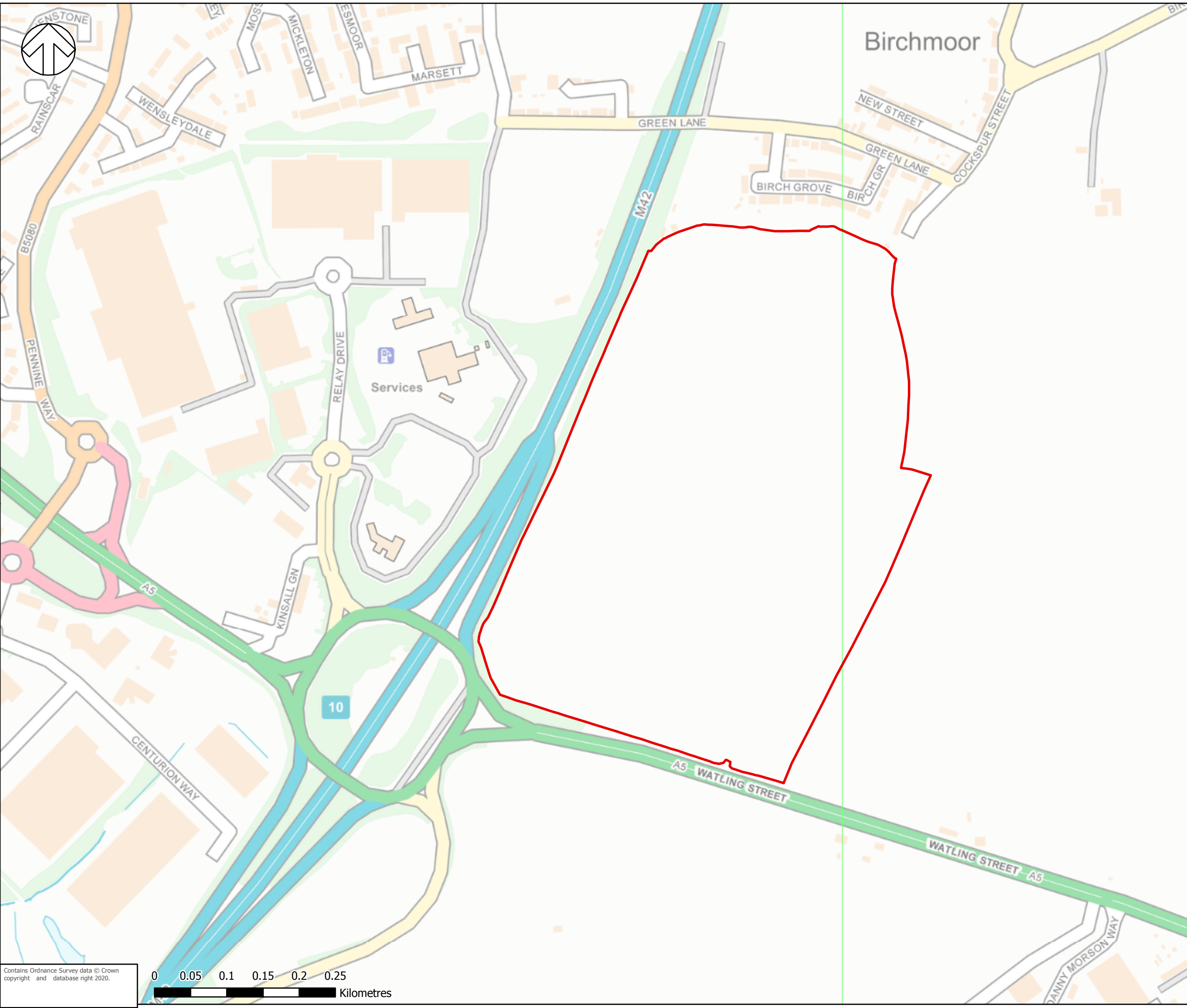
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# Appendix B

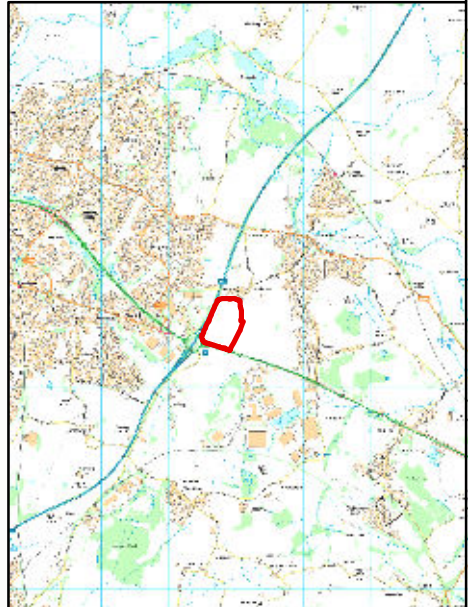
## FIGURES





**Key**

Site Boundary



TITLE:

