Bramshill House and Park
Bramshill, Hampshire

Heritage Statement and Ground Penetrating Radar Survey Report

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Summary

A detailed gradiometer survey was conducted over land at Bramshill, Hampshire (centred on NGR 475765 159527). The project was commissioned by Bramshill House Ltd with the aim of establishing the presence, or otherwise, and nature of detectable archaeological features to inform potential redevelopment of the formal gardens as given a better understanding of the potential archaeology to the south-west of the house.

The site comprises parkland and grounds associated with the Grade I Listed Bramshill House, which lies within the Grade I Registered Park and Garden, covering an area of 1.43 ha. The geophysical survey was undertaken on 17 – 19 July 2023. The ground penetrating radar survey has demonstrated the presence of a number of anomalies of potential archaeological interest in within each of the survey areas.

The anomalies identified as being of archaeological origin relate to structural remains associated with earlier phases of the house as well as responses thought to indicate surviving aspects of the formal garden layout and landscaping. A number of the anomalies can be related to historic plans and the known history of the house, however the exact date and character of many of the features would require further investigation.

Acknowledgements

Wessex Archaeology would like to thank Bramshill House Ltd for commissioning the geophysical survey. The assistance of Colin Radcliffe and Samantha VanDyk is gratefully acknowledged in this regard as well as the help of Adrian Wikeley (LUC).

Bramshill House and Park
Bramshill, Hampshire

Heritage Statement and Ground Penetrating Radar Survey Report

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by Bramshill House Ltd to carry out a geophysical survey at Bramshill House and Park (centred on NGR 475765 159527) (**Figure 1**). The survey has been undertaken to inform the potential restoration of one of the formal gardens, as well as given a better understanding of the potential archaeology to the south-west of the house.

1.2 Scope of document

1.2.1 This report presents a brief description of the methodology followed by the detailed survey results and the archaeological interpretation of the geophysical data.

1.3 The site

1.3.1 Bramshill House lies around 1.5 km to the south-east of Bramshill itself and 3 km to the north-west to the village of Hartley Wintney.

1.3.2 The site comprises land associated with the Grade I Listed Bramshill House (NHLE 1340025; **Fig. 2; Fig.3, Photo 1**), which lies within the Grade I Registered Park and Garden (NHLE 1000165; **Fig. 2**). The land which forms the focus of this survey and research comprises land from the south-western frontage of the house stretching along the access drive (**Fig. 3, Photos 1 – 3**) and part of the former gardens to the south-east of the house (**front cover; Fig. 3, Photo 4**). A number of other structures in the grounds are designated in their own right, of particular relevance to this survey are the walls and turrets south of Bramshill House (NHLE 1091939), which are Grade I listed.

1.3.3 Bramshill House and grounds was formerly a National Police College and a large number of other structures associated with this modern usage lie to the north and north-west of the house. The college closed in 2015 and a number of proposals were brought forward to develop the site. These were unsuccessful. More recently the property has been bought by a private individual with the view to restoring and redeveloping it back into a luxury residence.

1.3.4 Land to the south-east of the house forms a relatively level approximately square area of ground at a height of around 87m above Ordnance Datum (aOD), thought to be the location of a formal garden or parterre in the 17th century. The land slopes slightly to the south-east beyond this area but falls rapidly to the south and south-west towards a large pond at a height of around 74 m aOD. Although this area too is thought to have comprised a formal 'Italian Garden' in the 17th century' it could not be surveyed due to the steep slopes (**Fig. 3, Photo 4**).

1.3.5 The main approach to the house is from the south-west, via an access drive from the B3011. The area in front of the house form is currently gravel with grass beyond, flanked by the listed brick walls terminating in a small octagonal turret (**Fig. 3, Photo 2**); iron railings

demarcate this area from the driveway and approach to the south-west. This area along with the upper part of the approach beyond forms a narrow tapering platform with the ground falling away either side; it slopes gently to the south-west from a height of around 87 m aOD to around 66 m aOD before merging with the surrounding land (**Fig. 2**). The survey finished just before High Bridge (NHLE 1091941) at a hight of around 54 m aOD.

1.3.6 The underlying bedrock geology within the higher ground around the house is mapped as Windlesham (sand, silt, and clay) Formation with some superficial deposits of Surrey Hill Gravel Member in the immediate area of the house. To the south-west beyond the listed turrets and in the area of the pond lies the sedimentary sand bedrock of the Bagshot Formation. Land either side of the river valley is mapped as London Clay Formation with some overlying alluvial deposits (British Geological Survey 2023).

1.3.7 The soils underlying the site are likely to consist of stagnogely-podzols of the 643a (Bolderwood) association in the eastern part of the survey and typical argillic gley soils of the 814b (Hurst) association in the eastern part of the survey (SSEW SE Sheet 6 1983). Soils derived from such geological parent material have been shown to be acceptable for the detection of archaeological remains through ground penetrating radar.

1.4 Copyright

1.4.1 This report may contain material that is non-Wessex Archaeology copyright (e.g. Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which Wessex Archaeology are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferable by Wessex Archaeology. Users remain bound by the conditions of the *Copyright, Designs and Patents Act 1988* with regard to multiple copying and electronic dissemination of the report.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

2.1.1 The information below presents a summary of previous investigations alongside information on the archaeology and history of the site in order to better contextualise and interpret the results of the survey. The information is largely drawn from previous reports and surveys which were undertaken to inform a series of planning applications between 2016 and 2018 (City & Country 2016; Feilden and Mawson 2016; Henderson 2016). While unsuccessful, these applications led to renewed research and investigation of the house and park and the subsequent regrading of the park from Grade II* to Grade I.

2.2 Previous investigations

Introduction

2.2.1 There have been a number of archaeological investigations carried out within the estate during its time as a police training college and in association with previous development proposals within the site. Those investigations of immediate relevance to the areas are consideration are summarised below.

1998 earthwork survey

2.2.2 In 1998, the Royal Commission on the Historic Monuments of England (RCHME) undertook an earthwork survey in order to establish whether the Italian Garden as shown on the plan of 1715 – 16 was actually executed. The survey established the survival of the principal elements of the garden earthworks to the north-east and north-west of the pond, including the parterre south of the trocco ground; the terraces; and the line of Lady Abney's Walk.

The walk is thought to be associated with the 17th century garden but is first specifically documented in 1756; it was identified as a slight hollow extending for 55 m in the RCHME survey (RCHME 1998, 8).

1999 geophysical survey

2.2.3 Geophysical survey in the area of the Italian Garden in 1998 was also able to identify some traces of the formal layout of the parterre, which was situated immediately adjacent to the house (Clark 1999).

2012 watching brief

2.2.4 Archaeological monitoring was undertaken as part of a drainage survey around the house and within the central courtyard (PCA 2012). This located evidence of earlier drainage in the area south-east of the house, as well as evidence for walls, demolition, and later landscaping.

2015 ground penetrating radar survey

2.2.5 A high-resolution ground penetrating radar (GPR) survey was undertaken on land immediately adjacent to the house on the north-west, south-west, and south-east sides by Arrow Heritage Ltd on behalf of Wessex Archaeology (Wessex Archaeology 2015a). In the south-western area several features were identified through to relate to the earlier 17th century building. In the south-east two strong anomalies were located but it was not clear whether they represented services or structural features. The area to the north-west has heavily disturbed by modern services.

2015 walkover survey

2.2.6 A walkover survey of the estate was undertaken in 2015 alongside an assessment of historic maps, LiDAR data, aerial photographs and historic environment record data (Wessex Archaeology 2015b). This identified a number of extant features within the Site that reflect the design and history of the park from the post-medieval period into the 19th century. The current lake within the southern part of the Italian garden is a modern construction and first seen on the 1974-5 Ordnance Survey map. While an ornamental pond is shown on the 17th century design, this is not depicted on the 18th century map. Lady well, a red brick structure with stone carving of a woman forms an ornamental surround for spring at south-west side of bank/ terrace to north-east of pond. Not seen on early plans of the estate may relate to the later reconstruction of the pond. First documented in 1935 (RCHME 1998, 12).

2015 evaluation

2.2.7 In 2015 an evaluation was undertaken in the area of the Italian Garden, comprising a single trench targeted on the projected location of the south-west boundary wall of the garden (Wessex Archaeology 2015c; **Fig. 4**).

2.2.8 The evaluation was able to confirm the position of the Italian Garden boundary wall as indicated on a 1699 survey and demonstrate its good state of preservation below ground level with at least 10 courses remaining. The wall 112 was composed of red brick, 0.55 m wide aligned north-north-east to south-south-west. The brickwork observed was consistent with a post-medieval date. On the south-south-east side of the wall the construction cut 111 could be seen cutting through the natural geology 103. No backfill within the construction cut was observed and the wall appeared to have been built directly against the vertical face of the construction cut.

2.2.9 On the innermost (north-north-west) face of the wall a layer of redeposited natural clay on a brick rubble base 110 was thought to form a path and the likely position of Lady Abney's

Walk, thought to be associated with the 17th century garden but first specifically documented in 1756. A mortar-rich layer 109 beneath this suggests adjacent construction or demolition activity, although it clearly post-dates the original construction date of the wall.

2.2.10 A series of deposits butting against the north-north-western face of the garden wall 112 were thought to represent the fills of a substantial cut feature 104, the extent of which could not be established within the trench but exceeded 1.1 m in depth and was at least 7 m wide. The stratigraphic relationships between the wall and adjacent feature could not be established with certainty as the feature was not fully excavated. Although the exposed deposits within the cut feature post-date the wall, construction of the wall could post-date the original excavation of the feature, which may be associated with establishment of the Italian Garden perimeter or perhaps an earlier boundary ditch.

2.2.11 The lowest deposit encountered within the feature was a fine silt deposit 105, which appeared to be banked up against the wall. This contained several patches of degraded chalk. Additionally, a number of iron nails and brick fragments were recovered from this context suggesting possible adjacent construction or demolition activity. The deposit clearly post-dates the construction of the wall, though it was observed that the condition and colour of the mortar in the wall altered above this point. While this may be due to variations in preservation due to the different characteristics of the adjacent deposits, it could also suggest that some alterations occurred to the upper portions of the wall, or even that the wall face itself was exposed at this level for some time.

2.2.12 Overlying this lower deposit 105 was a gravel rich deposit 106. This contained no artefactual evidence, though sparse charcoal flecks confirm the presence of some anthropogenic activity in the vicinity. This deposit appeared to derive from the north-west with several bands within fill suggesting a series of depositional events. Above this was 107, a distinct dark silty sand. The dark colour of this deposit could suggest that it was formerly topsoil, though the sharp interface between this and the deposit below would seem to indicate that this is not an *in situ* buried soil. This also appears to derive from the north-west and could suggest material disturbed by work within the nearby parterre garden as shown on a 1715-16 plan (HRO ref. 133M84/3). Overlying 107 was deposit 108, a gravel rich, slightly mixed layer which was seen to extend through to the north-western end of the trench.

2.3 Archaeological background

Prehistoric and Romano-British

2.3.1 No prehistoric evidence is documented within the park, though a scheduled Bronze Age round barrow (NHLE 1001865) is situated just beyond its north-east corner. Another possible barrow is recorded in the HAHBR around 500 m to the north (HAHBR no. 59433) as well as three Bronze Age cremation urns found at Moor Place Farm in the early 20th century (HAHBR no. 50132). The Bronze Age sites and finds provide some background evidence for activity in the area during that time.

2.3.2 No evidence for Roman remains is currently documented at Bramshill. A Roman road passes 5 km to the north of the house, and buildings of the same period are documented along this route 5 km to the north-north-east, east of Wheatlands Manor (NHLE 1006968).

Saxon and medieval

2.3.3 Bramshill is recorded as a small settlement in the 1086 Domesday survey and is likely to have been established before this time. It likely derives from the Old English place name element 'broom' and the Anglian for 'hill' or 'shelf'[1].

A history of the house and park

2.3.4 A manor house is believed to have been extant from at least 1323 when the consecration of a chapel is recorded. The estate belonged to the Foxley family at this time. Thomas Foxley, later constable of Windsor Castle, was licensed in 1347 *'to inclose 2500 acres in Bramshill and Haseley, and to make the park now actually existing'*.

2.3.5 The house constructed by Thomas Foxley is believed to have stood on the site of the current house but may have replaced an earlier manor house on a different site. There is documentary evidence to suggest Henry VIII may have visited Bramshill in *c.* 1535 and examination of the historic fabric of the existing mansion shows evidence of a large Tudor house – larger than the Jacobean build – probably built around a medieval storey building. It is likely that there was a major rebuilding of the house in the mid to late 16th century. The main entrance at this time may have been from the north-east towards Windsor and fabric from a Tudor gateway survives at this approach to the house.

2.3.6 The estate belonged to the Foxley family until the late 15th century, then changed hands several times until it was bought in 1605 by Edward, Lord Zouche of Harringworth.

2.3.7 It is thought that during the 15th and early 16th centuries the estate owners were largely absentees with perhaps only occasional use of the park and grounds for hunting. The estate did not become its owner's principal seat until 1611, following which the estate was enlarged by the purchase of the manors of Great Bramshill in 1649 and Eversley in 1668.

