



Burgh Road, Skegness, Lincolnshire

Topographic Survey Report

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Portway House
Old Sarum Park
Salisbury
Wiltshire
SP4 6EB

www.wessexarch.co.uk

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On behalf of	Walter John Cook & Sons Ltd
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Document compiled by	Jack Fox-Laverick
Graphics by	Ian Atkins

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Burgh Road, Skegness Skegness, Lincolnshire

Topographic Survey Report

1 INTRODUCTION

1.1 Project and planning background

- 1.1.1 Wessex Archaeology was commissioned by RPS Planning and Development, on behalf of Walter John Cook and Sons Ltd. ('the client'), to undertake and report on a topographic survey of ridge and furrow earthworks located in the south part of the development area for a caravan park on Burgh Road, Skegness, PE25 2LG. (**Fig. 1**).
- 1.1.2 The survey was undertaken in response to a planning condition, ref. 16 of outline planning permission S/153/01687/15, issued in September 2015. Prior to the commencement of works a Written Scheme of Investigation (WSI) was approved by the local planning authority, *Burgh Road, Skegness, Lincolnshire, Written Scheme of Investigation for Topographic Survey* (Wessex 2019), in accordance with ref. 15 of the outline planning permission.

1.2 Scope of document

- 1.2.1 This report details the results of the metric survey, and the methods and standards that were employed. In format and content, it conforms to current best practice and to the guidance in *Management of Research Projects in the Historic Environment* (MoRPHE, Historic England 2015a) and the Chartered Institute for Archaeologists' (CIfA) *Standard and guidance for archaeological field evaluation* (CIfA 2014a).

1.3 Location, topography and geology

- 1.3.1 The development area is located to the west of Skegness and lies to the north of the A158 Burgh Road. The development area is centred on National Grid Reference TF 5473 6464. The site is surrounded by several caravan parks including Southview Leisure Park to the west and Beacon Park Home Village and Caravan Park to the north. There are residential houses to the east and an additional caravan park off the A158 road to the south. The site is located to the north of Burgh Road in fields which were under pasture at the time of the survey. The ridge and furrow earthworks are located in the southern part of the proposed development area.
- 1.3.2 The survey covered a total area of 12.5 hectares as illustrated in **Figure 1**.
- 1.3.3 The underlying geology is mapped as comprising superficial deposits of alluvium over cretaceous clay and limestone (British Geological Survey).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 2.1.1 The archaeological and historical background was assessed in a prior desk-based assessment undertaken by RPS (RPS 2014), which concluded that the proposed development area appears to have been in use as agricultural land since antiquity. The only visible archaeological features are represented by the ridge and furrow in the south part of

the development area. A summary of the results is presented below, with relevant entry numbers from the Lincolnshire Historic Environment Record (HER) and the National Heritage List for England (NHLE) included. Additional sources of information are referenced, as appropriate.

2.2 Previous investigations related to the proposed development

Wessex Archaeology trial trenching (2015)

- 2.2.1 Wessex Archaeology was commissioned by RPS Planning and Development on behalf of the client WJ Cook & Sons Ltd to carry out a programme of archaeological evaluation trenching in advance of a proposed new caravan park on 12.5ha of land off Burgh Road, Skegness, Lincolnshire, NGR 554600 364600. The Fieldwork was undertaken between the 11th and 16th of May 2015 and follows on from a previous desk-based assessment (RPS 2014) and geophysical survey (GSB Prospection Ltd 2014).
- 2.2.2 A total of thirteen 50m long trenches were dug to examine anomalies from a previous geophysical survey. The excavations revealed two ditches in Trench 7 that corresponded with the results of the survey. The ditches were shallow, undated U-shaped former field boundaries/drains that preceded the medieval agriculture present on the site. The ditches mirrored the drain alignments still present on the site today indicating a continuity of topographic uniformity in the land usage.
- 2.2.3 Trench 8 revealed a sharp slope at the western end which led to a waterlogged area and extant drain. The slope was covered by ploughsoil containing post-medieval redware dating to the late 16th century onwards suggesting a lengthy history as a waterlogged area. Layers of buried plough soil overlying the top of the slope contained pottery dating between the late 12th century and the late 16th century onwards. The concentration of artefactual material in this location matched an area of geophysical survey 'noise' of uncertain origin and likely indicates the spread of a former waste dump by ploughing.
- 2.2.4 Other geophysical anomalies were not detected archaeologically and must have been caused by shallow sub-surface features within the top and subsoils.