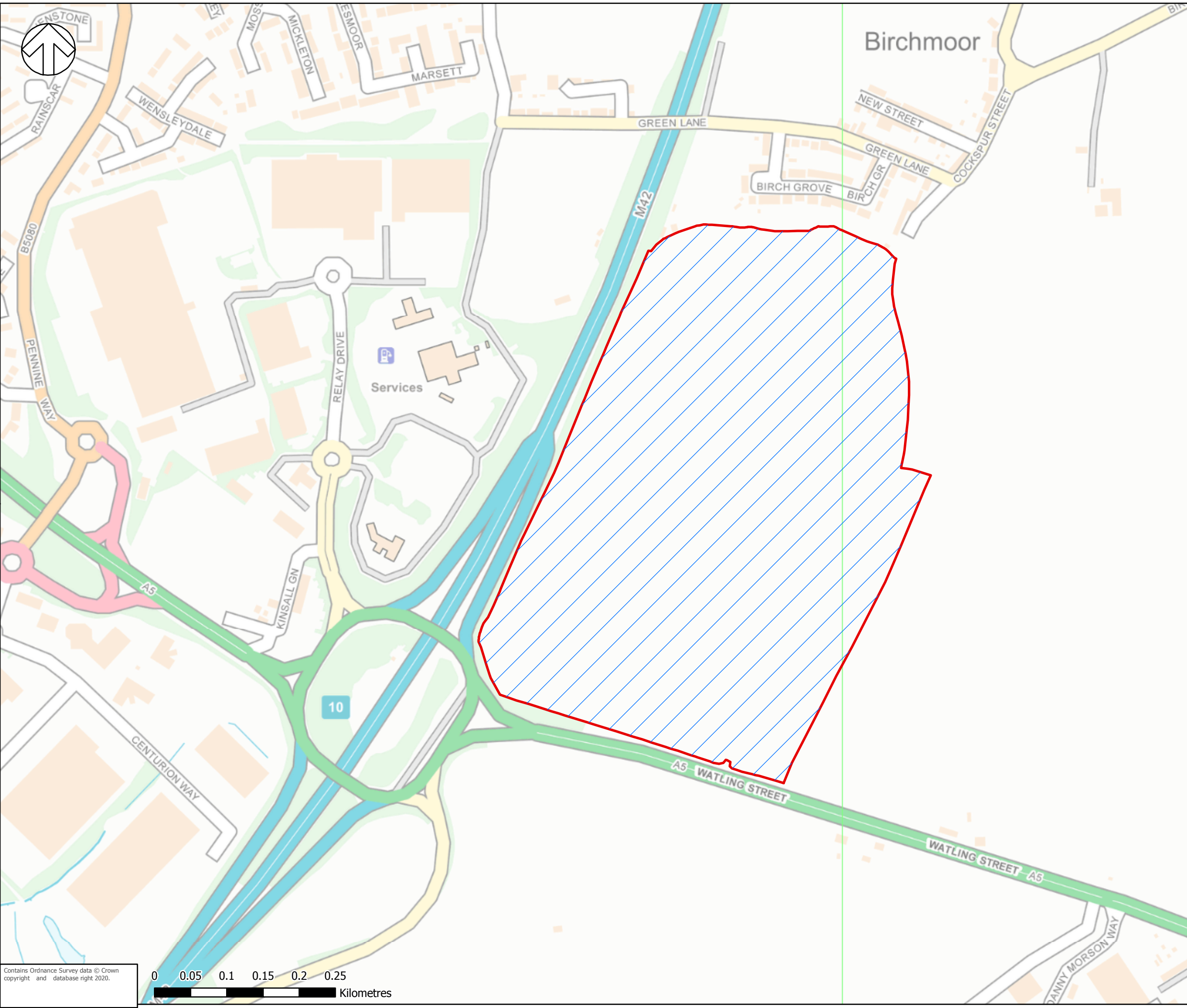
Site Location

FIGURE No:



FIGURE 1

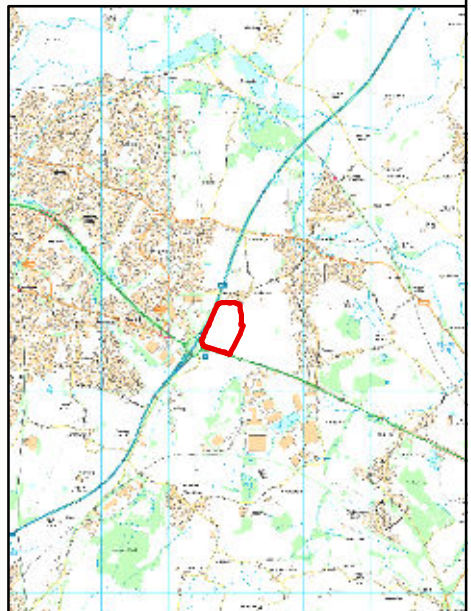
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**Key**

-  Site Boundary
-  Survey Area



TITLE:  
Proposed Archaeological Geophysical Survey Area

FIGURE No:  
**FIGURE 2**  
Scale: A3 @ 1:5000





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