2.3.8 The fine Jacobean interiors, the lake and the four formal rides centred on the mansion are the result of works undertaken by Edward, 11th Baron Zouche of Harringworth, who acquired Bramshill in 1605. The Zouches extended the Tudor house, but much of what we see now is the result of a later, 18th century phase of alteration following the demolition of the two wings on the south frontage together with a thorough mid-19th century restoration. These alterations were made under Sir John Cope and his heirs who owned the estate from 1699 – 1936.

2.3.9 Since 1953 the Site has been owned by the Home Office who developed and used it as the National Police College. This has resulted in the addition of a large number of structures within the grounds, situated primarily to the north-west of the House. Remaining areas of the park outside the current estate boundary were sold as farmland with sizable parts of the Registered Park and Garden now managed by the Forestry Commission. The college closed in 2015, since when the house has not been permanently occupied though it has been used as a filming location.

3 METHODOLOGY

3.1 Introduction

3.1.1 The geophysical survey was undertaken by Wessex Archaeology's in-house geophysics team between 17 – 19 July 2023. Field conditions were conducive to data collection throughout the period of survey. An overall coverage of 1.43 ha was achieved, with

[1] http://kepn.nottingham.ac.uk/map/place/Hampshire/Bramshill

reduction in survey area attributable to ground conditions due to vegetation, slope profile, and a fallen tree.

3.1.2 The methods and standards employed throughout the geophysical survey conform to that set out in the Written Scheme of Investigation (WSI) (Wessex Archaeology 2018), as well as to current best practice, and guidance outlined by the Chartered Institute for Archaeologists' (CIfA 2014) and European Archaeologiae Consilium (Schmidt *et al.* 2015).

3.2 Aims and objectives

3.2.1 The aims (or purpose) of the geophysical survey, in compliance with the CIfA' *Standards and guidance for archaeological geophysical survey* (CIfA 2014a), are:

- To determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices; and
- To inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.

3.3 Project objectives

3.3.1 In order to achieve the above aims, the objectives of the geophysical survey are:

- To conduct a geophysical survey covering as much of the specified area as possible, allowing for on-site obstructions.
- To clarify the presence/absence of anomalies of archaeological potential; and
- Where possible, to determine the general nature of any anomalies of archaeological potential.

3.4 Fieldwork methodology

3.4.1 The GPR survey was conducted using an Impulse Radar Raptor 45, 8 channel antenna, with a central frequency of 450 MHz. The multi-channel GPR system uses separate shielded transmitter and receiver antennae, towed by a motorised vehicle. The data were recorded every 4 cm, with a horizontal profile spacing of 8.5 cm, and a time window of 100 ns. Most of the data was collected in the zigzag method, however site boundary and coverage dictated single direction survey method on occasion.

3.4.2 The vehicle based GPR system provides real-time positioning, enabling full site coverage without the need to set up individual grid nodes. However, to ensure survey accuracy, the boundaries of the survey extent were established using a real-time kinematic (RTK) Global Navigation Satellite System (GNSS) instrument. This system allowed positions to be determined with sub-decimetre, accuracy and therefore exceeds EAC recommendations (Schmidt et. al. 2015).

3.5 Data processing

3.5.1 Data from the survey were subjected to common radar signal correction processes. These comprise wobble correction, bandpass gain, and filtering to remove frequency noise, background removal, Kirchhoff migration, and a Hilbert transformation. These steps are standard processing procedure and produce the highest quality resolution data for interpretation and presentation.

3.5.2 The approximate depth conversion for the 450 MHz antenna has been calculated on the assumption that the GPR pulses travel through the ground with an average speed of 0.129

m/ns. To determine this velocity, radargrams were analysed for suitable hyperbolic reflections of the GPR pulse through the subsurface deposits. It is possible to determine the average velocity of the GPR pulse through the ground more precisely if excavated features at a known depth can be identified and cross referenced in the data.

3.5.3 Further details of the geophysical and survey equipment, methods and processing are described in **Appendix 1**.

Table 1 Relative velocity to depth conversion based on a dielectric constant of 5.37 for the 450 MHz antenna.

Time Slice	Time (ns)	Depth (cm)	Time Slice	Time (ns)	Depth (cm)
1	0.0 - 1.56	0–0.1	11	15.55 - 17.12	1.01-1.11
2	1.56 - 3.12	0.1-0.2	12	17.11 - 18.67	1.11-1.21
3	3.11 - 4.67	0.2-0.3	13	18.66 - 20.23	1.21-1.31
4	4.67 - 6.23	0.3-0.4	14	20.22 - 21.78	1.31-1.41
5	6.22 - 7.78	0.4-0.5	15	21.78 - 23.34	1.41-1.51
6	7.78 - 9.34	0.5-0.6	16	23.33 - 24.89	1.51-1.61
7	9.33 - 10.89	0.6-0.71	17	24.89 - 26.45	1.61-1.71
8	10.89 - 12.45	0.71-0.81	18	26.44 - 28.0	1.71-1.81
9	12.44 - 14.01	0.81-0.91	19	28.0 - 29.56	1.81-1.91
10	14.0 - 15.56	0.91-1.01	20	29.55 - 31.12	1.91-2.01

4 GEOPHYSICAL SURVEY RESULTS AND INTERPRETATION

4.1 Introduction

4.1.1 The GPR survey was undertaken across the accessible portion of the site (**Figure 1**). The site boundary was designed to encompass set areas, based upon previous assessment, though extended beyond that to provide a wider contextual analysis.

4.1.2 The 450 MHz antenna used in this survey has the potential of detecting features to a depth of 2 – 3 m in optimal conditions, however the total depth reached varies depending on the specific conditions of each area.

4.1.3 For ease of interpretation, the most representative timeslices have been selected for presentation, with the interpretation image detailing the salient results from each relevant c.0.1 m section. This is followed by a graphical summation of all the timeslice interpretations to provide a summary and more complete understanding of how these features may relate to each other.

4.1.4 The GPR survey has identified multiple point reflectors, planar returns, and linear responses, along with anomalous areas of high and low amplitude. Results are presented as a series of colour scale timeslices, at a scale of 1:500 (**Fig. 5**, **7**, **9**, **11**, **13**, **15**, **17**, **19**, **21**, **23**, **25**, and **27**) and archaeological interpretations are presented at a scale of 1:500 (**Fig. 6**, **8**, **10**, **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**, **29**, **30**, **31**, and **32**). The colour scale plot displays red for high amplitude responses and blue for low amplitude responses.

4.1.5 All features are described in terms of their geophysical character. It is important to stipulate that all the depths referred to in this report are approximate levels below the current ground surface. The interpretation of the GPR data highlights the presence of archaeological features, possible archaeological features, high and low amplitude responses, historical and modern agricultural activity, drainage, and services.

4.1.6 It should be noted that small features and waterlogged features may produce responses that are below the detection threshold of the GPR antenna. Excessive disturbance can also impede the ability of geophysical techniques to detect archaeology. It may therefore be the case that more archaeological features are present than have been identified through the geophysical survey.

4.2 Ground penetrating radar survey results and interpretation

4.2.1 The GPR survey has produced evidence for archaeological activity in the north-eastern portion of the site, pertaining to former structures, garden features, and landscaping practices. Evidence for modern services, geology, and extents of roots have also been identified.

4.2.2 Multiple areas of high amplitude point and planar anomalies have been identified in the northern portion of the site, at **4000** – **4005** (**Fig. 6**, **8**, **14**, **16**, **21**, **24**, **29** and **30**). The total area covered by these anomalies is 55 m north-east by south-west and 43 m south-east by north-west, with concentrations of anomalies visible between Timeslice 04 (0.4 m – 0.5 m below present ground level (bpgl)) and Timeslice 15 (1.41 m – 1.51 m bpgl). These anomalies all likely pertain to sections of former structure though phasing is not always clear. The anomalies at **4000** and **4001** both measure 20 m north-east to south-west, with **4000** 13 m wide and **4001** 11 m wide. Both are associated with the wings of a previous iteration of the house, as noted on the map of (City & Country 2016, 38-39), likely related to the outer and inner wall foundations.

4.2.3 Further to **4000** and **4001** are a pair of high amplitude linear anomalies with a rectilinear anomaly central at **4002** (**Fig. 6**, **8**, **14**, **16**, **21**, **24**, **29** and **30**). These anomalies are visible between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). The anomaly is 37 m long and 4 m wide, with the central rectilinear anomaly 4 m wide and 7 m long at its greatest extent. This anomaly matches the location of a former wall and possible gatehouses noted on the map from (City & Country 2016, 38-39), and likely further associated with the wings of the building mentioned above.

4.2.4 A partial high amplitude curvilinear anomaly, with an additional high amplitude linear anomaly, are present at **4003a** and **4003b** respectively (**Fig. 6**, **8**, **14**, **16**, **21**, **24**, **29** and **30**). The anomaly at **4003a** is 17 m long and 0.7 m wide, the anomaly at **4003b** is 14.5 m long by 0.7 m wide. These anomalies are visible between Timeslice 04 (0.3 m – 0.4 m depth from surface) and Timeslice 15 (1.41 m – 1.51 m depth from surface). These may indicate a curved entrance feature, such as stairs or raised platform, likely associated with the former wings.

4.2.5 Numerous high amplitude point reflector anomalies are present at **4004** and **4005** (**Fig. 6**, **8**, **14**, **16**, **21**, **24**, **29** and **30**). The anomalies at **4004** covers an area 27 m by 15 m; the anomalies at **4005** cover an area 17 m by 12 m. These anomalies are visible between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). These anomalies have been interpreted as further building foundations associated with formerly unknown structures between the wings and the entrance wall.

4.2.6 Several amorphous high amplitude anomalies, but of less intensity than previously discussed, have been noted at **4006** – **4008** (**Fig. 6**, **8**, **14**, **16**, **21**, **24**, **29** and **30**). The anomaly at **4006** is 7 m by 4 m, the anomalies at **4007** cover an area 17 m by 9 m, and the anomalies at **4008** cover an area 15 m by 9 m. These anomalies are present between Timeslice 03 (0.2 m – 0.3 m bpgl) and Timeslice 07 (0.6 m – 0.71 m bpgl). Although likely related to further structural remains associated with features previously discussed, they may equally relate to landscaping or groundwork activities due to their shallower depths and less intense responses.

4.2.7 Within the area of structural remains, there are large high amplitude spreads of multiple point reflector anomalies, indicated at **4009** – **4011** (**Fig. 6**, **8**, **14**, **16**, **21**, **24**, **29** and **30**). The anomalies at **4009** cover an area 14 m by 19 m, the anomalies at **4010** cover an area 38 m by 27 m in a large right-angle, and the anomalies at **4011** cover an area of 28 m by 16 m. These anomalies are visible between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). Collectively, these indicate a spread of demolition material associated with the discussed structures. However, they could equally be attributed to landscaping and groundworks which have extensively covered the site.

4.2.8 A series of rectilinear and amorphous low and high amplitude anomalies are indicated at **4012** and **4013** (**Fig. 6**, **14**, **22**, and **29**). The anomalies at **4012** cover an area of 39 m by 25 m, while the anomalies at **4013** cover an area of 44 m by 17 m at their greatest extent. The anomalies range in visibility between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 11 (1.01 m – 1.11 m bpgl). These anomalies collectively indicate former garden features, possibly associated with the Italian Garden believed to be in this portion of the site. The linear portions of the anomalies may correspond to the pathways through, and around, the garden as indicated on the painting from HRO ref. 133M84; Henderson 2016, 23, with the amorphous portion to the north associated with visible crop marks in satellite and drone imagery. However, numerous phases of landscaping and groundworks have occurred in this area and may account for some of the noted features. Further, the pair of linear features at **4013** may be associated with the spring known to exist near the south-western end of the anomalies.

4.2.9 To the south-east of the linear features noted at **4013**, numerous low and high amplitude amorphous multiple point reflector anomalies were identified at **4014** (**Fig. 6**, **14**, **21**, and **29**). The anomalies cover a triangular area 31 m by 40 m and range in visibility between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). These anomalies indicate former trench cuts or structural remains. An exploratory trench was performed in this area and revealed a brick wall within clay (Wessex Archaeology 2015c). Clay has a detrimental effect on the performance of radar systems. As a result, these responses are weak and convoluted so may be a product of landscaping or groundworks. Further intrusive investigation would be required to determine the nature of these anomalies.

4.2.10 A broad right-angled series of high amplitude rectilinear and amorphous anomalies have been identified at **4015** (**Fig. 6**, **14**, **21**, and **29**). The anomalies cover an area 67 m long from north-east turning to the north-west, and between 12 m and 14 m in overall width. The anomalies range in visibility between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). These anomalies correspond to a large cut feature, with possible structural remains within. The cut feature presents in the data as having compacted surfaces on the slopes, which may infer the construction techniques of a ha-ha, otherwise known as a deer control structure without obstructing the views of the landscape. Alternatively, this could be the result of former landscaping as a defensive ditch or as a cultural statement, with the resulting enclosed platform area associated with a former iteration of the house.

4.2.11 A low intensity high amplitude broken linear anomaly, with circular anomaly, is indicated at **4016** (**Fig. 6**, **14**, **22**, and **29**). The collection of linear anomalies are 25 m total length and 2 m wide, whereas the circular anomaly is 5 m in diameter. These anomalies are visible between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 06 (0.5 m – 0.6 m bpgl). These indicate structural remains which would form a south-east facing feature atop the inner edge of the enclosing ditch feature discussed above (**4015**). However, due to numerous landscaping and groundworks phases, these features may be associated with the former garden or later groundworks.