2.3 Archaeological and historical context

Prehistoric and Roman

- 2.3.1 Mesolithic flint artefacts have been recorded at the nearby site of Burgh Le Marsh approximately 4.5km west of the development (Lincolnshire HER 43596) and the potential location of a Neolithic Long Barrow has been suggested approximately 220m to the east (Lincolnshire HER number 43113).
- 2.3.2 There is evidence of Bronze Age salt-making in the form of briquetage recovered from a site to the north east of the development area and from nearby sites at Hogsthorpe and Tetney (RPS 2014). It has been postulated that the briquetage is suggestive of a potential saltern site where occupation may have extended into the Iron Age, but this is uncertain (RPS 2014; Lincolnshire HER number 41690/ 41701).
- 2.3.3 The Roman road from Lincoln to Burgh Le Marsh has been well recorded and several Romano-British artefacts have been recovered at Burgh Le Marsh suggesting that it may have been an important settlement during the Roman period (RPS 2014).
- 2.3.4 The possibility of pre-historic and Romano-British archaeological remains within the development area should be considered significant.



Medieval

- 2.3.5 The Lincolnshire HER (number 43596) records the remains of a possible Anglo-Saxon burial mound which is approximately 4.5km to the west of the development area.
- 2.3.6 The nearby town of Burgh Le Marsh is recorded in the Domesday Book in 1086 and early medieval pottery has been found in the vicinity. There is some suggestion of continuity of settlement between the Romano-British and Anglo-Saxon periods in the form of a possible Iron Age/ Romano British field boundary (RPS 2014; Lincolnshire HER number 43596).
- 2.3.7 During the medieval period the development area lay within the parish of Skegness and local place names are recorded in the Domesday Book of 1086 which is suggestive of pre-existing occupation (RPS 2014).
- 2.3.8 Excavations in Wainfleet St Mary, located to the south of the development area, have shown that salt making continued to be undertaken well into the later medieval period.
- 2.3.9 Additional evidence for occupation during the medieval period can be found in the church of St Peter and St Paul in Burgh Le Marsh (HER List Entry Number 1222765) and the parish Church of St Clement which may date from the 13th century (HER List Entry Number 1229943).
- 2.3.10 There are numerous examples of surviving ridge and furrow field systems (including within the propose development area) which indicates that medieval farming practices were widespread in the area and a series of croft enclosures, not extant, were located 110m to the north-east of the site (Lincolnshire HER number 48570). However, there is no evidence suggestive of settlement within the development area.

Post Medieval

- 2.3.11 Settlement patterns in the early post-medieval period appear to have remained similar to those of the late medieval and the majority of buildings, with the exception of churches, date from the 18th century onwards. Ordnance Survey maps suggest that there was little development in terms of expanding settlement by the 19th century although the 1819 OS plans do show enclosed field systems and buildings having existed within the area of proposed development (RPS 2014).
- 2.3.12 The area appears to have witnessed minimal change until the mid-20th century when developments begin to appear around the fields to the east of the development and the ridge and furrow was relatively undisturbed in 2013 (RPS 2014)

3 AIMS AND OBJECTIVES

3.1 General aims

- 3.1.1 The general aims (or purpose) of the Topographic survey were;
- To assist in providing a better understanding of the above ground archaeological remains
 - To compile a lasting record, to analyse the findings/record and then disseminate the results.

3.2 General objectives

3.2.1 In order to achieve the above aims, the general objectives of the survey were:

- To establish, within the constraints of the survey, the extent, character, condition and quality of any surviving extant archaeological remains within the specified area;
- To make available information about the archaeological resource within the site by reporting on the results of the survey.

4 METHODS

4.1 Introduction

4.1.1 All works were undertaken in accordance with the detailed methods set out within this report.

4.2 Survey specification

Topographic survey

4.2.1 The topographic survey was conducted by means of a photogrammetric survey with images captured from a small unmanned aircraft (SUA). This was georeferenced by establishing a series of ground control points (GCP) using a Leica GNSS (for specification details, see section 4.3).

