

Archaeology Wales

Land at Blaengwrog, Beulah, Ceredigion

Geophysical Survey Report



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Report No. 1901

Archaeology Wales

Land at Blaengwrog, Beulah, Ceredigion

Geophysical Survey Report

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Summary

This report results from work carried out by Archaeology Wales Ltd (AW) for Gareth Davies Ltd, following recommendations made by Dyfed Archaeological Trust (DAT). It draws on the results of a geophysical survey undertaken on land at Blaengwrog, Beulah, Ceredigion, prior to determination of a planning permission. The location of the survey was centred on NGR SN 27773 43754 (henceforth "the site").

The aim of the geophysical survey was to determine the nature and extent of any buried archaeological features within the proposed development area. The work was undertaken using a Bartington Grad601-2 dual fluxgate gradiometer.

Several linear anomalies of a positive polarity were identified. Comparison with aerial photographs held by the RCAHMW confirm that these anomalies mirror some of the visible cropmarks noted in a survey of prehistoric defended enclosures conducted by Cambria Archaeology in 2006. In particular, a possible small sub-square enclosure and a series of parallel N-S aligned irregular linear anomalies, have been interpreted as possible ditches or gullies associated with the cropmark enclosures. Two faintly positive circular or elliptical responses may also indicate the truncated remains of prehistoric roundhouses.

The work was carried out to the Standard and Guidance set out by the Chartered Institute for Archaeologists for archaeological geophysical survey (CIfA 2014), and completed in accordance with EAC Guidelines for the Use of Geophysics in Archaeology (Historic England 2016).

Crynodeb

Mae'r adroddiad hwn yn deillio o waith a wnaed gan archeoleg Cymru Cyf (AW) ar gyfer Gareth Davies Cyf, yn dilyn argymhellion a wnaed gan Ymddiriedolaeth Archeolegol Dyfed (DAT). Mae'n tynnu ar ganlyniadau arolwg geoffisegol a gynhaliwyd ar dir ym Mlaenwrog, Beulah, Ceredigion, cyn penderfynu ar ganiatâd cynllunio. Roedd lleoliad yr arolwg yn canolbwyntio ar NGR SN 27773 43754 (henffych "y safle").

Nod yr arolwg geoffisegol oedd pennu natur a graddau unrhyw nodweddion archeolegol claddedig o fewn y maes datblygu arfaethedig. Ymgwymerwyd â'r gwaith gan ddefnyddio Grad601 Bartington-2 o raddiomedr deuol.

Nodwyd sawl anghysondeb llinol o Polaredd cadarnhaol. O gymharu â ffotograffau o'r awyr a ddelir gan CBHC, mae'r anomaleddau hyn yn adlewyrchu rhai o'r crofnodau gweladwy a nodwyd mewn arolwg o glostiroedd amddiffynedig cynhanesyddol a gynhaliwyd gan Archeoleg Cambria yn 2006. Yn benodol, mae clostir is-sgwâr bach posibl a chyfres o anghysonderau llinellol afreolaidd yn cyd-fynd â'i gilydd, wedi cael eu dehongli fel ffosydd neu gyliau sy'n gysylltiedig â'r llociau cropmark. Gall dau ymateb mewn cylchlythyr neu elitigol positif fod yn arwydd o weddillion tai crwn cynhanesyddol.

Cyflawnwyd y gwaith i'r safon a'r canllawiau a osodwyd gan Sefydliad Siartredig yr Archaeolegwyr ar gyfer arolwg geoffisegol archeolegol (CifA 2014), ac fe'u cwblhawyd yn unol â chanllawiau'r Pwyllgor ar gyfer defnyddio geoffiseg mewn archaeoleg (Historic England 2016).

1. Introduction

1.1 Location and scope of work

On 2 July 2020, Archaeology Wales Ltd (AW) carried out a geophysical survey on the site of a proposed erection of bungalow and garage, dog breeding kennels and stables.

The site is located on 1.13 hectares of land at Blaengwrog, Beulah, Ceredigion, SA38 9QS (Figure 1 and 2). On consultation with DAT, a phased mitigation approach was requested in a letter dated 18th June 2020. This would involve geophysical survey in the first instance. Any further stages will depend on the results of this initial survey.

Subsequently, a Written Scheme of Investigations (WSI) was prepared by AW at the request of Gareth Davies. It provided information on the methodology to be employed by AW during a geophysical survey of the site. The WSI was submitted to, and approved, by DAT-DM prior to the survey being undertaken.

The work was managed by Dr John Davey MCifA MIST (RSci), AW Project Manager, and the site work was undertaken by Jennifer Muller and James Evans on 2nd July 2020.

1.2 Site Description and Geology

The proposed development site comprises the northern half of a single gently sloping pasture field on the east side of the small hill at Bryneurin, centred on NGR SN 27773 43754 (plates 1& 2). It lies on the eastern side of a small uncategorized lane linking the hamlet of Rhippinllwyd with the village of Beulah (Figure 1). The site is bounded on all sides by enclosed pasture fields except on the west where it is bounded by the lane (Figure 2).

The solid geology of the proposed development area comprises rocks of the Nantmel Mudstones Formation; sedimentary Bedrock formed approximately 444 to 449 million years ago in the Ordovician Period. There are no recorded superficial deposits (BGS, 2020).

The soil type within the site comprises a Freely draining slightly acid loamy soil (Soilscapes, 2020).

1.3 Archaeological and Historical Background

The site is located immediately adjacent to a series of crop mark features identified through aerial photography and thought to represent the location of a field system or prehistoric enclosure (PRN 35748). This in turn lies adjacent to a Roman defended enclosure (PRN 14319). A further cropmark lies a short distance to the west (PRN 14320). Consequently, there is a strong possibility that archaeological material may extend into the proposed development site. For this reason, DAT recommended that an archaeological evaluation should take place to determine the archaeological potential of the site prior to planning permission being determined. This evaluation will take a phased approach with a geophysical survey in the first instance. It is intended that the results of this survey will inform any subsequent phases of the evaluation such as trial trenching. The results of the evaluation will inform any subsequent mitigation during development.