4.2.12 A high amplitude linear anomaly, with a wider amorphous anomaly at the south-western extent, is indicated at **4017** (**Fig. 6**, **14**, **22**, and **29**). The anomaly is 52 m in length and between 1 m and 15 m in width. The anomaly is visible between Timeslice 06 (0.5 m – 0.6 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). A former exploratory trench confirmed the presence of a brick wall set within clay, as part of a wider ditch feature. This feature my correspond to the wall, however given the presence of modern services leading to the same area in the north-east, it may infer that this feature is a modern service.

4.2.13 A high amplitude rectilinear anomaly is present towards the south-west of the site at **4018** (**Fig. 18**, **27**, and **31**). The anomaly is 8 m by 6 m and is visible between Timeslice 09 (0.8 m – 0.9 m bpgl) and Timeslice 11 (1.02 m – 1.12 m bpgl). This may indicate the foundations of a structure, which would be aligned with the entrance gateway further to the north-east. This anomaly is also situated adjacent to the entrance way to the deer park to the east. However, this feature may be a result of landscaping or intrusive groundworks.

4.2.14 Several high amplitude spreads of multipoint reflector anomalies are present at **4019** – **4026** (**Fig. 16**, **20**, **24**, **28**, **31**, and **32**). These anomalies are present between Timeslice 04 (0.3 m – 0.4 m bpgl) and Timeslice 15 (1.41 m – 1.51 m bpgl). These are likely associated with tree root vegetation.

4.2.15 Numerous high and low amplitude linear and amorphous anomalies are present across the site, at **4027** – **4043** (**Fig. 6**, **8**, **10**, **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **29**, **30**, **31**, and **32**). These features are associated with modern services.

4.2.16 High amplitude spreads are noted across the south-western portion of the site and correspond to the change in superficial geology.

5 DISCUSSION

5.1 South-western frontage

5.1.1 Within this area there are a clear series of responses (**4000, 4001**) which correlate closely with the two projecting wings which formerly stood in this area. The wings are shown on a 1699 map by Issac Justis of the house and estate commissioned after its purchase by Sir John Cope (**Fig. 33, Map A**). While they are perhaps most likely to relate to an extensive series of redevelopments undertaken by Lord Zouche and heirs, the slightly asymmetric appearance may indicate that they incorporate earlier fabric or buildings. There is a documentary reference to a fire in 1640 and this part of the house may have been damaged then, whatever the reason they are known to have been demolished around 1702 (City & Country 2016, 38-39). A plan of the foundations of the former wing exists from 1766 and can be seen to correspond well with the survey results (**Fig. 33, Map B**). The data suggests the structural remains may extend to a depth of around 1.5 m. Within this the north-west range appears more substantial but this could be an artefact of the data. While there is no evidence of open existing basement the depth of the deposits could suggest a basement level which has been backfilled. The high amplitude response in the area of the wing is almost certainly related to demolition debris. Likewise the area in front of the wings is also likely to be related to demolition, though there is a chance it could relate to a possible surface.

5.1.2 The current brick walls and ‘pepper-pot’ turrets are described in their list entry as early 17th century, though their present form is likely to be later in date. On the 1699 map three courts are shown mirroring the width of the house and extending to the main boundary wall of the trapezoid enclosure which encloses the immediate grounds of the house from the park beyond (**Fig. 33, Map A**). An investigation in 2005 by Northamptonshire Archaeology of the foundations of the turrets found a second earlier foundation though to relate to an earlier lodge, more likely to coincide with what is depicted on the 1699 map. The extent of these

lodges appears to lie outside the area available for survey due to the existing railings and vegetation.

5.1.3 The two internal court walls (**4002**) are clearly seen in the survey data with the outer court boundary suggesting a substantial wall with deep foundations and a gateway with flanking structures, the north-westerly of which gives a clearer sub-rectangular response suggesting a gatehouse or tower. It is not certain without excavation whether the differences in the responses between the flanking structures indicate better preservation or differences in design. Two similar structures are indicated by the 1699 map though the scale means that no detail is shown (**Fig. 33, Map A**).

5.1.4 An inner court formed by a boundary stretching between the two projecting wings is also indicated, with again the suggestion of some structures, though perhaps less substantial, either side of the gateway. The boundary of the court, though perhaps narrower, can be identified in the data, however the evidence for an entry point or structures to either side is not clear. An early 18th century plan of the gardens (Hampshire Record Office (HRO) ref. 133M84; **Fig. 34, Map E**) suggests a formal garden immediately in front of the house across the area previously occupied by the wings, however this could not be identified in the data.

5.1.5 Further surveys and plans of the estate were undertaken in the 18th century. One thought to date from around 1735 (HRO ref. 43M48-1889; **Fig. 33, Map C**) suggests just two courts to the south-west of the house. This revised division cannot be clearly discerned in the data set.

5.1.6 A number of responses within the area of the inner courts (**4004, 4005**) suggests possible structural remains of buildings or other features in this area. While nothing is shown on the 1699 and 1735 plans there are hints of structures adjacent to the side court walls shown on an estate map from 1756 – 7 (HRO ref. 6M63-3; **Fig. 33, Map D**), though in contrast clearly defined buildings are indicated on the periphery of the courts to the north-east of the house.

5.1.7 A curving low amplitude response seen in the dataset corresponds to a feature visible on the LiDAR data (**Fig. 2**) and is likely to be of recent origin.

5.2 South-western approach

5.2.1 The survey results along the south-western approach are marked by a large number of responses thought to indicate modern services. Vegetation responses through this area are likely to relate to root disturbance from the avenue trees.

5.2.2 There is an area of possible archaeological features (**4018**) near the intersection of the main approach road and a north-west to south-east aligned avenue. This avenue is not shown on the 1699 map but is visible on the 1735 plan (**Fig. 33, Map C**). While the extant nature of this possible feature is uncertain is location adjacent to this crossroads could be significant. The position and depth of this feature could suggest a small structure.

5.2.3 Thought the topography of the upper part of the approach is unusual the banding of the underlying geology suggests this structure is natural rather than man-made.

5.3 South-east of the house/ area of formal gardens

5.3.1 Defining a smaller area than the parterre the possible ha-ha or defensive ditch (**4015**) could indicate an earlier phase in this area; though ha-has are generally associated with 17th century garden design. There is a reference to John Foxley's will of 1378 being executed at 'Bramshill Castle' which may suggest a more fortified appearance to the house at this

time despite there not being any reference so far in the various assessment reports to any licence to crenulate. Evidence attributed to an 18th century ha-ha was located during drainage works adjacent to the south terrace of the house (PCA 2012, 16).

5.3.2 Possible structural remains (**4016, 4018**) could potentially be associated with this feature and/ or with earlier phases of the house of which little is known about the overall layout. Two robber-cuts on east – west alignments were identified during archaeological monitoring in this area as well as demolition deposits suggesting alteration of buildings in this area, the redevelopment was tentatively dated to the 18th century but dating was not clear (PCA 2012, 14). A series of brick culverts on both east – west and north – south orientations was located and thought to date to the Tudor period along with a series of landscaping deposits post-dating the evidence for demolition.

5.3.3 Early 18th century plans of the gardens in this area remain (HRO ref. 133M84; **Fig. 34**), though it is unclear whether these represent plans of existing gardens or proposals which may or may not have been enacted as portrayed. Derring's plan of 1715 – 6 shows a formal square garden layout immediately south-east of the house, this quadripartite garden would have been designed to be viewed directly from the state rooms on the east side of the house (Henderson 2016, 23; **Fig. 34, Map E**). Adjacent to this lies a triangular area bordered by a walk and the boundary wall. The earthwork evidence for the parterre and adjacent triangular area was confirmed by the RCHME survey in 1998 and is clearly visible in the LiDAR data (**Fig. 2**). Parch marks suggesting something of the formal bed structure in this area have also been identified from various aerial photographs. Within the GPR data the outline of the parterre and some internal divisions are visible within the upper levels of the dataset down to around 1 m (**4012, 4013**). To the south parallel responses could indicate subtle terracing, though there are a number of other explanations e.g. drainage. A small square structure thought likely to be a cistern is also shown on this plan; nothing definitive to indicate this was visible in the data, however a possible sub-square feature was visible at low depths. The area to the south-west (which could not be surveyed) is shown as largely open with a trapezoid area of water near the south-western edge.

5.3.4 The other available (undated) plan shows an elaborate trapezoid garden often termed the Italian Garden (**Fig. 34, Map F**), normally assumed to occupy the lower area, though notwithstanding issues relating to the overall shape of the area depicted, a case can be made for its depicted both the upper parterre and the lower area. In this instance the three part lake corresponds more easily with the single area of water shown on the 1715 – 6 plan (**Fig. 34, Map E**) and also correlates better with the three part water feature shown on the 1756 – 7 plan (**Fig. 33, Map D**). This could therefore suggest proposals to redevelop the parterre and to shift its location to a more central position in the upper area. The 1756 – 7 plan (unfortunately this does not show any of the formal garden layouts) suggests at least some of this design was enacted.

5.3.5 The location of the brick exterior boundary wall was confirmed by evaluation (Wessex Archaeology 2015c; **Fig. 4**) with a potential internal path, however, the combination of brick within clay is not conductive to strong responses and so the continuation of this is not readily apparent in the dataset. The high amplitude linear anomaly in this area, **4017**, appears to correspond with the large cut feature located immediately adjacent to the wall. The exact date and nature of this feature was unclear but potentially had a contemporary association with the wall.

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APPENDICES

Appendix 1: Survey equipment and data processing

The ground penetrating radar (GPR) data was collected using an Impulse Radar Raptor-45 skid-mounted shielded antenna with a central frequency of 450 MHz. The antenna is a multi-channel system, comprised of 8 channels spaced 8.5 cm apart, with the capability of use with or without GPS positioning. When using GPS, the system can function on an RTK PPS corrected signal, producing sub-decimetre accuracy and therefore exceeds EAC recommendations (Schmidt et. al. 2015).

The system was towed behind a suitable motorised vehicle, and collected data were recorded every 4 cm along each traverse, with a horizontal profile spacing of 8.5 cm provided by the separate channels, and 100 ns was decided to provide the best depth penetration time window.

Lower frequency antennae are able to acquire data from deeper below the surface, whereas higher frequencies allow high resolution imaging of near-surface targets at the expense of deep penetration.

The depth penetration of GPR systems is determined by the central frequency of the antenna and the relative dielectric permittivity (RDP) of the material through which the GPR signal passes. In general, soils in floodplain settings may have a wide range of RDPs. An RDP of 8 may be considered average, resulting in a maximum depth of penetration of approximately 2.5 m, and a GPR signal velocity of approximately 0.1 m/ns.

The transmitted GPR signal is conical in shape, and whilst most of the energy is concentrated in the centre of the cone, the GPR signal produces a horizontal footprint, becoming wider with increased depth. At the maximum depth of the antenna, it becomes impossible to resolve any feature smaller than the horizontal footprint for the corresponding depth. The size of the footprint is dependent upon the central frequency, its size increases as the central frequency value decreases.

The vertical resolution is similarly dependent upon the central frequency; for example, a 300 MHz antenna may resolve vertical features in the order of 0.05 m. Antennae with lower frequencies can therefore penetrate more deeply but are less resolute in both horizontal and vertical directions. Choice of antenna frequency is guided largely by the anticipated depth to target and the required resolution.

GPR data for detailed surveys are collected along traverses of varying length. Separation varies by GPR system, with 0.5 m spaced grids collected with single frequency antennae, the Raptor-45 is collected with effective traverse separation of 0.085m. The data sampling resolution is governed by the data logger, or data logging software, and a minimum separation of 0.05 m between traces is collected for all surveys in accordance with European Archaeologiae Consilium recommendations (Schmidt *et al.* 2015).

Post-Processing

The collected GPR survey data are downloaded, or uploaded, from the GPR data collection system for processing and analysis using commercial software (GPR Slice). The software allows for both the data and images to be processed to enhance the results for analysis; however, it should be noted that minimal data processing is conducted so as not to distort the anomalies.

Typical data and image processing steps may include:

- Spectra frequency selection for gain and Bandpass filter application. These remove GPR signal responses outside the desired specified range and applies a gain curve to boost signal degradation at depth.

- Background Filter - used to remove horizontal banding produced in the radargrams, usually associated with high-reflective subsoil properties such as water-tables, wet clay, etc.

- Kirchhoff Migration – used to recollect hyperbolic tail energy produced by the conical signal transmission of the GPR system and focus the energy back to the focal point of the anomaly response.

- Hilbert Transformation – this process transposes the negative and positive polarity of the GPR signal into a total amplitude for each reflective response. The result is used to produce clearer timeslices in a 3-D volume.

Typical displays of the data used during processing and analysis:

- Timeslice – Presents the data as a series of successive plan views of the variation of reflector energy from the surface to the deepest recorded response. The variation in amplitude is represented using a greyscale with black indicating high amplitude and white indicating low amplitude responses.

- Radargram – Presents each radar profile in a vertical view with distance along the profile expressed along the x axis and depth along the y axis. The amplitude variation is expressed using a greyscale.