4.2.2 All work was conducted in the Ordnance Survey National Grid, with heights calculated as distance above Ordnance Datum (Newlyn), as defined by OSGM15 and OSTN15.

4.2.3 GCPs were located using a Real Time Kinematic (RTK) Global Navigational Satellite System (GNSS) which provides an accuracy of +/-30mm in accordance with metric survey specifications laid down by Historic England (2015b).

4.2.4 The photogrammetric survey was completed achieving an image ground sampling distance of <2cm/px. This is described with the Historic England Metric Survey Guidance as being suitable for a reproduction scale of 1:200 or larger. This reproduction scale provides for the production of a site plan at a level of detail equivalent to level 3 survey as described in the 2017 Historic England guidance document Understanding the Archaeology of Landscapes.

4.2.5 All images recorded were processed into a 3-D point cloud and mesh which was then exported as a series of survey products, including a digital surface model and orthomosaic image. This revealed the form and extent of extant archaeological features and an archaeological interpretation was produced in the form of a hachure plan. Processing was undertaken using the latest iteration of Agisoft Metashape Professional software, in this case v 1.5.5. Photogrammetric survey and processing will be conducted in line with guidance provided by Historic England in Photogrammetric Applications for Cultural Heritage (2017).

4.3 Instrument specification

4.3.1 The survey was undertaken with a DJI Mavic 2 Pro equipped with a 20.1 megapixel Hasselblad L1D-20c camera and flown at a height of 70m. This enabled features to be recorded to a GSD of <2cm/px.

4.3.2 A Leica Viva NetRover Global Navigation Satellite System or an equivalent instrument was used to record all GCPs and was set to a minimum three-dimensional accuracy of 3 cm.



5 RESULTS

- 5.1.1 The survey was conducted successfully on Wednesday 11th September 2019. It confirmed the existence of extant ridge and furrow earthwork features across the site and also identified several possible field boundaries.
- 5.1.2 Prior to the photogrammetric survey commencing a series of ground control points were established around the perimeter of the site and surveyed in using a Leica GNSS global positioning system. The DJI Mavic 2 Pro was flown at a height of 70m. This enabled the survey to achieve an approximate. Multiple flights were required to cover the entire site. In total the UAV conducted 5 separate flights totalling 67 minutes of survey time.
- 5.1.3 The data collected from the ground-truthing photogrammetric survey was processed using Agisoft Metashape. Photographs were initially aligned to generate a 3-D sparse cloud, then ground control points were added manually to geolocate the model to an accuracy of <3cm. Following this the model was further processed into a 3-D dense cloud and mesh which was used to generate a Digital Surface Model (DSM). The DSM was used to identify any extant earthwork features which were digitised in CAD (Figure 1).
- 5.1.4 The ground-truthing survey successfully identified the upstanding earthwork remains of ridge and furrow farming practices across the site. These features proved to be very discrete in nature. The form of the ridge and furrow, being straight and narrow, suggests that it was created in the late or post-medieval period as it would have been created by a steam-driven plough or short plough team. This is opposed to earlier forms of ridge and furrow which would have a wider form with a discernible 'S' shape that would be created by using a long plough team.
- 5.1.5 The survey also recorded a number of extant field boundaries. One of these lies in the southern field containing the ridges and furrow, dividing it approximately north to south, perpendicular to the ridge and furrows direction, though the stratigraphic relationship between the two features is unknown. This feature can be seen to continue through the field immediately to the north where there a feature of similar form approximately 50 metres to the east.
- 5.1.6 Within the digital surface model, it is possible see wide linear topographic trends within the data, parallel to these field boundaries, suggesting the remains of contemporary ridge and furrow within the northern field. These ridge and furrow features are wider in size and spacing than those in the southern field and this would normally suggest that they are of greater antiquity.

