SEARCHING FOR CHARIOTS

CADW PROJECT NO. DAT 154

Prepared by Dyfed Archaeological Trust
For: Cadw

DYFED ARCHAEOLOGICAL TRUST

REPORT NO. 2020-05

EVENT RECORD NO. 125655

CADW PROJECT NO. DAT 154

January 2021

SEARCHING FOR CHARIOTS

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SEARCHING FOR CHARIOTS:
A YEAR OF DISCOVERY PROJECT

Client	Cadw
Event Record No	125655
Report No	2020-05
Project Code	DAT 154
Report Prepared By	Charles Enright
Fieldwork Directed By	Charles Enright
Illustrated By	Charles Enright
Report Approved By	Ken Murphy 16.03.2021

SEARCHING FOR CHARIOTS:

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ACKNOWLEDGEMENTS

Dyfed Archaeological Trust would like to thank all of the volunteers for their assistance in the field and to each of the landowners for kindly permitting us to carry out the surveys on their land.

SEARCHING FOR CHARIOTS:

CRYNODEB GWEITHREDOL

Yn dilyn llwyddiant arolygon 2019-20, fe wnaeth Ymddiriedolaeth Archeolegol Dyfed gyda grant Cadw yn gynnal arolygon geoffisegol pellach tu allan i aneddiadau amddiffynedig cynhanesyddol hwyr yn ne-orllewin Cymru.

Yn ystod 2020-21, arolygwyd chwe safle arall, gan ddod â'r cyfanswm i 13 o safleoedd yr ymchwiliwyd fel rhan o brosiect 'Searching for Chariots'. Mae'r rhan fwyaf o'r arolygon hyn wedi dangos bod mwy o olion archeolegol yn bodoli y tu allan i aneddiadau amddiffynedig nag feddywl yn flaenorol.

Ni welwyd unrhyw dystiolaeth o'r dirwedd angladdol helaeth a welwyd ar safle claddu cerbydau mewn man arall. Ond o ystyried y nifer fawr o aneddiadau amddiffynedig cynhanesyddol yn ne-orllewin Cymru mae'r potensial i safleoedd tebyg fodoli yn parhau i fod yn uchel.

EXECUTIVE SUMMARY

Following on from the success of the 2019-20 surveys, Cadw grant-aided Dyfed Archaeological Trust to undertake further geophysical surveys outside late prehistoric defended settlements in southwest Wales.

During 2020-21, six more sites were surveyed, bringing the total to 13 sites investigated as part of the Searching for Chariots project. Most of these surveys have demonstrated that more archaeological remains exist outside defended settlements than previously thought.

No evidence of the extensive funerary landscape seen at the chariot burial site has been observed elsewhere. But given the large number of prehistoric defended settlements in southwest Wales the potential for similar sites to exist remains high.

1. INTRODUCTION

1.1 In early 2018 a metal detectorist discovered a group of Iron Age chariot horse fittings in a field in Pembrokeshire. This led to the discovery of Wales' first Iron Age chariot burial and an unrecorded inland promontory hillfort. A subsequent geophysical survey of the burial area revealed a rich funerary landscape that extended several hundred metres from the fort's entrance.

1.2 The discovery of a chariot and other buried archaeological features outside an inland promontory fort raises several questions, namely, is this unique? Or are there similar landscapes outside other hillforts? One thing is sure, and that is that the discovery has highlighted a woeful lack of knowledge of what happened outside of hillforts and other late prehistoric enclosed settlements.

1.3 In an attempt to fill the knowledge gap Dyfed Archaeological Trust (DAT) undertook a series of geophysical surveys in 2019 – 2020 (Enright 2020). DAT surveyed the immediate area outside of several late prehistoric settlement sites. The results provided new evidence of the nature and extent of archaeological remains outside prehistoric settlements in west Wales (Figures 1 & 2). This included evidence of settlements, outer defences, enclosures and sometimes burials, all of which lie outside of the designated scheduled area. The results have demonstrated that more archaeological activity occurs outside of the forts (and by extension the scheduled area they occupy) than previously thought.

1.4 Following on from the success of the 2019 – 2020 surveys, DAT secured further grant-aid from Cadw to continue the surveys outside late prehistoric settlements in southwest Wales.

1.5 As in the previous year, DAT seeks to answer what happened outside prehistoric settlements by using geophysical surveys. This was undertaken using a fluxgate gradiometer that detects subtle variations in the earth's magnetic field, indicating the presence of buried features such as ditches, pits, walls or postholes, which are not visible on the ground surface. The projects overall aim is to advance our knowledge of what might have occurred outside of promontory forts and other prehistoric settlements. It is expected these results will also assist in the management of promontory forts/defended enclosures and their environs, which are often excluded from scheduled areas and therefore have no legal protection.

1.6 A total of six prehistoric settlement sites were surveyed across Pembrokeshire and Carmarthenshire, southwest Wales, during the 2020 – 2021 Searching for Chariots project (Figure 3):

Carmarthenshire:-

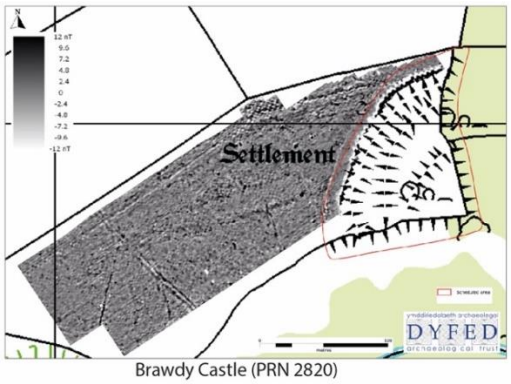
- Castell Pen Y Coed (PRN 3887)
- Castle Lloyd (PRN 3830)

Pembrokeshire:-

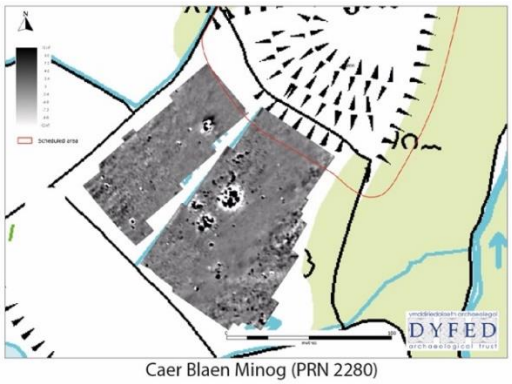
- Pictons Point (Prn 3603)
- Rudbaxton (PRN 3307)

- Castell Bach (PRN 2827
- Caer Aber Pwll (PRN 2735)

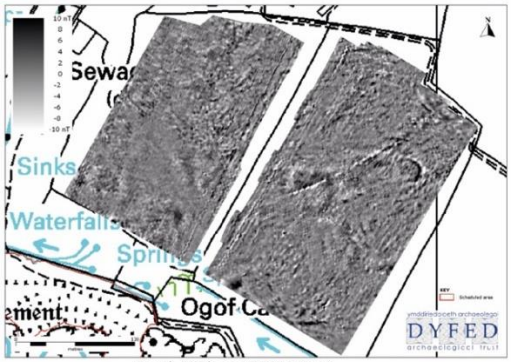
1.7 The Event Record Number (ERN) for the project is 125655.



Brawdy Castle (PRN 2820)

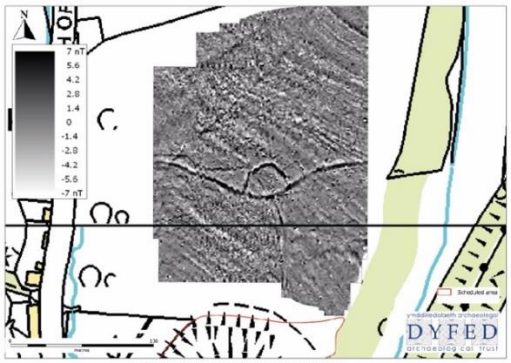


Caer Blaen Minog (PRN 2280)

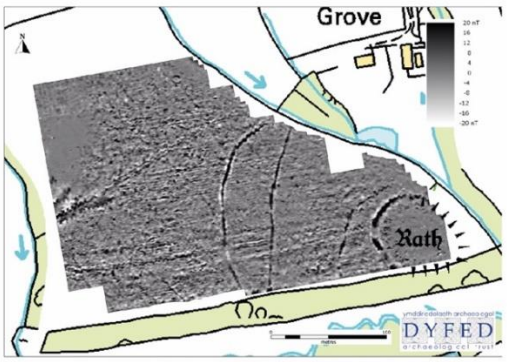


Porth Y Rhaw (PRN 2721)

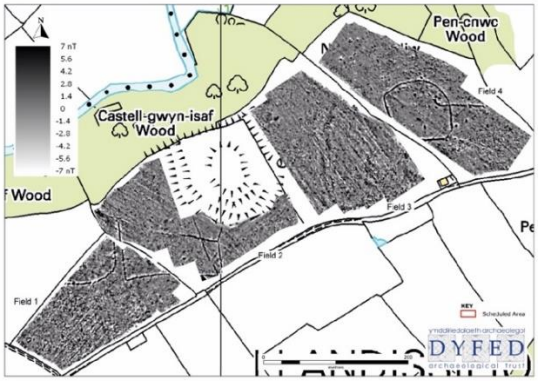
Tancredston (PRN 2777)



Thornton Rath (PRN 3172)



Walesland Rath (3298)



Castell Gwyn (PRN 920)

Figure 1: Results from the 2019-2020 Dyfed Archaeological trust Searching for Chariots project (Enright 2020).

Figure 2: Map showing the location of surveyed forts.

1.2 Late Prehistoric Settlements in southwest Wales

1.2.1 Hillforts and small defended enclosures characterise settlements of the late prehistoric period. These typically are earthworks consisting of defensive banks and ditches enclosing an internal area that is usually oval or irregularly oval in shape (Murphy et al 2007).

12.2 Murphy & Murphy (2010) reported 787 defended settlements in southwest Wales (Carmarthenshire, Ceredigion and Pembrokeshire), which included 59 definite or possible hillforts, 166 definite or possible promontory forts and 562 definite or possible enclosures (Figure 3). Some of these sites are scheduled. But because most of what we know about forts comes from projects that have focused on their internal character, in most instances, the scheduled area has been established to protect the inner workings only. The scheduling of the forts demonstrates their importance. The importance of areas outside of the scheduled area is largely unknown, but the potential is high.

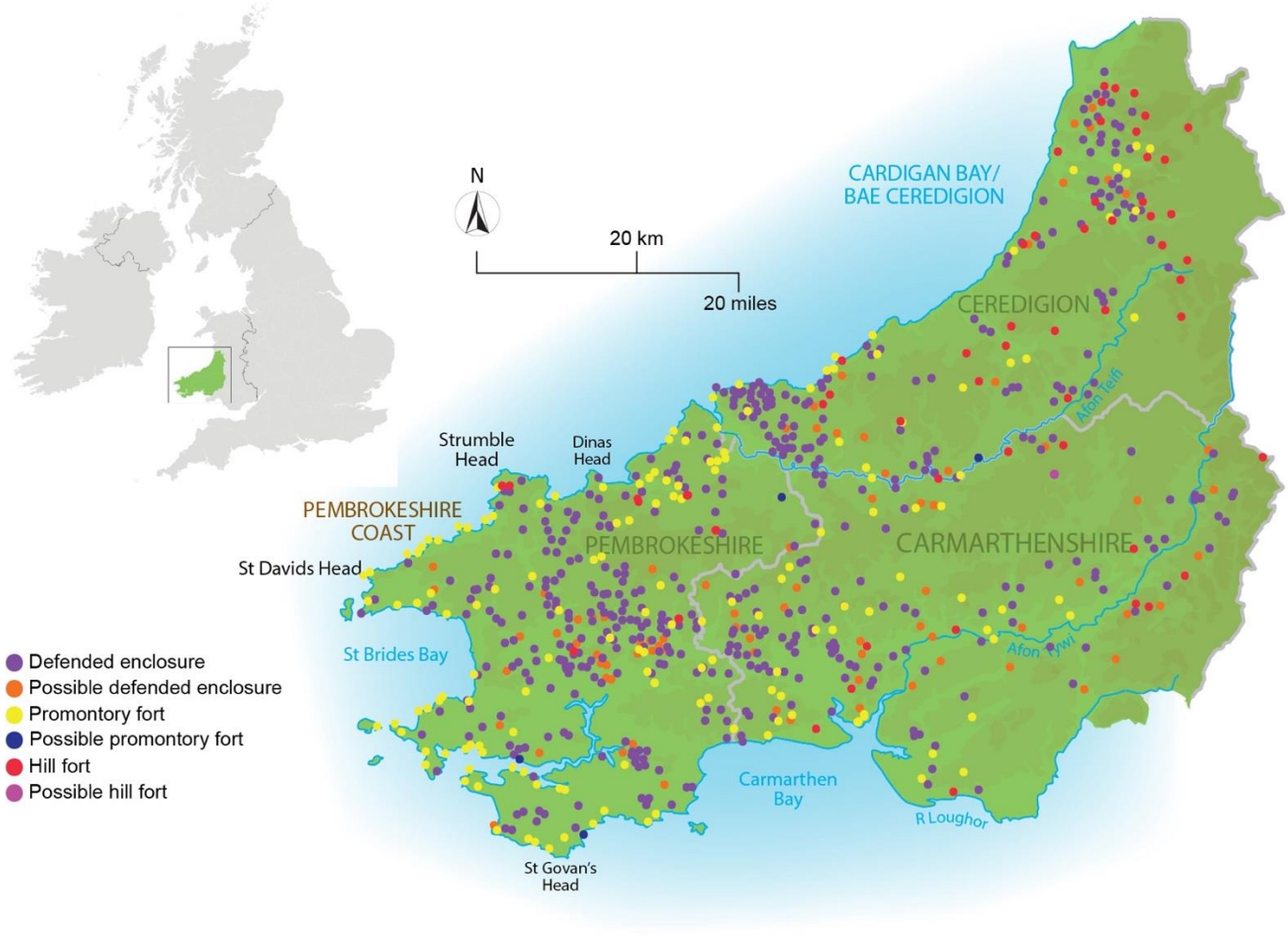


Figure 3: Distribution of Iron Age hillforts, promontory forts, and defended enclosures in southwest Wales by site type (adapted from Murphy & Murphy 2010).

1.2. Project Aim and Objectives

1.2.1 The aim of the project was:

- To delineate archaeological sites and features outside of hillforts.
- To characterise in detail the shape of individual anomalies of archaeological interest.
- To formulate ways in which remains can be managed and protected for future generations.
- To make appropriate scheduling recommendations.

1.2.2 The objectives of the project were:

- To characterise the buried remains outside of hillforts and other late prehistoric enclosed settlements using a geophysical survey.
- To improve our understanding, management, and protection of the sites, and by extension, other similar sites in the region.
- To engage members of the local community in the project.
- To disseminate the results of the project to a wide audience.

1.3 Community Engagement

1.3.1 Current covid-19 restrictions provided a challenging environment for community engagement, but not impossible and on occasions the DAT survey team could be accompanied by volunteers. This provided an opportunity to teach them new skills, share experiences and build-up their capacity to undertake archaeological investigations.

1.3.2 In total, four days of volunteer time was committed to the project.

1.4 Report Outline

1.4.1 This report summarises the archaeological evaluation and its results and puts those results within their regional and national context.

1.5 Abbreviations

1.5.1 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). Sites recorded on the National Monument Record (NMR) held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) are identified by their National Primary Record Number (NPRN). Scheduled Monument (SM). Altitude is expressed to Ordnance Datum (OD). References to cartographic and documentary evidence and published sources will be given in brackets throughout the text, with full details listed in the sources section at the rear of the report.

1.6 Illustrations

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

1.7 Timeline

1.7.1 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 –	20th 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

2.0 METHODOLOGY

2.1 Data Collection

2.1.1 Each geophysical survey was conducted by an experienced surveyor using a fluxgate gradiometer with two sensors at 1m spacing and with a DL601 data logger. The gradiometers sensitivity was set to detect a magnetic variation in the order of 0.1 nanoTesla.

2.2.2 Data was collected within a controlled grid that the surveyors physically marked out on the ground to within 0.1m+/- accuracy. The survey grid was tied into the local Ordnance Survey (OS) grid using a Trimble R8s integrated GNSS system with a TSC3 controller.

2.2 Ground Coverage

2.2.1 In an attempt to answer the project's questions, each survey attempted to cover a large area as possible in the given timeframe (typically two days). In most instances the desirable area to survey exceeds what could be reasonably surveyed in the allotted time; with this in mind, the immediate area outside the fort's entrance was surveyed in its entirety (100% coverage). Where evidence of archaeological remains was limited and the survey moved away from the fort entrance a sampling strategy was adopted. This meant every other grid was surveyed. Where areas of possible archaeological remains were detected during the sampling strategy the adjacent grids were later surveyed to characterise the response.

2.3 Resolution

2.3.2 In the first instance, data was collected in 30m x 30m grids using the zigzag traverse method with a sample interval (x-axis) of 0.25m (four readings per metre) and a line separation (y-axis) of 1m.

2.3.2 In areas that required greater definition of detail the line separation (y-resolution) was reduced to 0.5m

2.4 Data Processing

2.4.1 The data was processed using *Terrasurveyor 3.0.36.1* and is presented with a minimum of processing.

2.4.2 Typically, the data is "de-striped" to remove any striping effect caused by an imbalance between the two sensors. It is then "clipped" to remove high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, allowing finer details to show through.

2.4.3 Other processing functions may include "de-staggering" the data. This is to correct line displacement errors caused by variations in the traversal rate resulting in the sensors being in the incorrect position when taking a reading. Finally, the data may be "interpolated" followed by a "low pass filter". The gradiometer collects readings every 0.25m along the transect (x-axis) and 1.0m (or 0.25m in the higher resolution surveys), this results in an imbalanced grid, so by interpolating the data and choosing to match the x and y-axis by an increased factor the grid becomes more balanced. The "low pass filter" is used cautiously to smooth the data without removing any archaeology.

2.5 Data Presentation and Interpretation

2.5.1 Data is presented with a minimum of processing as a grey-scale plot overlaid on local topographical features. The main magnetic anomalies have been identified using a combination of the grey-scale plots at different stages of processing and XY traces which aid in interpretation by allowing for visualisation of the magnitude and form of a geophysical anomaly.

2.5.2 The results have been compared to available sources (satellite imagery, aerial photographs, historic maps etc.) to increase confidence levels, and an interpretation of the results has been formulated. In some instances it is possible to provide a very specific interpretation to geophysical anomalies, i.e. where its character or form is well documented, its existence was known about before the survey, or corroborative evidence can be found. In other cases, a broader categorisation of interpretation is required (outlined in Table 2). Often, looking at the results as a whole and the environs within which they sit provides greater context and aids in interpreting individual features.

Archaeological features	
Archaeology	Where the character and form of response are clearly archaeological in origin or corroborative evidence exists (i.e. historical sources, excavation, etc.). These are typically made up of linear/curvilinear/rectilinear anomalies. This category also includes pits with a discernible arrangement, grouping or association with an archaeological feature to suggest an archaeological origin.
Industrial/area of burning	Where an anomaly has a strong magnetic response that could be evidence of kilns, heaths etc, their shape, form and context may aid interpretation. Caution should be observed as often a similar response can be produced from modern ferrous material.
Possible archaeological feature	
Possible archaeology	Where an archaeological response is favoured, but the response is weak or incomplete and lacks any distinguishing characteristics akin to an archaeological feature. This category also includes possible pits with no discernible pattern, grouping or association with an archaeological feature. They may be of archaeological origin, but they are also likely to

	represent natural features such as a tree throws (former root bole of a tree shrub).
Area of enhanced magnetic activity	An area that exhibits increased magnetic variations with no discernible pattern or cause. This may have an archaeological origin or a result of the geological variation.
Agricultural features	
Former field boundary	Typically a linear anomaly often seen as a positive response (bank) flanked either side by a negative (response) ditches. These can usually be attributed to former boundaries depicted on historical maps.
Ridge and furrow	A series of regular linear anomalies with consistent broad spacing. If they run parallel with existing field boundaries this might suggest a recent activity.
Plough lines	A series of regular linear anomalies with consistent narrow spacing. If they run parallel with existing field boundaries this might suggest a recent activity.
Field drains	A series of regularly spaced linear anomalies.
Non-archaeological features	
Magnetic interference	Typically an external source that affects the survey data. Usually occurs along the edges of surveys near fences containing ferrous material or around pylons and from subsurface utilities.
Ferrous	These may be associated with an artefact of archaeological interest but generally unless they form a pattern or a part of a larger feature they are regarded as not significant. They are usually the result of miscellaneous modern ferrous-rich debris, such as brick and tile fragments, and objects such as horseshoes or broken ploughshares, which lie within the topsoil and result in a dipole response.