Appendix 2 Geophysical interpretation

The interpretation methodology used by Wessex Archaeology separates the anomalies into four main categories: archaeological, modern, agricultural, and uncertain origin/geological.

The archaeological category is used for features when the form, nature and pattern of the anomaly are indicative of archaeological material. Further sources of information such as aerial photographs may also have been incorporated in providing the final interpretation. The category is further sub-divided into 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.

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

- Modern service – used for responses considered relating to cables and pipes; most are composed of metallic/ceramic material although services made from non-metallic material can sometimes be observed.

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.
- Historic cultivation – such as ridge and furrow ploughing, and for broad and diffuse linear anomalies which are considered to indicate areas of land management.
- Ploughing – used for well-defined narrow linear responses, usually aligned parallel to existing field boundaries.
- Drainage – used to define the course of field drains that are visible in the data as a series of repeating high or low amplitude linear responses.

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:

- High amplitude response – used for areas dominated by a high amplitude GPR response pertaining to indistinct anomalies which may have some archaeological potential, such as compact features.
- Low amplitude response – used for areas dominated by a low amplitude GPR response pertaining to indistinct anomalies which may have some archaeological potential, such as cut features.
- 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 high or low amplitude responses corresponding with known geology or geomorphology.

Appendix 3 OASIS form

Project Details:

Project name		Bramshill House and Park			
Type of project		Ground Penetrating Radar Survey			
Project description		A detailed gradiometer survey was conducted over land at Bramshill, Hampshire (centred on NGR 475765 159527). The project was commissioned by Bramshill House Ltd with the aim of establishing the presence, or otherwise, and nature of detectable archaeological features to inform potential redevelopment of the formal gardens as given a better understanding of the potential archaeology to the south-west of the house. The site comprises parkland and grounds associated with the Grade I Listed Bramshill House, which lies within the Grade I Registered Park and Garden, covering an area of 1.43 ha. The geophysical survey was undertaken on 17 – 19 July 2023. The ground penetrating radar survey has demonstrated the presence of a number of anomalies of potential archaeological interest in within each of the survey areas. The anomalies identified as being of archaeological origin relate to structural remains associated with earlier phases of the house as well as responses thought to indicate surviving aspects of the formal garden layout and landscaping. A number of the anomalies can be related to historic plans and the known history of the house, however the exact date and character of many of the features would require further investigation.			
Project dates		**Start:** 17-07-2023		**End:** 19-07-2023	
Previous work		DBA, evaluation, watching brief			
Future work		unknown			
Project Code:	280321	**HER event no.**	If relevant	**OASIS form ID:**	wessexar1-518660
		NMR no.	N/A		
		SM no.	N/A		
Planning Application Ref.					
Site Status		Grade I Listed Building NHLE 1091939, 1340025; Grade I Registered Park and Garden NHLE 1000165			
Land use		Park and grounds			
Monument type		Building, Formal garden	**Period**	Post-medieval	

Project Location:

Site Address	Bramshill House, Bramshill, Hook, Hampshire			**Postcode**	RG27 0JW
County	Hampshire	**District**	Hart	**Parish**	Bramshill
Study Area	1.43 ha	**Height OD**	87 – 54 m aOD	**NGR**	SU 75765 59527

Project Creators:

Name of Organisation	Wessex Archaeology		
Project brief originator	Client	**Project design originator**	Brett Howard

Project Manager	Naomi Brennan and Tom Richardson	**Project Supervisor**	Pamela Warne
Sponsor or funding body	Client	**Type of Sponsor**	Private individual

Project Archive and Bibliography:

Physical archive	N/A	**Digital Archive**	Geophysical survey and report	**Paper Archive**	N/A
Report title	*Bramshill House and Park, Bramshill, Hampshire: Heritage Statement and Detailed Gradiometer Survey Report*			**Date**	2023
Author	Wessex Archaeology	**Description**	Unpublished report	**Report ref.**	280321.02

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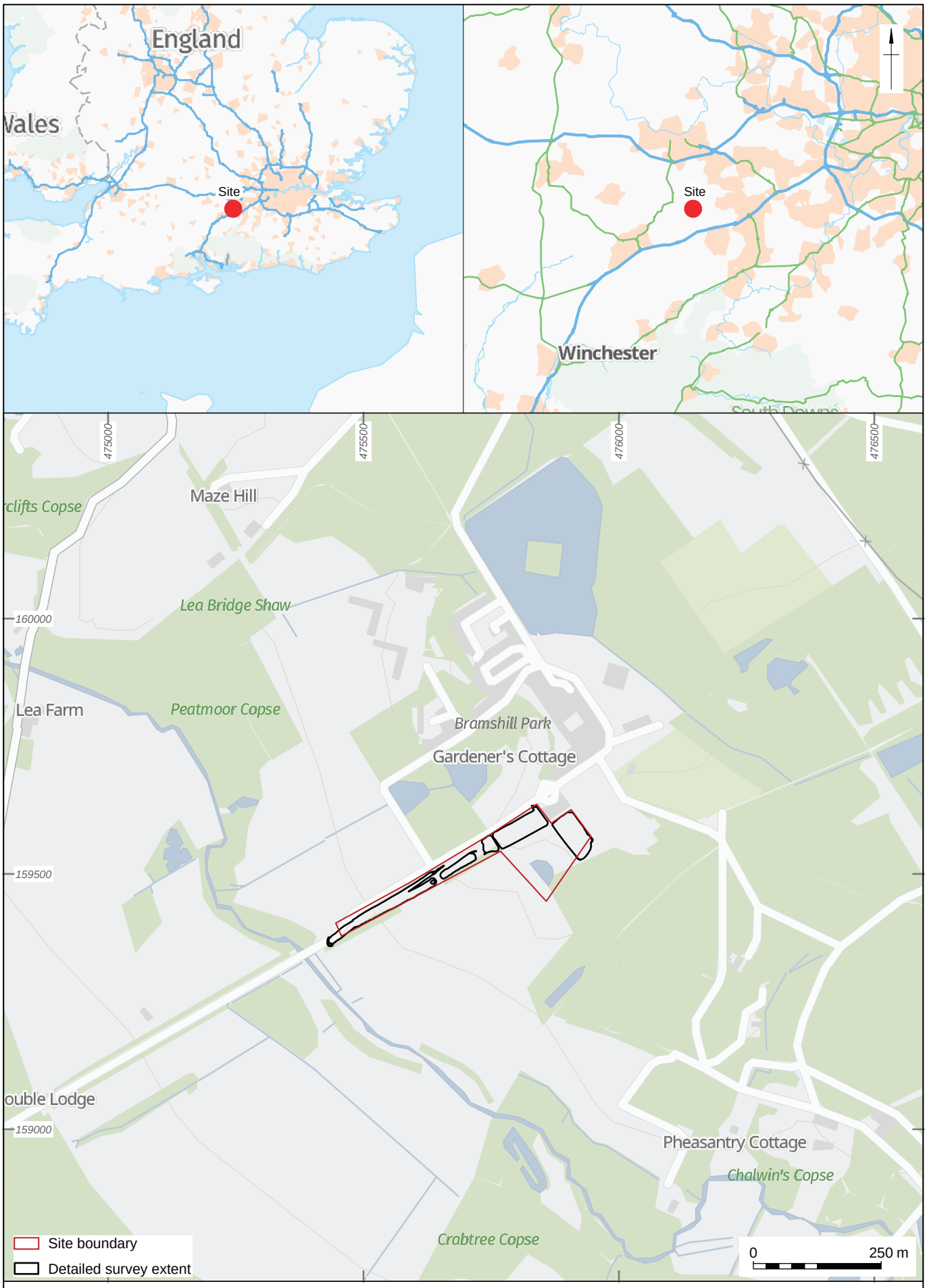

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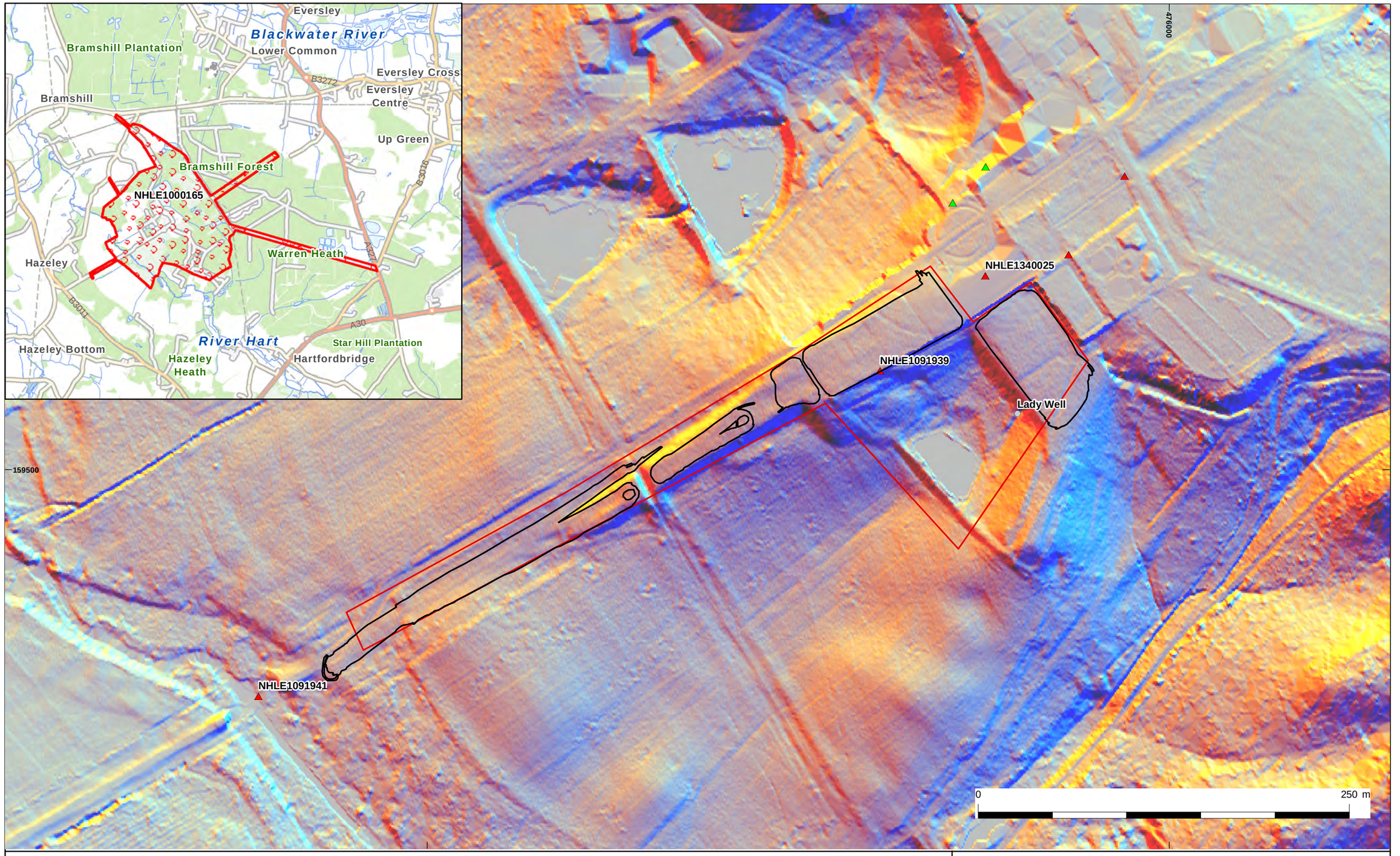
Figure 1: Site location and survey extent



Grade I Registered Park and Garden

Grade I Listed Building

Grade II Listed Building

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LiDAR (multi-hillshade) data and location of designated heritage assets