5.2 Conclusions

- 5.2.1 In conclusion the data gathered from the survey confirmed the presence of ridge and furrow earthworks and other associated features, which supports the assessment outlined in the RPA (2014) desk based assessment and results gathered from previous trial trenching (Wessex Archaeology 2015), and is indicative of the site being used for agricultural processes during the medieval period with the topographic land use remaining relatively uniform to the present day.
- 5.2.2 In accordance with point 17 of the outline planning permission, a copy of this report will be deposited with the Local Planning Authority the Historic Environment Record Officer at Lincolnshire County Council within 3 months of the commencement of works.

5.3 OASIS

- 5.3.1 An OASIS online record (<http://oasis.ac.uk/pages/wiki/Main>) will be created, with key fields completed, and a .pdf version of the final report submitted. Subject to any contractual requirements on confidentiality, copies of the OASIS record will be integrated into the relevant local and national records and published through the Archaeology Data Service ArchSearch catalogue.

6 ARCHIVE STORAGE AND CURATION

6.1 Repository

- 6.1.1 In accordance with the A copy of this report and surveyed spatial digital data relating to the archaeological findings will be deposited with the relevant Historic Environment Record (HER).

6.2 Preparation of archive

- 6.2.1 The complete project archive, which includes paper records, graphics, and digital data, will be prepared following the standard conditions for the acceptance of archaeological material by the identified repository, and in general following nationally recommended guidelines (SMA 1995; ClfA 2014b; Brown 2011; ADS 2013). The archive will usually be deposited within one year of the completion of the project, with the agreement of the client.

6.3 Security copy

- 6.3.1 In line with current best practice (e.g., Brown 2011), on completion of the project a security copy of the written records will be prepared in the form of a digital PDF/A file. PDF/A is an ISO-standardised version of the Portable Document Format (PDF) designed for the digital preservation of electronic documents through omission of features ill-suited to long-term archiving.

7 COPYRIGHT

7.1 Archive and report copyright

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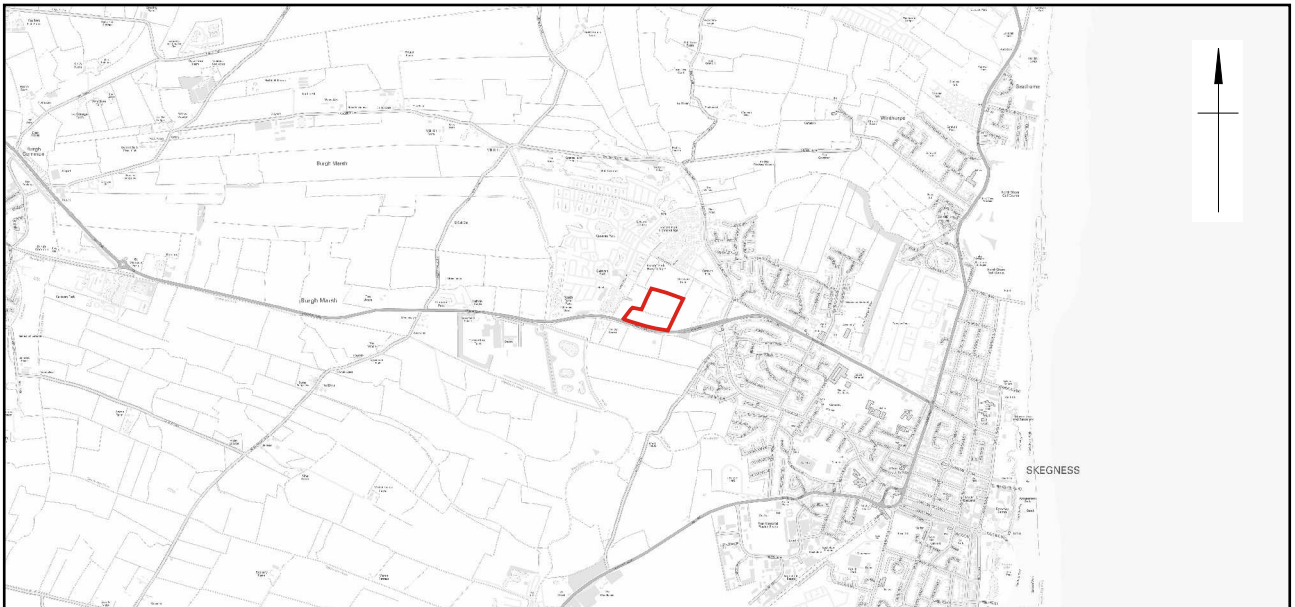