2. Aims and Objectives

2.1 Geophysical Survey

The geophysical survey was undertaken in order to:

- The primary objective of the work has been to locate and describe archaeological features that may be present within the survey area. The work attempts to elucidate the presence or absence of archaeological material that might be affected by the scheme, its character, distribution, extent and relative significance, providing sub-surface data to inform any future on-site works.
- It is the aim of this report to provide information which is sufficiently detailed to allow the archaeological resource to be better understood. The information could then be used to help inform further archaeological work undertaken in association with the proposed development.

3. Methodology

3.1 Geophysical Survey

The survey was carried out using a Bartington Grad601-2 dual sensor fluxgate gradiometer (plates 3 & 4). This instrument has been chosen due to its proven efficient and effective method of locating sub-surface archaeological anomalies on greenfield

sites. The machine consists of two high stability fluxgate sensors suspended on a single frame, accurately aligned, that can detect localised magnetic anomalies compared with the general magnetic background. When mapped in a systematic manner this allows changes in the magnetic field resulting from differing features in the soil to be plotted. Strong magnetic anomalies will be generated by iron-based objects or areas modified by heat, such as hearths and kilns. More subtle anomalies may be generated by changes, typically in the iron-oxide content, of underlying soils, compared to the natural subsoil. This enables the detection of material infilling sub-surface archaeological features such as ditches, pits and structural remains. Data from this may be mapped at closely spaced regular intervals, to produce an image that may be interpreted to locate buried archaeological features (Clark, 1997) (Aspinall *et al*, 2011).

Moreover, Fluxgate gradiometry has the advantage of being able to identify the broadest range of sub-surface archaeological feature types and can detect such anomalies at a range of soil depths (typically 0.3-1m).

Fluxgate gradiometry has been chosen as the principal survey tool above resistivity or earth resistance survey because resistance results are susceptible to changes in soil moisture conditions. Extremely wet or dry conditions can significantly modify the ability of the soil to conduct an electrical current, masking the more subtle responses from sub-surface archaeological features. Equally, earth resistance survey is unlikely to identify archaeological features such as hearths, which may not vary from the natural subsoil in terms of conductivity of electric current but will nevertheless produce an enhanced magnetic response (David, 2008, 8-13). Ground penetrating radar is generally best suited to producing time slices or isolated soil profiles, which are not ideally suited for archaeological site plans or interpretations (Schmidt *et al*, 2015, 14).

The site was located by GPS. All survey points were located with the GPS and plotted onto an O.S. base map.

The on-site survey was undertaken in a single phase lasting one day.

Detailed survey was carried out in grids of 30m x 30m along zig-zag and parallel traverses spaced at 1m intervals, recording data points spaced at 0.25m intervals to a maximum instrument sensitivity of 0.1nT in accordance with Historic England Guidelines. The survey mode was set to bi-directional (traverses walked alternately northwest-southeast/southeast-northwest). Incomplete survey lines resulting from irregular area boundaries or obstacles were completed using the 'dummy log' key. At regular intervals the data was downloaded in the field onto a laptop computer for storage and assessment.

3.2 Data Processing and Presentation

Following the completion of the detailed survey, processing and analysis took place using the TerraSurveyor v.3 software package.

A composite of each detailed survey area has been created and processed using Terrasurveyor v.3. The report includes raw and unclipped data in both greyscale, colour, and x-y trace plots. The presented data is unprocessed. Every effort has been made to reduce the instrument directional sensitivity in the field rather than reliance on post data-collection processing.

The final results have been presented at an appropriate scale tied to the Ordnance Survey National Grid.

The most typical method of visualising the data is as a greyscale image (Figure 3). In a greyscale plot, each data point is represented as a shade of grey, from black to white at either extreme of the data range. A limited number of standard operations can be carried out to process the data, including clipping and graduated shade. The data was analysed using a variety of parameters and styles and the most useful of these were saved as *.TIF images and displayed (Figures 3-5) using Adobe Illustrator software. The results of the survey were then overlaid onto a digital map of the study area. This was then used to produce interpretation figures (Figure 6).

- 1.1 All works were undertaken in accordance with the standard required by The Chartered Institute for Archaeologists' *Standard and Guidance for Archaeological Geophysical Survey* (2014) and current Health and Safety legislation. All works were also undertaken in accordance with the latest Construction Sector guidelines - *Site Operating Procedures Protecting Your Workforce During Coronavirus (Covid-19)* (Construction Leadership Council, July 2020).

4. Geophysical Survey Results

4.1 Limitations

The survey was undertaken during a period of warm, partly cloudy weather.

The survey area contained no limitations, save the boundaries – which contained metal fencing – and gates into the field, all of which were avoided due to their magnetic interference.

The dominant magnetic responses revealed through the survey have been from modern plough scars and these responses have tended to mask the fainter responses from earlier archaeological features. It may also be that this modern ploughing has severely truncated earlier features also resulting in faint responses from the earlier features. A combination of the raw and clipped data (Figures 3-5) has therefore been used in interpreting the results as necessary.

4.2 Results of the Survey (Fig 6)

Immediately apparent within the survey results are parallel linears (F1) running north-west/south-east throughout the entire survey area. With an alternating positive and negative polarity, coupled with their regular nature, these features are interpreted as modern plough scars. The Southwestern most pair of plough scars run parallel with the modern field boundary and road, whilst the remainder run approximately N-S in very regular fashion across the entire field. It should be noted that only a selection of these features have been highlighted in the interpretative Figure 6.

Two dipolar anomalies (F2) appear in the field, one at the north-west corner, and the other at the north-east end. These are responses usually due to an iron object on or in the ground.

Running approximately E-W across the survey area are a number of faint parallel linear positive magnetic responses (F3). These trends are likely the result of the truncated remains of an earlier system of ploughing. They are fairly regularly spaced at approximately 2.5m apart suggesting that they may represent the remains of narrow rig ploughing rather than medieval ridge and furrow. Their alignment does not conform to that of the modern field boundaries and it is also possible that they represent a response to geological trends.

Running approximately southwest-northeast is another set of positive linear magnetic responses (F4). These anomalies correspond with a series of parallel cropmarks visible on aerial photographs of the site (DAT Images/AP89-100.28.jpg). Their alignment corresponds well with the northern field boundary and it may be that they represent the truncated remains of medieval ridge and furrow. Their spacing ranges from approximately 8m-5m apart.