Natural / Geology	These natural variations can cause significant variations in magnetic readings.

Table 2: Categories of interpretation for geophysical anomalies.

2.5.3 The processed data plot is included in the body of this report, and minimally processed, minimally enhanced and XY trace plots for each survey can be found in the appendix.

2.6 Results Quality

2.6.1 The 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 the gradiometer can identify. In interpreting those features recorded, the shape is the principal diagnostic tool and a 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 mostly subjective.

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

3. CASTLE LLOYD

3.1 Site Description

3.1.1 Castle Lloyd (DAT PRN 3830; SM No. CM141; Photo 1) is a promontory fort situated on a triangular spur of high ground at approximately 120m above sea level, Carmarthenshire (NGR SN 2410 0934). The sides of the camp slope away sharply in all directions, except on the north, where a well-preserved single bank and ditch cuts off and protects the interior. A counterscarp is also visible and is best preserved on the northwest. The interior bank is 5.0m high, and the ditch 1.3m deep, 4.0m wide; the counterscarp is c.1.0m high on the west, 0.30m high on the east. The interior bank peters out as it curves south, on the east side, but ends abruptly on the west, indicating the position of the original entrance.

3.1.2 The whole site is under rough pasture, with some bracken and gorse. The adjoining field is ploughed up to the edge of the ditch.

Photo 1: Castle Lloyd aerial image (Image AP92-095.18 ©DAT).

3.2 Assessment of Historical Evidence

3.2.1 The 1841 Laugharne tithe map (Figure 4) shows a fieldscape similar to that of today. The only slight difference is that the field's northern boundary projects in a southwest direction, creating a triangular point. However, there is no depiction of the fort itself and the field is called Croft Isaf, which does not refer to the fort that sits in its southwest corner.

3.2.2 The first (Figure 5) and second edition OS maps show a similar field layout as the tithe map, but with the addition of the fort illustrated in the southwest corner of the field. It is not until modern-day mapping that the field boundaries slightly change and that the northern boundary has been removed and re-established somewhat further north on an east-west alignment.

3.2.3 A review of the available aerial photographs and LiDAR shows nothing of archaeological significance.

Figure 4: Extract from the 1841 Parish of Laugharne tithe map. (Survey Field is shown in red).

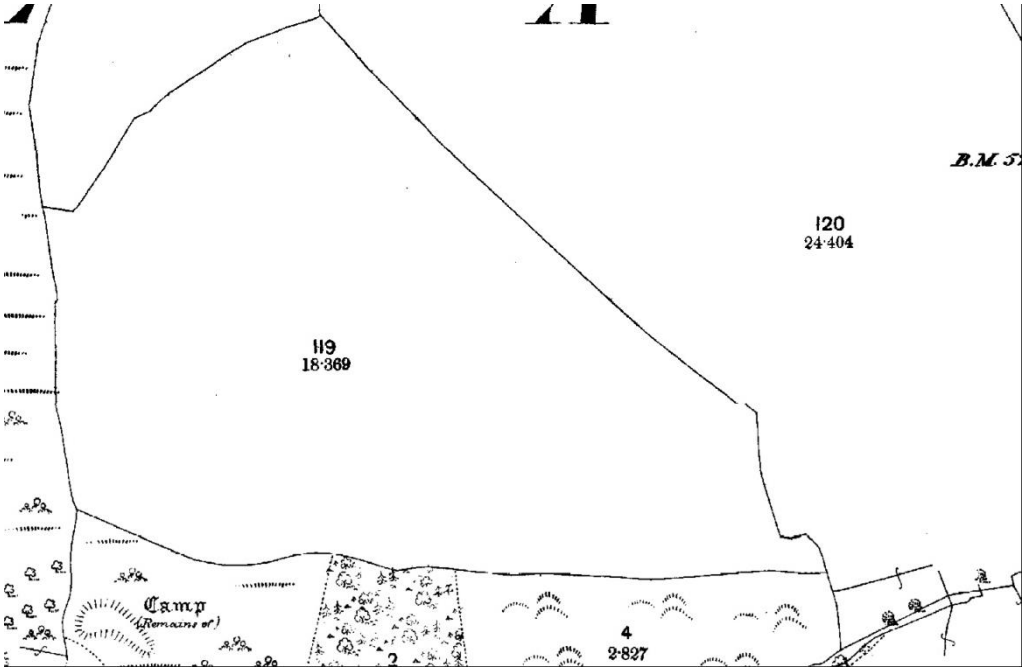


Figure 5: Extract of the first edition OS map.

3.3 Results

3.3.1 The processed geophysical data is presented as a grey-scale plot overlaid on a topographic map (Figure 6). The interpretation of the results is provided in Figure 7. A plot of the minimally processed data and a trace plot can be found in Appendix 1. The area immediately outside of the fort was surveyed in its entirety. After this a sampling strategy was used to cover as large of an area as possible.

3.3.2 A total area of 2.53ha was surveyed.

Archaeological features

3.3.3 No features with a clear archaeological origin were observed during the survey.

Possible archaeological features

Possible archaeology

3.3.4 A series of positive and negative linear anomalies can be seen across the survey area. The negative linear along the western edge of the survey area follows the existing field boundary and possibly represents a track. In most instances, the other responses are weak and diffused and lack clear characteristics making it difficult to attribute them to an archaeological origin. There is some potential that they are the remains of ditches, but it is just as likely they are a natural phenomenon.

Pits (unknown origin)

3.3.5 Several possible pit features in various shapes and sizes have been observed across the survey area. There is no substantial evidence suggesting that any of these are archaeological and they are likely to represent natural geological features.

Non-archaeological

Ferrous

3.3.6 Just one example of a ferrous object was detected in the survey. It most likely represents modern detritus.

Natural/Geology

3.3.7 There is a series of sinuous negative magnetic anomalies that occur over much of the survey area. It is thought to be patterned ground that forms in areas where the freezing and thawing of soil alternates.

3.3.8 A large area of positive magnetic readings that correspond with a convergence of slopes likely represents a geological change or accumulation of colluvial material.

Agricultural features

3.3.9 No agricultural features were detected.

3.4 Summary of Results

3.4.1 The geophysical survey at Castle Lloyd detected nothing of certain archaeological origin.

3.4.2 A series of possible archaeological features were detected in the form of linear anomalies that may represent the remains of ploughed-out ditches, but this cannot be substantiated through the use of geophysics alone. The negative anomaly along the western edge of the survey area possibly represents a former trackway. Given that it appears to follow the line of the existing field boundary it is unlikely associated with the fort and probably dates to no earlier than the medieval period. There is no evidence of the earlier field boundary along the field's northern edge depicted on the tithe and early edition OS maps. This might be because the surveyed area does not extend far enough north to cover this earlier feature. There is little evidence to suggest that further survey work is required at the site.

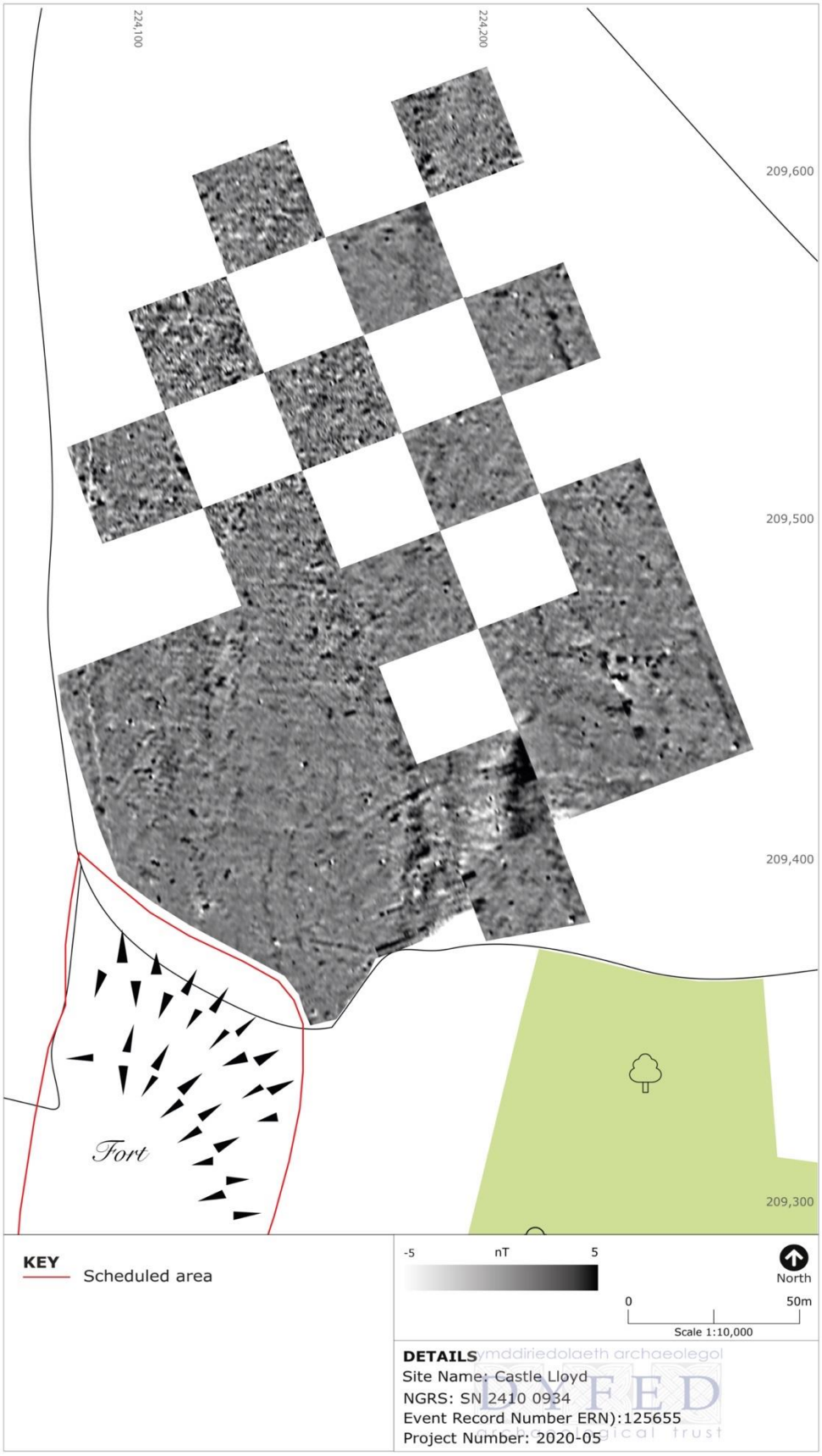


Figure 6: Castle Lloyd grey-scale plot of geophysical survey results.

Figure 7: Castle Lloyd interpretation of geophysical survey results.

4. CASTELL PEN-Y-COED

4.1 Site Description

4.1.1 Castell Pen-y-Coed (DAT PRN 3887; SM No. CM142; Photo 2) is an excellent example of an inland promontory fort on high ground, at 90m above sea level in Carmarthenshire (NGR SN 2450 1277). The small internal area is defended on the northeast and southeast by natural steep slopes that fall to a stream below, and on the west by a triple system of banks and ditches. This system of defences is best preserved on the south side, though the outermost ditch is not visible here. The outer two banks appear to peter out toward the north side as the steep natural slopes take effect. The Ordnance Survey suggests that the entrance may have been on the north side, although there is no evidence for this. The interior of the enclosure is covered with rough grass.

4.1.2 In 1917 the Royal Commission of Ancient Monuments visited the site in Wales and Monmouthshire, and a site plan and description were produced, reproduced in Figure 8.

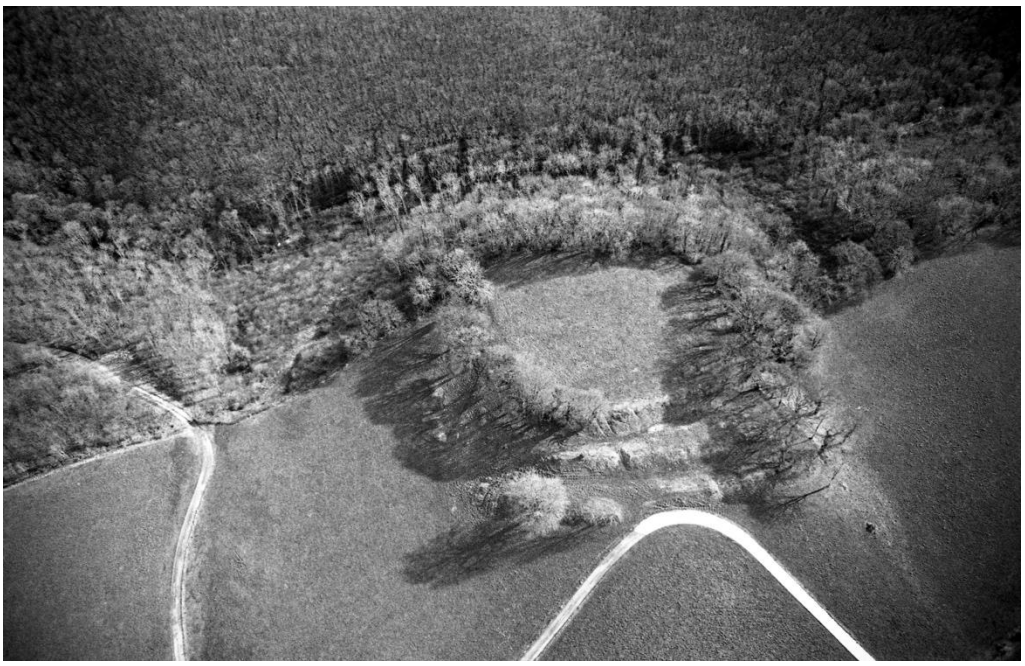


Photo 2: Castell Pen-y-Coed aerial image viewing in an easterly direction (Image AP93-98.26 ©DAT).

DIVISION II (EARTHWORKS), SUB-DIVISION B (HILL FORTS).

130. *Castell pen y coed* (6 in. Ord. Surv. sheet, Carm. 44 N.E.; lat. 51° 47′ 9″, long. 4° 32′ 40″).

This is a strong position, placed within the angle made by the junction of two small streams that eventually fall into the Tav, on the northern boundary of the parish. One of the streams flows almost directly north; its left bank rises abruptly for about 200 feet, and at the top is placed the camp. The other stream makes a wide sweep until its direction becomes almost east and west before it unites with the first-mentioned brook at a point about 500 yards to the north of the camp. The defences consist of three strong banks, with two intervening ditches. They face directly to the west, protecting a somewhat small area of ground in front of the sharp slope to the river. It is evident that escape in face of disaster must have been by a rush down the hill, a dangerous operation, with a stream, however small, at the foot, especially in wet weather. The innermost bank rises to a height of 15 feet, and is of massive construction; the two other banks are about 8 feet high. The ditches are each about 12 feet in breadth. The entrance appears to have been at the northern end of the banks, and probably had a straight course across the different ditches, but it has been too much disturbed to admit of certainty.—Visited, 16th May, 1912.

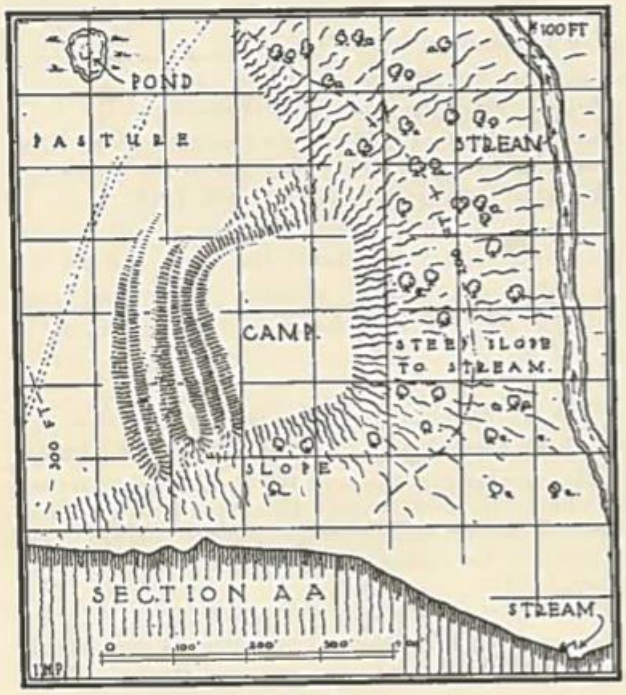


Fig. 47.

NOTE.—This earthwork has been suggested as the possible scene of the battle of Pencon or Pencoed, said (*Annales Cambriae* and *Brut y Tywysogion*) to have been fought in the 6th century.

Figure 8: Description of Castle Pen-y-Coed from Royal Commission on the Ancient Historical Monuments and Constructions in Wales and Monmouthshire (1917).

4.2 Assessment of Historical Evidence

4.2.1 The fort itself is not illustrated on the 1842 Eglwyscummin tithe map (Figure 9); the map shows a much larger field to the north of the fort than exists today. Although the fort itself is not shown, it is referenced in the fields name, Castle Park. The names of all fields in the surrounding area contain a 'Park' element. Park is a term used for field in south Carmarthenshire and does not refer to a deer park or garden feature. By the time of the first and second edition OS map (Figure 10) the fort is illustrated, and the large field to the north of it has been divided by a trackway. A pond is also marked in the field, which is evident today as an area of marshy ground.

4.2.2 The 1:2500 map published in 1953 (not reproduced here) shows a similar fieldscape seen today with the previous trackway now replaced with one that meanders through the field to the north of the fort, presumably to avoid the marshy ground. Today the field to the north of the trackway has been enlarged by removing a field boundary to create an inverted "L" shaped field.

4.2.3 A review of the available aerial photographs and LiDAR shows nothing of archaeological significance.

Figure 9: Extract of the 1842 Eglwyscummin tithe map.