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 Site

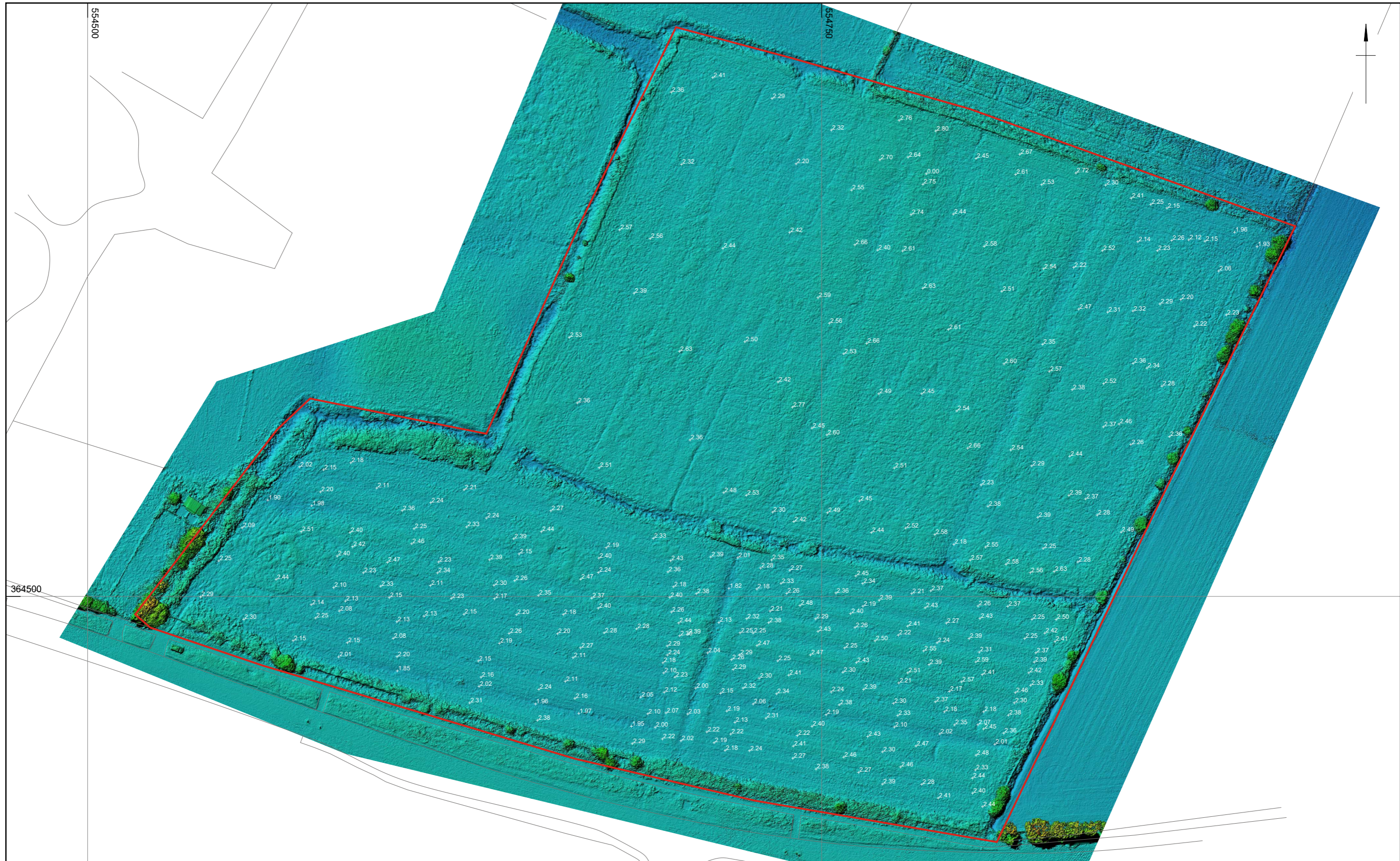
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Site location with orthomosaic