Figure 2

Photo 1) South-western frontage of Bramshill House

Photo 2) Area in front of south-western frontage towards approach drive

Photo 3) View from south-western access road towards to the house

Photo 4) Area of former formal gardens and south-western frontage

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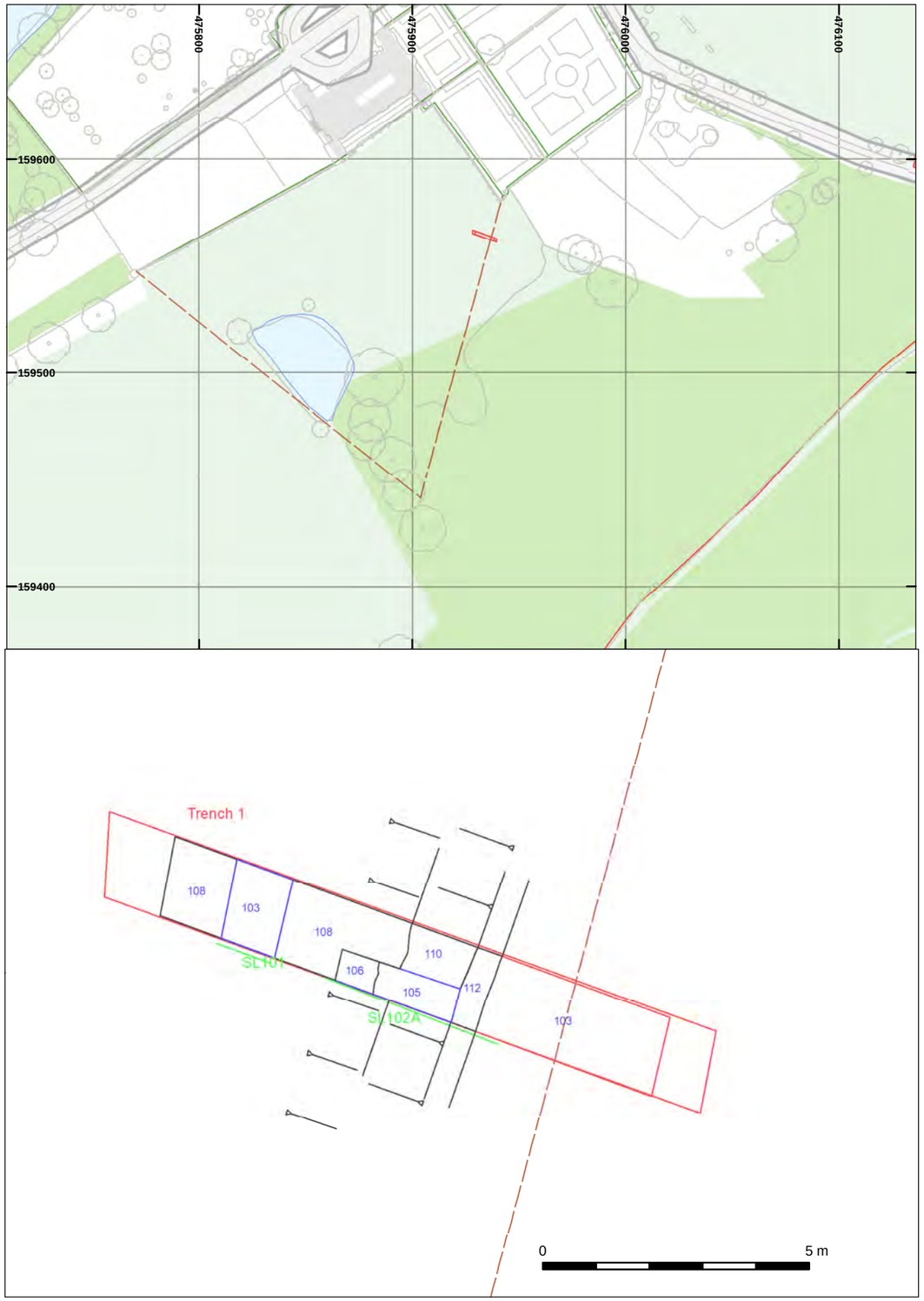

Location and plan of evaluation trench

Photo 5) North-north-west facing elevation of wall 112

Photo 6) North-north-east facing section of wall 112 and feature 104

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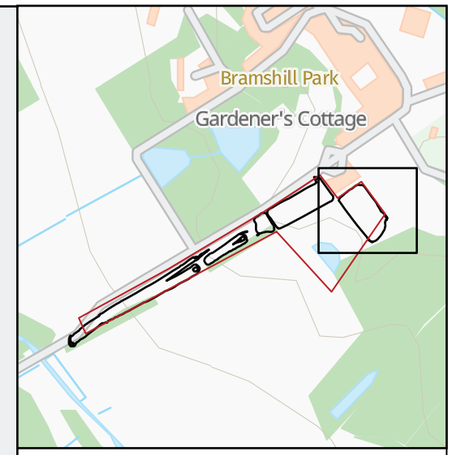
475900

475950

159600

159550

0.5 m - 0.6 m depth from surface



Site boundary

Detailed survey extent

Unsurveyable

Low amplitude

High amplitude

0

20 m

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Figure 5: Ground penetrating radar survey results: Timeslice 06 colourscale

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475900

475950

159600

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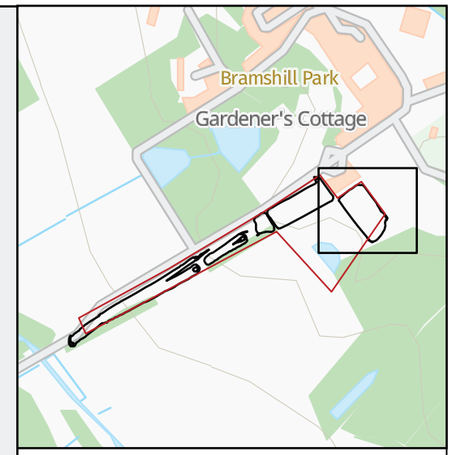
0.5 m - 0.6 m depth from surface



Site boundary
Detailed survey extent
Unsurveyable
Archaeology
Possible archaeology
High amplitude
Low amplitude
Modern services

0 20 m

Date: 25/08/2023 | Created by: BH

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Figure 6: Ground penetrating radar survey results: Timeslice 06 interpretation

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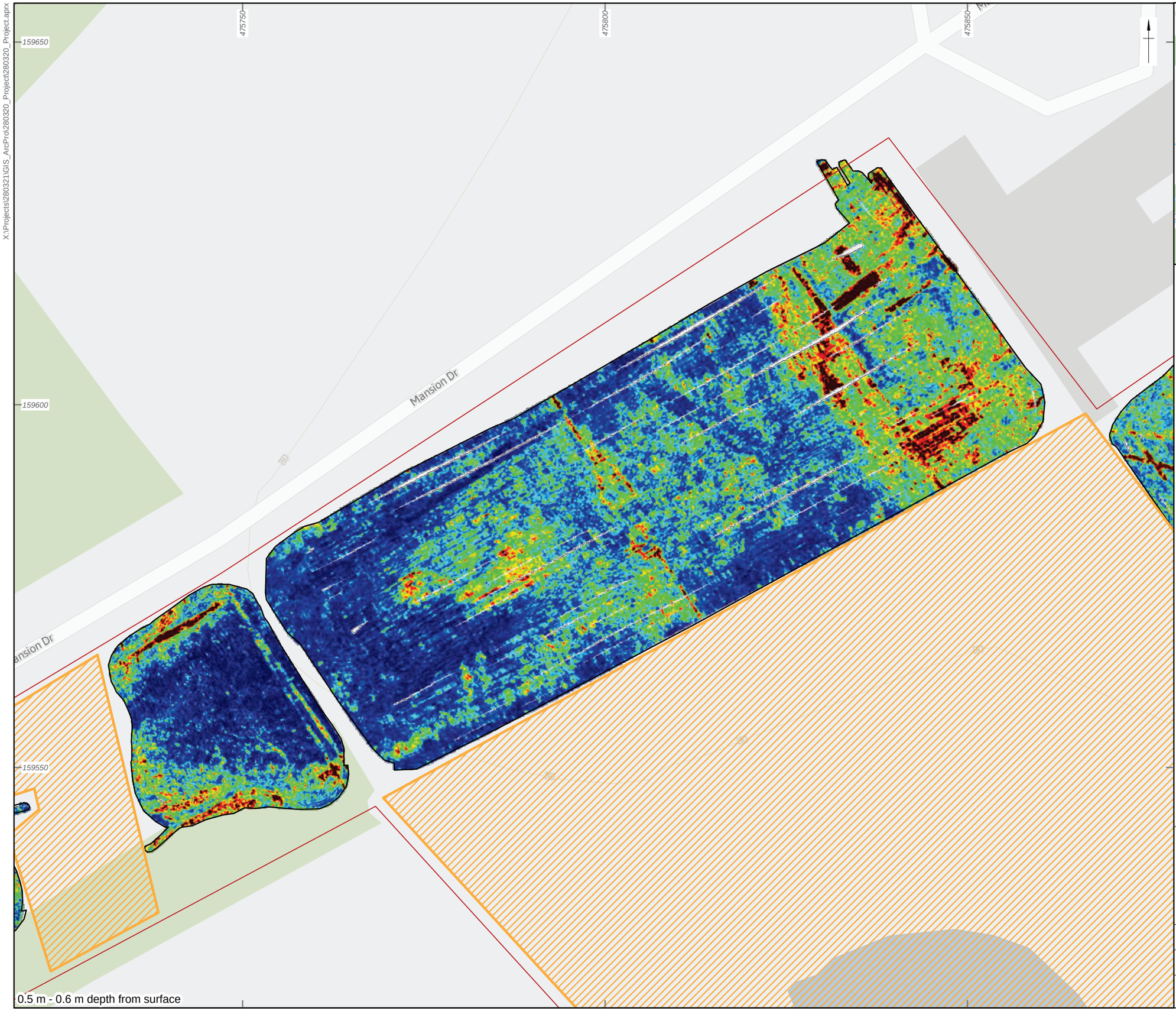

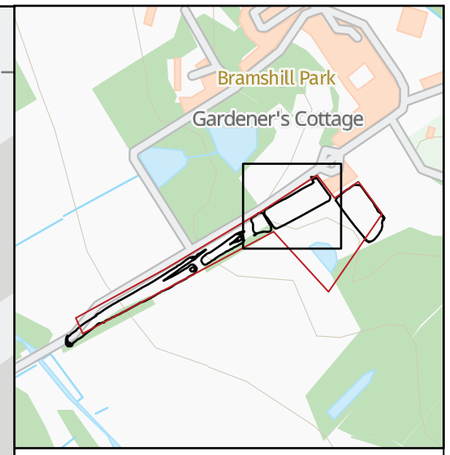

Site boundary

Detailed survey extent

Unsurveyable

Low amplitude — High amplitude

0 — 20 m

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Figure 7: Ground penetrating radar survey results: Timeslice 06 colourscale

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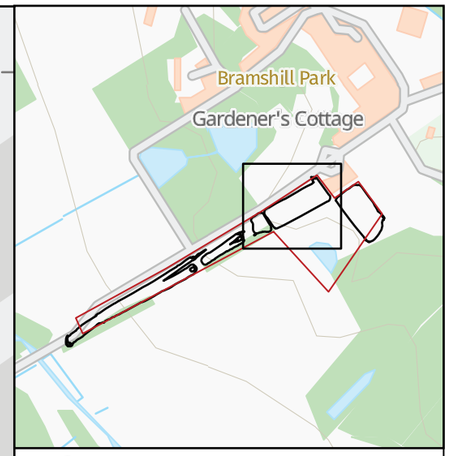
475800
475850
159650
159600
159550
Mansion Dr
Mansion Dr
0.5 m - 0.6 m depth from surface



Site boundary
Detailed survey extent
Unsurveyable
Archaeology
Possible archaeology
High amplitude
Low amplitude
Modern services

0
20 m

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 8: Ground penetrating radar survey results: Timeslice 06 interpretation

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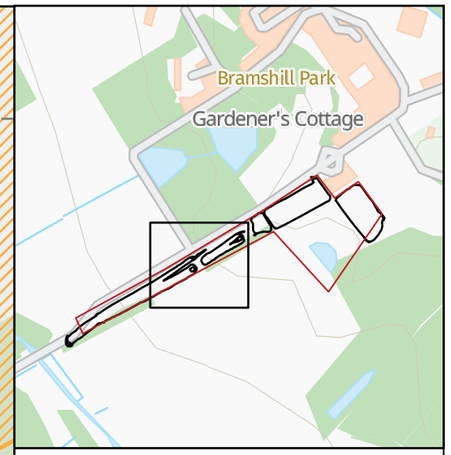
475650
475700
159550
159500
159450

Lower Pool Rd
Mansion Dr
Mansion Dr
70
70
70



Site boundary
Detailed survey extent
Unsurveyable

Low amplitude
High amplitude

0
20 m

0.5 m - 0.6 m depth from surface

Date: 25/08/2023	Created by: BH
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Figure 9: Ground penetrating radar survey results: Timeslice 06 colourscale

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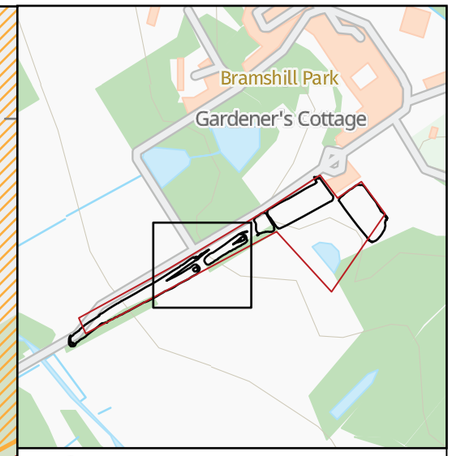
475600
475650
475700
159550
159500
159450
Lower Pool Rd
Mansion Dr
Mansion Dr
70
70
70



Site boundary
Detailed survey extent
Unsurveyable
Modern services

0
20 m

0.5 m - 0.6 m depth from surface

Date: 25/08/2023	Created by: BH
Scale: 1:500 at A3	Revision: 0

Figure 10: Ground penetrating radar survey results: Timeslice 06 interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