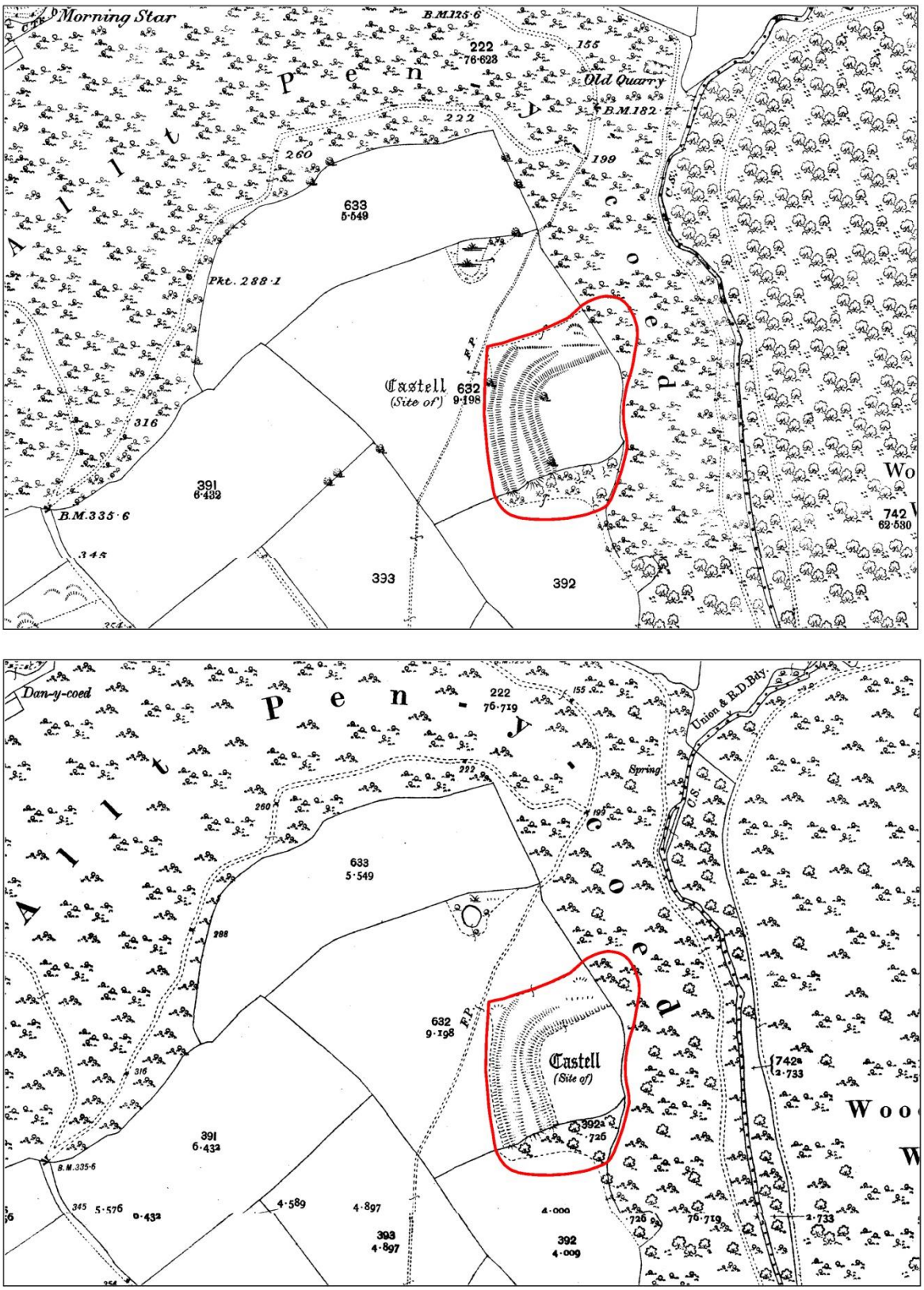


Figure 10: Extract from the first (top) and second (bottom) edition OS map showing Castell Pen-y-Coed.

4.3 Results

4.3.1 The geophysical survey's processed results are shown in Figure 11 as a grey-scale plot overlaid on a topographical map. The interpretation of the results is provided in Figure 12. A plot of the minimally processed data and the trace plot can be found in Appendix 2. The area immediately outside of the fort (Field 1) was surveyed in its entirety. In Field 2 a sample strategy was used to cover as large of an area as possible in the given time.

4.3.2 A total area of 3.61ha was surveyed.

Archaeological features

4.3.3 The following archaeological features have been identified:

a. Curvilinear ditch: A section of ditch approximately 96m in length. It extends from the northern boundary of field two and sweeps sharply in an easterly direction before diffusing until it can no longer be seen.

b. Linear ditch: A section of ditch extending from beyond the survey area to the north. It is aligned roughly N-S and extends for approximately 30m before abruptly terminating. Possibly a continuation of ditch (a).

Possible Archaeological Features

4.3.4 a Large number of possible pits can be seen across each of the surveyed areas. These features can be seen in various shapes and sizes. There is little evidence suggesting that any of these have an archaeological origin and are likely to represent natural features or geology.

c. Linear ditch: A 22m section of ditch.

d. Rectilinear ditch: A L-shaped section of the ditch running roughly NW-SE for approximately 30m. At its northwest end it appears to extend beyond the survey area. At the southeast end it turns sharply to the SSW for 14m.

e. Possible ring-ditch: The tentative remains of a possible ring ditch sits on a raised area of ground on the edge of Field 2. It measures c.8m north-south and has an east-facing opening.

Non-Archaeological Features

Ferrous

4.3.4 Several examples of dipole responses caused by ferrous artefacts can be seen within the survey areas. These most likely represent modern ferrous debris on the surface or within the topsoil.

Natural/Geological

4.3.5 In general, Field 2 exhibits a more varied magnetic response than Field 1. The underlying geology likely causes this response, and it is more evident in the northern portion of the survey area that lies on a plateaued area atop the slope. Linear striations aligned roughly east to west are visible in Field 2, and these also likely caused by the underlying geology.

Agricultural Features

4.3.6 No agricultural features were detected.

4.4 Summary of Results

4.4.1 The magnetic response varied greatly between Field 1 and Field 2, with increased background noise evident in the higher areas of Field 2 to the north. Some ditch features were observed on this high ground, but their archaeological significance and age are difficult to determine. It is conceivable to suggest that ditches a and b are a continuation of the same feature. The straight courses of possible ditches of c–d is unlike the nature of curvilinear ditch a/b, and based on the morphological difference, a much later date of origin for ditches c and d could be inferred.

4.4.2 It is likely the ditches predate the creation of the current fieldscape, but how closely they relate to the fort, if at all, cannot be ascertained. Given that the character of ditch a appears to suggest it is curving away from the fort it would suggest it is unlikely to be intimately related to it. Still, it could represent a palisade enclosure for an adjacent settlement that functioned independently of the fort.

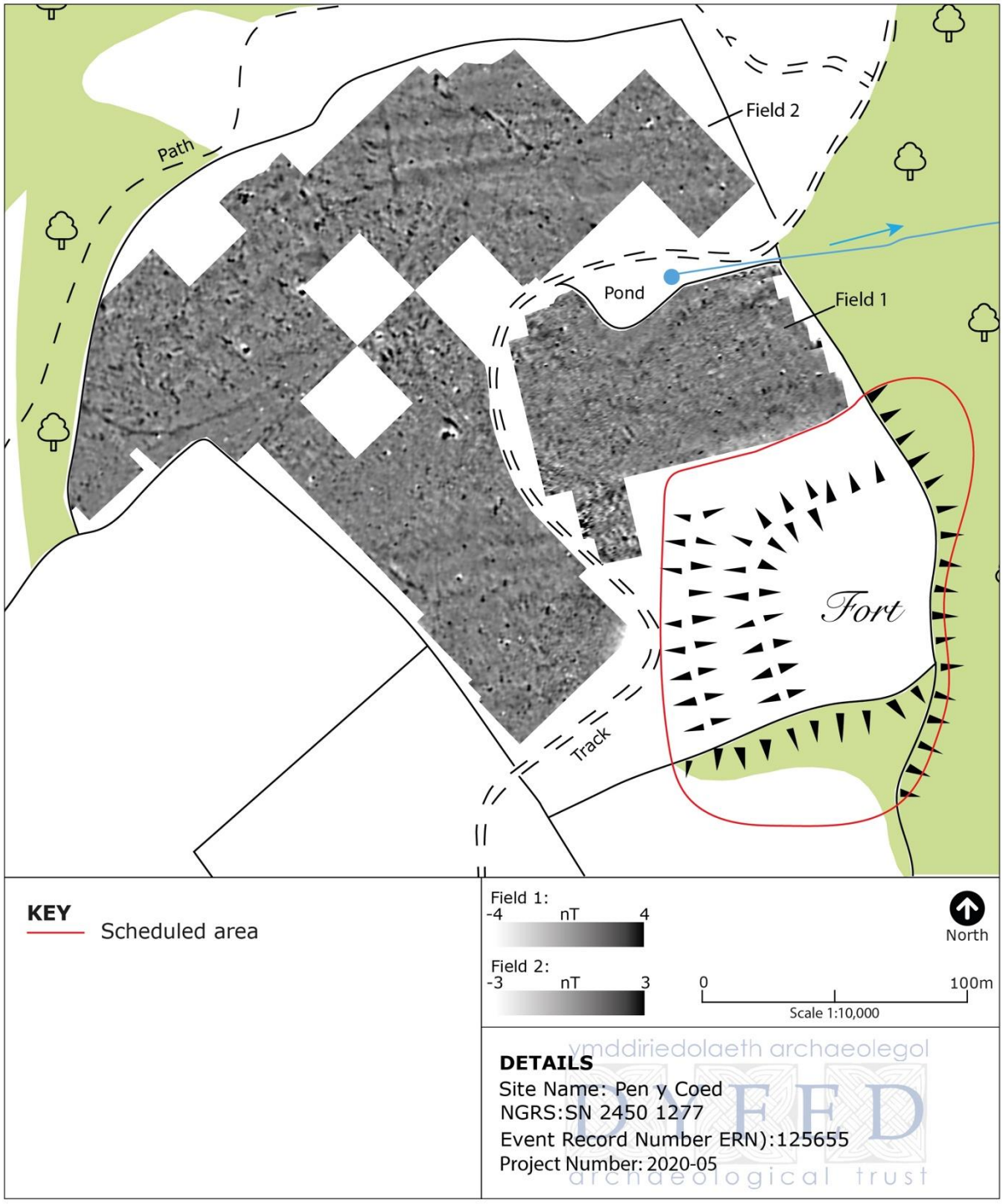


Figure 11: Castle Pen-y-Coed grey-scale plot of geophysical survey results.

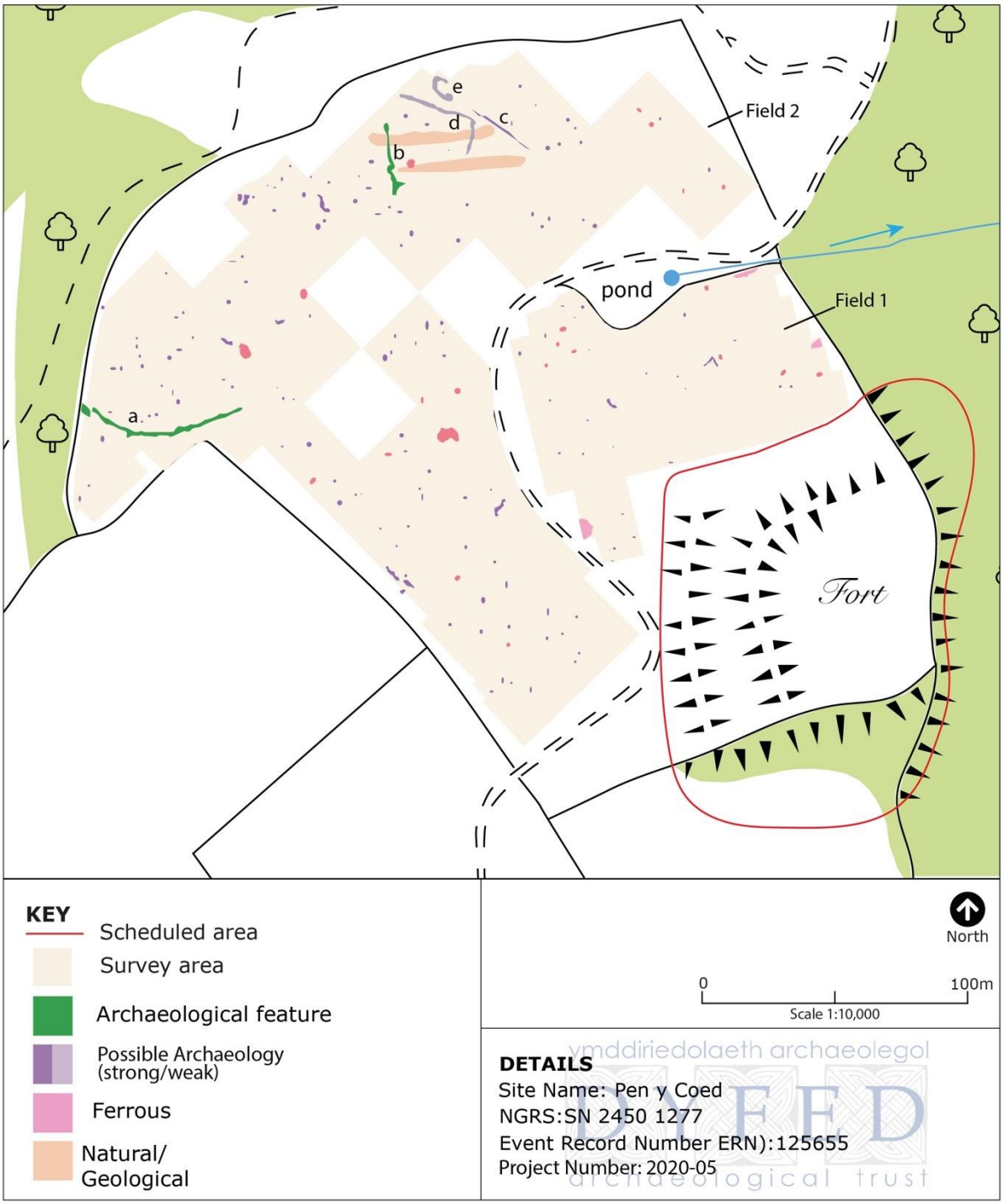


Figure 12: Castle Pen-y-Coed interpretation of geophysical survey results.

5. PICTON POINT

5.1 Site Description

5.1.1 Picton Point is located on the Cleddau River banks and is sometimes referred to as Sockets Rath (DAT PRN 3603; SM PE280; Photo 3; NGR SN 0027 1174).

5.1.2 the following description is taken from the Cadw ancient monument description:

"*Iron Age promontory fort on the headland of Picton Point which marks the confluence of the eastern and western branches of the Cleddau River enclosing the triangular shaped headland with a single bank and ditch on the landward side with steep natural slopes and low rocky cliffs to the south above the shoreline. Rather overgrown. The Royal Commission on Ancient and Historical Monuments of Wales (RCAHMW) concluded in 1925 that the Welsh name of the site, Caer Liski, was preserved in the name 'Curlysky' of the nearby cottage."* Cadw AM107, 2000.

"The promontory fort is currently fenced off along the outer edge of the bank leaving the defensive ditch within the cultivated field. Within the fenced area large mature oak trees have grown up on the defences and bracken, brambles and thorn trees have colonised the interior which was largely inaccessible during the farm visit". AP July 2003.

Photo 3: Picton Point aerial image (Image AP90-9.3_1 ©DAT).

5.2 Assessment of Historical Evidence

5.2.1 The Parishes of Slebech, Minwere and Newton tithe map of 1847 (not reproduced here) shows the same fieldscape as seen today. The fort itself is not depicted on the map but is referenced with the name Rath Park.

5.2.2 The 1st edition OS map (1890; Figure 11) illustrates Picton Point on the edge of the water, and the 2nd edition OS map (1907; Figure 12) shows a mine shaft in the same field as the fort.

5.2.3 A review of the available aerial photographs and LiDAR shows nothing of archaeological significance.

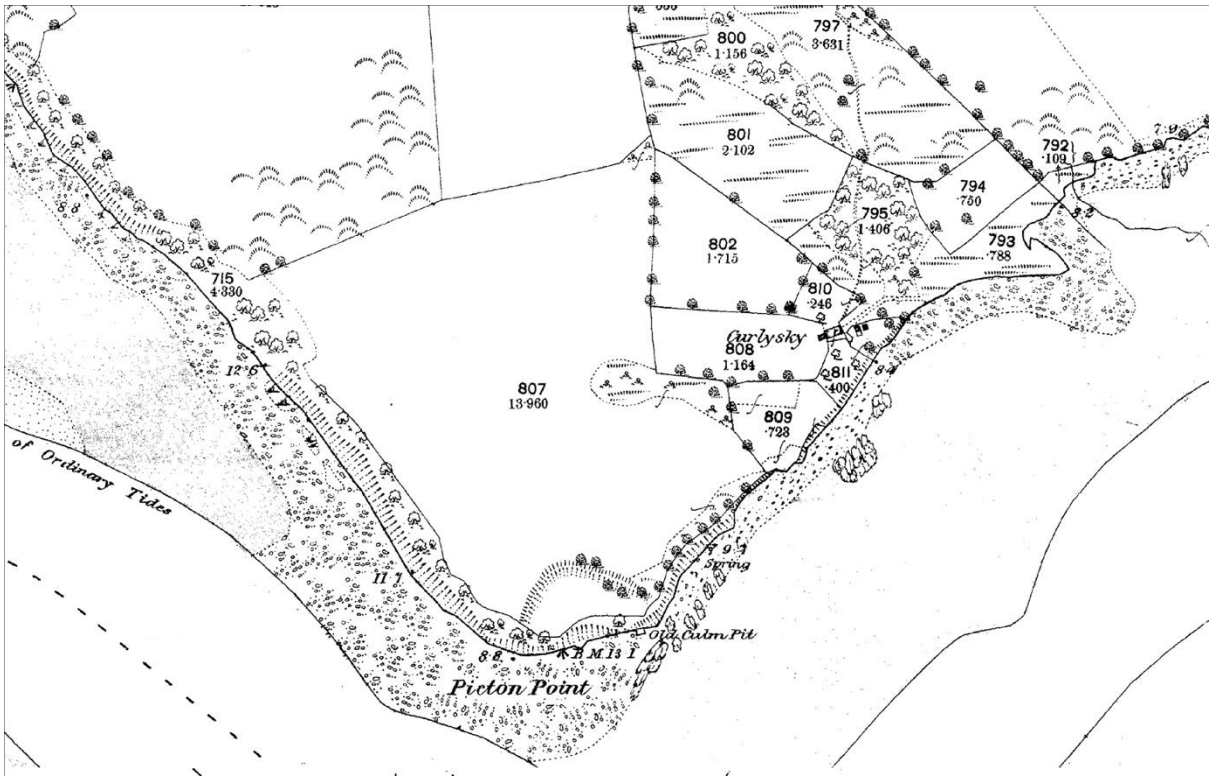


Figure 11: 1st edition OS map (1890) showing Picton Point.

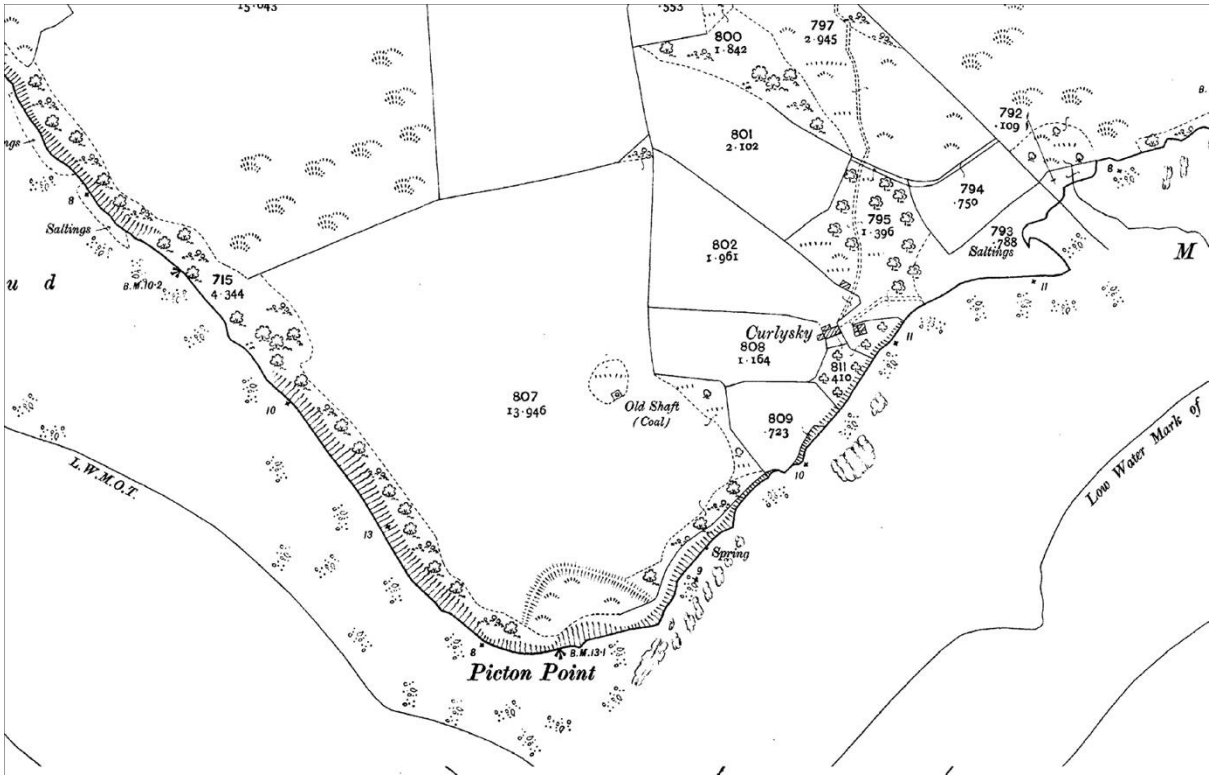


Figure 12: 2nd edition OS map (1907) showing Picton Point.