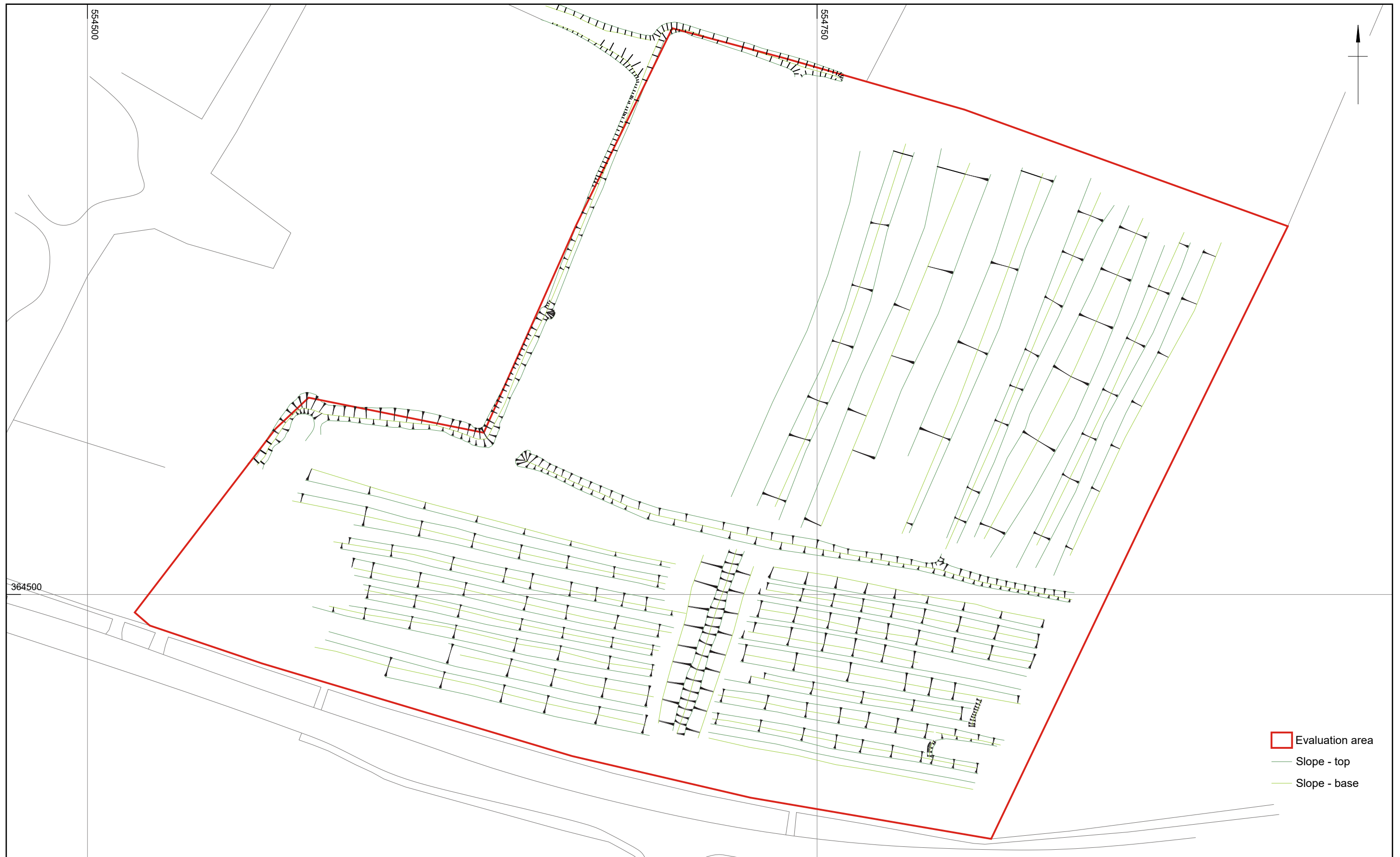
Figure 1



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Digital surface model with spot levels

Figure 2



- Evaluation area
- Slope - top
- Slope - base



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Interpretive hachure plan

Figure 3



Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www.wessexarch.co.uk



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