Aerial Photography of the site also indicates the presence of a small sub-rectangular cropmark enclosure within the SW part of the survey area. Despite the interference from the trends outline above and the resulting truncation of earlier deposits, it is possible to identify this feature on the geophysical survey (F5). The enclosure measures approximately 24m N-W x 15m E-W and may be related to known

archaeological sites in the neighbouring field to the north. These neighbouring sites are thought to represent the location of a field system or prehistoric enclosure (PRN 35748) and a Roman defended enclosure (PRN 14319).

The faint outlines of two possible prehistoric circular or elliptical features F6 and F7 lie in close proximity to possible prehistoric enclosure F5 as well as other possible related archaeological features. To the west and outside of possible enclosure lies possible prehistoric circular feature F6 which measures approximately 8-9m in diameter. To the east lies F7 which measures slightly smaller at approximately 6.5m diameter. Both comprise faint circular responses suggestive of an eaves or drip gully as well as faintly positive point responses approximately at their centres suggestive of central hearths.

A fourth anomaly may be contemporary with features F5-7. This comprises a pair of faintly positive parallel linear responses F8 suggestive of a double ditched track. This anomaly also corresponds with a cropmark visible on aerial photographs of the site and may link the enclosure F5 with the prehistoric field system or enclosure in the neighbouring field (PRN 35748).

5. Interpretation and Discussion

Through personal communication with the landowner, information was relayed that this field has been regularly ploughed for many years in the same direction as the anomalies interpreted as modern plough scars (F1). He also relayed that the topsoil layer is approximately 20cm deep before hitting a layer of shale. It is possible that the shallowness of the topsoil has enhanced the magnetic response of these plough marks in the survey results.

The other magnetic responses (F2-8) are clearly truncated by the plough marks, distorting the earlier features slightly in the results. The landowner also reported that former ploughing went as deep as the natural shale layer.

The sub-rectangular feature (F5), as well as the curvilinear towards the north-west corner (F8), are both visible as cropmarks in an aerial photograph from Cambria Archaeology in 2004, when cropmark enclosure Blaentwrog I (PRN 14319) was photographed in the adjacent field to the north (Murphy et al. 2006). In fact, part of parallel linears F8 appear to continue into the adjacent field.

The faint circular or elliptical responses F6 and F7 are not visible on the available aerial photography and their interpretation must remain tentative until proven through intrusive archaeological investigation.

6. Conclusions

The survey has confirmed the potential for archaeological features within the development site. This is confirmed in the positive linears identified in the geophysical survey which match the cropmarks noted by Cambria Archaeology (Murphy et al. 2006). However, it is possible that these features may be severely truncated through regular ploughing over hundreds of years.

The possible archaeological remains identified on this site need to be confirmed through further archaeological investigation, potentially in the form of an intrusive trenched evaluation. However, situated as they are, adjacent to recorded prehistoric and Romano-British enclosures, they have the potential to elucidate the early development of the region as a whole.

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Soilscapes, 2020. www.landis.org.uk/soilscapes/



Figure 1: Location plan,

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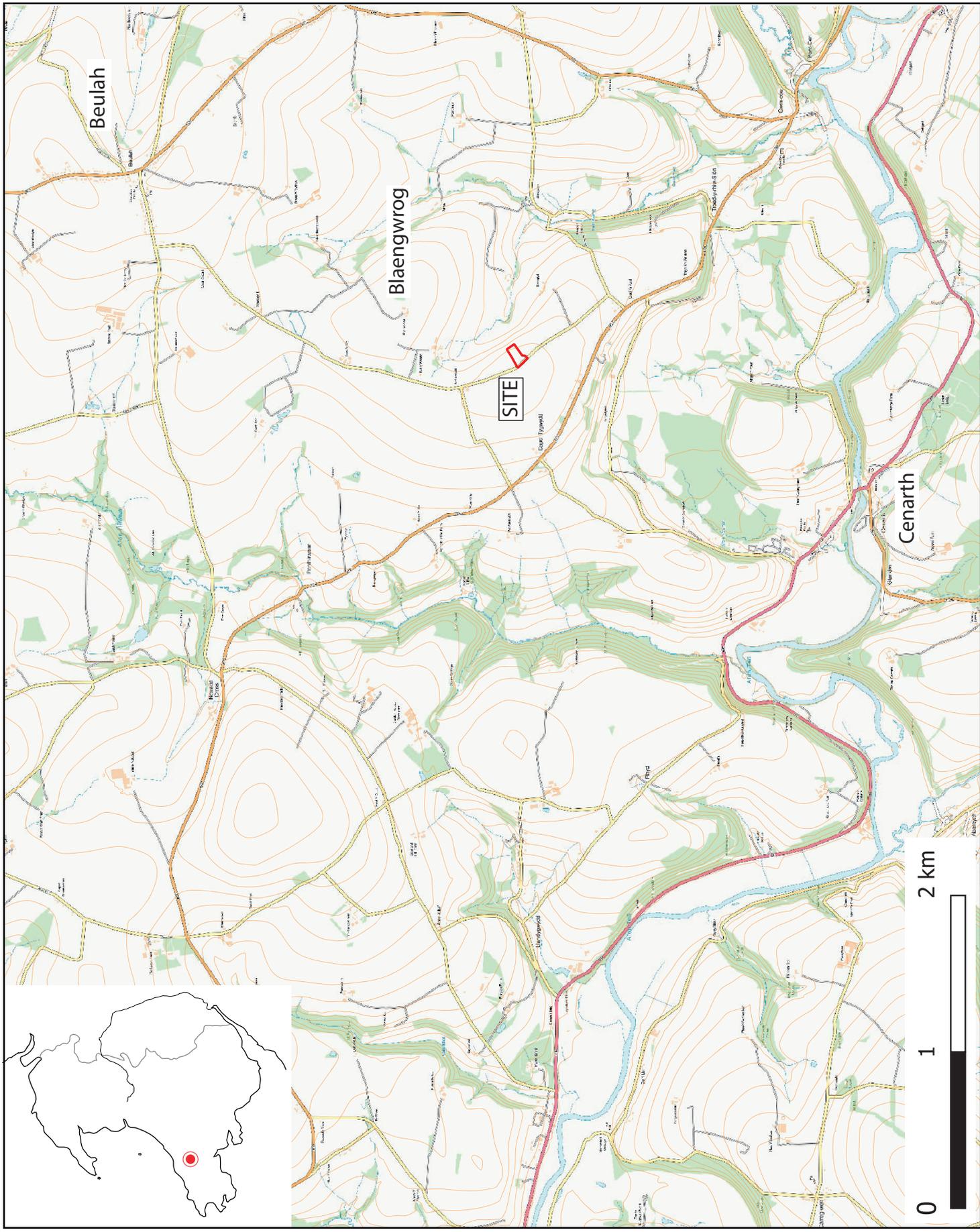