5.3 Results

5.3.1 The processed geophysical survey results are shown as a grey-scale plot overlaid on a topographic map in Figure 13. The interpretation of the results is provided in Figure 14. A plot of the minimally processed data and the trace plot can be found in Appendix 3. The area was surveyed in its entirety (100% coverage).

5.3.2 A total area of 4.31ha was surveyed.

Archaeological features

5.3.3 The following archaeological features have been identified:

a. Linear ditch: A ditch projecting from the most northern point of the fort in a northwest direction for approximately 58m before sharply turning to the west where it appears to extend beyond the field's boundaries.

b. Rectilinear ditch: This correlates with the mine shaft location illustrated on the 2nd edition OS map.

Possible archaeological features

5.3.4 A large number of possible pit features can be seen across the survey area. Those illustrated in the interpretation are not an exhaustive list of such features, but a sample representing the anomalies that exhibit a strong signal. The possible pits come in various shapes and sizes (up to 2m across), but there is little evidence to suggest they are of archaeological origin, and it is just as likely that they represent natural features or geology.

Non-archaeological features

Ferrous

5.3.5 The survey has detected two strong dipole responses. The first appears to be associated with the remains of the old mine shaft, whilst the second has no apparent cause and is likely caused by modern ferrous debris on the surface or within the topsoil.

Agricultural Features

4.3.6 No agricultural features were detected.

5.4 SUMMARY OF RESULTS

5.5 Aside from the old mine shaft, only one other feature with a certain archaeological origin has been observed in the survey data, a linear ditch extending from the fort. The ditch's straight nature is somewhat different from the fort's circular defences, which might suggest a later date, perhaps an enclosure independent of the fort but utilising the already established banks.

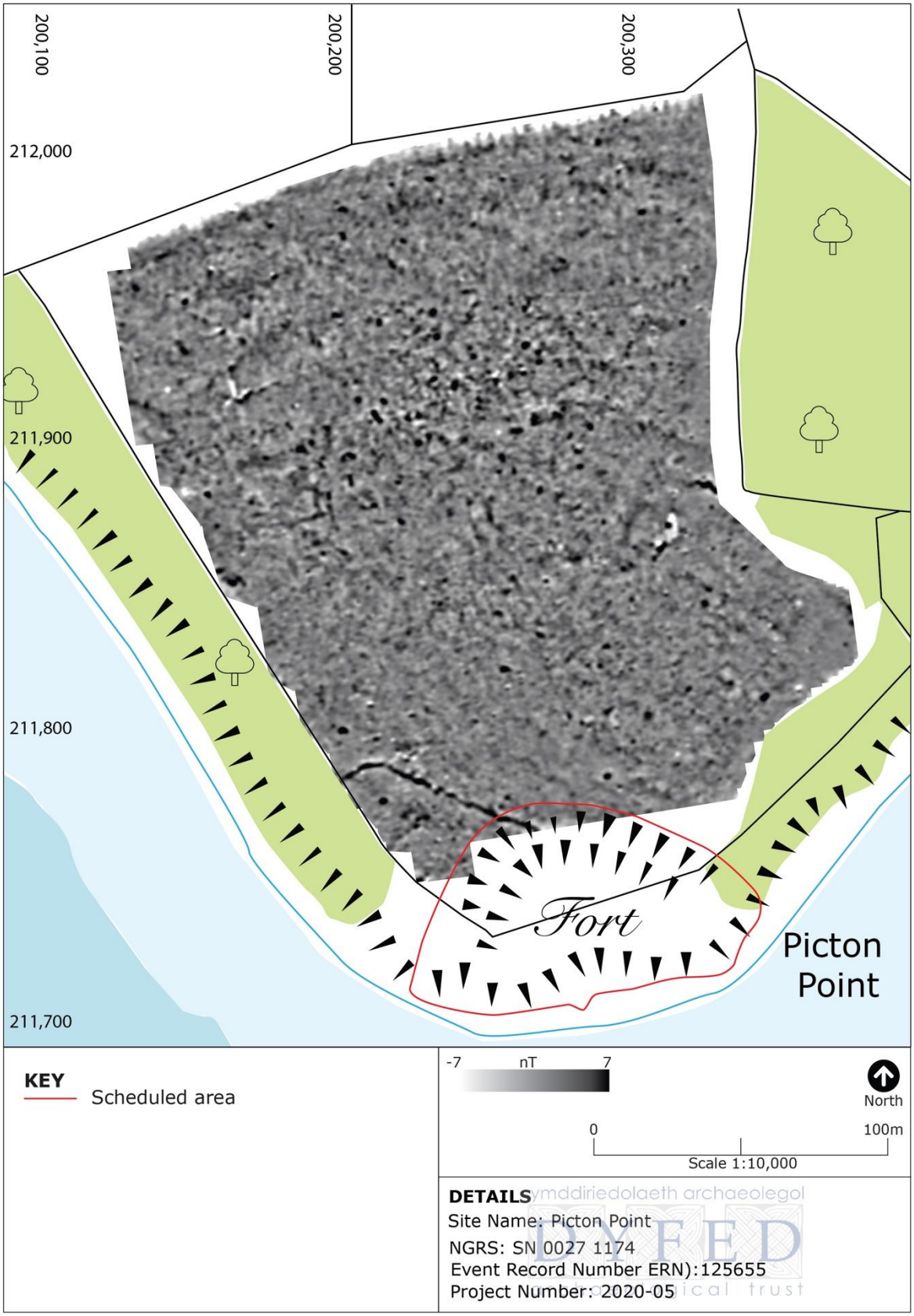


Figure 13: Picton Point grey-scale plot of geophysical survey results.

Figure 14: Picton Point Interpretation of geophysical survey results.

6. RUDBAXTON RATH

6.1 Site Description

6.1.1 Rudbaxton Rath (PRN 3307) is a small, bivallate, Iron Age hillfort reused in the medieval period as a motte and bailey castle (PRN 3308). It occupies the summit of a low rounded hill that achieves a height of over 70m above sea level (Photo 4; NGR SM 9854 1886). Immediately to the east land falls away sharply by 40m into the valley of the Cartlett Brook. On other sides the land falls away more gently by c.25m. Two ramparts running around the contours of the hill defend the fort. These are quite widely spaced on the west side, but run closer together on the south, east and north sides. On the east side the inner bank stands up to 2.8m above the interior and 6.5m over the ditch. The outer bank is slighter and stands to an average of 1.5m. There is a modern gap in the ramparts on the south side. The original entrance seems to be on the north side.

6.1.2 The sub-circular interior measures c.100m diameter. A weak, medieval motte, represented by a step up by 1.5m, occupies the western part of the interior. On aerial photographs a crop-mark ditch can be seen outside (east) of this step.

6.1.3 The interior and exterior of the site are under improved pasture. The ramparts and steep eastern valley sides are under deciduous woodland.

Photo 4: Rudbaxton Rath aerial image (Image AP88-44.14©DAT).

6.2 Assessment of Historical Evidence

6.2.1 A review of the historical maps available how that the fieldscape in the vicinity of the fort has remained virtually the same since at least the Rudbaxton tithe map (1844), with the only minor change being that the large field to the south of the Rath has now been divided into two.

6.2.2 Outside the northeast corner of the outer ring and within the ramparts lies St. Leonard's Well (PRN 3311), and just below the well are the remains of St. Leonard's Chapel (PRN 3310), the walls of which were standing in living memory. Both the well and chapel are not depicted on maps until the 2nd edition OS map (1908; Figure 15).

6.2.3 An aerial photograph (Photo 5) shows extensive and complex crop marks in the large field to the south of the fort, which had just been sown shortly before the survey so could not be accessed. There are some tentative crop marks in the survey field that lies to the west of the Rath.

6.2.4 A review of the available LiDAR (only 2m resolution available) shows nothing of archaeological significance.

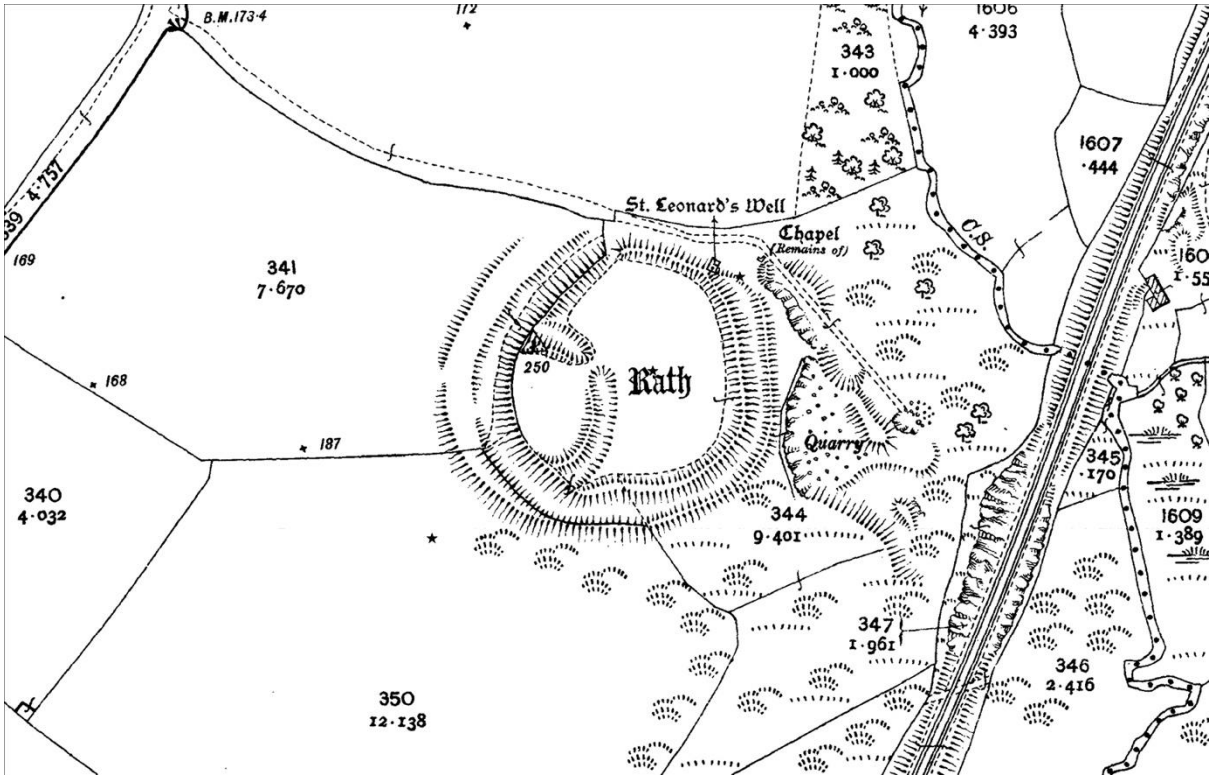


Figure 15: 2nd edition OS map showing Rudbaxton Rath.

Photo 5: Aerial photograph showing Rudbaxton Rath and crop marks (DAT SM94N012).

6.3 Results

6.3.1 The geophysical survey's overall results are shown in Figure 16 as a grey-scale plot overlaid on a topographical map. The interpretation of the results is provided in Figure 17. Associated interpretation diagrams for individual areas (Fields 1 – 3) are shown in Figures 19 - 21. A plot of the minimally processed data and the trace plot can be found in Appendix 4.

6.3.2 A 100% survey coverage was achieved in Fields 1 – 3, totalling a survey area of 4.23 ha.

6.3.3 In general, the quality of the results is good with little to no interference from external sources. The gradient of Field 3 varied considerably across the whole area, resulting in some staggering visible in the results.

6.3.4 Before proceeding with the individual anomalies identified it is important to point out the large swathe of low magnetic variation seen in Field 1 and 2. In Field 1 this is located at the base of the slope in a relatively flat area. As some of the observed archaeological features pass through this area their amplitude significantly decreases. It is believed that this is likely due to a build-up of hill wash or "colluvium" in this area which overlies the archaeological features. This area has been marked as "z" on the accompanying result plots.

Archaeological features

6.3.4 The following archaeological features have been identified:

a. Small enclosure / Possible ring ditch (Field 1): This small enclosure measures approximately 8.0m across and sits close to the fort's entrance. It appears to have an open west end, facing away from the fort, suggesting a possible ditch that has been terraced into the slope. Inside the ditch there is a large pit measuring c.4m in across. There are two other pits just outside of the enclosure's bounds on its western side and a third pit on the north side.

b. Large ditched enclosure (Field 1): located on the Rath's western edge on the ground that slopes steeply (approximately 5.0m) east to west. The enclosure appears to extend directly from the Rath's ramparts suggesting an intimate relationship, possibly using the ramparts to form its eastern bounds to form an annexe. The northern boundary of the enclosure extends from the ramparts of the Rath. It runs in a north-westerly direction for approximately 30m before turning almost 90^{o,} forming a rounded corner. The western boundary is also approximately 30m in length and appears to have two defined breaks along its course. The southern boundary is not in the same alignment as the northern boundary and extends for a shorter length at just 20m leaving a large opening. There are no obvious internal features inside the enclosure.

c. Curvilinear ditch (Field 1): A section of ditch measuring approximately 67m in length and bowing to the west. The magnetic response diffuses before it reaches the northern edge of the field but may extend into the field to the south. The ditch is roughly concentric with the Rath and may be associated with outer defences. The ditch bows around enclosure (b) and, with the combination of ditch (d), possibly forms a funnel into this enclosure.

d. Linear ditch (Field 1): A linear section of ditch measuring approximately 46m long and 1.5m wide. This possibly works in conjunction with ditch (c) to create a funnel and delineates access into the Rath whilst acting as a marked separation between the rath entrance and enclosure (b).

e. Linear bank (Field 1): This negative anomaly orientated approximately NNE to SSW and 45m in length sits at the base of the slope downhill from the Rath. It is indicative of a buried bank.

f. Linear bank (Field 1): This second negative linear anomaly is orientated roughly NE to SE and measures approximately 112m in length. The mid-section of the bank is diffused, and the response is weak as it passes beneath the colluvium deposits. At its most western end, the bank culminates in a strong response with an associated positive response. The bank appears to terminate short of the existing western field boundary.

g. Curvilinear ditch (Field 1): Visible on the aerial photograph this ditch extends from the west of the survey area and sweeps across the north-eastern edge of the survey bowing to the southeast. The observed ditch is 104m long and continues into the field to the north. As the ditch passes beneath the colluvium deposits at the base of the slopes its response weakens significantly.

h. Linear ditch (Field 1): short sections probably part of a single length of ditch that appears to follow the alignment of the existing field boundary to the west of the survey area. It could represent an earlier phase of this field boundary.

i. Linear ditch (Field 1): This short section of a ditch extends from the western field boundary into the survey area for 14m before the response diffuses. It is possible that the ditch continues beneath the colluvium deposit.

j. series of small enclosures (Field 1): Located on the southern edge of the survey area a series of small enclosures appear to be extending into Field 1 from the southwest. Although not clear, the enclosures possibly extend beneath the colluvium deposit that sits at the base of the hill slope.

k. Double ditch (Field 2): This anomaly comprises a pair of parallel positive anomalies indicative of ditches. The pair of ditches is aligned roughly ESE to WSW and are approximately 50m in length. At the most western end, the ditches' responses are diffuse; they may extend further beneath the colluvium deposit. There is a possibility that the southern ditch can be seen curving beneath the colluvium, but this response exhibits a very weak amplitude. Features of this nature could be different phases of a single ditch but more commonly resolve to be ditches flanking a hedge-line. There is no indication on historic mapping that these represent a former boundary, but they follow the projected line of an existing field boundary.

l. Sections of ditches extending from Field 1 (Field 2): These two short sections of ditches (approximately 10m in length) appear to be an extension of the small enclosures (j) seen in Field 1. At their western end, the ditches' response diffuses, but they may continue below the alluvium.

m. Linear ditch (Field 2): This 44m long ditch is aligned roughly SE to NW and is possibly cut by double ditch (k). At its southwest end the ditch appears likely to extend into the adjacent field, and at its northwest end it appears to continue into Field 1 where it likely joins with (j).

n. Linear ditch (Field 2): This linear ditch is aligned parallel with ditch m with a separation of 11m. This ditch also appears to extend into the field to the south-east and possibly continues into Field 1, where it joins (j).

o. Circular ditch (Field 2): This circular anomaly appears to extend from the adjacent field. Its eastern half exhibits the strongest amplitude response, which weakens significantly on its western half, making it difficult to discern. It possibly terminates at ditch (m).

p. Parallel ditches (Field 3): A series of up to three ditches orientated roughly NE to SW, on roughly the same alignment as the existing field boundary. The length of the ditches is 206m, almost the length of the field. There are several visible interruptions along the course of the ditches, but this is likely caused by the varying gradient across the field resulting in stagger. It is possible that these ditches are different phases of a single ditch. Given their similarities with the existing field boundary it is likely they are an earlier phase of it.

q. Linear ditch (Field 3): This ditch is orientated roughly SW to NE, a slightly different orientation to the previously discussed ditches (p). The ditch is 59m long and appears to terminate a short distance before ditch (r). Whether there is a

relationship with ditch (r) as an intentional access route (c.5m wide) or coincidental cannot be ascertained.

r. Linear ditch (Field 3): This ditch is orientated NW to SE and begins a short distance to the north of the terminus of ditch (r). It is 40m long and appears to extend beyond the existing field boundary to the SE.

s. Linear ditch (Field 3): This linear ditch is similar to (q). The ditch starts at the north in proximity to ditch (r) when it then extends for 80m in a southwest direction before sharply curving at its most southern end forming a hook.

t. Linear ditch (Field 3): This linear ditch is visible on the aerial photograph of Rudbaxton Rath (Photo 5). It is aligned NW to SE and appears to extend from the wooded area to the west of Field 3. The ditch is 64m long and likely extends into the field to the west.

v. Double ditch (Field 3): Visible on the aerial photograph, these parallel ditches exhibit a feeble response making them barely discernible. They sit at the base of a steep slope that rises sharply before plateauing out to a large level area adjacent to the Rath. The weak response could be attributed to hill wash masking the underlying ditches, which may enclose an annexe to the Rath.

Possible Archaeological Features

6.3.5 A Large number of potential pit and ditch features can be seen across each of the surveyed areas. Some of these have already been discussed where there is strong evidence to suggest they are probable continuations of archaeological features.