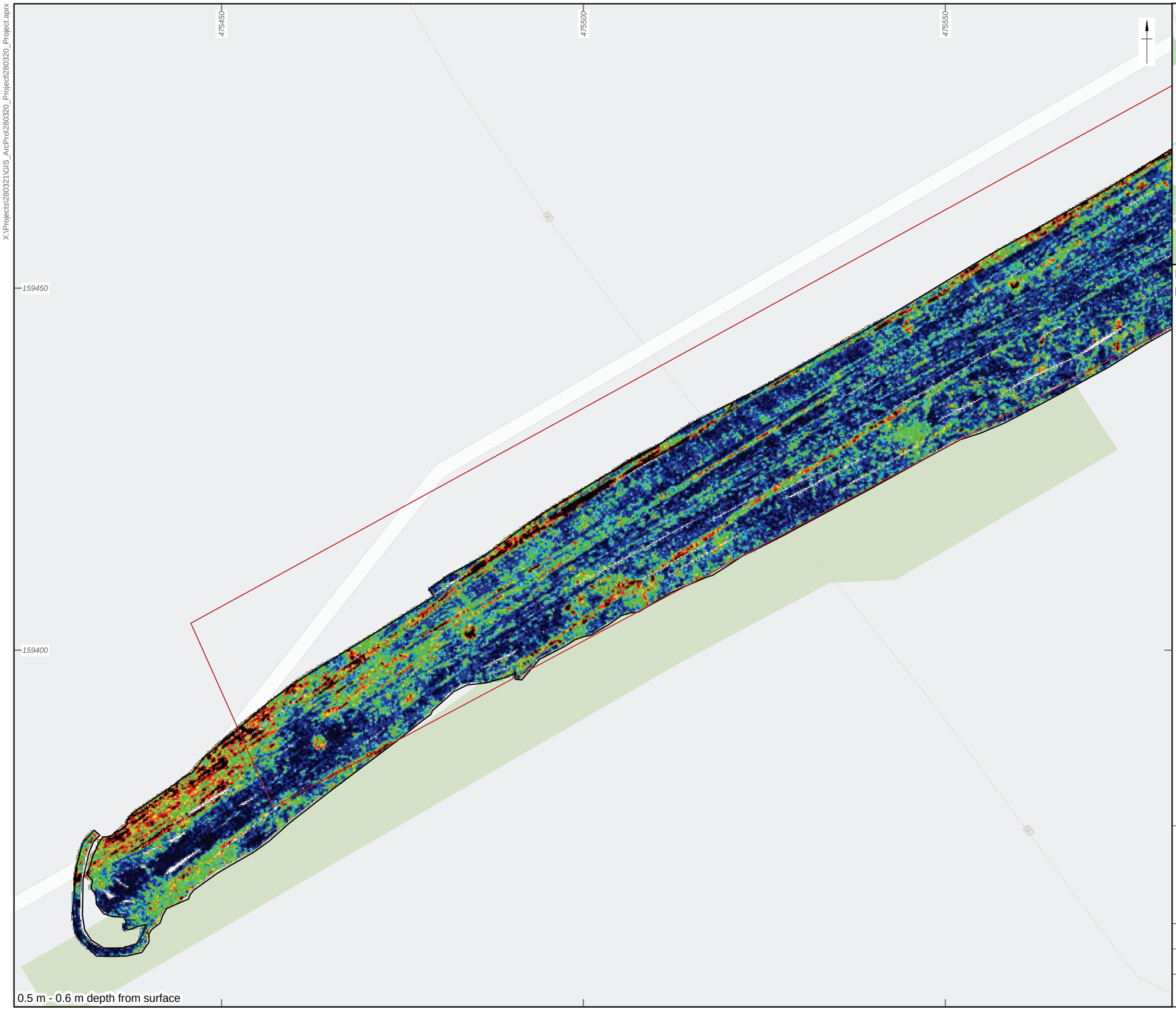
475450

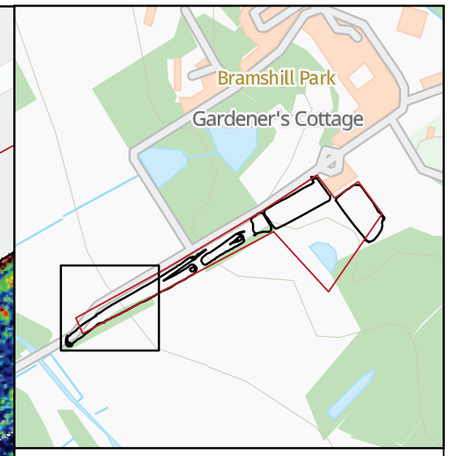
475500

475550

159450

159400





Site boundary

Detailed survey extent

Low amplitude — High amplitude

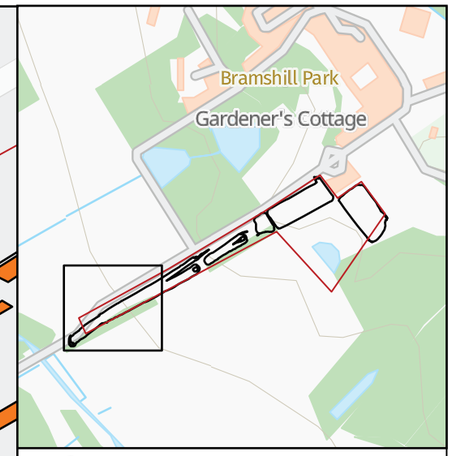
0 — 20 m

Date: 25/08/2023	Created by: BH	
Scale: 1:500 at A3	Revision: 0	

Figure 11: Ground penetrating radar survey results: Timeslice 06 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475450
475500
475550
159450
159400



Site boundary
Detailed survey extent
Low amplitude
Modern services

0 20 m

0.5 m - 0.6 m depth from surface

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 12: Ground penetrating radar survey results: Timeslice 06 interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475850

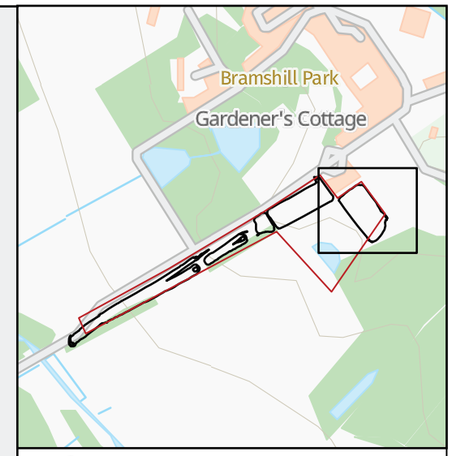
475900

475950

159600

159550

0.81 m - 0.91 m depth from surface



Site boundary

Detailed survey extent

Unsurveyable

Low amplitude

High amplitude

0

20 m

Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

Figure 13: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475850

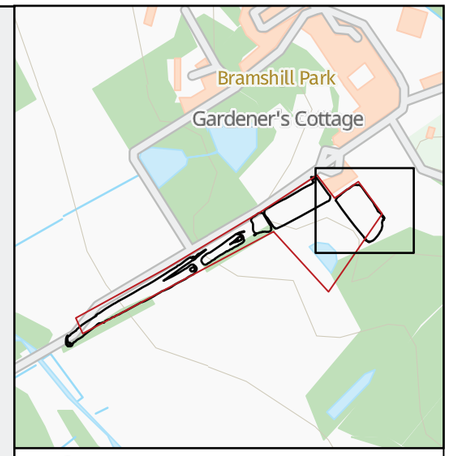
475900

475950

159600

159550

0.81 m - 0.91 m depth from surface



- Site boundary
- Detailed survey extent
- Unsurveyable
- Archaeology
- Possible Archaeology
- High amplitude
- Low amplitude
- Historic landscape feature
- Modern service

0 20 m

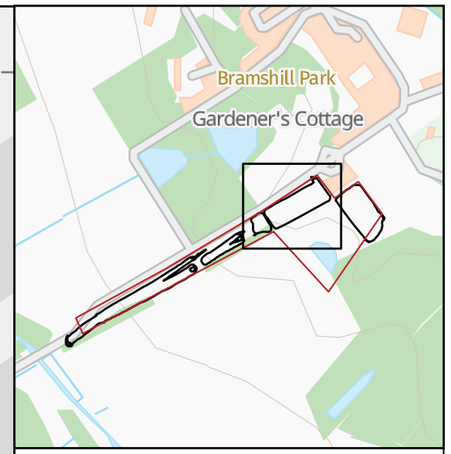
Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

Figure 14: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475750
475800
475850
159650
159600
159550
Mansion Dr
0.81 m - 0.91 m depth from surface



Site boundary
Detailed survey extent
Unsurveyable

Low amplitude
High amplitude

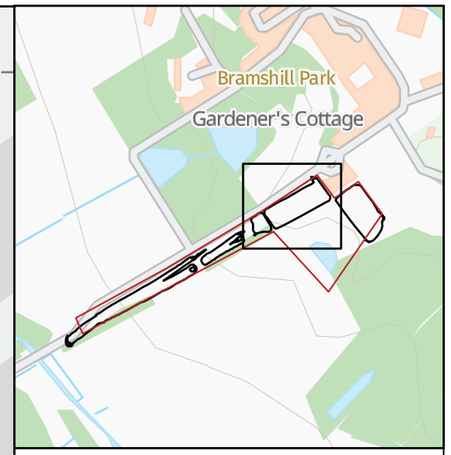
0
20 m

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 15: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475750
475800
475850
159650
159600
159550
Mansion Dr
50
0.81 m - 0.91 m depth from surface



- Site boundary
- Detailed survey extent
- Unsurveyable
- Archaeology
- High amplitude
- Low amplitude
- Historic landscape feature
- Geology
- Vegetation
- Modern service

0 20 m

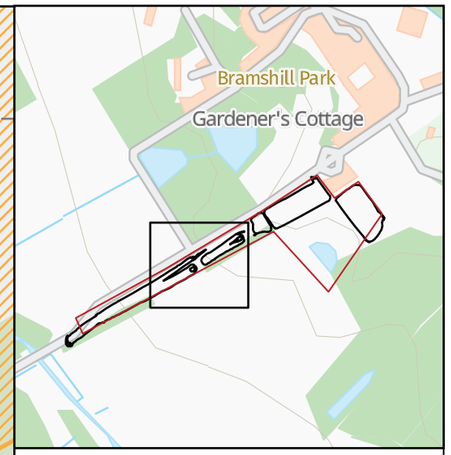
Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 16: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475600
475650
475700
159550
159500
159450

Lower Pool Rd
Mansion Dr
Mansion Dr



Site boundary
Detailed survey extent
Unsurveyable

Low amplitude
High amplitude

0
20 m

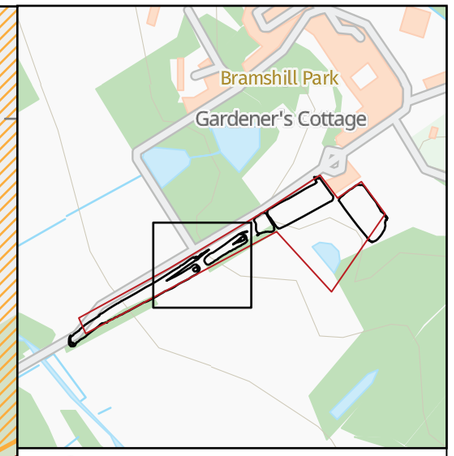
0.81 m - 0.91 m depth from surface

Date: 25/08/2023	Created by: BH	
Scale: 1:500 at A3	Revision: 0	

Figure 17: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475600
475650
475700
159550
159500
159450
Lower Pool Rd
Mansion Dr
Mansion Dr
70
70



Site boundary
Detailed survey extent
Unsurveyable
Possible Archaeology
Geology
Modern service

0
20 m

0.81 m - 0.91 m depth from surface

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 18: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475450

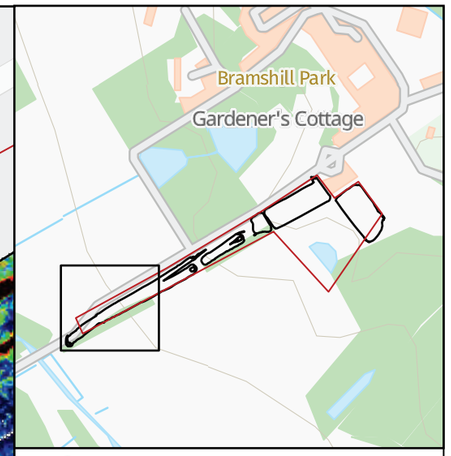
475500

475550

159450

159400

0.81 m - 0.91 m depth from surface



Site boundary

Detailed survey extent

Low amplitude

High amplitude

0

20 m

Date: 25/08/2023	Created by: BH	
Scale: 1:500 at A3	Revision: 0	

Figure 19: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475450

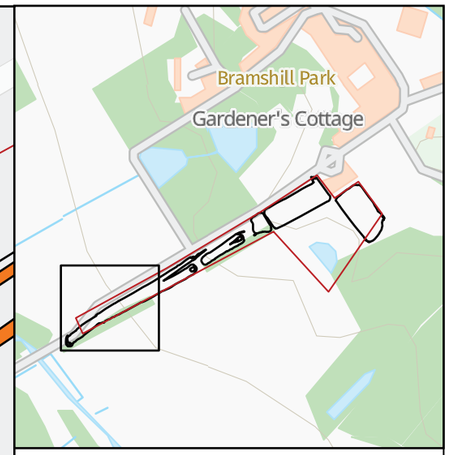
475500

475550

159450

159400

0.81 m - 0.91 m depth from surface



Site boundary
Detailed survey extent
Low amplitude
Vegetation
Modern service

0 20 m

Date: 25/08/2023	Created by: BH
Scale: 1:500 at A3	Revision: 0

Figure 20: Ground penetrating radar survey results: Timeslice 09 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475850

