

**HEOL Y PLAS, LLANNON,
CARMARTHENSHIRE
GEOPHYSICAL SURVEY 2017
(NGR SN 54125 08890)**



Prepared by DAT Archaeological Services
For: Asbri Planning Ltd/
Coastal Housing Group



ymddiriedolaeth archaeolego
DYFED
archaeological trust

DYFED ARCHAEOLOGICAL TRUST

RHIF YR ADRODDIAD / REPORT NO. 2017-68
RHIF Y PROSIECT / EVENT RECORD NO. 111149

Hydref 2017
October 2017



HEOL Y PLAS, LLANNON, CARMARTHENSHIRE

GEOPHYSICAL SURVEY 2017

Gan / By

Charles Enright

Paratowyd yr adroddiad yma at ddefnydd y cwsmer yn unig. Ni dderbynnir cyfrifoldeb gan Ymddiriedolaeth Archaeolegol Dyfed Cyf am ei ddefnyddio gan unrhyw berson na phersonau eraill a fydd yn ei ddarllen neu ddibynnu ar y gwybodaeth y mae'n ei gynnwys

The report has been prepared for the specific use of the client. Dyfed Archaeological Trust Limited can accept no responsibility for its use by any other person or persons who may read it or rely on the information it contains.



Ymddiriedolaeth Archaeolegol Dyfed Cyf
Neuadd y Sir, Stryd Caerfyrddin, Llandeilo, Sir
Gaerfyrddin SA19 6AF
Ffon: Ymholiadau Cyffredinol 01558 823121
Adran Rheoli Treftadaeth 01558 823131
Ffacs: 01558 823133
Ebost: info@dyfedarchaeology.org.uk
Gwefan: www.archaeolegdyfed.org.uk

Dyfed Archaeological Trust Limited
The Shire Hall, Carmarthen Street, Llandeilo,
Carmarthenshire SA19 6AF
Tel: General Enquiries 01558 823121
Heritage Management Section 01558 823131
Fax: 01558 823133
Email: info@dyfedarchaeology.org.uk
Website: www.dyfedarchaeology.org.uk

Cwmni cyfyngedig (1198990) ynghyd ag elusen gofrestredig (504616) yw'r Ymddiriedolaeth.
The Trust is both a Limited Company (No. 1198990) and a Registered Charity (No. 504616)
CADEIRYDD CHAIRMAN: Professor B Burnham. CYFARWYDDWR DIRECTOR: K Murphy BA MCIfA

**HEOL Y PLAS, LLANNON, CARMARTHENSHIRE
GEOPHYSICAL SURVEY**

CONTENTS

SUMMARY	1
1. INTRODUCTION	2
1.1 Project Commission	2
1.2 Scope of Project	2
1.3 Report Outline	3
1.4 Abbreviations	3
1.5 Illustrations	3
1.6 Timeline	3
2. THE SITE	6
2.1 Site Location	6
2.2 Archaeological Potential	6
3. METHODOLOGY	7
4. RESULTS AND DISCUSSION	8
5. CONCLUSIONS	12
6. SOURCES	13
APPENDIX I	16

TABLES

Table 1:	Archaeological and Historical Timeline for Wales	3
-----------------	--	---

FIGURES

Figure 1:	Location map, based on the Ordnance Survey.	4
Figure 2:	Plan of the proposed development site outline at land off Heol y Plas, Llannon	5
Figure 3:	Geophysical Survey Results	9
Figure 4:	Geophysical Interpretation Plot	10
Figure 5:	Probable archaeological features overlaid on 1 st edition OS map (1879)	11

HEOL Y PLAS, LLANNON, CARMARTHEHIRE
GEOPHYSICAL SURVEY

SUMMARY

DAT Archaeological Services were commissioned by Asbri Planning on behalf of Coastal Housing Group to undertake a geophysical survey on land at Heol Y Plas, Llannon Carmarthenshire. The survey was undertaken in advance of the submission of a planning application to develop the site for housing. It was anticipated that the geophysical survey would provide a better indication of the potential archaeology within the development area and if necessary inform targeted archaeological mitigation prior to or during development.

The survey was undertaken in October, 2017 and consisted of a fluxgate gradiometer survey, which detects variations in the earth's magnetic field. The survey has met the aims of the project by identifying the presence of potential buried archaeology and where possible inferences have been made to establish the character and extent of these deposits.

An examination of historic mapping indicated that some of the features identified by the geophysical survey were former field boundaries that traversed the site north to south and east to west. The survey also identified a possible former trackway that runs north-south across the development area that appears to correspond with a visible linear earthwork on the ground.

The characterisation of the remaining features identified by the geophysical survey is more uncertain. They include a second trackway of probable post-medieval origin; a cottage alluded to on the 1841 parish tithe map; and a possible prehistoric ring ditch that may represent evidence of much earlier human activity in this area.

The results of the geophysical survey have identified the potential for archaeological features and deposits to survive within the development area; some of which could be considered to be of local and regional importance.

Intrusive investigation would be required to ascertain the true nature, character and extent of the features and potentially provide dating material.

1. INTRODUCTION

1.1 Project Commission

1.1.1 DAT Archaeological Services were commissioned by Asbri Planning Ltd on behalf of Coastal Housing Group to undertake a geophysical survey in advance of submitting a planning application for development of the site located at Heol Y Plas, Llannon, Carmarthenshire (NGR SN 54125 08890 ; Figure 1 and 2). The potential development site covers an area of approximately 2ha in size and the proposed development will include some 45 units, a mix of both bungalows and houses with associated access and infrastructure works.

1.1.2 A Historic Environment Appraisal was prepared for the site by DAT Archaeological Services on behalf of Asbri planning. The report summarised the results as follows: `

Although there are no known archaeological sites within the development site, there are twenty four known archaeological or historical sites within a 1km buffer zone around the area and eleven listed buildings with 2km. The archaeological potential for hitherto unknown archaeological sites to be present within the proposed development area is considered to be low. There is a possibility that a field name on the tithe map of 1841 referred to a cottage within or near the proposed site boundary. This gives a low potential for buried remains of medieval and post-medieval date. The potential for features and finds originating from any time period before the medieval cannot be discounted, but is considered to be very low based on the dearth of other sites of these periods in the area (Day 2017).