6.3.6 Often, these features are discrete with weakened and diffused responses making an archaeological interpretation difficult. They appear in various shapes and sizes, although an archaeological origin cannot be ruled out, there is often little evidence to support such an interpretation and there is just as much likelihood they represent natural or geological features. There are, however, some noteworthy anomalies:

w. Possible ring-ditch (Field 1): This tentative ring-ditch sits on the slopes below the Rath. It has a diameter of 8.5m and possibly has a central feature. It is difficult to discern if there is an opening on the northwest side due to the area's natural magnetic variation. If there is, this would suggest a probable roundhouse, but one that is not terraced into the hill slope as you would expect. If the ring-ditch is complete then a burial mound is the more favourable interpretation.

x. U-shaped ditch (Field 3): This weak amplitude anomaly sits just below the slope's base and is orientated roughly northwest to southeast. At its mid-section, it sharply bows to the SW creating its U-shape. No obvious function is apparent.

Non-archaeological features

Magnetic Interference

6.3.7 Generally, there is little interference from external sources. A probably water pipe (y) feeding watering troughs can be seen cutting across field 1, but its impact on the geophysical survey results appears to be negligible. At its western end it appears to have cut through the small enclosures (j). As it is likely more archaeological remains are masked by the colluvium deposit it is likely it has impacted more remains that are not evident in the geophysical survey results.

Ferrous

6.3.8 The survey has detected four strong dipole responses (pink). These don't appear to be associated with any evident archaeological remains and are more likely to represent modern ferrous debris on the surface or within the topsoil.

Natural/Geological

6.3.9 A large swathe of the survey area in Field 1 and 2 (z) exhibits a low magnetic variation. This likely represents a build-up of hill wash or "colluvium".

Agricultural Features

Plough Lines

6.3.10 There is evidence of plough lines in the southwest corner of Field 2.

6.4 SUMMARY OF RESULTS

6.4.1 The geophysical survey has identified extensive archaeological remains outside of the Rath and scheduled area. Some of these features could relate directly to the Rath, such as ditch curvilinear ditch (c), which appears to be concentric with the Rath, and enclosure (b) which appears to share a boundary with the banks of the Rath and is enclosed by ditch (c). It is also tempting to speculate whether ditch (c) is creating a funnel towards the entrance of enclosure (b), possibly for herding animals. Outside of the entrance to the Rath is what appears to be a small enclosure or possible ring-ditch terraced into the natural slope. This setup is commonly seen in roundhouses, where the ditch is not needed on the downslope side. If this is a roundhouse, it could mean that ditch (d) is being used to separate the activities occurring around enclosure (b) from an area of occupation.

6.4.2 Further afield from the Rath entrance, the aerial photograph shows a field littered with crop marks of likely archaeological origin. Unfortunately, this field was not available for survey as it had just been seeded, but it looks as though evidence of these archaeological remains has just been "clipped" through the survey of Field 1. Although only a small area is observable, these remains' character appears to be quite different from that of the remains closer to the Rath. It seems to be a series of small paddocks, the character of which might suggest a later date.

6.4.3 Based on these results it looks as though archaeological remains are still extending in all directions away from the Rath, suggesting that in total the archaeological remains cover a large area. It would indeed be insightful to extend the survey area at Rudbaxton Rath, particularly into the field in between Fields 2 and 3.

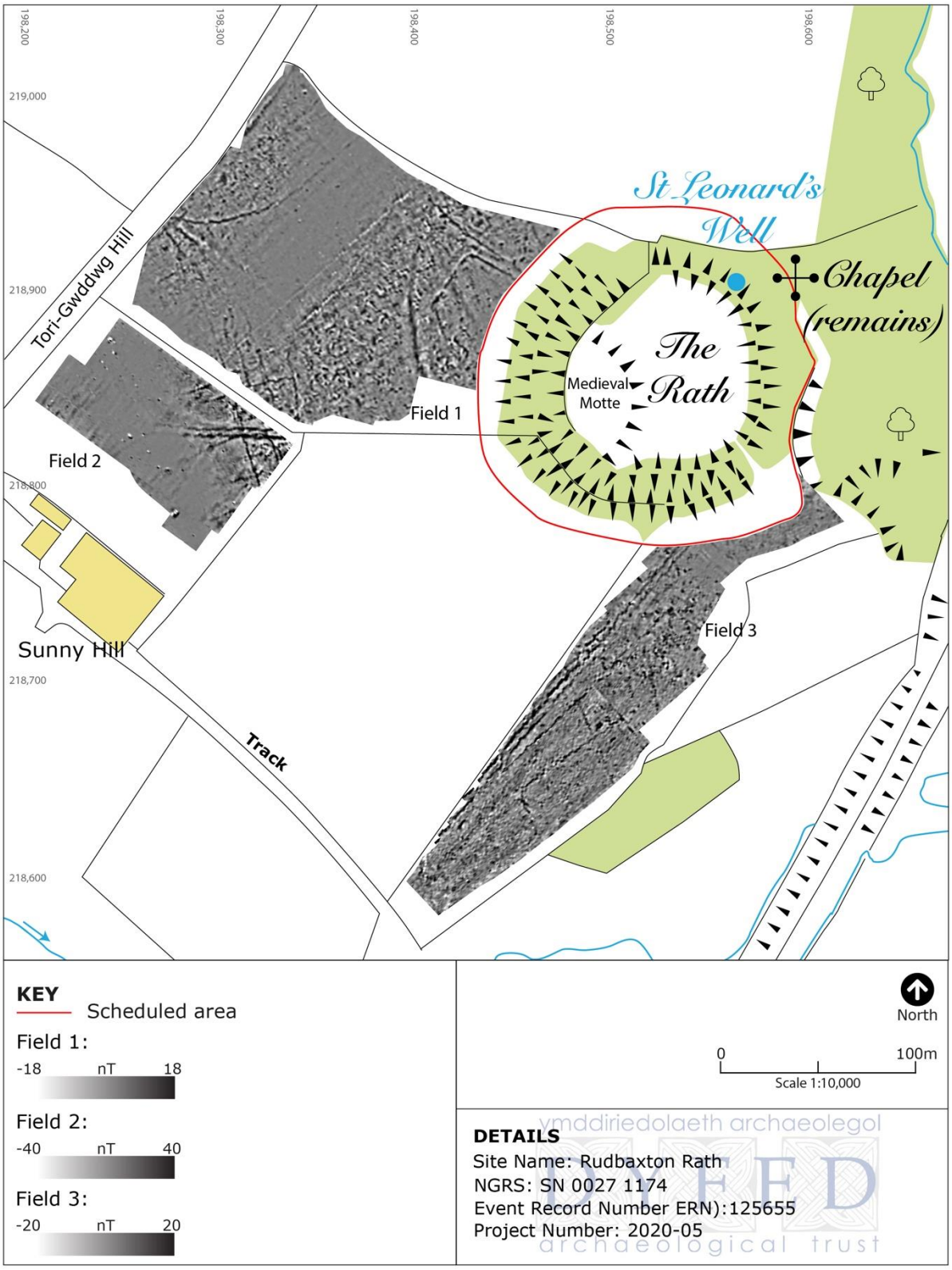


Figure 16: Rudbaxton Rath grey-scale plot of overall geophysical survey results.

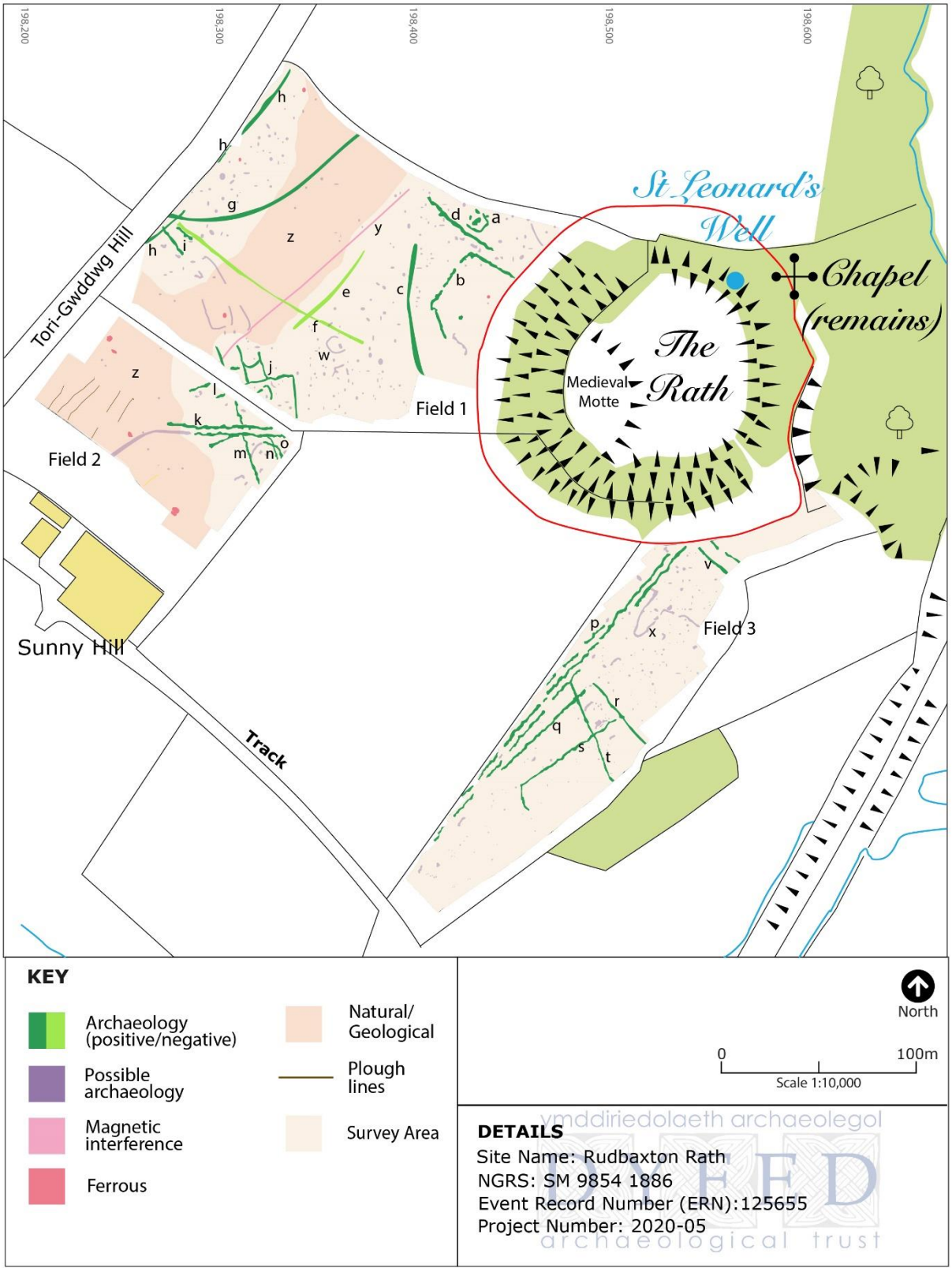


Figure 17: Rudbaxton Rath interpretation plot of overall geophysical survey results.

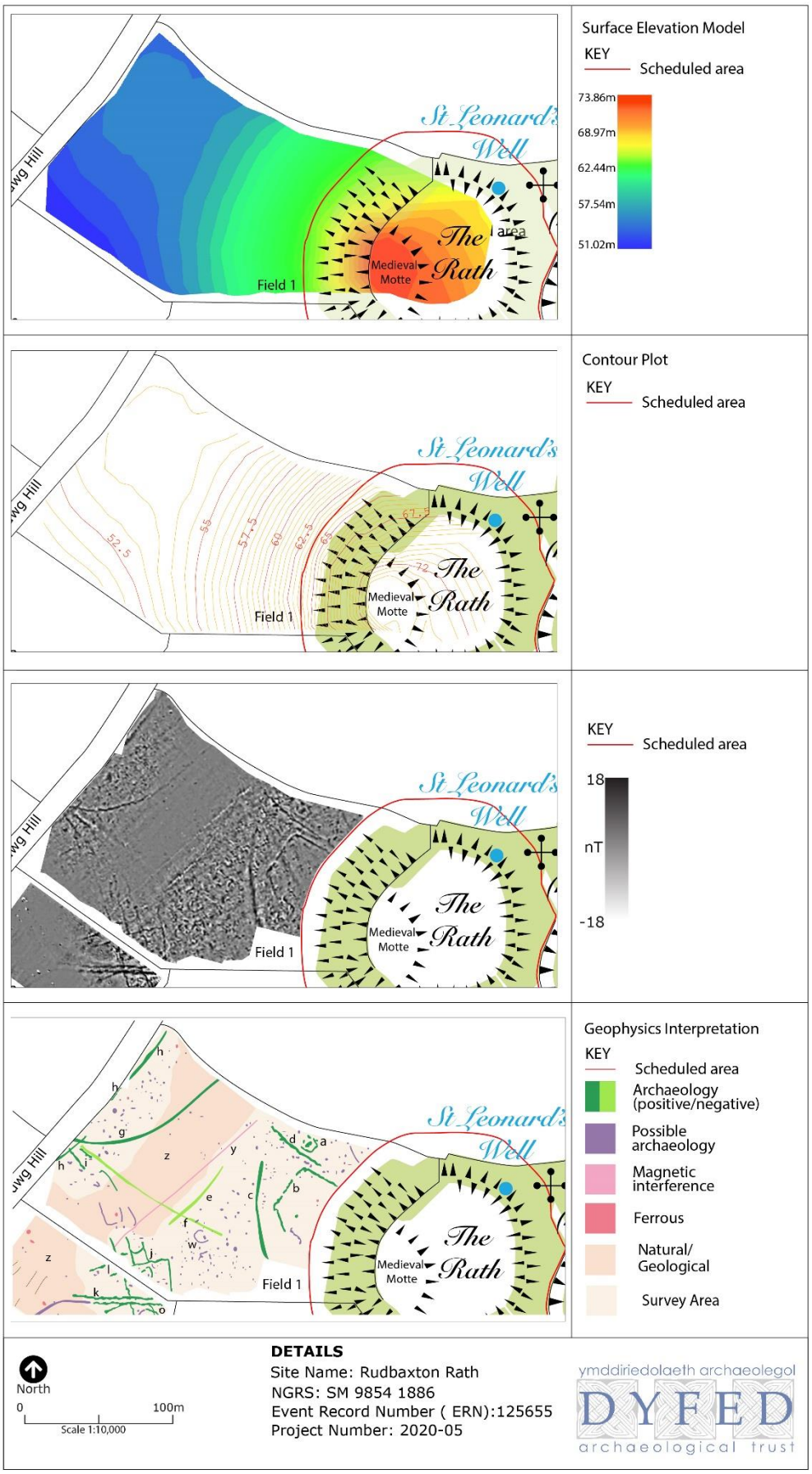


Figure 18: Rudbaxton Rath Field 1.

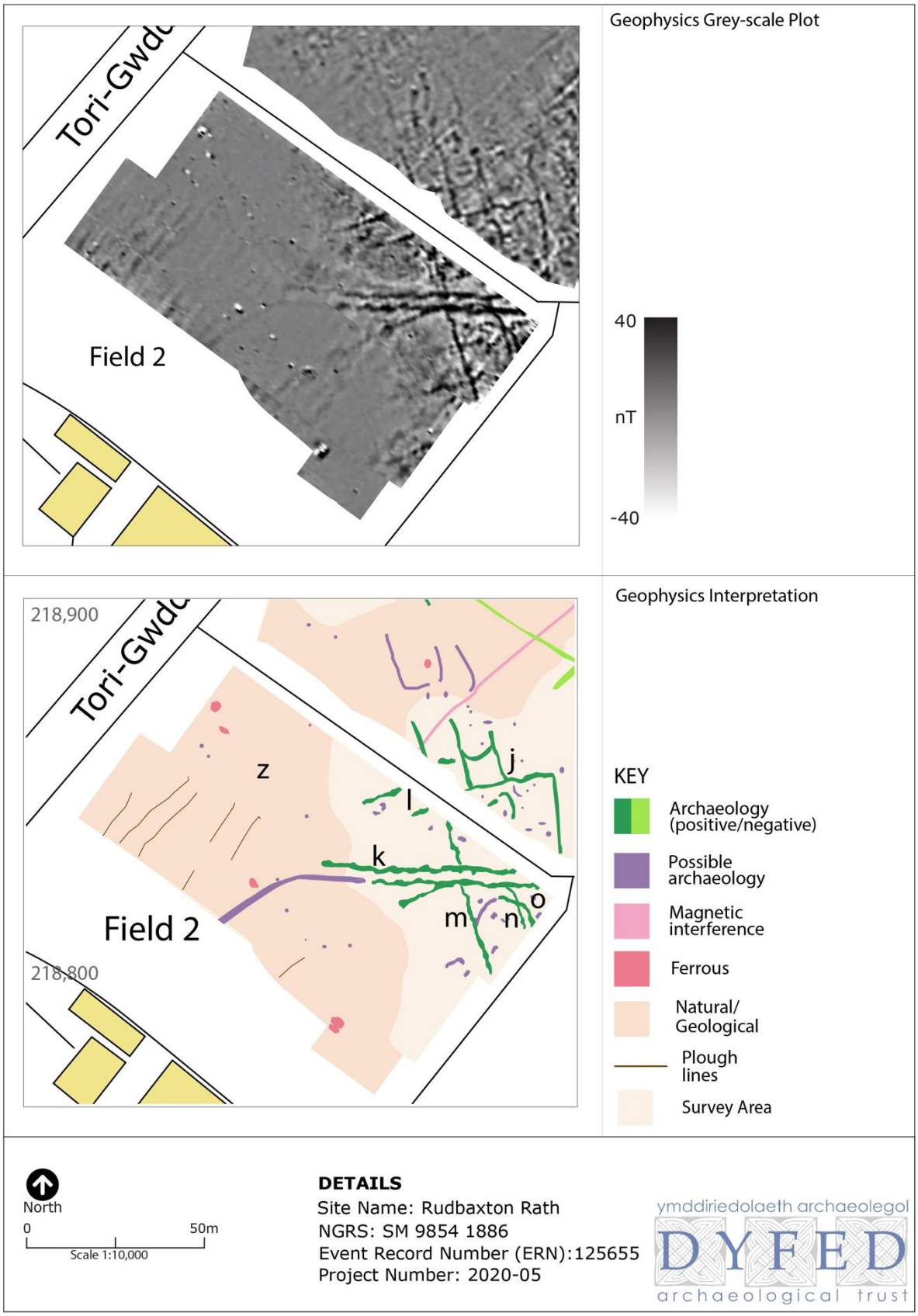


Figure 19: Rudbaxton Rath field 2.