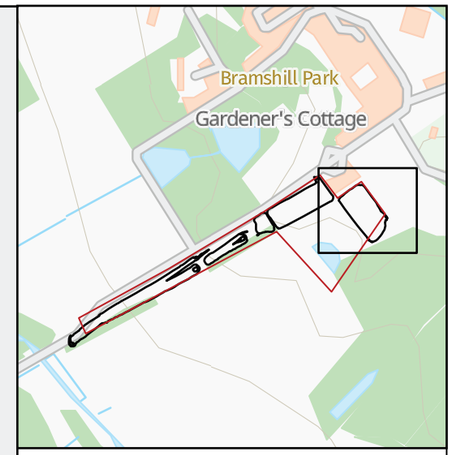
475900

475950

159600

159550

1.01 m - 1.11 m depth from surface



Site boundary

Detailed survey extent

Unsurveyable

Low amplitude

High amplitude

0

20 m

Date: 25/08/2023	Created by: BH	
Scale: 1:500 at A3	Revision: 0	

Figure 21: Ground penetrating radar survey results: Timeslice 11 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475850

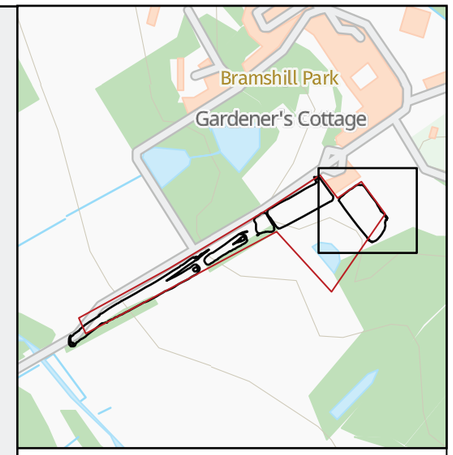
475900

475950

159600

159550

1.01 m - 1.11 m depth from surface



- Site boundary
- Detailed survey extent
- Unsurveyable
- Archaeology
- Possible archaeology
- High amplitude
- Low amplitude
- Historic landscape feature
- Modern service

0 20 m

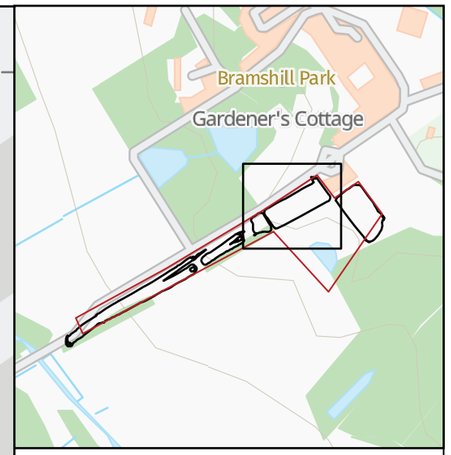
Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

Figure 22: Ground penetrating radar survey results: Timeslice 11 interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475750
475800
475850
159650
159600
159550
Mansion Dr
1.01 m - 1.11 m depth from surface



Site boundary
Detailed survey extent
Unsurveyable

Low amplitude
High amplitude

0
20 m

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 23: Ground penetrating radar survey results: Timeslice 11 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475750
475800
475850
159650
159600
159550
Mansion Dr
Bramshill Park
Gardener's Cottage
Site boundary
Detailed survey extent
Unsurveyable
Archaeology
High amplitude
Low amplitude
Historic landscape feature
Geology
Vegetation
Modern service
0
20 m
1.01 m - 1.11 m depth from surface

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 24: Ground penetrating radar survey results: Timeslice 11 interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475600 475650 475700

159550 159500 159450

Lower Pool Rd

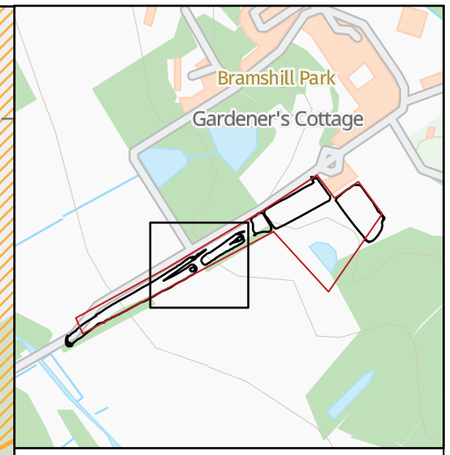
Mansion Dr

Mansion Dr

70

70

70



Site boundary

Detailed survey extent

Unsurveyable

Low amplitude High amplitude

0 20 m

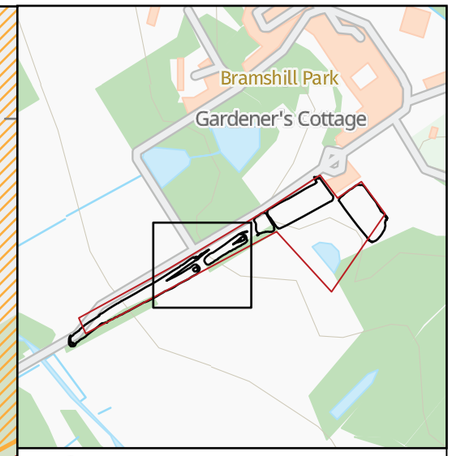
1.01 m - 1.11 m depth from surface

Date: 25/08/2023	Created by: BH
Scale: 1:500 at A3	Revision: 0

Figure 25: Ground penetrating radar survey results: Timeslice 11 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475600
475650
475700
159550
159500
159450
Lower Pool Rd
Mansion Dr
Mansion Dr
70
70



Site boundary
Detailed survey extent
Unsurveyable
Possible archaeology
Geology
Modern service

0
20 m

1.01 m - 1.11 m depth from surface

Date: 25/08/2023 | Created by: BH
Scale: 1:500 at A3 | Revision: 0

Figure 26: Ground penetrating radar survey results: Timeslice 11 interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

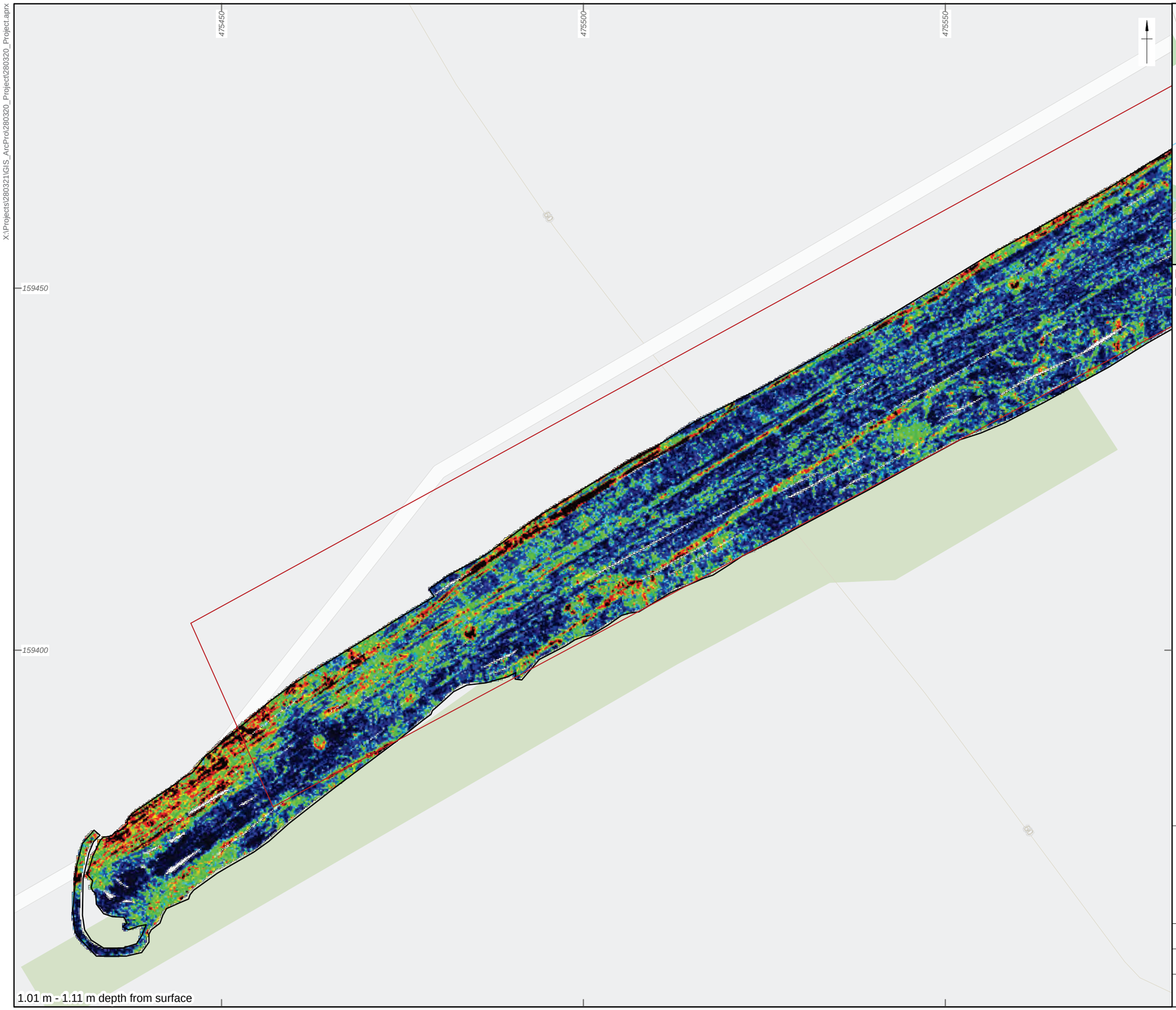
475450

475500

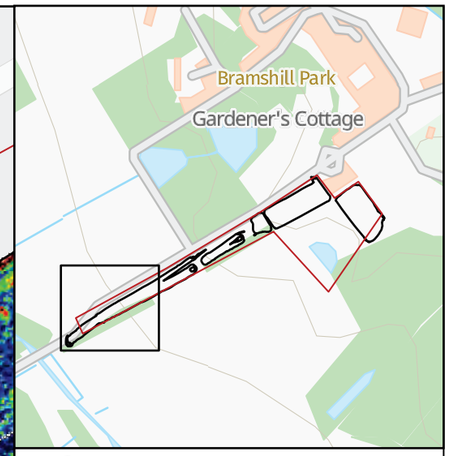
475550

159450

159400



1.01 m - 1.11 m depth from surface



Site boundary

Detailed survey extent

Low amplitude

High amplitude

0

20 m

Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

Figure 27: Ground penetrating radar survey results: Timeslice 11 colourscale

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475450

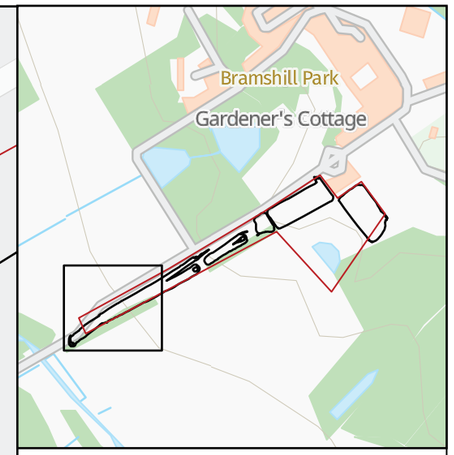
475500

475550

159450

159400

1.01 m - 1.11 m depth from surface



Site boundary

Detailed survey extent

Vegetation

0 20 m

Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

Figure 28: Ground penetrating radar survey results: Timeslice 11 interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475850

475900

475950

159600

159550

4000

4001

4027

4012

4016

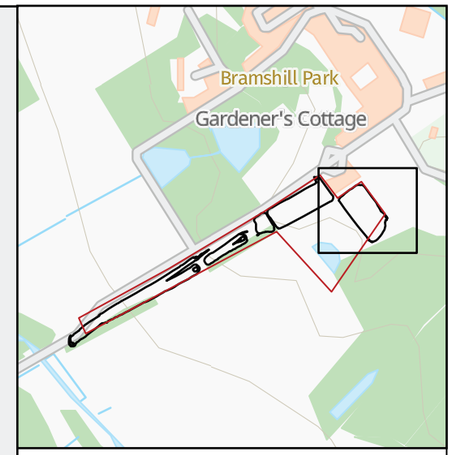
4015

4028

4013

4014

4017



Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Historic landscape feature
High amplitude
Low amplitude
Geology
Vegetation
Modern services

0 20 m

Coordinate system: OSGB 1936 British National Grid

Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

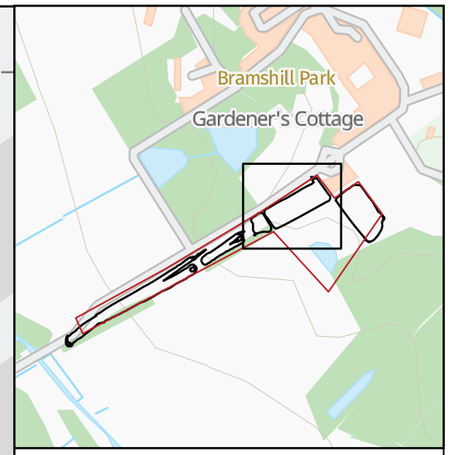
Figure 29: Ground penetrating radar survey results: combined interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475750
475800
475850
159650
159600
159550