1.1.3 The Historic Environment Appraisal went on to recommend that the site should be `subjected to a non-intrusive geophysical survey in order to better ascertain the potential archaeological of the 1.95ha site area.` (Day 2017).

1.1.4 The geophysical survey consisted of a fluxgate gradiometer survey, which detects variations in the earth's magnetic field. Readings were taken at 1.0m wide traverses and every 0.25m within a 30m x 30m grid across the proposed development area. The purpose of the geophysical survey is to provide a better indication of the archaeological potential of the site and enable targeting of any further archaeological mitigation requirements before or during the development. The archaeological advisor has stated that should the survey show no evidence of potential archaeology then no further work will be required.

1.1.5 A written scheme of investigation defining the archaeological works was produced by DAT Archaeological Services and was approved by Dyfed Archaeological Trust – Development Management (DAT-DM).

1.2 Scope of the project

1.2.1 The aims of the project were laid out in the written scheme of investigation for the geophysical survey were prepared by DAT Archaeological Services and approved by DAT-DM. The aims were thus:

- To identify the presence/absence of any archaeological deposits;
- To establish by geophysical survey, as far as is possible, the character, extent and date range for any archaeological deposits to be affected by the proposed ground works.

- To prepare a report and using the the results of the geophysical survey to determine if any further archaeological mitigation would be required at the site either prior to or during construction in order to mitigate against any disturbance to archaeological remains from the proposals.
- To prepare an archive for deposition in to the Historic Environment Record (HER).

1.3 Report outline

- 1.3.1 This report provides a summary and discussion of the geophysical survey and its results.

1.4 Abbreviations

- 1.4.1 Sites recorded on the Regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Gradiometer readings are measured in nanoTesla (nT).

1.5 Illustrations

- 1.5.1 Printed map extracts are not necessarily produced to their original scale.

1.6 Timeline

- 1.6.1 The following timeline (**Table 1**) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Period	Approximate date	
Palaeolithic –	c.450,000 – 10,000 BC	Prehistoric
Mesolithic –	c. 10,000 – 4400 BC	
Neolithic –	c.4400 – 2300 BC	
Bronze Age –	c.2300 – 700 BC	
Iron Age –	c.700 BC – AD 43	
Roman (Romano-British) Period –	AD 43 – c. AD 410	Historic
Post-Roman / Early Medieval Period –	c. AD 410 – AD 1086	
Medieval Period –	1086 – 1536	
Post-Medieval Period ¹ –	1536 – 1750	
Industrial Period –	1750 – 1899	
Modern –	20 th century onwards	

Table 1: Archaeological and Historical Timeline for Wales.

