Lon Pant y Cudyn, Benllech
Ynys Môn

Archaeological Assessment & Evaluation (Geophysical Survey)

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Lon Pant y Cudyn, Benllech Ynys Môn

Archaeological Assessment & Evaluation (Geophysical Survey)

Historic Environment Record Event Primary Reference Number 45329

Prosiect Rhif / Project No. G2582

Adroddiad Rhif / Report No.1449

Prepared for: Caulmert Ltd

May 2019

Written by: Robert Evans and Neil McGuinness

Front cover image: View of survey area east of Lon Pant Y Cudyn sowing tree bounded area to the east (G2582_003)

Cyhoeddwyd gan Ymddiriedolaeth Achaeolegol Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

Approvals Table				
	Role	**Printed Name**	**Signature**	**Date**
Originated by	Document Author	ROBERT EVANS		31/05/2019
Reviewed by	Document Reviewer	STUART REILLY		31/05/2019
Approved by	Principal Archaeologist	JOHN ROBERTS		31/05/2019

Revision History			
Rev No.	**Summary of Changes**	**Ref Section**	**Purpose of Issue**
1.1	Addition of geophysics XY trace plot and minimally processed plot, amendments to figure refs in text	Figure 09; Figure 10	GAPS request

CONTENTS

CRYNODEB ANHECHNEGOL

Comisiynwyd Ymddiriedolaeth Archeolegol Gwynedd gan Caulmert Ltd. i ymgymryd ag asesiad a gwerthusiad archeolegol (arolwg geoffisegol) cyn datblygu preswyl arfaethedig ar dir yn Lôn Pant y Cudyn, Benllech, Ynys Môn. Roedd yr ardal ddatblygu yn mesur 0.8ha ac wedi'i lleoli i'r gorllewin o ffordd yr A5025, o fewn cae pori agored wedi'i lled-wella.

Nododd yr asesiad desg, er nad oedd unrhyw safleoedd archeolegol hysbys yn ardal yr astudiaeth, nodwyd bod yr ardal ehangach yn cynnwys tystiolaeth archeolegol o'r cyfnod cynhanesyddol hyd at yr oesoedd canol. Er bod tystiolaeth ar gyfer aneddiadau gwasgaredig a systemau caeau o'r canoloesoedd ymlaen, mae Benllech fel y gwyddom yn ffenomen gyfan o ddiwedd y 19eg ganrif a'r 20fed ganrif.

Nododd yr arolwg cerdded caeau un nodwedd yn unig, gweddillion wal gerrig sychion ar ochr dde-ddwyreiniol y plot datblygu arfaethedig. Nododd yr arolwg geoffisegol ardal o weddillion archeolegol tebygol: grŵp o gloddiau caeau a chlostiroedd cynnar a ffos gromliniol a allai ddynodi safle anheddu cynnar.

Argymhellir rhaglen arall o werthuso archeolegol ar ffurf ffosydd treial ar gyfer y nodweddion archeolegol tebygol i wirio canlyniadau'r arolwg a'u nodweddu cyn dechrau'r gweithgareddau adeiladu.

SUMMARY

Gwynedd Archaeological Trust was commissioned by Caulmert Ltd. to undertake an archaeological desk-based assessment and evaluation (geophysical survey) in advance of a proposed residential development on land at Lon Pant y Cudyn, Benllech, Ynys Môn. The development area measured 0.8ha and was located west of the A5025 road, within a field of semi-improved open pasture.

The desk-based assessment noted that whilst there were no known archaeological sites within the study area, the wider area was noted to contain archaeological evidence from the prehistoric through to medieval times. Whilst there is evidence for dispersed settlement and field systems from the medieval times onwards, Benllech as we know it is entirely a late 19th to 20th century phenomenon.

The walk over survey identified only one feature, remnants of a drystone wall placed on outcropping on the south-east side of the proposed development plot. The geophysical survey identified an area of probable archaeological remains: a group of early field banks and enclosures and a curvilinear ditch which may indicate an early settlement site.