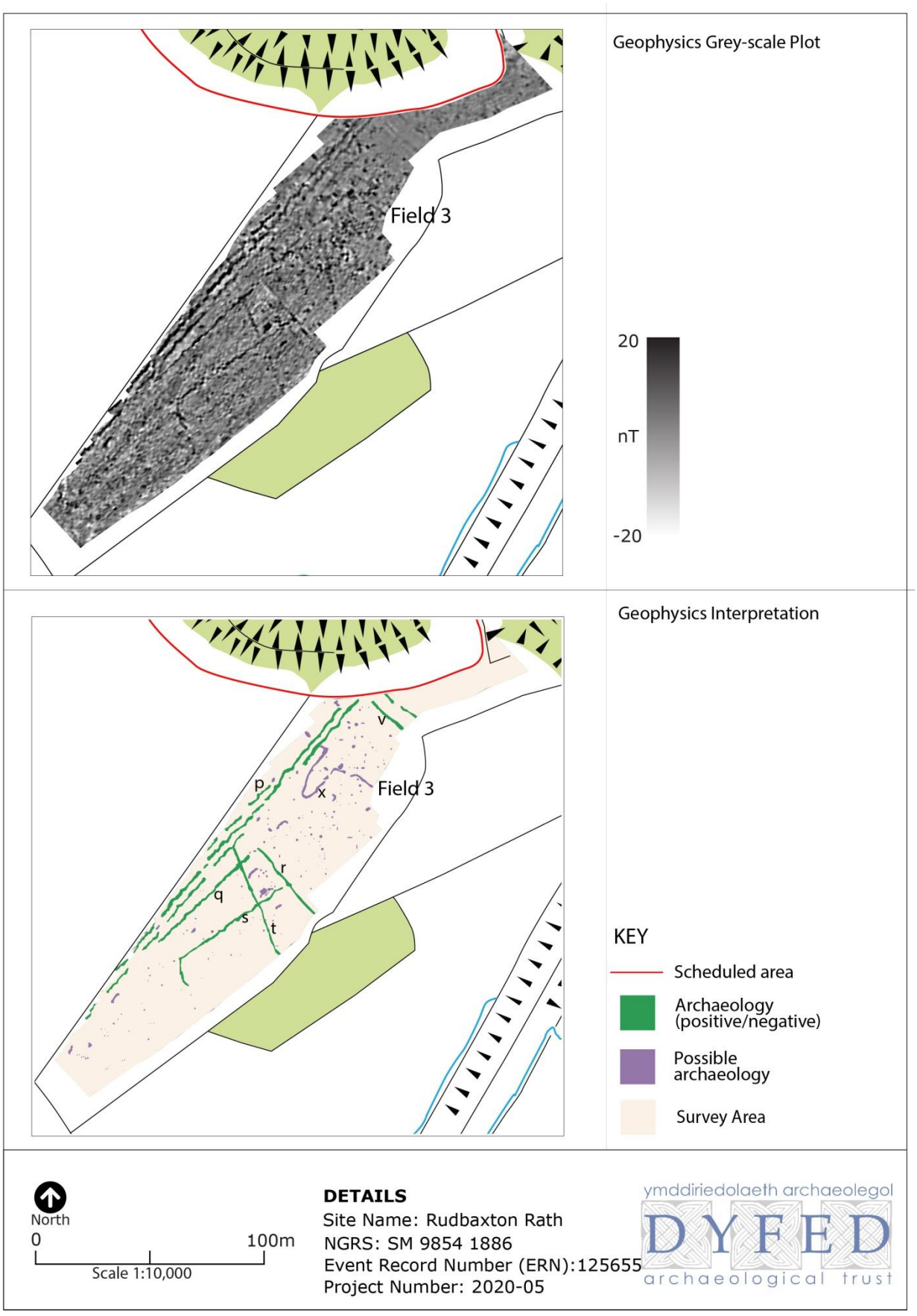


Figure 20: Rudbaxton Rath Field 3.

7. CASTELL BACH

7.1 Site Description

7.1.1 Castell Bach (DAT PRN 2827; NGR SM 8919 3666) is a small, oval defended enclosure occupying the southwest end of a rounded hilltop at 90m above sea level. In 1925, the RCAMW described the site as a bank 75ft long and 3ft high with traces of an external ditch. By the 1960s the Ordnance Survey recorded the defences as a scarp 0.6m high. In 2007, there was no earthwork evidence for the site, and all that remained of it was a slightly stony band in a ploughed field. According to the OS map the enclosure originally measured c.120, SW-NE and 85m NW-SE. They recorded a possible entrance on the SE side.

7.2 Assessment of Historical Evidence

7.2.1 The defended enclosure does not appear on any available map sources. However, the four fields that now converge over the enclosure area each contain a "Castel" element in their name (Castel Nessa, Castel Ucha, Castel Bach and Castel Draw). The field-scape in the vicinity of the defended enclosure remains virtually unchanged since the Llanwnda tithe map, produced in 1845.

7.2.2 A review of the available aerial photographs and LiDAR shows nothing of archaeological significance.

7.3 Results

7.3.1 The processed geophysical survey results are shown as a grey-scale plot overlaid on a topographical map in Figure 21. The interpretation of the results is provided in Figure 22. A plot of the minimally processed data and the trace plot can be found in Appendix 5.

7.3.2 A total area of 6.92ha was surveyed.

7.3.3 In general, the quality of the results is good with little interference from external sources.

Archaeological features

7.3.4 The following archaeological features have been identified:

a. Defended enclosure: Remnants of the defended enclosure can be seen extending across Fields 1, 2 and 4 and possibly Field 3. The enclosure is sub-oval in shape and measures approximately 128m (north-south) by 99m (east-west), and encloses an area roughly 0.9ha in size. Along its course, the enclosure's response is diffused, which could indicate the feature is shallow, either through truncation or being close to the surface. Truncation through ploughing is the favoured interpretation. There is neither obvious entrance nor evidence of any internal features of definite archaeological origin.

b. Angled ditch: In Field 3 this ditch measures 34m long and is aligned roughly SW-NE. It continues into Field 1 on the same alignment where it extends for another 60m before sweeping eastwards, creating a curved corner and running for approximately 80m. The ditch stops short of the enclosure (b).

c. Polygonal enclosure: The intermittent remnants of this enclosure lie towards the southwest corner of Field 3. The enclosure measures 92m (north-south) by 113m

(east-west). The response is weak, likely suggesting truncation through ploughing. The enclosure appears to extend into the field to the west, and there is possibly an extension on its southern side extending into the adjacent field to the south. There is no obvious entrance into the enclosure visible, but the northern edge seems most likely.

Possible Archaeological Features

7.3.5 A Large number of possible pits can be seen across each of the surveyed areas. Often, these features are discrete with weakened and diffused responses making an archaeological interpretation difficult. Such features that lie within the internal area have a higher likelihood of being archaeological and associated with the defended enclosure. However, with features outside of the enclosure there is little evidence to support an archaeological origin, and although it cannot be ruled out there is just as much likelihood they represent natural or geological features. There are, however, some noteworthy anomalies:

d. Possible semi-circular ditch: This faint feature lies to the north of feature (b). It is semi-circular in shape with a northeast-facing opening. This could be a heavily truncated archaeological feature or the result of a natural phenomenon.

e. Small semi-circular feature: This faint feature is located in Field 4 with a west-facing opening and measures approximately 9m across. Its shape and size are comparable to that of known ring-ditches. A strong positive anomaly on its southern edge could represent an associated pit.

Non-archaeological features

7.3.6 A modern utility is Located along the western edge of fields 2 and 4 and follows the existing field boundary. Its impact on the geophysical survey appears negligible.

Uncertain Origin

7.3.7 A strong discrete anomaly (g) has been identified located towards the north of Field 4. Its origin has not been determined; it is possible that it could be archaeological given its proximity to the defended enclosure, but it is equally likely that it is natural or something modern located within the topsoil.

7.4 SUMMARY OF RESULTS

7.4.1 The geophysical survey has successfully located remnants of the known defended enclosure and demonstrated the impact that ploughing has had on the below surface remains. There are no signs of an obvious entrance in what has been detected of the defended enclosure. In the northeast corner of Field 3 only a subtle possible ditch section can be seen before it disappears beneath the curved hedge bank. Although only a weak response is observed it would account for this unusual curve in the hedge bank, strengthening its interpretation as part of the defended enclosure. There is also no evidence of any internal features of definite archaeological origin, but given the impact ploughing has had on the site, these features were likely shallow and completely removed. There are features of possible archaeological features in the internal area which given their location, the likelihood they are remnants of settlement associated with the defended enclosure is high.

7.4.2 The survey has also detected the remains of previously unknown archaeological features, including a further two enclosures of considerable size. How each of these enclosures relates to each other has not been determined. Still, it appears likely that they extend into the adjacent fields suggesting a strong potential for further unrecorded archaeological remains to be within the area.

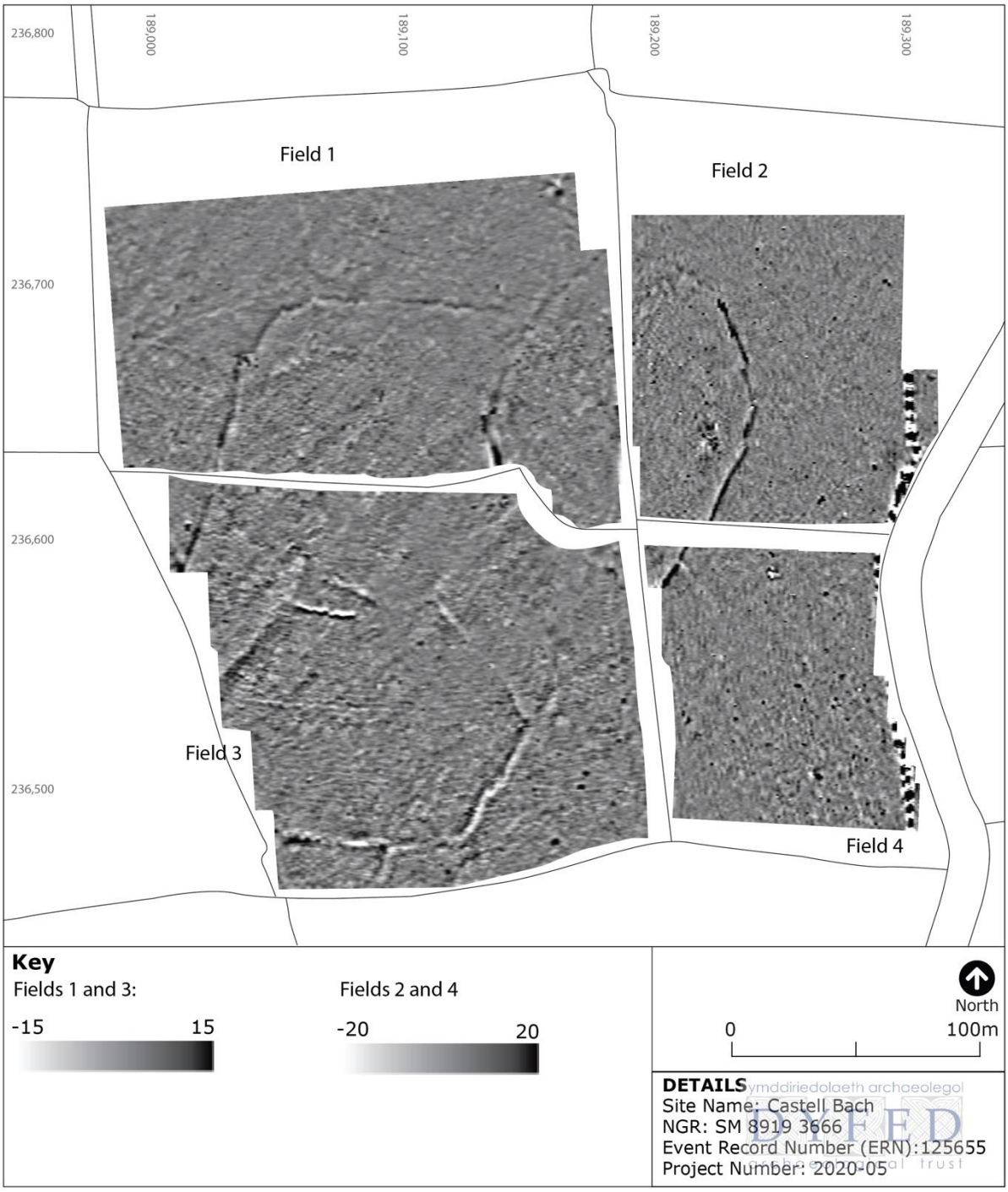


Figure 21: Castell Bach grey-scale plot of overall geophysical survey results.

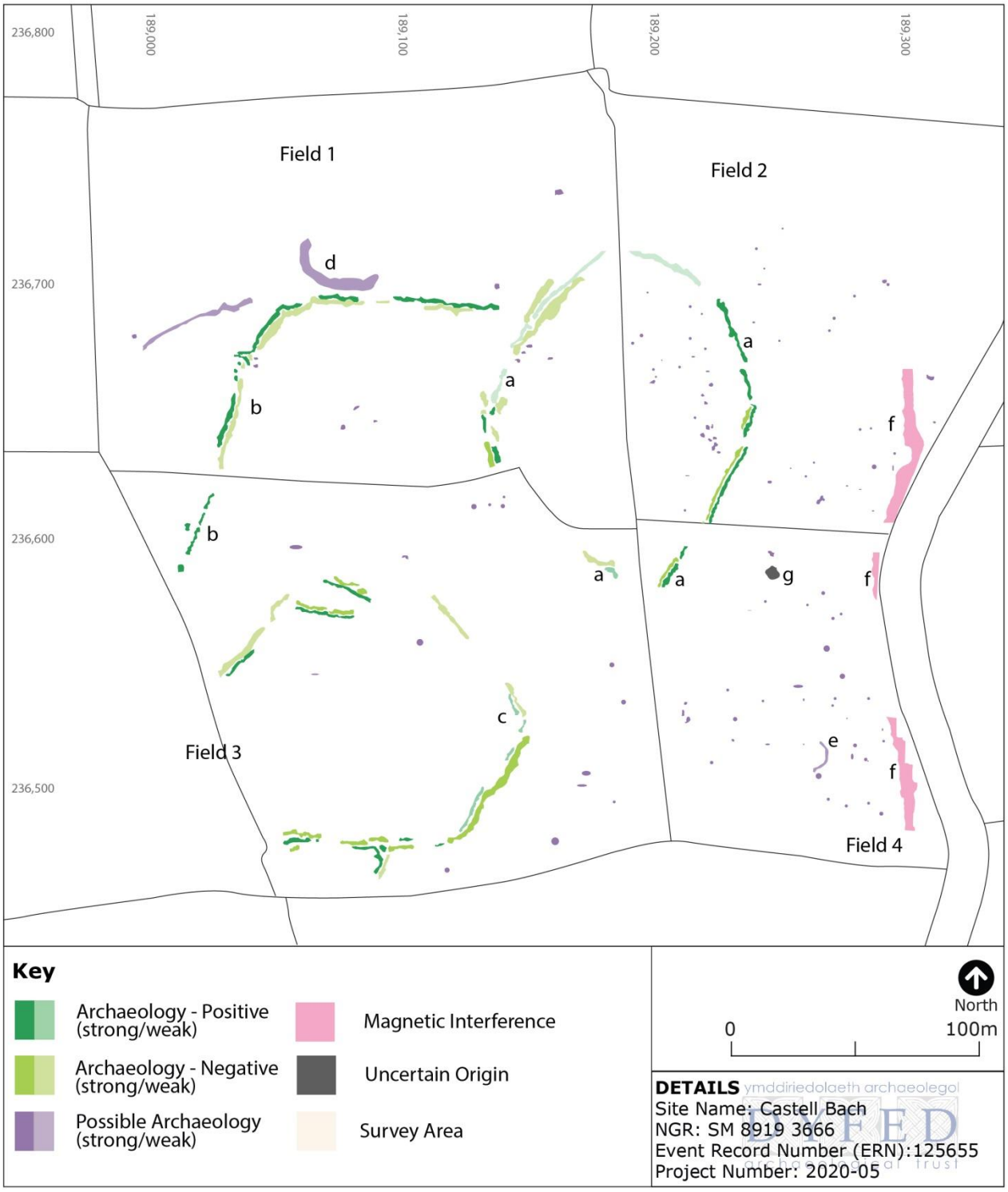


Figure 22: Castell Bach interpretation plot of overall geophysical survey results.

8. CAER ABER PWLL

8.1 Site Description

8.1.1 Caer Aber Pwll or Caerau (DAT PRN 2735 SM No. PE 392; Photo 6) is a multivallate coastal promontory fort in Pembrokeshire (NGR SM 7883 3075). It is naturally defended by sea cliffs on the north side and by a curving line of banks and ditches on the south. The interior area now only measures 65m E-W and 55m N-S. It is assumed that a large part has been lost to the sea. The defensive system is complex and consists of three lines of bank and ditch, with the banks rising over 2.5m above the interior of the fort and above the ditch bottoms. There is no evidence for an entrance; the sea has presumably removed it. The configuration of the defences suggests at least two phases of construction. One line of bank and ditch runs to the east, linking with a second fort (2907) - the name 'Caerau' means forts. The site is under rough grass.

8.2 Assessment of Historical Evidence

8.2.1 The promontory fort does not appear on available map resources until the OS map published in 1888. The field-scape within the fort's vicinity has remained mostly unchanged since the St Davids tithe map published in 1840.

8.2.2 The promontory fort's substantial earthworks are visible on aerial photographs and LiDAR data (only 2m resolution available). No other features are visible in the immediate area of the fort.

Photo 6: Caer Aber Pwll aerial image viewing in a southerly direction (Image AP92-14.28©DAT).

8.3 Results

8.3.1 The processed geophysical survey results are shown as a grey-scale plot overlaid on a topographical map in Figure 23. The interpretation of the results is provided

in Figure 24. A plot of the minimally processed data and the trace plot can be found in Appendix 6.

8.3.2 A total area of 3.65 was surveyed.

8.3.3 No features of obvious archaeological origin were detected during the geophysical survey.

Possible Archaeological Features

8.3.4 Generally, several possible pits can be seen across each of the surveyed areas. Often, these features are discrete with weakened and diffused responses making an archaeological interpretation difficult. They appear in various shapes and sizes. Although an archaeological origin cannot be ruled out, there is often little evidence to support such an interpretation. There is just as much likelihood they represent natural or geological features. In Field 3, there are a number of other features, besides that of the pits, that could have a possible archaeological origin:

a. Curvilinear negative anomaly: Located on the eastern edge of the fort, this anomaly appears to be concentric with the fort's extant defences. It may represent a buried bank associated with the fort.

b. Linear anomaly: This fragmented linear anomaly lies towards the centre of field 3, it is aligned northeast to southwest and is approximately 20m in length. It might represent truncated archaeological remains.

c. Sinuous negative anomaly: This faint signature may represent the remains of truncated archaeological remains.

Non-archaeological Features

Ferrous

8.3.5 The survey has detected several strong dipole responses (pink). These don't appear to be associated with any evident archaeological remains and are more likely to represent modern ferrous debris on the surface or within the topsoil.

Uncertain Origin

8.3.6 Anomalies d – l represents strong magnetic readings with no apparent cause. These anomalies are amorphous in shape, suggesting they are likely geological or related to quarrying activities that are known to have taken place nearby.

8.4 SUMMARY OF RESULTS

8.4.1 The geophysical survey at Caer Aber Pwll has not detected any anomalies of clear archaeological origin. Some faint possible features have been detected, but they lack any evident archaeological characteristics. Although they could represent the remnants of truncated archaeological remains, there is no evidence to support this, so it is just as likely they result from natural phenomena. Several large anomalies of uncertain origin were detected, but they lack any supporting evidence to suggest they are archaeological. It is believed that they are probably associated with quarrying activities known to have taken place in the area, as documented on map sources.