¹ The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust

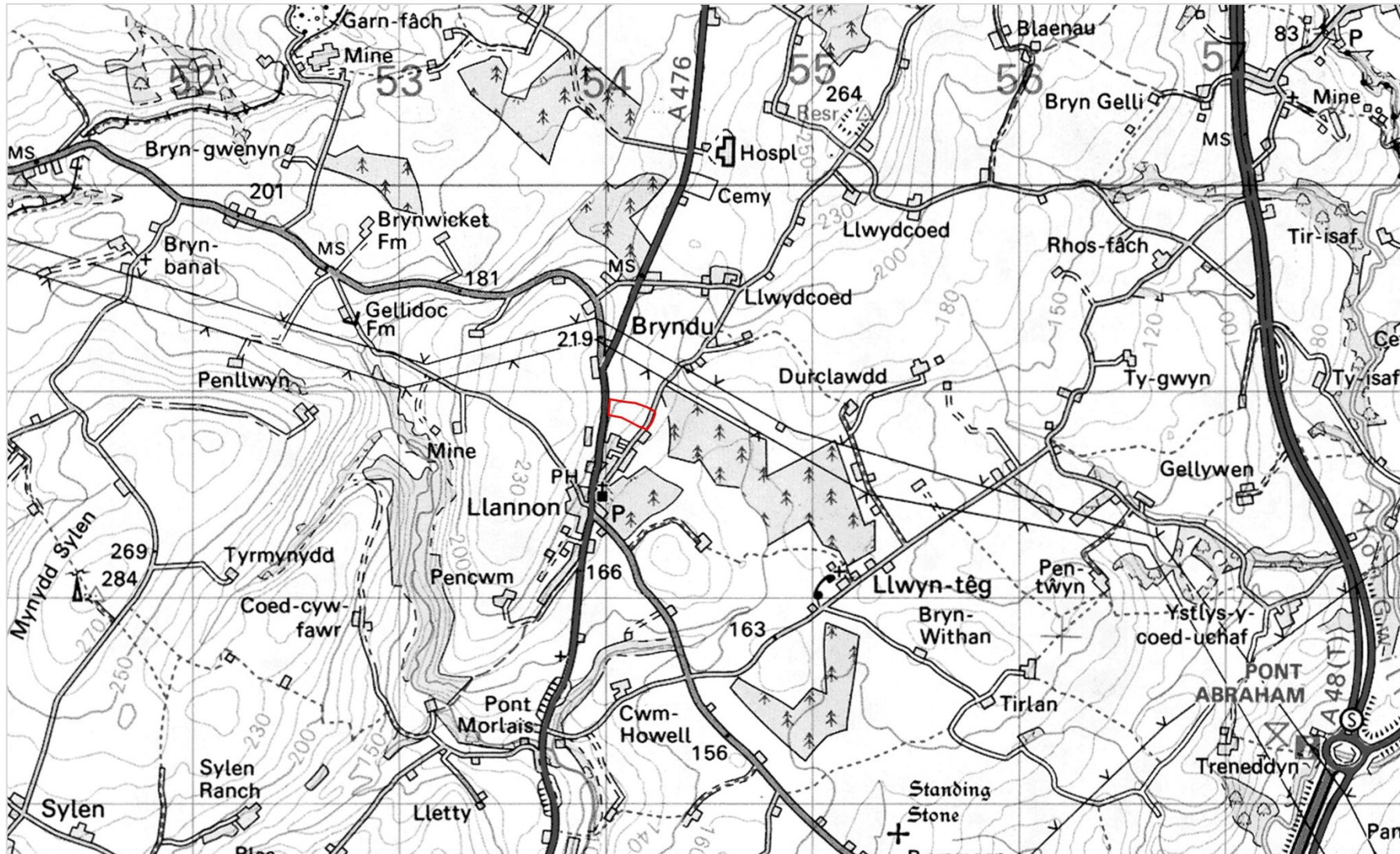


Figure 1: Location map, based on the Ordnance Survey. The development area is outlined in red.

Reproduced from the Ordnance Survey 1:25,000 scale Landranger Map with the permission of The Controller of Her Majesty's Stationery Office, © Crown Copyright Dyfed Archaeological Trust Ltd., The Shire Hall, Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AF. Licence No 100020930



Figure 2: Plan of the proposed development area (outlined in red) at land off Heol y Plas, Llannon (plan supplied by client).

2. THE SITE

2.1 Location, topography and geology

- 2.1.1 The proposed development is situated at land off Heol y Plas, Llannon, Carmarthenshire (roughly centred on SN 54108 08878; Figures 1 and 2). This area is about 7km northwest of Pontarddulais and about 7km north-northeast of Llanelli. Llannon is a growing village with good access to the M4 motorway.
- 2.1.2 The village has a primary school and two pubs but lacks any other amenities such as a shop. Two new small housing estates have been constructed since 1999. The local school recently underwent a large extension programme to cope with the increased demand for schooling from the growing population.
- 2.1.3 The site and its environs occupy a gentle slope on the east-facing side of a hill on the northern edge of the village. The lowest point on the site is at c.185m above OD and the highest at c.208m above OD.
- 2.1.4 The development site lies on the northern side of a modern housing development leading from Clos Rebecca. The proposed development area is currently used as an agricultural field.
- 2.1.5 The underlying solid geology of the site is complex: Green-grey and blue-grey, feldspathic, micaceous lithic arenites ("Pennant sandstone") with thin mudstone/siltstone and seatearth interbeds and mainly thin coals. It is named the 'Llyfni Member' and dates to the Bolsovian substage. The bedrock is overlain by Till (Diamicton) of Devensian Age - superficial deposits formed up to 2 million years ago by glacier deposition. (Source: British Geological Survey).

2.2 Archaeological potential

- 2.2.1 A full and detailed archaeological and historical background was included in the Historic Environment Appraisal (Day 2017) produced by DAT Archaeological Services but some of its findings are summarised below.
- 2.2.2 Very little is known about the early origins or history of Llannon. Evidence of Mesolithic activity around Llannon is absent and very few Neolithic sites are present, and those that are present are not typical of those found in most of the rest of Wales (Day 2017).
- 2.2.3 Bronze Age activity in the area exists mainly in the form of funerary monuments and standing stones, of which there are a particularly large number of the latter just 2km southeast of Llannon. There is very little evidence of Iron Age activity, which is not typical of the county (Day 2017).
- 2.2.4 It is believed that a Roman Road that once ran between Pontarddulais and Carmarthen passed through Llannon, but to date no supporting evidence has been found (Day 2017). Very little evidence of early medieval settlement is also available (*ibid*).
- 2.2.5 Although the Historic Environment Appraisal identified the proposed development area as having a low potential for buried archaeological remains, it also noted that very few previous archaeological investigations had taken place within the general area. Thus, this apparent absence of archaeology may be due to the absence of investigative work, as opposed to an actual absence of archaeology. With this in mind, the geophysical survey was undertaken to shed more light on the archaeological potential of the site.

3. METHODOLOGY

- 3.1 A fluxgate gradiometer, which detects variations in the earth's magnetic field, with a DL601 data logger was used to conduct a detailed survey of the proposed development area. A sample interval of 0.25m (four readings per metre) was used with 1.0m wide traverses across 30m x 30m grids using the zigzag traverse method of collecting data. The gradiometers sensitivity was set to detect a magnetic variation in the order of 0.1 nanoTesla.
- 3.2 The survey grid was tied in to the local Ordnance Survey grid using Differential Global Positioning System (DGPS).
- 3.3 The data was processed using *Terrasurveyor 3.0* and presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, have been 'clipped' to remove the extreme values allowing the finer details to show through.
- 3.4 The processed data has been presented as a grey-scale plots (Figures 4, 5 and 6) overlaid on local topographical features.
- 3.5 The resulting survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.
- 3.6 All measurements given will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of identified features can be affected by its relative depth and magnetic strength.