Figure 2:
Detailed Site Plan

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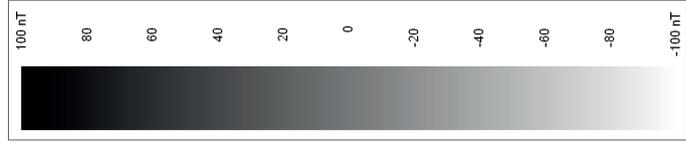


Figure 3:
Geophysical Survey
Results; greyscale

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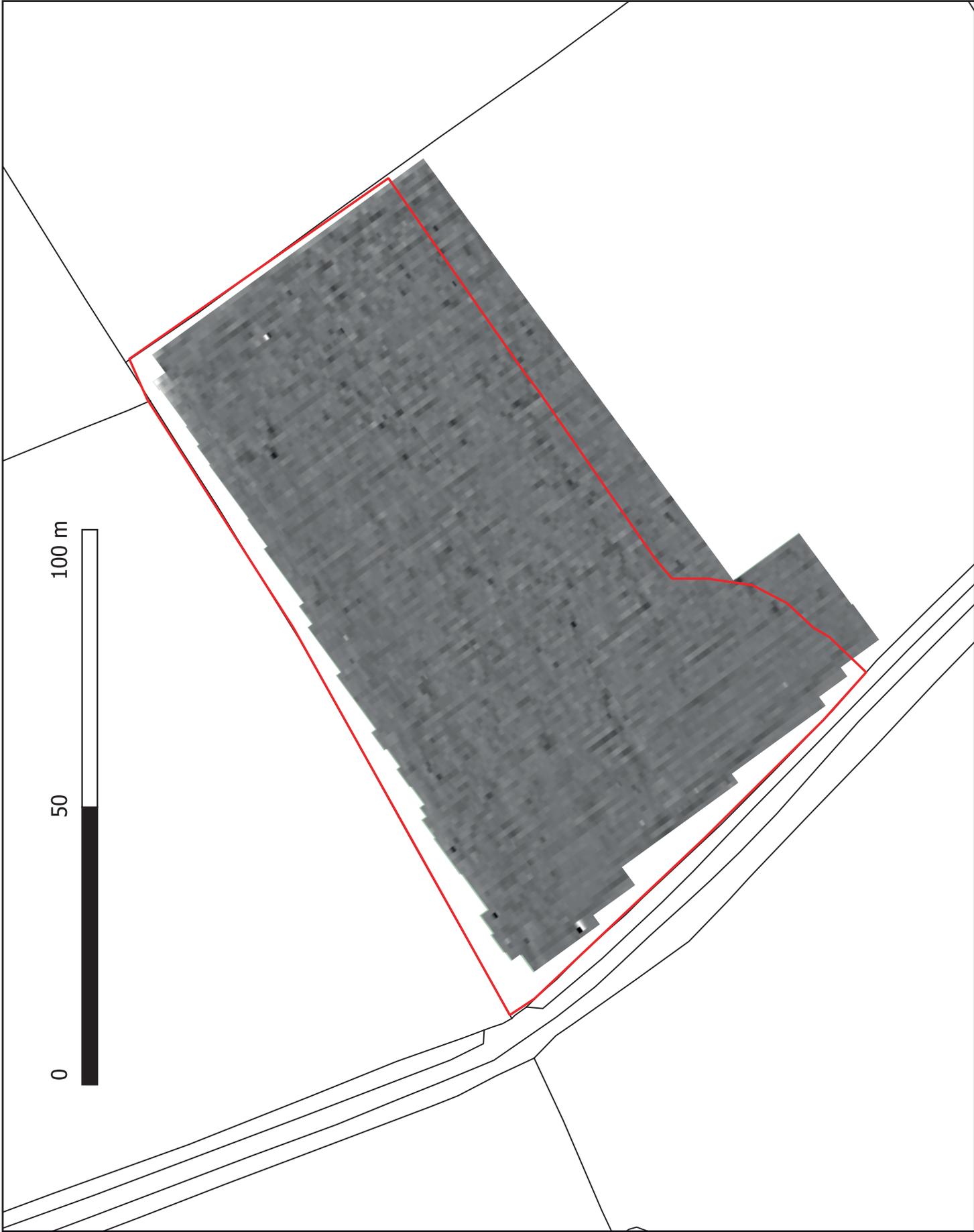