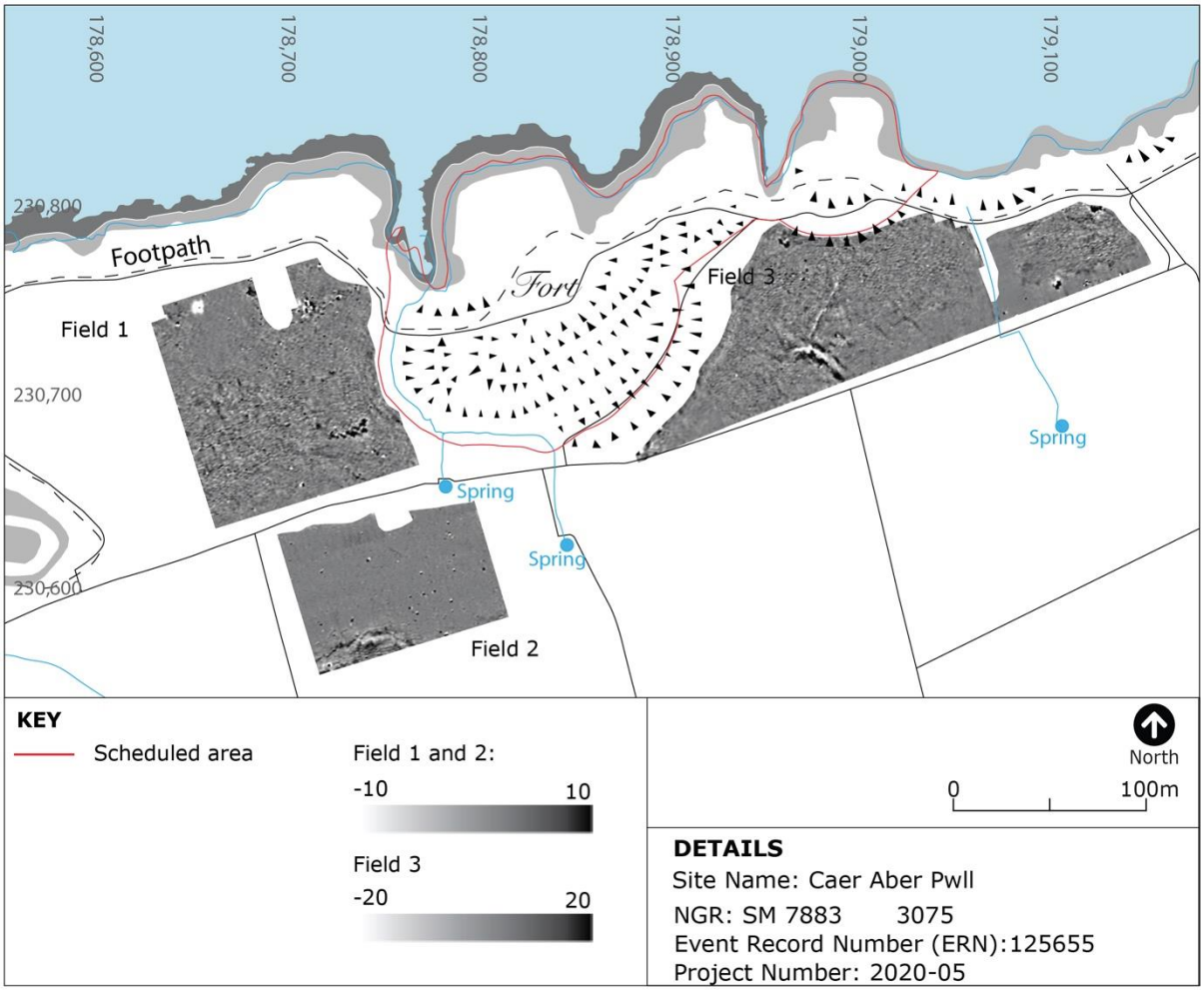


Figure 23: Castell Bach grey-scale plot of overall geophysical survey results.

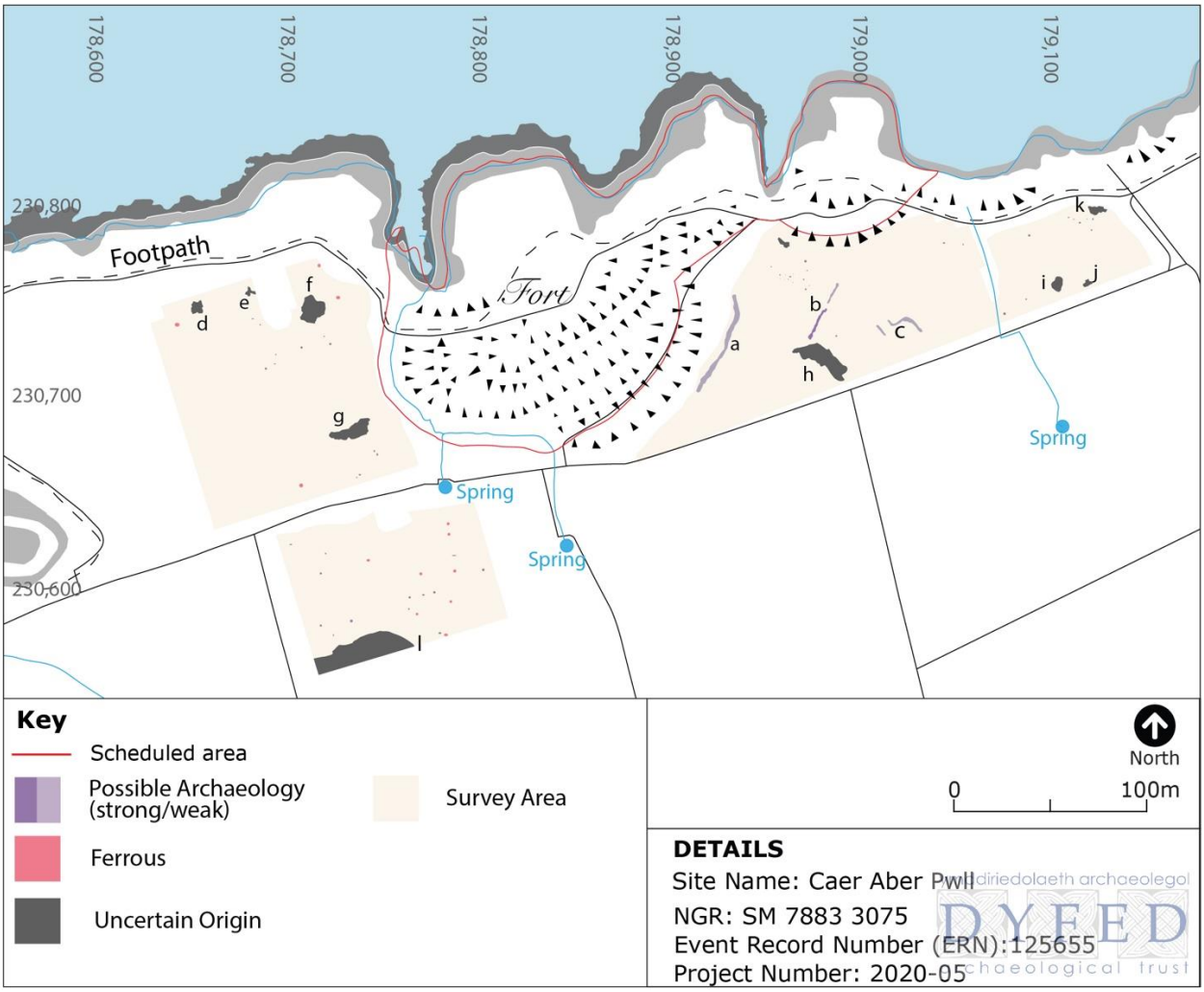


Figure 24: Caer Aber Pwll interpretation plot of overall geophysical survey results.

9. CONCLUSIONS

9.1 During the 2020-2021 geophysical surveys, six sites were surveyed. This included five promontory forts (three inland and two coastal) and one defended enclosure. Along with the defended enclosure at Castell Bach only the promontory fort at Ruxbaxton Rath showed clear evidence of extensive archaeological remains outside its main defences.

9.2 In total, 13 sites have been surveyed since 2019 as part of the Searching for Chariots project. The majority of these site surveys have demonstrated a need to reconsider such sites' management with previously unknown archaeological remains extending beyond the scheduled areas.

9.3 As yet, no evidence of the extensive funerary landscape observed at the chariot burial site has been encountered. Only one definite funerary monument has been identified at the site of Tancredston defended enclosure during the previous year's surveys. But evidence of additional buried defences, settlements and enclosure systems has been observed. Given that there are approximately 787 defended settlements in southwest Wales, it is likely that a great number of these will also have significant archaeological remains within their environs.

9.4 Yet again, the Searching for Chariots project has provided an interesting glimpse into what was occurring outside defended settlements in southwest Wales and highlighted the necessity to focus not only on the internal areas of forts but also their surroundings to assist with future management decisions.

9.5 A number of the sites surveyed here would indeed be well worth revisiting to extend the survey areas, particularly Rudbaxton Rath and Castell Bach. But other sites should also be considered to further enhance our knowledge across southwest Wales.

10. REFERENCES

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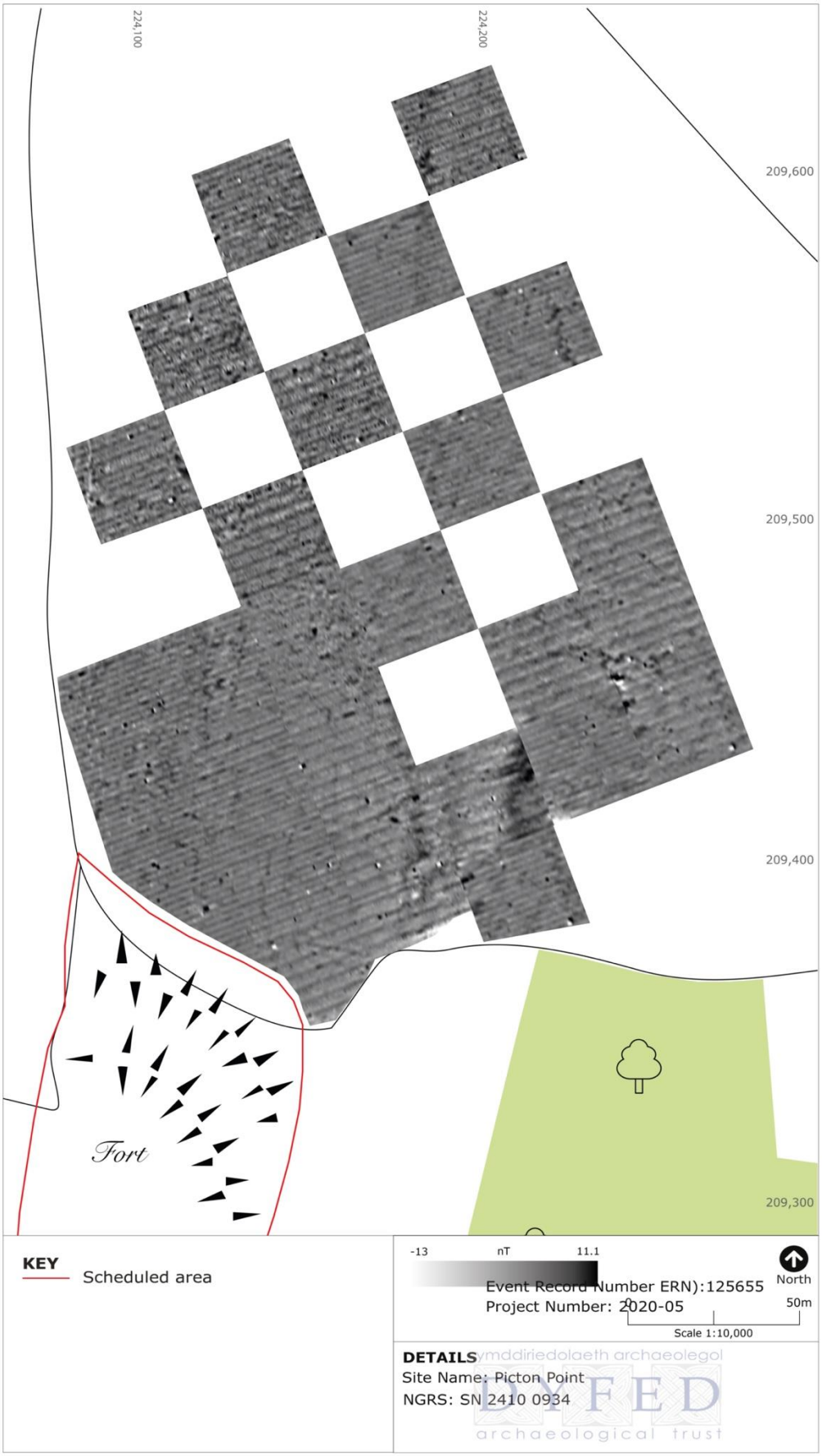
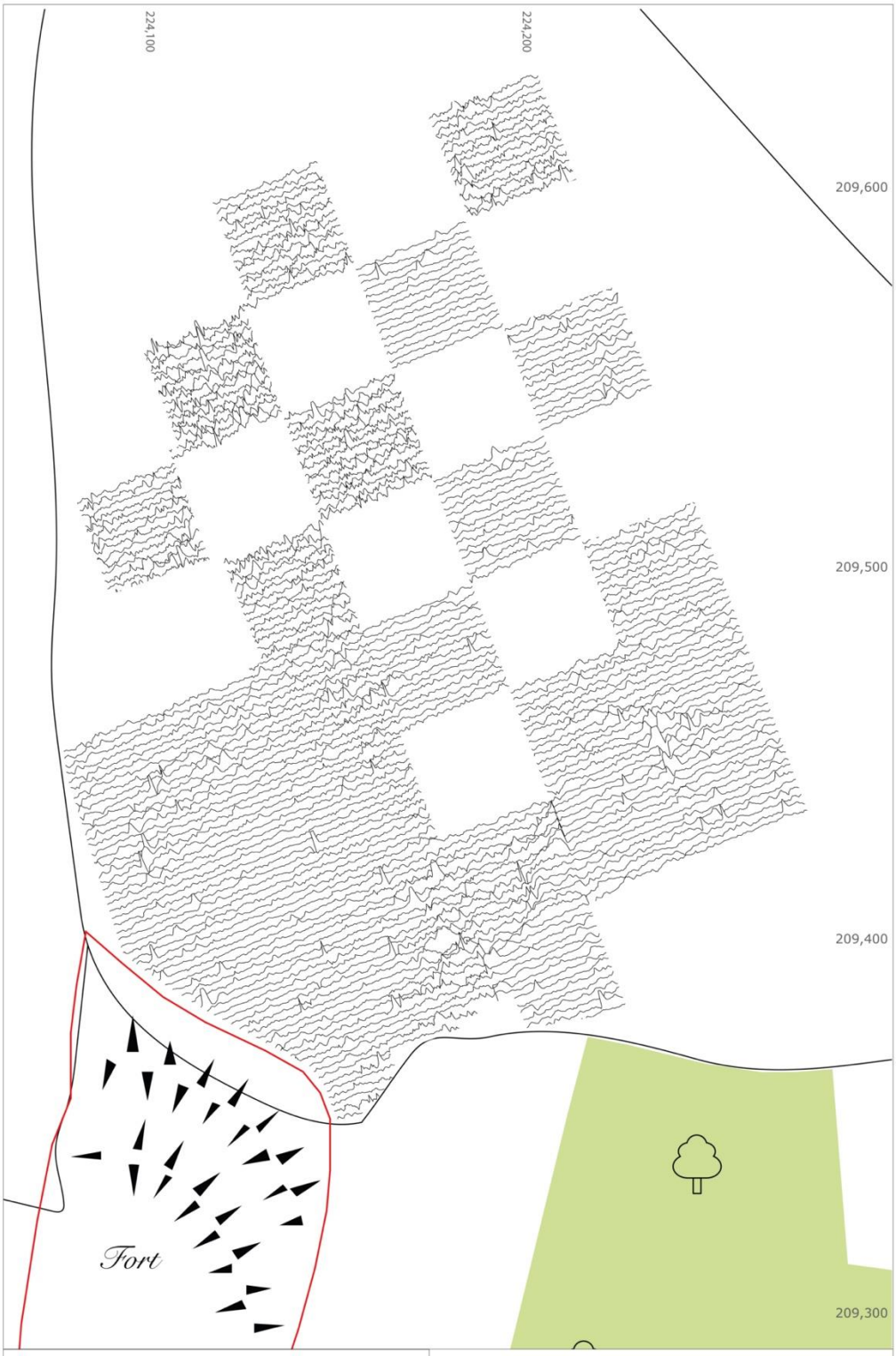
11. GLOSSARY

Dipole	An anomaly consisting of a single positive response with an associated negative response forming a 'halo effect'. The negative and positive response is of equal magnitude but opposite polarity and are caused by the same feature. Dipole anomalies are very commonly observed across a range of sites, particularly agricultural land. Generally, unless the dipoles form part of a larger pattern or feature they are regarded as not significant. They are usually the result of miscellaneous modern ferrous rich debris, such as brick and tile fragments, and objects such as horseshoes or broken ploughshares, which lie within the topsoil.
Ferrous object	Metals and alloys that contain iron.
Fluxgate gradiometer	An instrument used to measure magnetism to search for areas of disturbed ground that may be associated with subsurface archaeological features.
Ring ditch	Circular or near-circular ditches, usually seen as crop marks. The term is typically used when the function is unknown. Ring ditches may be the remains of ploughed out round barrows or roundhouses.
Roundhouse	A dwelling with a circular plan. Such structures typically date to the Iron Age, although occasional medieval roundhouses have been excavated.

Appendix 1 – Castell Lloyd

- **Map showing minimally processed data plot**
- **Map showing minimally processed XY trace plot**


224,100
224,200
209,600
209,500
209,400
209,300
Fort
KEY
Scheduled area
-13
nT
11.1
North
Event Record Number ERN):125655
Project Number: 2020-05
0
50m
Scale 1:10,000
DETAILS
Site Name: Picton Point
NGRS: SN 2410 0934
ymddiriedolaeth archaeolegol
DYFED
archaeological trust


224,100
224,200
209,600
209,500
209,400
209,300
Fort
KEY
Scheduled area
32nT
/cm
North
0
50m
Scale 1:10,000
DETAILS
Site Name: Castle Lloyd
NGRS: SN 2410 0934
Event Record Number ERN):125655
Project Number: 2020-05

Appendix 2 – Castell Pen-y-Coed

- **Map showing minimally processed data plot**
- **Map showing minimally processed XY trace plot**

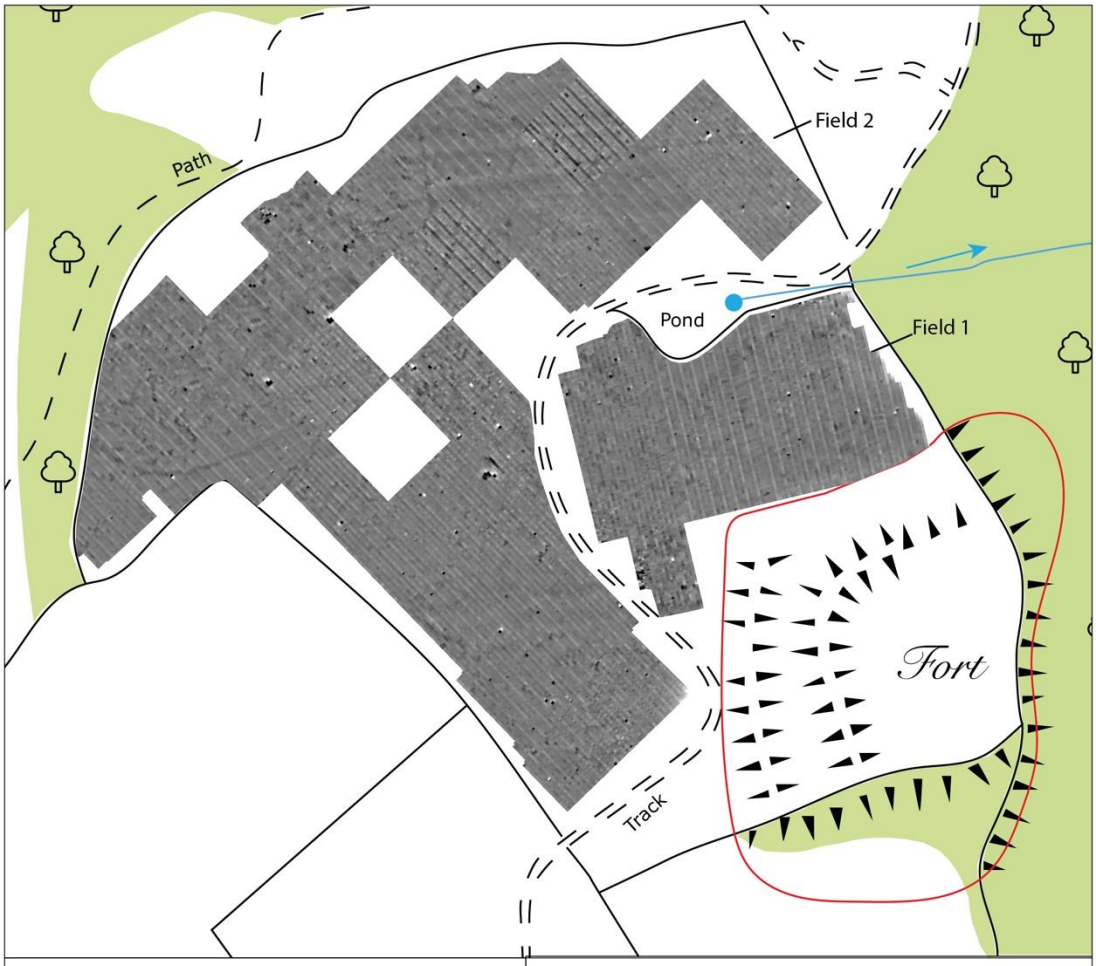
KEY
Scheduled area

Field 1: 24 nT/cm
Field 2: 65 nT/cm

North

0 100m
Scale 1:10,000

DETAILS
Site Name: Pen y Coed
NGRS:SN 2450 1277
Event Record Number ERN):125655
Project Number: 2020-05