4.0 RESULTS AND DISCUSSION

- 4.1 The area was surveyed on the 26th and 27th October, 2017. The resulting greyscale plot can be seen in Figure 3 and an interpretation of the identified geophysical anomalies is shown in Figure 4 and discussed below.
- 4.2 A high density of dipole anomalies (red hatching (A)) can be seen crossing the field roughly north-south (Figure 4). Typically dipole anomalies are attributed to modern ferrous debris within the topsoil such as brick and tile fragments, or metal objects such as horse shoes and plough shares which lie just below or on the ground surface. Generally, unless dipoles form part of a larger pattern or feature they are regarded as not significant. In this instance the large cluster of dipoles would suggest a significant feature and upon inspection appears to correspond to a former trackway still visible as a low linear earthwork that runs north-south across the field.
- 4.3 Throughout the survey area a number of isolated discrete positive anomalies (shaded blue) were observed. Although some of the isolated positive anomalies are probably a result of natural phenomena, it is possible to identify two linear arrangements of anomalies. The first linear (B) is orientated approximately north-south across the field and the second (C), is orientated roughly east-west. By overlaying the interpretation plot over the 1879 1st edition OS map (Figure 5) it is clear that the lines of anomalies correspond to former field boundaries that are no longer visible on the ground.
- 4.4 A large dipole spike (red hatching (D)) was detected at the intersection of the former field boundaries (B & C). Due to its position it is probable that this feature was contemporary with the boundaries. The response exhibited was far too strong to be attributed to a stray ferrous object. And one suggestion is that it represents where a former cattle feeding trough was located.
- 4.5 Positioned near the northern edge of the survey area further positive linear anomalies were detected along with associated negative (yellow) anomalies (E), these anomalies run parallel to each other in an east to west orientation and possibly represent the remnants of a former double ditched trackway that does not appear on available historic mapping. Interestingly, it looks as though this anomaly runs parallel with field boundary (C).
- 4.6 Towards the northwestern corner of the survey area a near rectilinear positive anomaly (F) was detected orientated roughly north to south, and measuring approximately 7.0m long and 4.0m wide. The high amplitude positive response and rectangular shape suggests that this represents a structural feature such as a building; it may also be possible to discern an internal wall. The 1841 tithe map implies that a cottage may have once stood in the field or nearby (Day 2017) and it is possible that it has been detected here.
- 4.7 Situated to the south of the former field boundary (C) subtle ditch-like anomalies were identified forming a near sub-circular feature (G), possibly a ring ditch. At its widest the feature measures approximately 9.5m in diameter and breaks in the ditches are situated on the north, east and west side of the feature.
- 4.8 Finally, along the southern perimeter of the survey area magnetic interference (pink hatching) can be seen. This response is caused by the wire fencing that constitutes the field boundary.