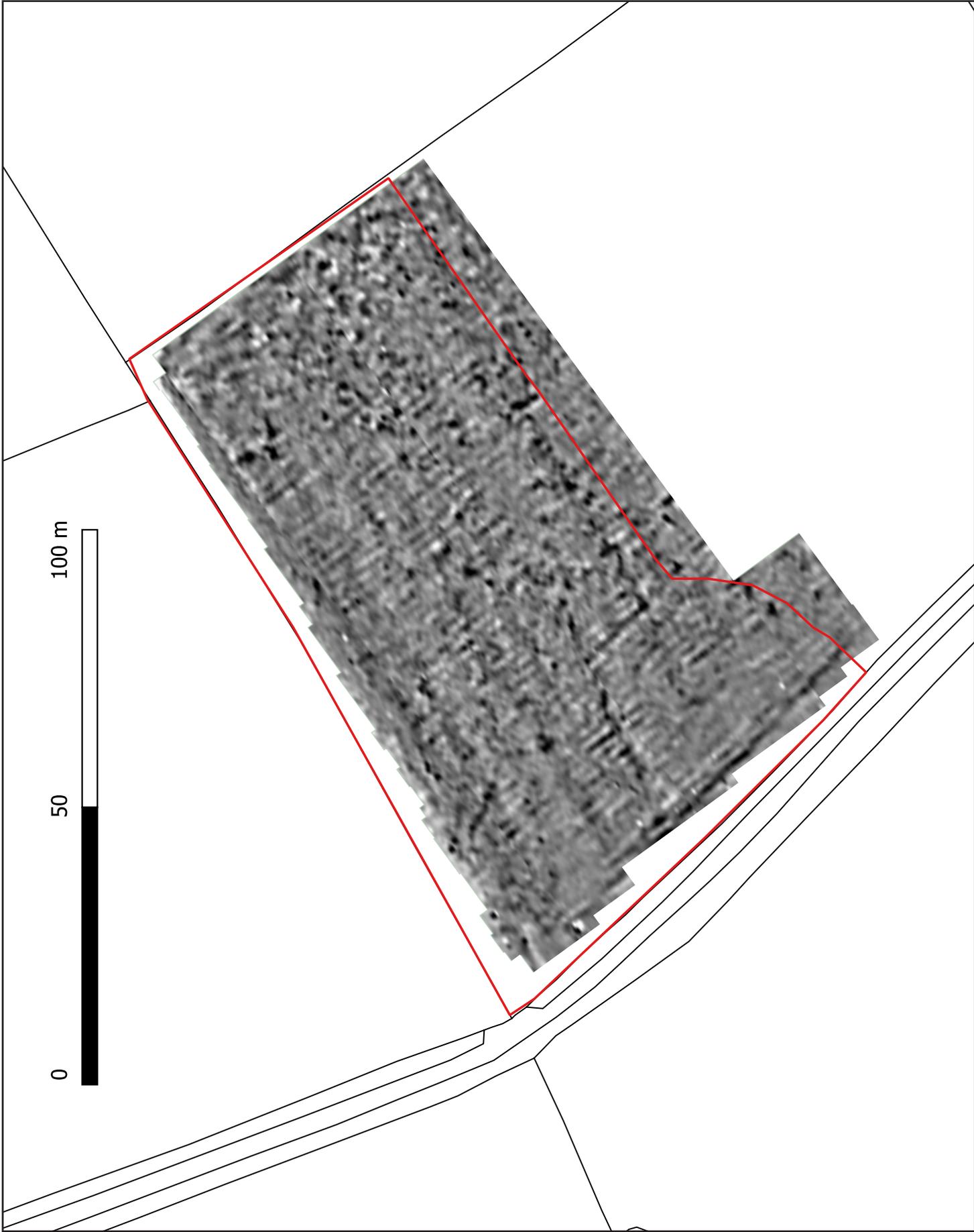




Figure 4:
Geophysical Survey
Results; clipped to +/-
25 nT

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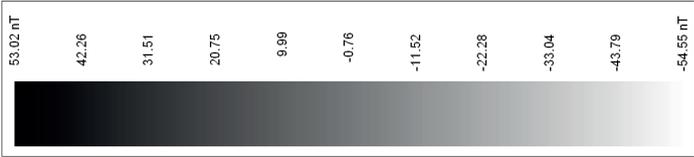
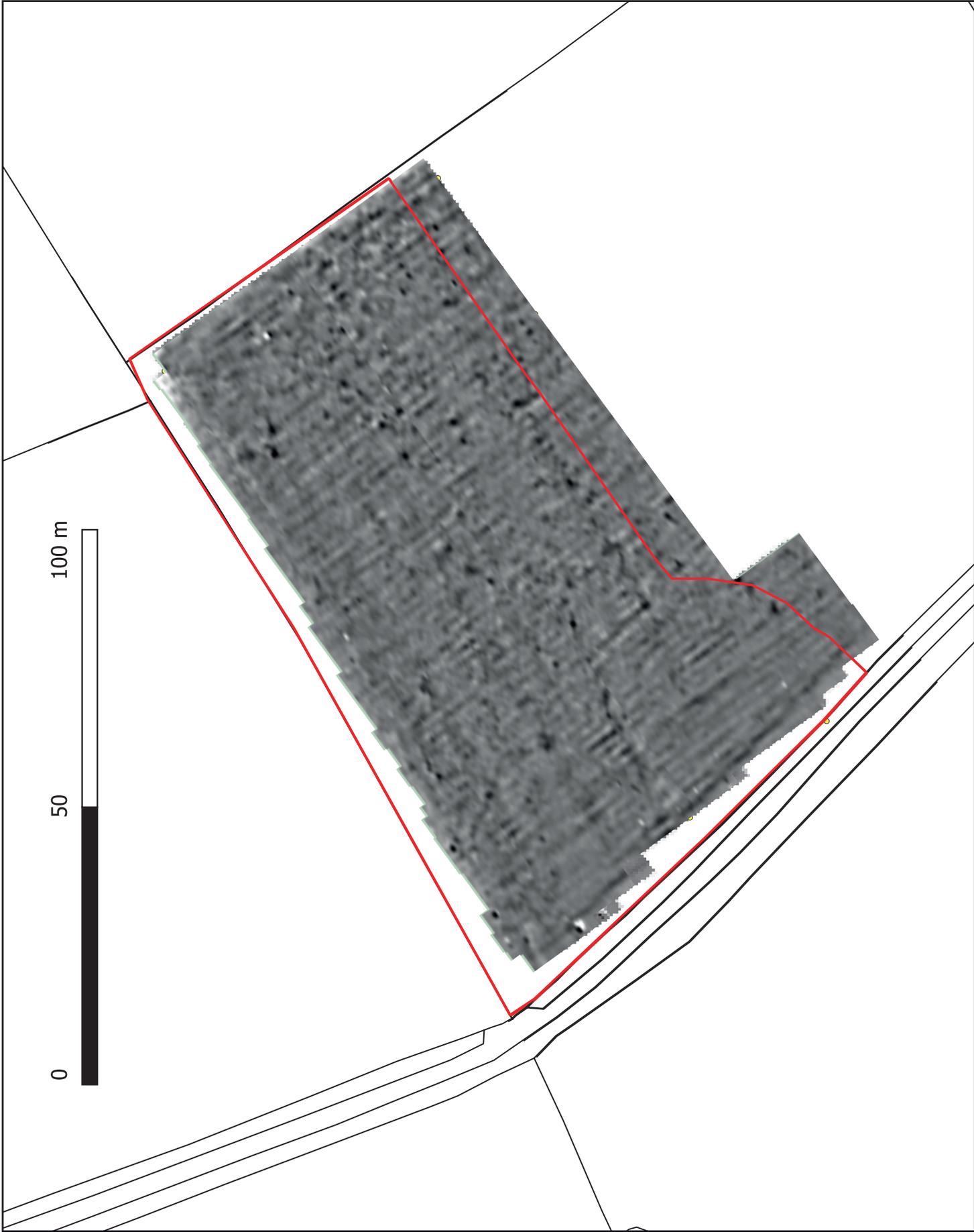
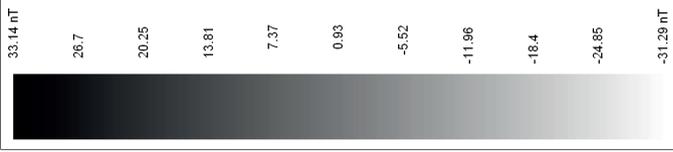