KEY
Scheduled area

Field 1:
-7 nT 7

Field 2:
-20 nT 20

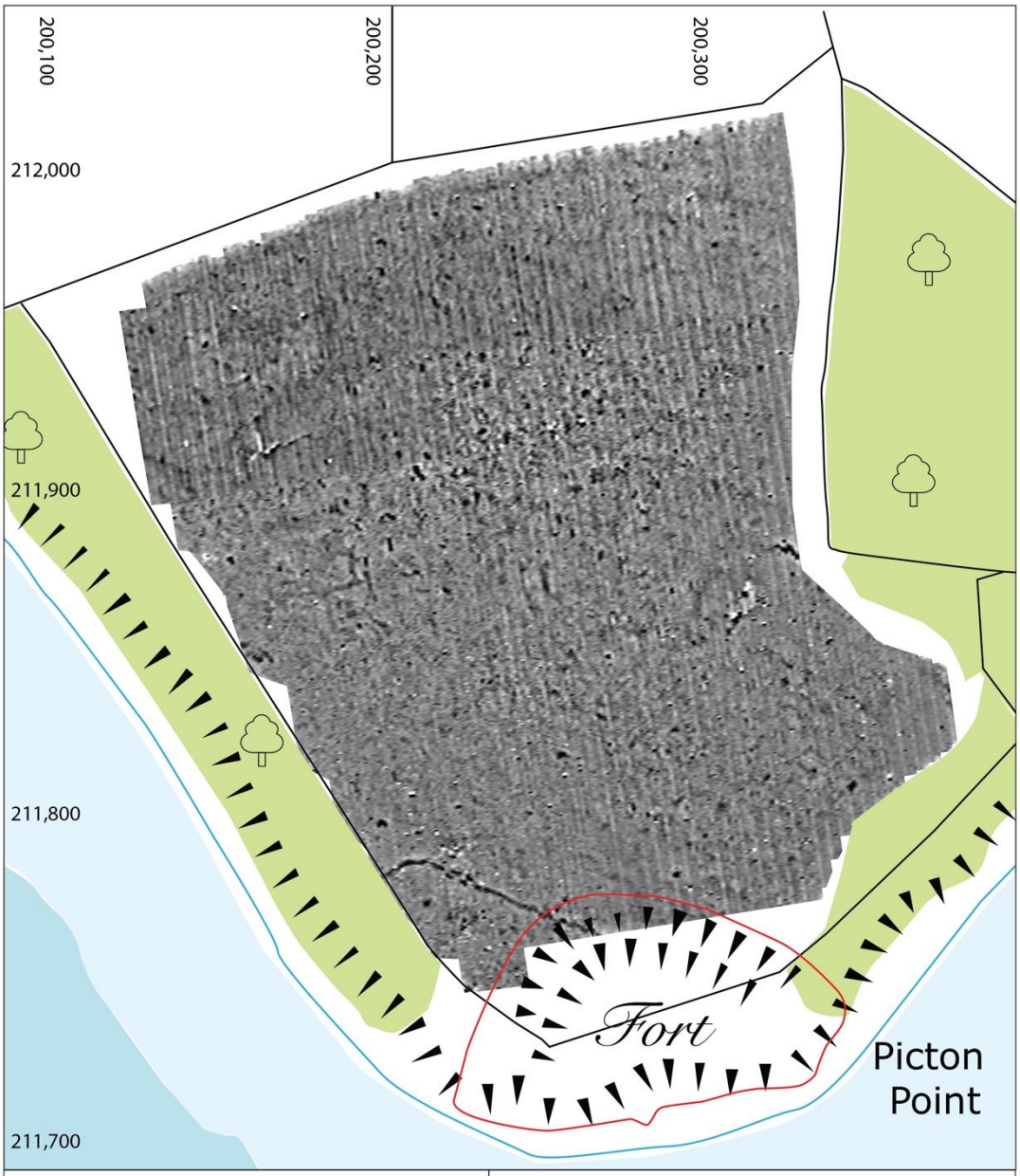
North

0 100m
Scale 1:10,000

DETAILS
Site Name: Pen y Coed
NGRS:SN 2450 1277
Event Record Number ERN):125655
Project Number: 2020-05

Appendix 3 – Picton Point

- **Map showing minimally processed data plot**
- **Map showing minimally processed XY trace plot**



KEY
Scheduled area

-15 nT 15

North

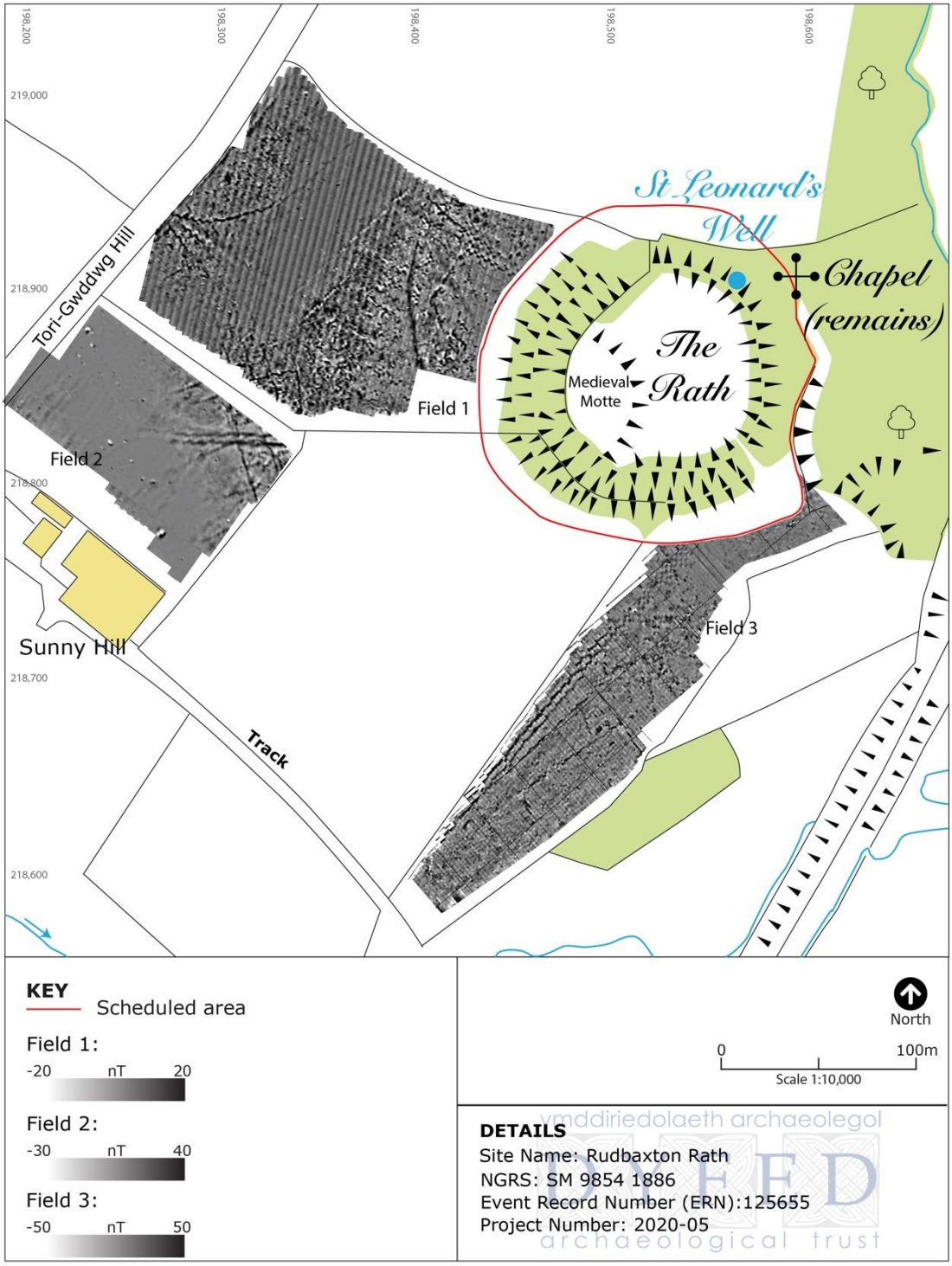
0 100m

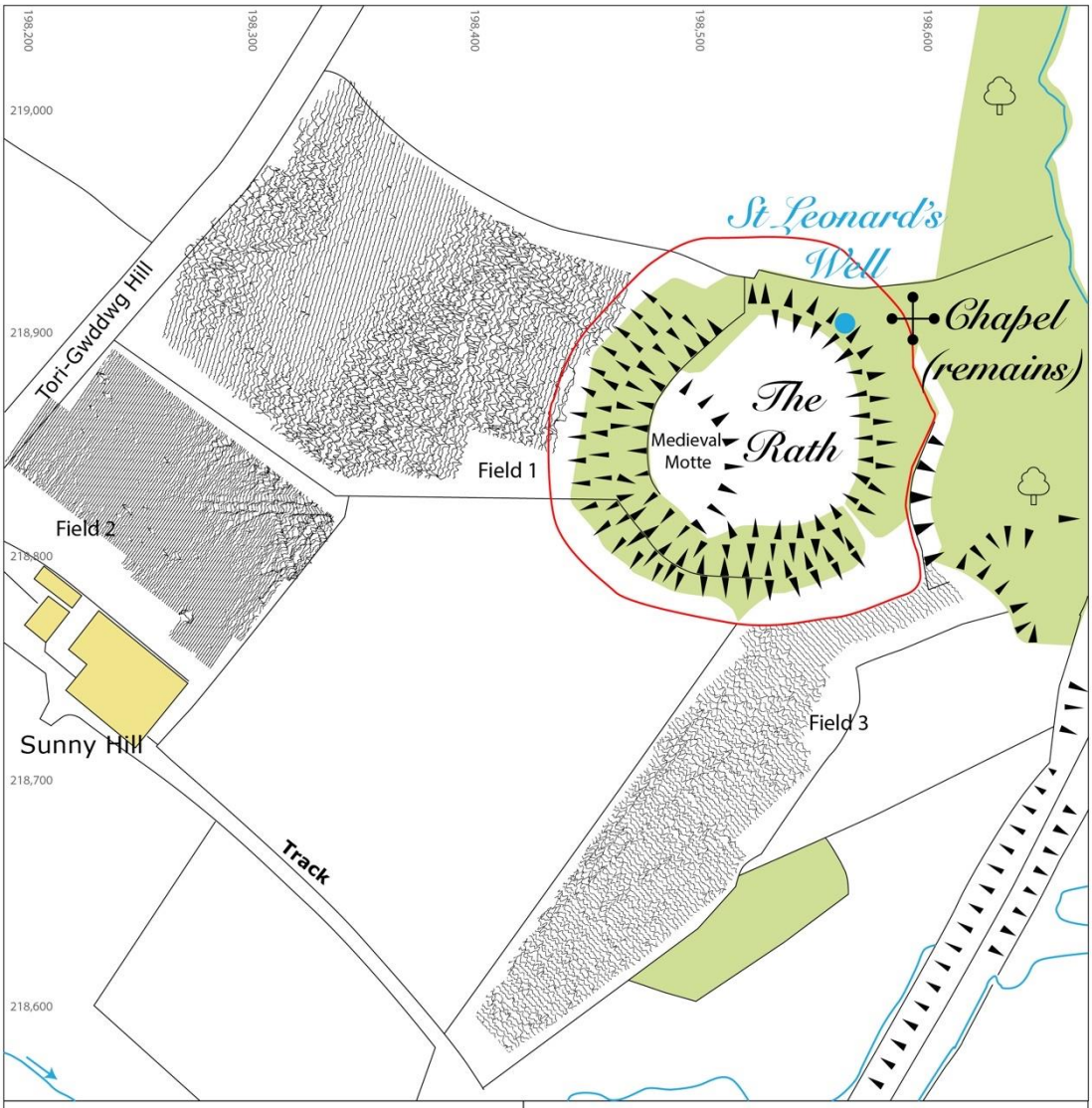
Scale 1:10,000

DETAILS
Site Name: Picton Point
NGRS: SN 0027 1174
Event Record Number ERN):125655
Project Number: 2020-05

Appendix 4 – Rudbuxton Rath

- **Map showing minimally processed data plot**
- **Map showing minimally processed XY trace plot**





KEY

Scheduled area

Field 1: 86 nT per cm

Field 2: 157 nT per cm

Field 3: 315 nT per cm

North

0 100m

Scale 1:10,000

DETAILS

Site Name: Rudbaxton Rath
NGRS: SM 9854 1886
Event Record Number (ERN):125655
Project Number: 2020-05

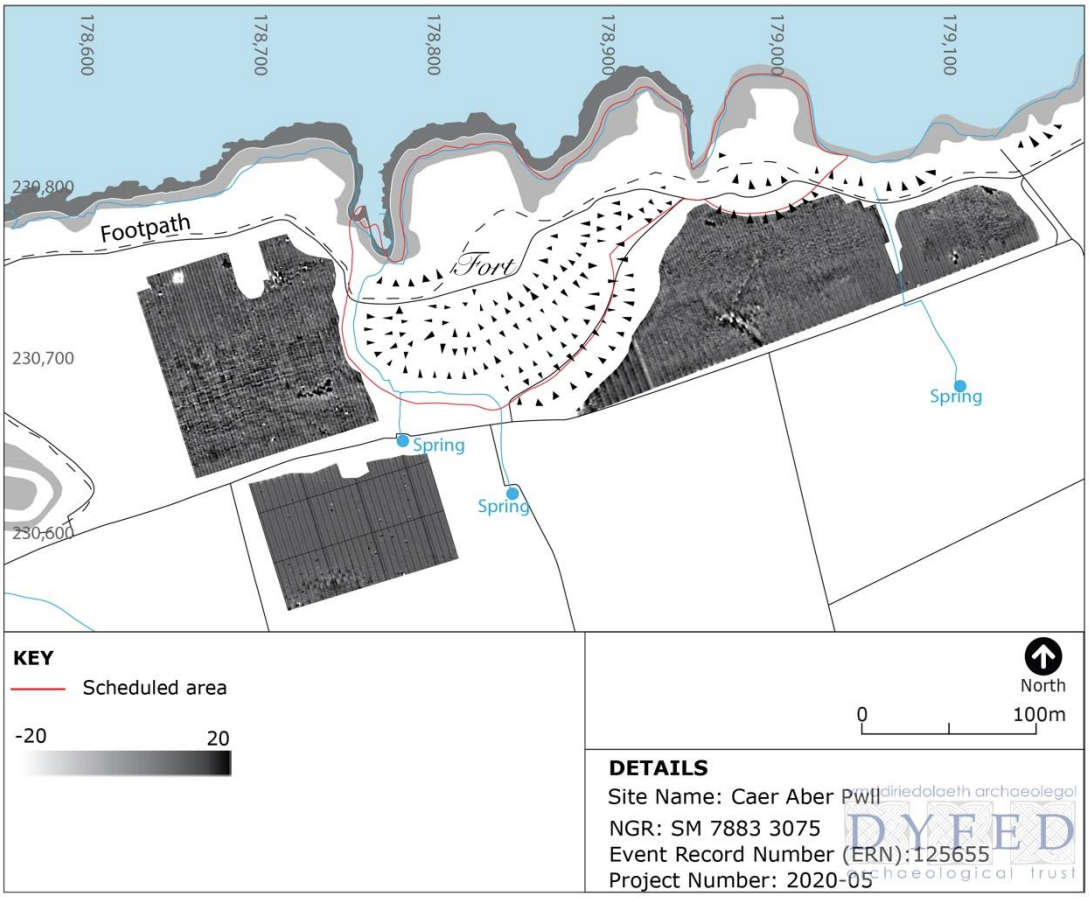
Appendix 5 – Castell Bach

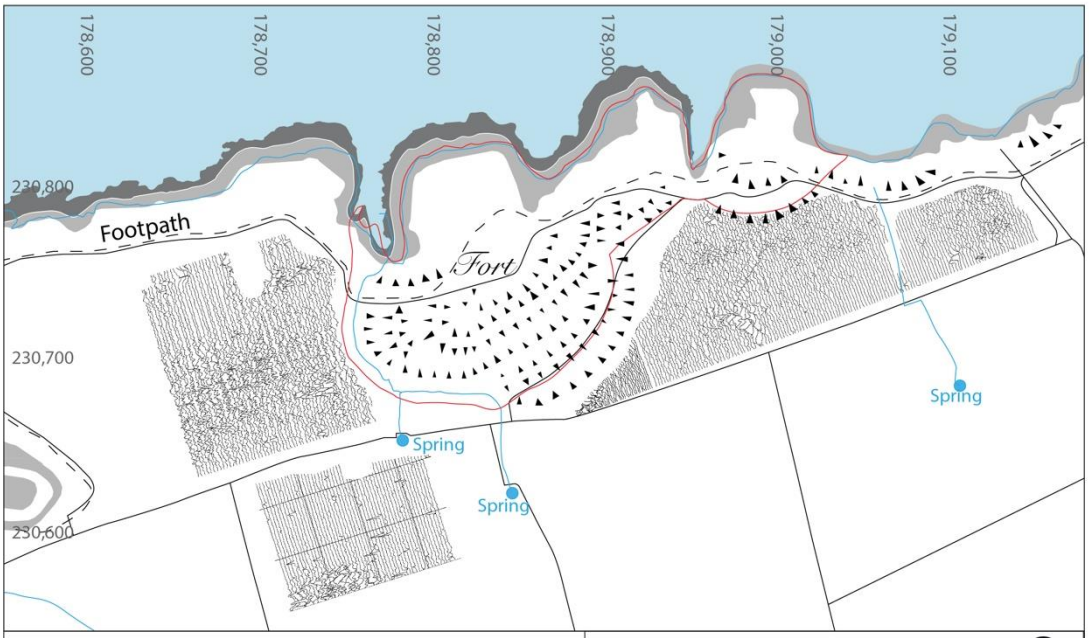
- **Map showing minimally processed data plot**
- **Map showing minimally processed XY trace plot**


236,800
189,000
189,100
189,200
189,300
Field 1
Field 2
236,700
236,600
Field 3
236,500
Field 4
KEY
Field 1 and 3: 52nT/cm
Field 2 and 4: 86nT/cm
North
0
100m
DETAILS
Site Name: Castell Bach
NGR: SM 8919 3666
Event Record Number (ERN):125655
Project Number: 2020-05

Appendix 6 – Caer Aber Pwll

- **Map showing minimally processed data plot**
- **Map showing minimally processed XY trace plot**





KEY

Scheduled area

Field 1 and 2: 32nT/cm

Field 3: 59nT/cm

North

0 100m

DETAILS

Site Name: Caer Aber Pwll

NGR: SM 7883 3075

Event Record Number (ERN):125655

Project Number: 2020-05