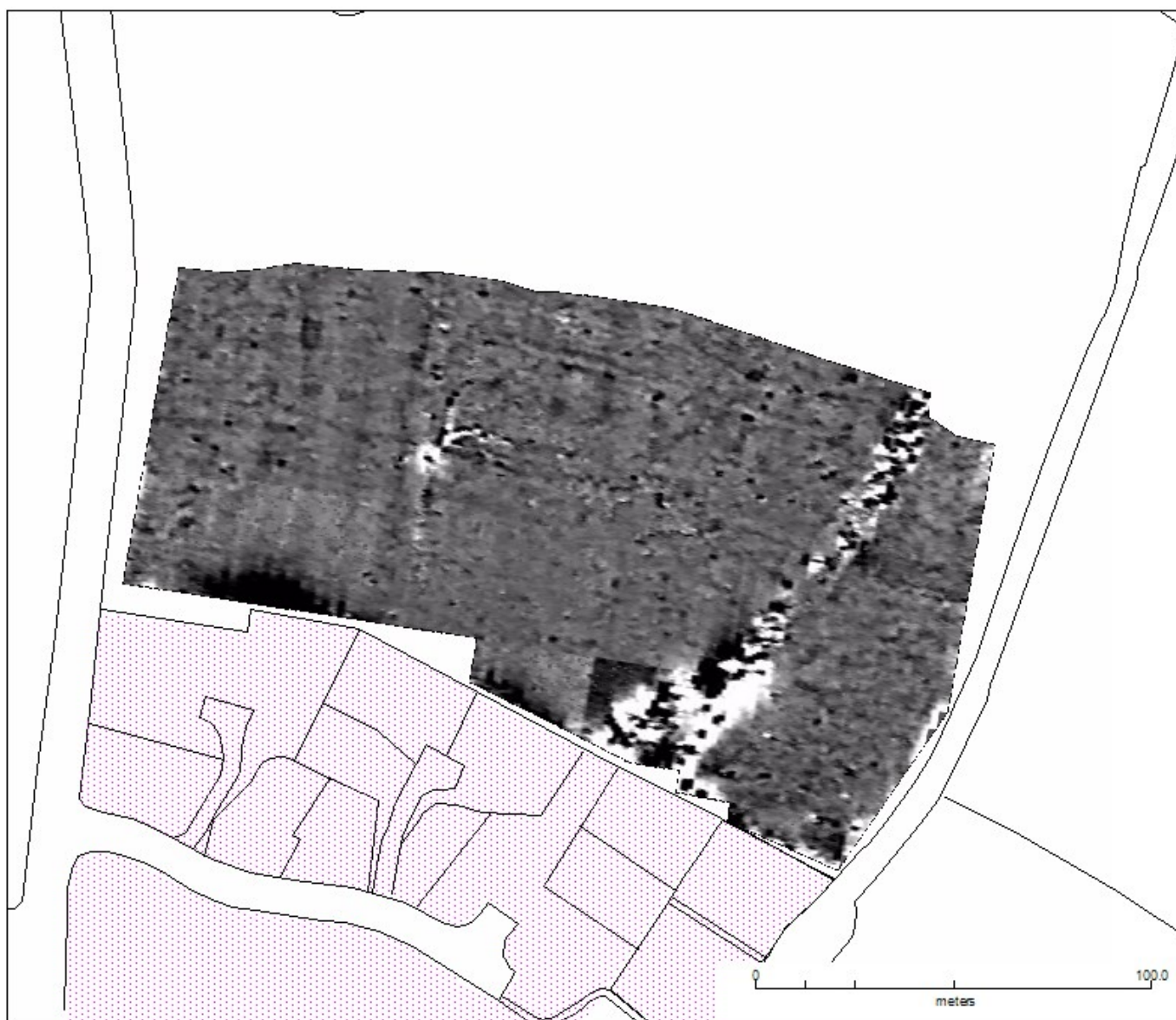
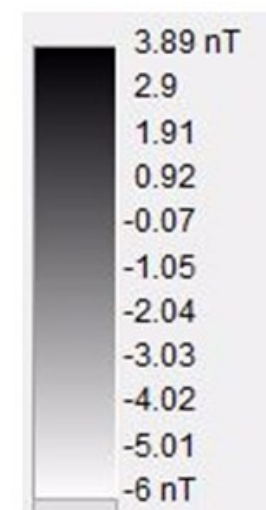
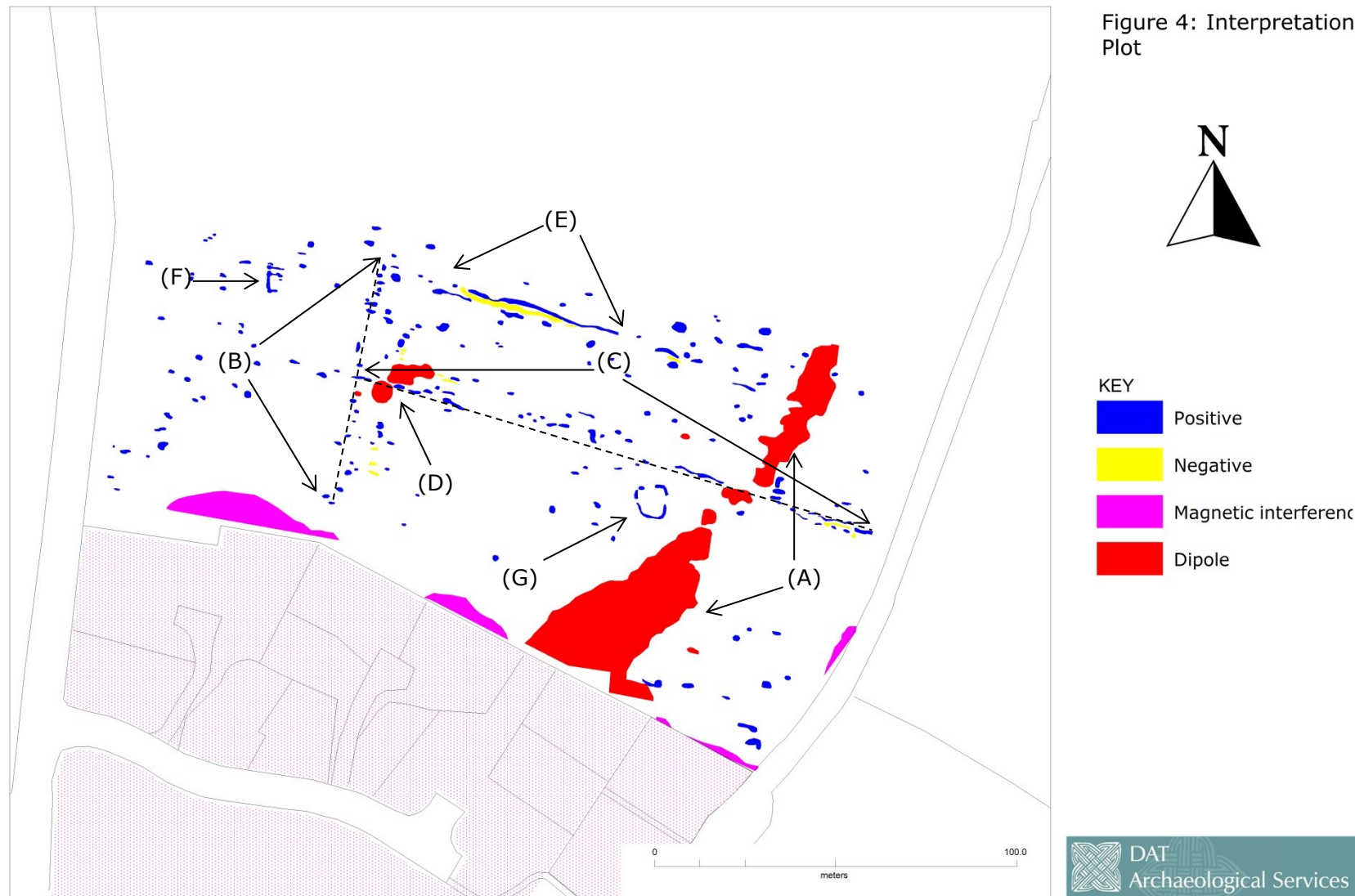
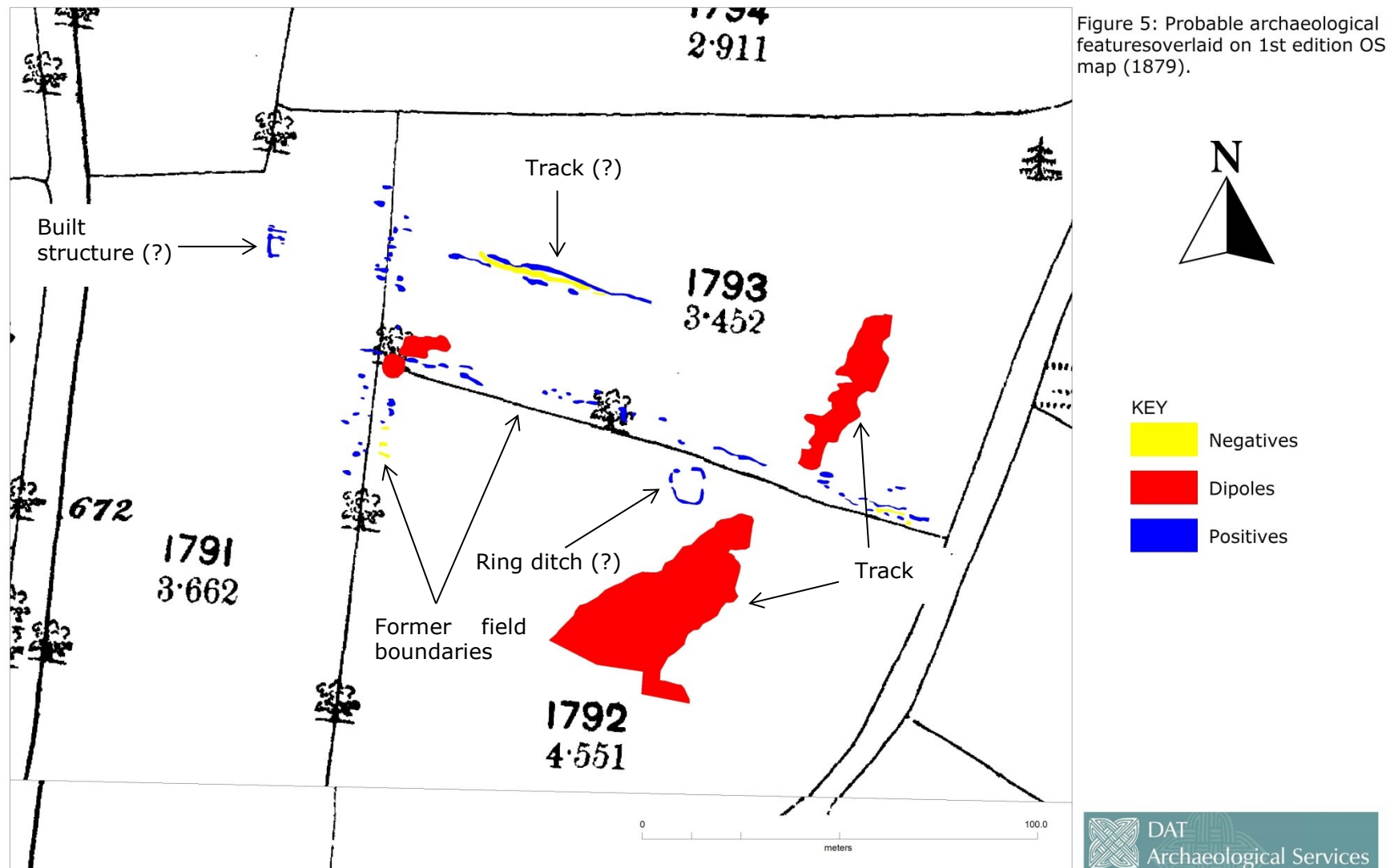