Figure 5:
Geophysical Survey
Results; clipped to +/-
50 nT

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**Figure 6:
Geophysical Survey
Results and
interpretation**

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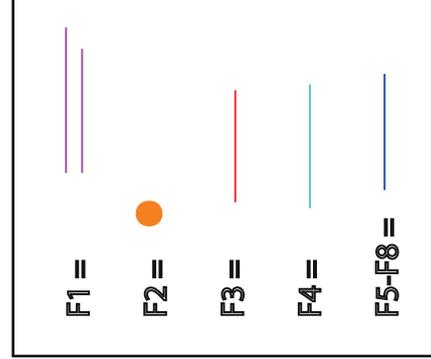
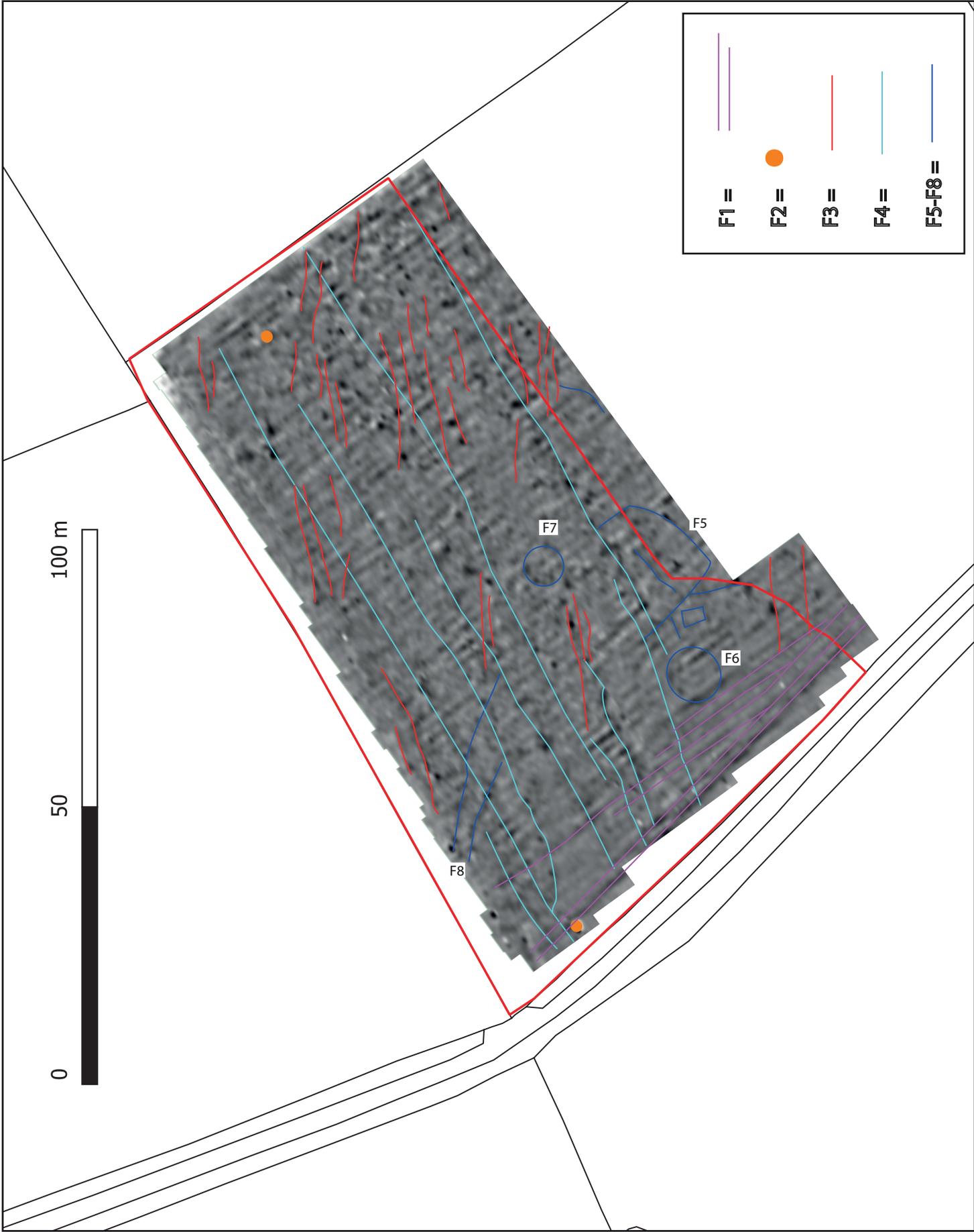




Plate 1: View of the site, looking E.



Plate 2: View of the site, looking NE.



Plate 3: Working shot of the survey, looking W.



Plate 4: Working shot during the survey, looking NE.

Archaeology
Wales

**APPENDIX I:
Written
Scheme of
Investigation**

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Written Scheme of Investigation
for a Geophysical Survey:
On Land at Blaengwrog, Beulah,
Ceredigion.