Mansion Dr

4000
4009
4010
4004
4003b
4001
4007
4003a
4006
4008
4002
4030
4029
4011
4005
4020
4032
4031
4019
4033



- Site boundary
- Detailed survey extent
- Archaeology
- Possible archaeology
- Historic landscape feature
- High amplitude
- Low amplitude
- Geology
- Vegetation
- Modern services

0 20 m

Date: 25/08/2023 | Created by: BH

Scale: 1:500 at A3 | Revision: 0

Figure 30: Ground penetrating radar survey results: combined interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475600 475650 475700

159550 159500 159450

Lower Pool Rd

Mansion Dr

Mansion Dr

4035

4034

4021

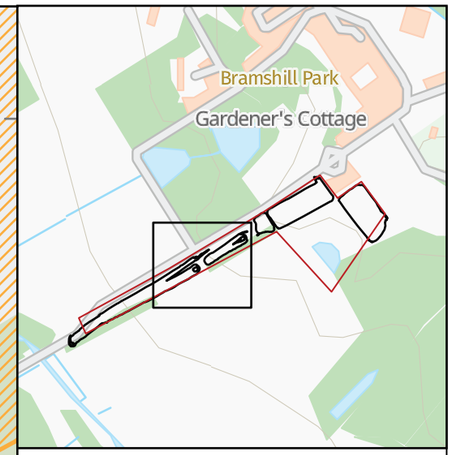
4018

4038

4039

4037

4036



Site boundary
Detailed survey extent
Archaeology
Possible archaeology
Historic landscape feature
High amplitude
Low amplitude
Geology
Vegetation
Modern services

0 20 m

Coordinate system: OSGB 1936 British National Grid

Date: 25/08/2023 | Created by: BH

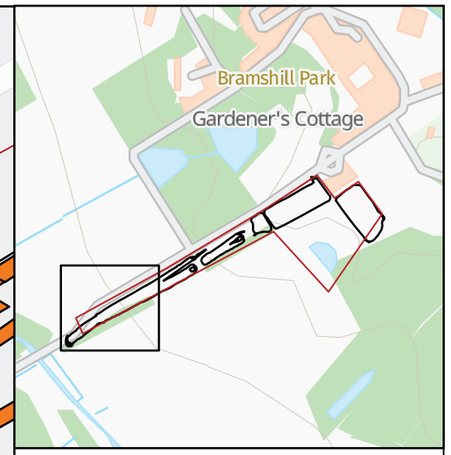
Scale: 1:500 at A3 | Revision: 0

Figure 31: Ground penetrating radar survey results: combined interpretation

X:\Projects\2803211\GIS_ArcPro\280320_Project\280320_Project.aprx

475450
475500
475550
159450
159400

4039
4022
4042
4040
4023
4024
4041
4043
4026
4025



- Site boundary
- Detailed survey extent
- Archaeology
- Possible archaeology
- Historic landscape feature
- High amplitude
- Low amplitude
- Geology
- Vegetation
- Modern services

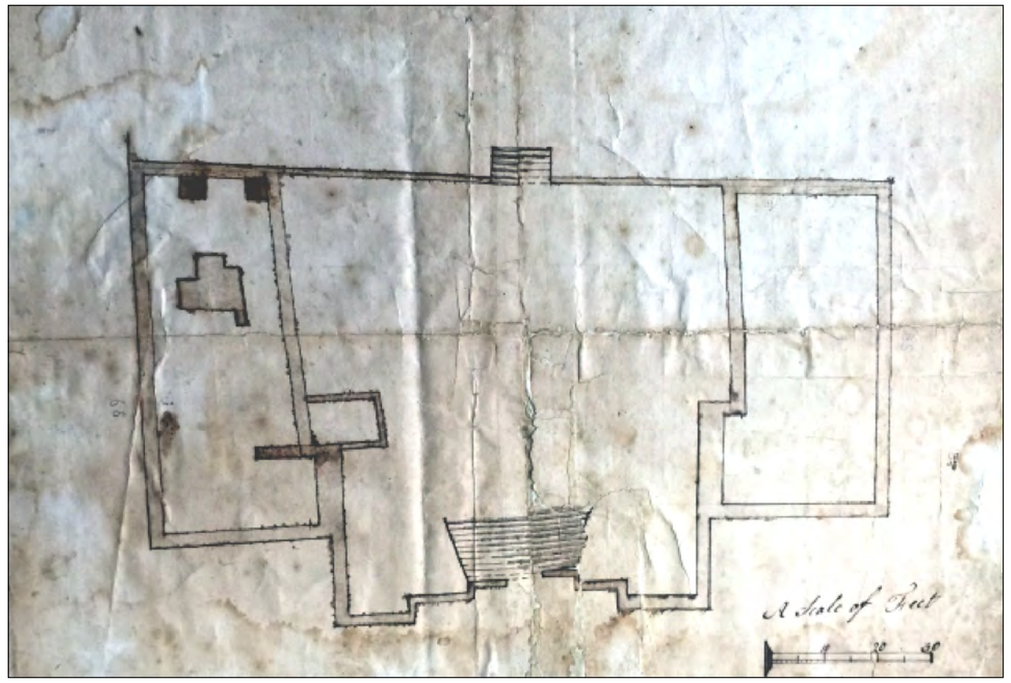
0 20 m

Date: 25/08/2023 | Created by: BH

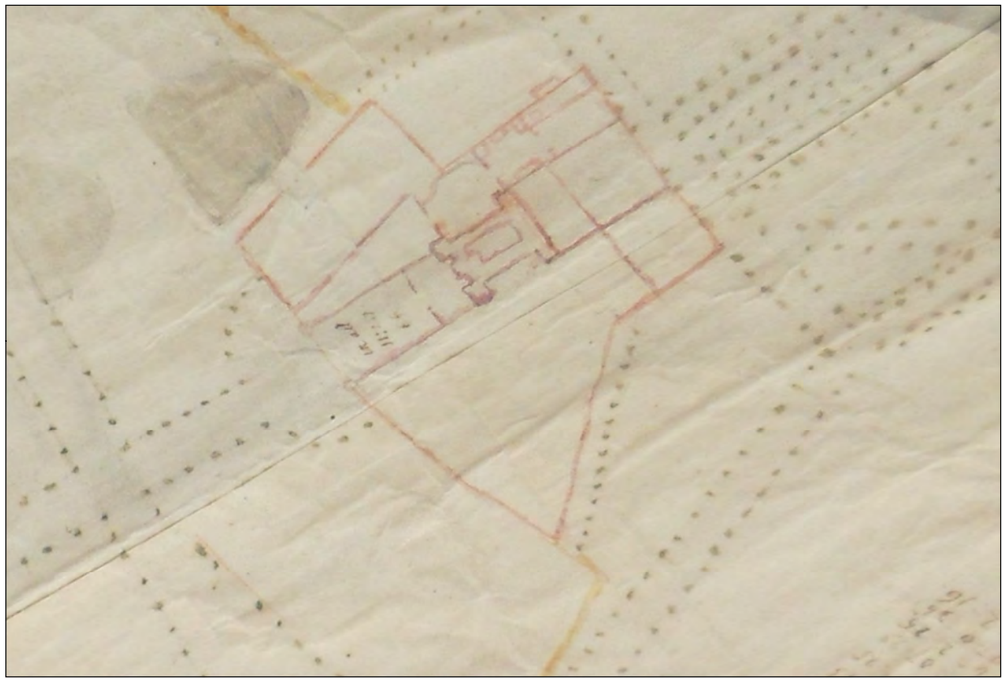
Scale: 1:500 at A3 | Revision: 0

Figure 32: Ground penetrating radar survey results: combined interpretation

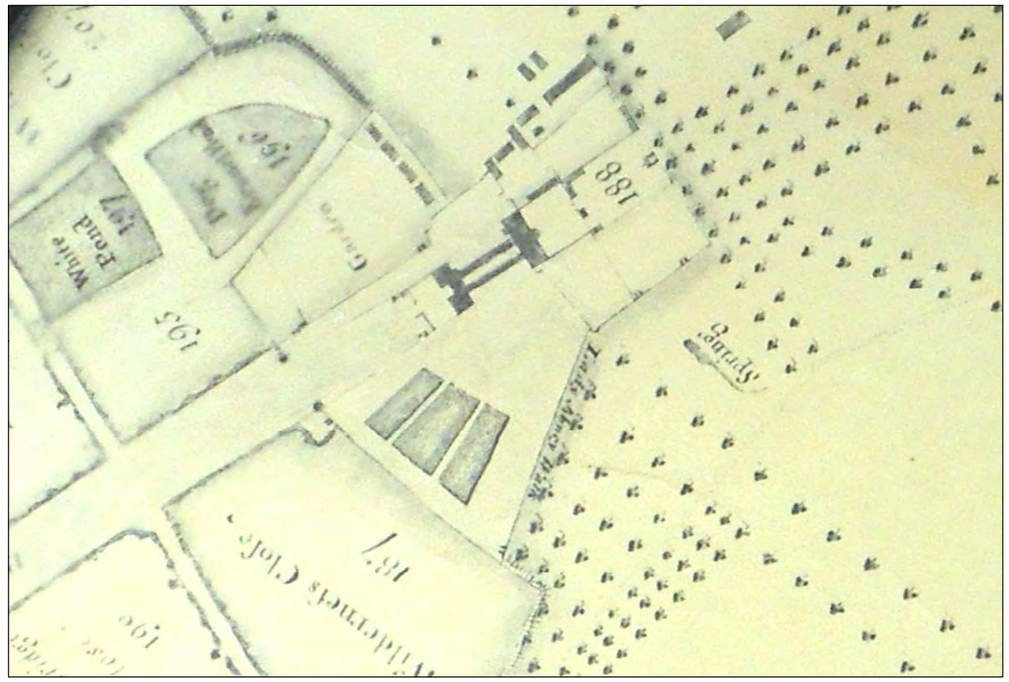
Map A) 1699 map by Issac Justis



Map B) 1766 plan of former wings (orientation hasn't be corrected)

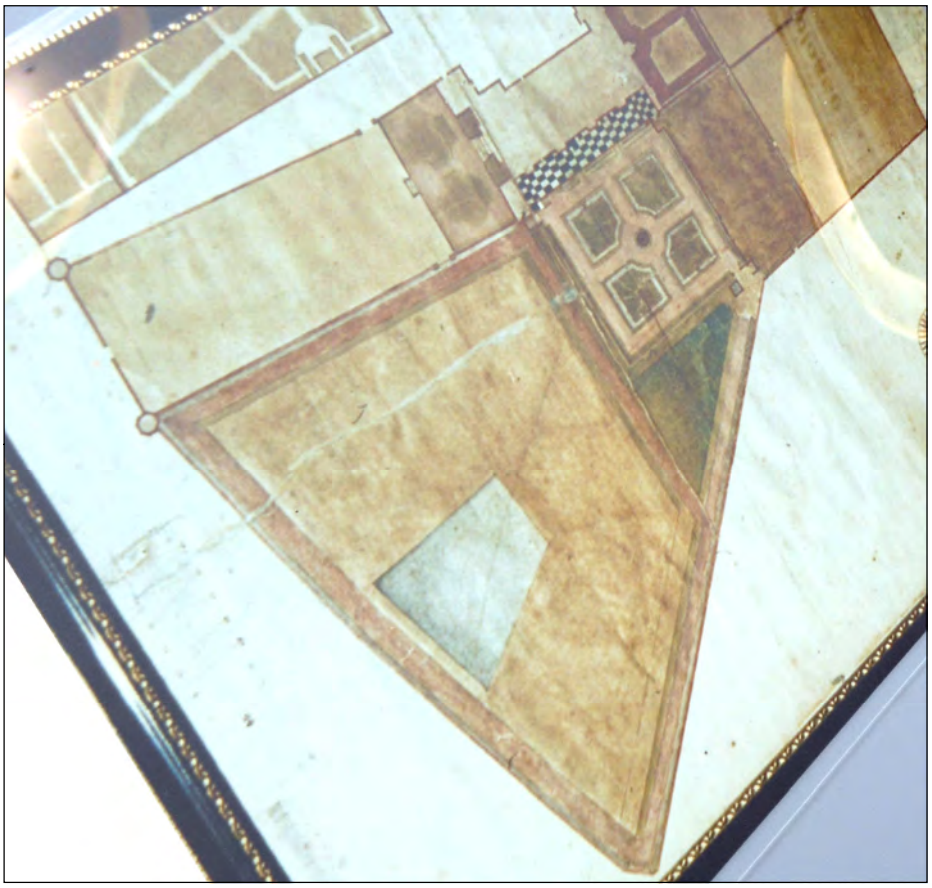


Map C) c.1735 plan of Bramshill estate



Map D) 1756-7 plan of Bramshill estate

Date:	25/08/2023	Revision Number:	0
Scale:	N/A	Illustrator:	Naomi_B
Path:	\GIS Shore To Ship - wessex\Projects\280320\GIS\Graphics\Figures\MXD		



Map E) Derring's plan of 1715-6

Map F) 18th century plan of the 'Italian Garden'

Date:	25/08/2023	Revision Number:	0
Scale:	N/A	Illustrator:	Naomi_B
Path:	\GIS Shore To Ship - wessex\Projects\280320\GIS\Graphics\Figures\MXD		

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