Figure 3: Geophysical
Survey Results







5. CONCLUSIONS

- 5.1 The geophysical survey undertaken at land of Heol Y Plas, Llannon, Carmarthenshire has successfully identified a number of anomalies that could be attributed to archaeological features.
- 5.2 It is possible to say with a high degree of certainty that the former field boundaries that once traversed the site north to south and east to west, visible on historic mapping but no longer visible on the ground, have been identified.
- 5.3 The large dipole situated at the intersection of the former field boundaries exhibits a response far too strong to be caused by a stray ferrous item and its siting would suggest intention. As it sits in the corner of the former field boundaries it is likely to be contemporary with them and could be the result of farming practices.
- 5.4 Evidence of a possible trackway identified by the geophysical survey shares a similar E-W alignment to a former field boundary suggesting they may originate from roughly the same period of time; likely to be the post medieval period.
- 5.5 The small building or cottage identified in the northwestern corner of the development area could well be of post-medieval date.
- 5.6 The possible ring ditch, however, could be evidence of human activity of prehistoric date. They are thought to represent a range of purposes such as funerary monuments or settlement enclosures, but perhaps more significantly they usually reflect a transitional period from nomadic to sedimentary communities. Their identification is often rare, as they are very prone to destruction from ploughing.
- 5.7 The results of the geophysical survey have identified the potential for archaeological features and deposits to survive within the development area; that could be considered to be of local and regional importance.
- 5.8 The geophysical survey has addressed the aims as laid out in the WSI by identifying the presence of potential archaeological features and deposits within the proposed development area. Where possible an attempt has been made to characterise the features and deposits. A report (this document) and archive based on the results of the geophysical survey have been produced.
- 5.9 Intrusive investigation would be required to ascertain the true nature, character and extent any of the identified features and potentially provide dating material.
- 5.10 The decision for the scope of any further programme of archaeological works, if they are required, lies with the archaeological advisor to the local planning authority (Development Management - Dyfed Archaeological Trust).

6. SOURCES

6.1 Unpublished

Day, A., 2017. *Heol Y Plas, Llannon, Carmarthenshire: Historic Environment Appraisal*. Dyfed Archaeological Trust Report No. 2017/51.

6.2 Databases

Dyfed Archaeological Trust Historic Environment Record, The Shire Hall,
Llandeilo, Carmarthenshire, SA19 6AF

RCAHMW Coflein Database <http://www.coflein.gov.uk/>

Cof Cymru - National Historic Assets of Wales

<http://cadw.gov.wales/historicenvironment/recordsv1/cof-cymru/?lang=en>

6.3 Cartographic

Ordnance Survey, 1879, 1st edition 1:2500 map of Carmarthenshire

Ordnance Survey, 2003, 1:25 000, Carmarthenshire.

APPENDIX I

HEOL Y PLAS, LLANNON, CARMARTHENSHIRE: WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL GEOPHYSICAL SURVEY

1 INTRODUCTION

- 1.1 This written scheme of investigation presents a methodology for archaeological geophysical survey of a proposed development site at Heol Y Plas, Llannon, Carmarthenshire. The potential development site covers an area of around 1.95ha. It is proposed that the development will include some 45 units, a mix of both bungalows and houses with associated access and infrastructure works.

- 1.2 A Historic Environment Appraisal was prepared for the site by DAT Archaeological Services on behalf of Asbri planning, this summarised the results as follows: *'Although there are no known archaeological sites within the development site, there are twenty four known archaeological or historical sites within a 1km buffer zone around the area and eleven Listed Buildings within 2km.'*

The archaeological potential for hitherto unknown archaeological sites to be present within the proposed development area is considered to be low. There is a possibility that a field name on the tithe map of 1841 referred to a cottage within or near the proposed site boundary. This gives a low potential for buried remains of medieval and Post-Medieval date. The potential for features and finds originating from any time period before the medieval cannot be discounted, but is considered to be very low based on the dearth of other sites of these periods in the area.