Prepared for:
Mr G Davies

Project No: 2813

July 2020

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NON-TECHNICAL SUMMARY

This Written Scheme of Investigation (WSI) details the proposal for geophysical survey of land at Blaengrwog, Beulah, Ceredigion, SA38 9QS. It has been prepared by Archaeology Wales Limited for Gareth Davies Ltd following consultation with Dyfed Archaeological Trust (DAT).

The application is for the erection of bungalow and garage, dog breeding kennels and stables. DAT have requested a phased approach to the archaeological mitigation, starting with geophysical survey.

1. Introduction

This Written Scheme of Investigation (WSI) details the methodology for a programme of geophysical survey to be undertaken at the site. The site is located on 1.13 hectares of land at Blaengrwog, Beulah, Ceredigion, SA38 9QS, (Figure 1 and 2) centred on NGR SN 27773 43754 (henceforth "the site"). The survey is being undertaken prior to determination of planning permission (Ceredigion County Council Planning Application Ref A200403 and following consultation with DAT

On consultation with DAT a phased mitigation approach was requested in a letter dated 18th June 2020. This would involve geophysical survey in the first instance. Any further stages will depend on the results of this initial survey.

This WSI has been prepared by John Davey, Archaeology Wales Ltd (henceforth - AW) at the request of Gareth Davies. It provides information on the methodology that will be employed by AW during a geophysical survey of the site. This WSI is to be approved by DAT-DM, prior to the survey being undertaken, in its capacity as archaeological advisors to the local planning authority.

All work will conform to the Standard and Guidance for Geophysical Survey (CIfA December 2014) and will be undertaken by suitably qualified staff to the highest professional standards.

2 Site Description & Archaeological Background

The proposed development area is on 1.13 hectares of land at Blaengrwog, Beulah, Ceredigion, SA38 9QS. The proposed development site comprises the northern half of a single gently sloping pasture field on the east side of the small hill at Bryneurin centred on NGR SN 27773 43754. It lies on the western side of a small uncategorised lane linking the hamlet of Rhippinllwyd with the village of Beulah. The site is bounded on all sides by enclosed pasture fields except on the west where it is bounded by the lane.

The solid geology of the proposed development area comprises rocks of the Nantmel Mudstones Formation; sedimentary Bedrock formed approximately 444 to 449 million years ago in the Ordovician Period. There are no recorded superficial deposits (BGS, 2020).

The soil type within the site comprises a Freely draining slightly acid loamy soil (Soilscapes, 2020).

The site is located immediately adjacent to a series of crop mark features thought to represent the location of a field system or prehistoric enclosure (PRN 35748). This in turn lies adjacent to a Roman defended enclosure (PRN 14319). A further cropmark lies a short distance to the west (PRN 14320). Consequently, there is a strong possibility that archaeological material may extend into the proposed development site. For this reason, DAT recommended that an archaeological evaluation should take place to determine the archaeological potential of the site prior to planning permission being determined. This evaluation should take a staged approach with a geophysical survey in the first instance with the results of this survey informing any subsequent phases of evaluation such as trial trenching. Once the evaluation is complete the results will inform any subsequent mitigation during development.

3 Objectives

This WSI sets out a program of works to ensure that the geophysical survey will meet the standard required by The Chartered Institute for Archaeologists' *Standard and Guidance for archaeological geophysical survey (2014)*.

The primary objective of the work will be to locate and describe, by means of geophysical survey, archaeological features that may be present within the survey area. The proposed archaeological work will attempt to elucidate the presence or absence of archaeological material that might be affected by the scheme, in particular its character, distribution, extent and relative significance.

A report will be produced that will provide information which is sufficiently detailed to allow the archaeological resource to be better understood. The information could then be used to help inform further archaeological work undertaken in association with the proposed development.

4 Methodology for geophysical survey

The area to be surveyed is currently under grass. On-site adjustments may be required to avoid areas of magnetic interference, inaccessibility due to the presence of mature trees or other obstacles.

The site will be located by GPS. All survey points will be located with a total station or similar survey equipment and plotted onto an O.S. base map.

The on-site survey will be undertaken in a single phase lasting approximately one day. This will be followed by report production.

Choice of Survey equipment

The survey will be carried out using a Bartington Grad601-2 dual sensor fluxgate gradiometer. This instrument has been chosen due to its proven efficient and effective method of locating sub-surface archaeological anomalies on greenfield sites. The equipment is particularly suited to surveys over areas of sedimentary geology, such as the current site. The relatively uniform surface will allow rapid traverses and readings to be taken at consistent heights above ground, with a relatively even depth of topsoil.

Fluxgate gradiometry has the advantage of being able to identify the broadest range of sub-surface archaeological feature types and can detect such anomalies at a range of soil depths (typically 0.3-1m). The Bartington grad601-2 consists of two high stability fluxgate sensors suspended on a single frame, accurately aligned, that can detect localised magnetic anomalies compared with the general magnetic background. When mapped in a systematic manner this allows changes in the magnetic field

resulting from differing features in the soil to be plotted. Strong magnetic anomalies will be generated by iron-based objects or areas modified by heat, such as hearths and kilns. More subtle anomalies may be generated by changes, typically in the iron-oxide content, of underlying soils, compared to the natural subsoil. This enables the detection of material infilling sub-surface archaeological features such as ditches, pits and structural remains.

Fluxgate gradiometry has been chosen as the principal survey tool above resistivity or earth resistance survey because resistance results are susceptible to changes in soil moisture conditions. Extremely wet or dry conditions can significantly modify the ability of the soil to conduct an electrical current, masking the more subtle responses from sub-surface archaeological features. Equally, earth resistance survey is unlikely to identify archaeological features such as hearths, which may not vary from the natural subsoil in terms of conductivity of electric current but will nevertheless produce an enhanced magnetic response (David, 2008, 8-13). Ground penetrating radar is generally best suited to producing time slices or isolated soil profiles, which are not ideally suited for archaeological site plans or interpretations (Schmidt et al, 2015, 14).

Survey Methodology

Each survey area will be divided into 20m or 30m square grids along a common alignment. Within each grid, parallel traverses 1m apart will be walked at rapid pace along the same orientation. Instrument readings will be logged at 0.25m intervals, with an average cycle of 4 using an ST1 internal sample trigger. Incomplete survey lines resulting from irregular area boundaries or obstacles will be completed using the "dummy log" key.