The exact nature of any archaeological mitigation required at the site will need to be discussed with the archaeological advisors to the planning authority, Development Management - Dyfed Archaeological Trust. It is recommended that the site area is subjected to a non-intrusive geophysical survey in order to better ascertain the potential archaeological of the 1.95ha site area.' (Day 2017)

- 1.3 It should be noted that although there are few records of archaeological remains within the vicinity of the development area, this is very likely to be as a result of the lack of previous archaeological investigations undertaken in this part of Carmarthenshire as opposed to a definite lack of archaeology.
- 1.4 The results of the geophysical survey will supplement those of the Historic Environment Appraisal and will be submitted in support of the planning application for the development.
- 1.5 A geophysical survey should provide a better indication of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. We proposed to undertake a gradiometer survey of the site, which, through the measurement of tiny variations in the earth's magnetic field, can indicate the presence of buried features such as ditches, pits, walls or postholes, which are not visible on the ground surface.
- 1.6 A site visit was undertaken on 11th August 2017 to assess the site area as part of the Historic Environment Appraisal. This did not identify any constraints to the geophysical survey. The site area is relatively easy to access from the road, although livestock was present which would need to

be temporarily removed during the survey. No clear indications of any underground services, such as manhole covers, were present.

- 1.7 This WSI will need to be approved by the archaeological advisors to the planning authority (Dyfed Archaeological Trust – Development Management) to comply with the Chartered Institute for Archaeologists Standard and Guidance and their Code of Conduct (CIfA 2014). The specification is in accordance with the relevant Institute for Archaeologists Standard and Guidance for archaeological geophysical survey (Chartered Institute for Archaeologists (CIfA 2014).
- 1.8 The Trust always operates to best professional practice. DAT Archaeological Services has its own Health and Safety Policy, and all works are covered by appropriate Employer's Liability and Public Liability Insurances. Copies of all are available on request.
- 1.9 ***Dyfed Archaeological Trust is a CIfA Registered Organisation.***
- 1.10 ***All permanent staff members of DAT Archaeological Services are CSCS² registered.***

² *Construction Skills Certification Scheme (Health and Safety Tested)*

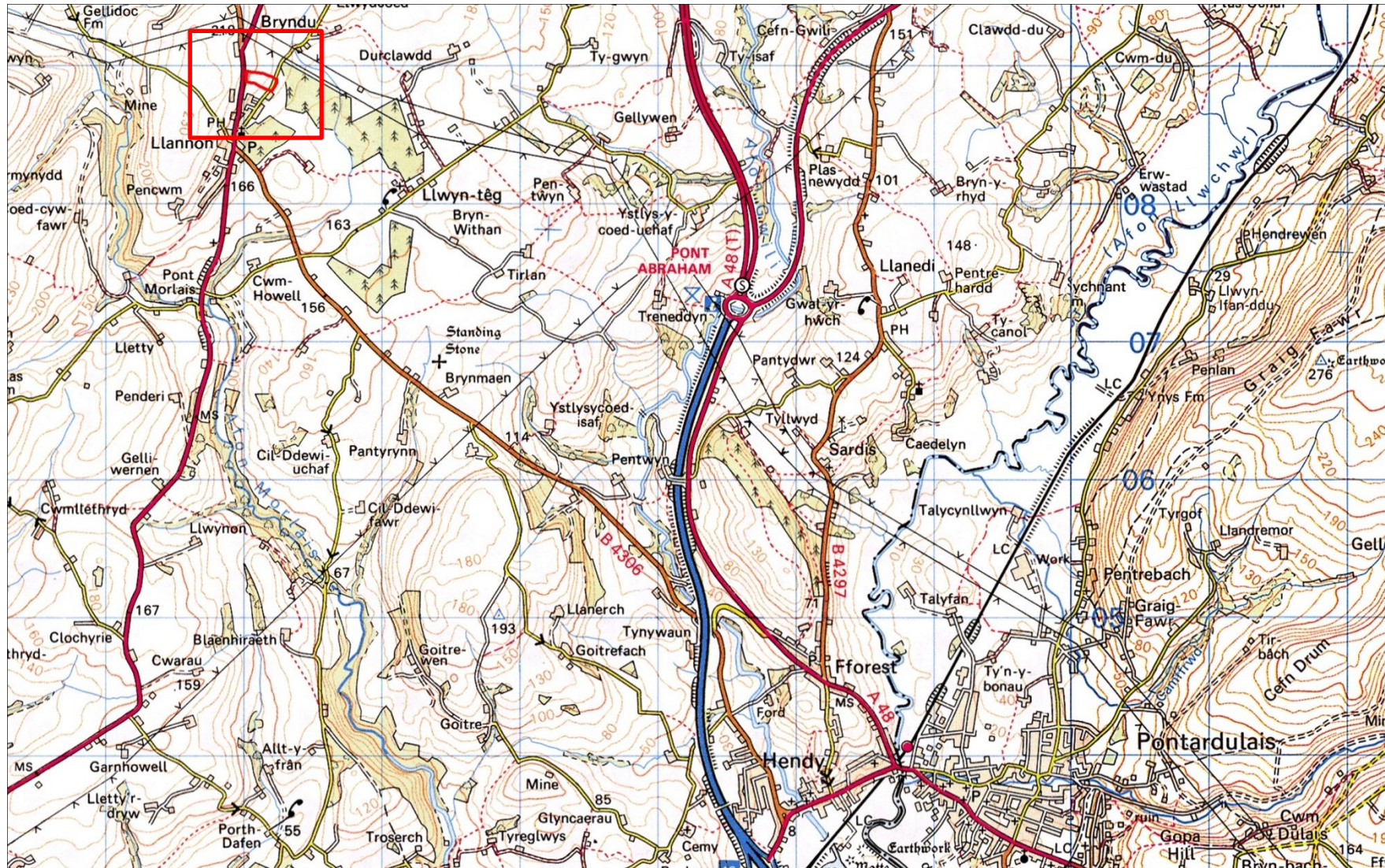


Figure 1: Map showing the location of land off Heol y Plas, Llannon, Carmarthenshire (within the red outline, top left of image)