Further survey information will be completed on the relevant pro-forma sheet. All data will be downloaded in the field into a laptop computer. The location of the grid corners will be recorded using a total station or similar survey equipment so that results can be accurately placed onto an OS map.

A composite of each detailed survey area will be created and processed using the software package *Terrasurveyor v.3*. The report will include raw and unclipped data in both greyscale and x y trace plots. The data will only be minimally processed and all processing techniques that are used will be accompanied by a full justification statement as well as a statement on what, if any, archaeological remains might be lost or minimised as a result of this processing. For example, the excessive use of de-stripe can be an indication of poorly calibrated equipment and every effort will be made to reduce the instrument directional sensitivity in the field rather than reliance on post data-collection processing.

The final results will be presented at an appropriate scale tied to the Ordnance Survey National Grid.

5 Monitoring

DAT-DM will be contacted approximately one week prior to the commencement of site works, and subsequently once the work is underway.

Any changes to this WSI that AW may wish to make after approval will be communicated to DAT-DM for approval on behalf of the Planning Authority.

DAT-DM will be given access to the site so that they can monitor the progress of the work, they will be kept regularly informed about developments, both during the site works and subsequently during the post-fieldwork programme.

5 Post-fieldwork programme

Site archive

An ordered and integrated project archive will be prepared in accordance with guidelines set out in *EAC Guidelines for the Use of Geophysics in Archaeology 2015*; *Geophysical Data in Archaeology: A Guide to Good Practice* (Schmidt, 2011) and the guidelines of the Chartered Institute for Archaeologists. 2014. *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*.

6 Final Reporting

The client report will contain, as a minimum, the following elements:

- Concise non-technical summary of the results
- Introductory statements and project background
- Aims and purposes of the survey
- Methodology, including a description of, and reasoning behind, geophysical survey technique
- Detailed plans of the site and survey results. This will include raw and unclipped data in both greyscale and x y trace plots. All processing techniques used will be accompanied by a full justification statement. And what if any archaeological remains might be lost or minimised as a result of this processing.
- Site illustrations, related to Ordnance Datum
- Written description
- Written interpretation of results along with illustrated interpreted site plan
- Statement of local and regional context
- Conclusions as appropriate
- Index to and location of the digital archive
- Bibliography
- A copy of the AW Specification

Copies of the report will be sent to the Client, and a copy of the report will be sent to DAT-DM for approval. Following approval, a copy will also be sent to CCC and the regional Historic Environment Record. Digital copies will be provided in pdf format if required.

The report and all relevant information will be submitted to the Historic Environment Record following the guidelines and procedures laid out in the Chartered Institute for Archaeologists. 2014. *Standards and guidance for the collection, documentation, conservation and research of archaeological materials*. It will also conform to the guidelines set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records* (WAT 2018) and *EAC Guidelines for the Use of Geophysics in Archaeology 2015*.

A summary report of the work will be submitted for publication to a national journal no later than one year after the completion of the work.

7 Resources and timetable

Standards

AW works to the standards and guidance provided by the *Chartered Institute for Archaeologists*. AW fully recognise and endorse the Chartered Institute for Archaeologists' *Code of Conduct*, *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* and the *Standard and Guidance for archaeological geophysical survey* currently in force. All employees of AW, whether corporate members of the Chartered Institute for Archaeologists or not, are expected to adhere to these Codes and Standards during their employment.

Staff

The project will be undertaken by suitably qualified AW staff. Overall management of the project will be undertaken by John Davey MCIfA, AW Project Manager.

Equipment

The project will use a Bartington Grad601-2 dual sensor fluxgate gradiometer set to standard specifications.

Timetable of archaeological works

The work will be undertaken at the convenience of the client. No start date has yet been agreed, but this it is anticipated to start soon after approval of this WSI, if possible, July 2nd or 3rd 2020.

Insurance

AW is fully insured for this type of work and holds Insurance with Aviva Insurance Ltd and Hiscox Insurance Company Limited through Towergate Insurance. Full details of these and other relevant policies can be supplied on request.

Arbitration

Disputes or differences arising in relation to this work shall be referred for a decision in accordance with the Rules of the Chartered Institute of Arbitrators' *Arbitration Scheme for the Institute for Archaeologists* applying at the date of the agreement.

Health and safety

Prior to the commencement of work AW will carry out and produce a formal Health and Safety Risk Assessment in accordance with *The Management of Health and Safety Regulations* 1992. A copy of the risk assessment will be kept on site and be available for inspection on request. A copy will be sent to the client (or their agent as necessary) for their information. All members of AW staff will adhere to the content of this document.

AW will adhere to best practice with regard to Health and Safety in Archaeology as set out in the FAME (Federation of Archaeological Managers and Employers) health and safety manual *Health and Safety in Field Archaeology (2002)*.

Covid 19 specific Health and Safety Considerations

- If an AW Staff member believes they are at an increased risk from the virus they are to contact management.
- Please see attached Site Operating Procedures for full details and work in accordance with them.
- If anyone is showing symptoms of Covid-19 they are to go home immediately and notify the appropriate people.
- Staff must drive to site in a private vehicle alone or with someone from their household only. If sites require multiple staff members to attend, they will travel separately and will try to avoid the use of public transport (walking, cycling etc)
- Staff must stay at least 2m away from any person, who does not live within their own household, AT ALL TIMES. This includes on site, within office space, in the canteen and all other parts of the compound.
- Wash hands regularly and thoroughly, especially on arriving to site, leaving site and before eating.
- The staff members should take their own food and drink to site.
- Once returning home, appropriate care should be taken to ensure that contamination does not spread (change clothes, shower etc)
- Staff must avoid touching surfaces if possible. If they have to touch a surface, such as a door handle or toilet seat, staff must either wear gloves or wash their hands/ relevant body part with sterilising hand wash immediately afterwards. DO NOT touch your face after touching any surface. Staff should also disinfect surfaces before and after touching. Staff must bring their own sterilising handwash, wipes and gloves and

dispose of them safely after use.

- All staff must read, sign and adhere to the separate AW Covid – 19 risk assessment.
- If any AW staff, contractor or any other persons on site are not abiding by these rules, the staff member will remove themselves from the risk and contact the PM immediately.

References

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