Reproduced from the Ordnance Survey 1:50,000 scale Map with the permission of The Controller of Her Majesty's Stationery Office, © Crown Copyright Dyfed Archaeological Trust, Corner House, 6 Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AE. Licence No 100020930



Figure 2: Plan of the proposed development site outline at land off Heol y Plas, Llannon, supplied by client

Heol Y Plas, Llannon, Carmarthenshire:
Written Scheme of Investigation for Archaeological Geophysical Survey



Llannon, Llanelli | Pennant Homes

Conceptual Site Layout | 2184 - 01E | 1:500 @ A2 | June 2016

spring
design

Figure 3: Plan of the current development proposals at land off Heol y Plas, Llannon, supplied by client

2. AIM AND OBJECTIVES OF THE PROJECT

2.1 This document provides a scheme of works for:

The implementation of a geophysical survey using a gradiometer within the proposed development site at Heol Y Plas, Llannon, Carmarthenshire. The results of the survey will be presented in a report and an archive will be prepared.

2.2 The following tasks will be completed:

- Provision of a written scheme of investigation to outline the methodology for the geophysical survey (this document);
- To identify the presence/absence of any potential archaeological deposits through an initial gradiometer survey;
- To establish the character and extent of any potential archaeological remains within the site area that could be affected by the proposed works;
- To prepare a report and archive on the results of the geophysical survey.

3. GEOPHYSICAL SURVEY METHODOLOGY

3.1 A fluxgate gradiometer will be used for the survey, which detects variations in the earth's magnetic field. Readings will be taken on traverses of at most 1m wide and every 0.25m within 20m x 20m grids across the site. The full area of the proposed development site will be surveyed, some 0.25ha in total. A Trimble TST will be used to tie the survey grid into the local Ordnance Survey grid.

3.2 The underlying geology and soils appear suitable for geophysical survey. As noted above the presence of over-ground wires along the southern boundary of the site will cause some disturbance to the gradiometry survey results in that area, but these should be relatively isolated to their immediate vicinity.

Processing, presentation and interpretation

3.3 Processing will be performed using *TerraSurveyor 3.0*. The data will be presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, will be 'clipped' to remove the extreme values allowing the finer details to show through.

3.4 The processed data will be presented as grey-scale plots overlaid on local topographical features. The main magnetic anomalies will be identified and plotted onto the local topographical features as a level of interpretation.

3.5 The resulting survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.

3.6 All measurements given will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of identified features can be affected by its relative depth and magnetic strength.

- 3.7 The interpretation diagrams will be used to identify the presence/absence of any potential archaeological deposits.

4 POST-FIELDWORK REPORTING AND ARCHIVING

- 4.1 A copy of the final report will be deposited with the regional HER within six months of the completion of the project.
- 4.2 All data recovered during the fieldwork will be collated into a site archive structured in accordance with the specifications in *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and the procedures recommended by the National Monuments Record, Aberystwyth. The *National Standards for Wales for Collecting and Depositing Archaeological Archives* produced by the Federation of Museums and Art Galleries of Wales will also be adhered to.
- 4.3 The results of the geophysical survey will be included in a specification for further archaeological mitigation at the site. The results will also be included in any subsequent reports on any future archaeological mitigation implemented at the site.
- 4.4 The report will be prepared to follow the relevant Institute for Archaeologists *Standards and Guidance* (IfA 1994/1995, revised 2001 & 2008).

5 STAFF

- 5.1 The project will be managed by James Meek, Head of DAT Archaeological Services. The on-site geophysical survey will be undertaken by Charlie Enright and Alice Day, both experienced geophysical surveyors.

6 MONITORING

- 6.1 The site work may need to be monitored by the archaeological advisor to the planning authority. The works will also be monitored by the Project Manager.

7 HEALTH AND SAFETY

- 7.1 All permanent members of DAT Archaeological Services staff are CSCS³ registered.
- 7.2 DAT Archaeological Services will carry out a health and safety risk assessment to ensure that all potential risks are minimised.
- 7.3 All relevant health and safety regulations must be followed.
- 7.4 Gradiometer survey is a non-intrusive method of archaeological prospection. The process involves the laying out of grids across the site area which are then traversed with the gradiometer taking regular readings. Trip hazards are one of the main issues for such work.
- 7.5 Due to the nature of the survey surveyors are not able to wear any clothing with metal in (such as safety boots). Sturdy footwear is worn with no metal parts.
- 7.6 The developer will make all site staff aware of any other PPE⁴ that may be required.

BIBLIOGRAPHY

Day, A, 2017 Heol Y Plas, Llannon, Carmarthenshire: Historic Environment Appraisal, DAT Report No. 2017/51

³ Construction Skills Certification Scheme (Health and Safety Tested)

⁴ Personal Protection Equipment

HEOL Y PLAS, LLANNON, CARMARTHENSIRE GEOPHYSICAL SURVEY 2017

RHIF YR ADRODDIAD / REPORT NUMBER: 2017-68

RHIF Y PROSIECT / EVENT RECORD NO. 111149

Hydref 2017

October 2017

Paratowyd yr adroddiad hwn gan / This report has been prepared by

Charles Enright

Swydd / Position: Archaeologist DAT Archaeological Services

Llofnod / Signature  Dyddiad / Date 01/11/17

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith
This report has been checked and approved by

Fran Murphy

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position: Project Manager DAT Archaeological Services

Llofnod / Signature  Dyddiad / Date 01/11/17

Yn unol â'n nôd i roddi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau
sydd gennych ar gynnwys neu strwythur yr adroddiad hwn

As part of our desire to provide a quality service we would welcome any
comments you may have on the content or presentation of this report