A further programme of archaeological evaluation in the form of trial trenching is recommended for the probable archaeological features to verify the survey results and characterise them prior to the commencement of construction activities.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was commissioned by Caulmert Ltd. to undertake an archaeological assessment and evaluation (geophysical survey) in advance of a proposed residential development on land at Lon Pant y Cudyn, Benllech, Ynys Môn (NGR SH51618268; Figure 01). The development area measured 0.8ha and was located west of the A5025 road, within a field of semi-improved open pasture

The assessment was undertaken in accordance with guidelines specified in the Chartered Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014) and *Standard and Guidance for Archaeological Geophysical Survey* (Chartered Institute for Archaeologists, 2014), as well as MoRPHE (English Heritage 2015) and (English Heritage, 1991, *Management of Archaeological Projects*). The assessment and geophysical survey were completed in October 2018.

The assessment was monitored by Gwynedd Archaeological Planning Services (GAPS) and undertaken in accordance with an approved written scheme of investigation (Appendix I).

The Historic Environment Record Enquiry Reference Number for this project was GATHER1011 and the Event Primary Reference Number was 45329.

GAT is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

2 METHODOLOGY

2.1 Assessment (Desktop Study)

A desk-based assessment is defined as “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage….Significance is to be judged in a local, regional, national or international context as appropriate” (CIfA 2014, 4).

The desk-based assessment included the study of the following resources:

1. The regional Historic Environment Register ((HER) Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Garth, Bangor, Gwynedd LL57 2RT) was examined for information concerning the study area, defined as the highlighted plot in Figure 01 and the immediate environs. This included an examination of the core HER, the 1:2500 County Series Ordnance Survey maps and any secondary information held within the HER. All identified features were mapped, described and added to a gazetteer of sites and the relative importance of any sites defined;
2. The National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, Plas Crug, Aberystwyth SY23 1NJ) was checked for sites additional to the HER;
3. Aerial photographs from the National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) were examined for potential features;
4. On-line catalogue search of the National Library of Wales (Penglais Rd, Aberystwyth SY23 3BU);
5. Archive data, including primary and secondary sources, historic maps and estate maps were examined at the regional archives (Archifau Ynys Môn / Anglesey Archives, Diwydiannol Bryncefni / Industrial Estate Rd, Llangefni LL77 7JA and Library).. The examination of the archive data included historic mapping such as the local tithe map and schedule;

6. Light Detection and Ranging (LiDAR) data was examined from the Lle Geo-Portal at http://lle.gov.wales/home for information on potential surface features using digital terrain modelling and digital surface modelling;

2.2 Walkover Survey

The walk-over survey was carried out on 5th December 2018. All known and new archaeological features on the ground were located and described on GAT pro-formas. The sites were then added to the overall gazetteer and their relative importance defined. The potential for sub-surface archaeology was estimated and defined. A photographic record was maintained in RAW format using a digital SLR (Nikon D5100) camera set to maximum resolution (4,928 × 3,264; 16.2 effective megapixels) and were be converted to TIFF format for archiving using Adobe Photoshop; the photographic record was digitised in *Microsoft Access* using archive numbering system G2582_001 to G2582_025 (Appendix II). A handheld GPS unit was also used during the walkover survey

2.3 Gazetteer

A gazetteer was compiled for all identified sites within and within proximity to the assessment based on information sourced from the regional HER; the gazetteer included the following:

1. Feature Number
2. Site name
3. PRN number
4. Grid reference
5. Period
6. Site type
7. Assessment category
8. Description
9. Impact
10. Recommendation for further assessment/evaluation
11. Recommendation for mitigatory measures

The following categories will be used to define the assessment category of the archaeological asset:

Category A - Sites of National Importance.
Scheduled Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both. Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.
Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.
Sites which are not of sufficient importance to justify a recommendation for preservation if threatened. Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.
Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category. For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.
Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation. In this report several sites of unknown potential have been allocated to this category.

The impact of the proposed works on any asset will be identified using the following impact criteria, defined either as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

None:

There is no construction impact on this asset.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the asset, ***e.g.*** part of a trackway or field bank.

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of an asset affecting its overall integrity. Assets falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of an asset or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the asset is unknown, but thought to be in the vicinity of the proposed works.

2.4 Geophysical Survey

2.4.1 Summary

The geophysical survey was completed by *GAT* on the 24th April 2019 and was carried out in a series of traverses within 22x20m grids (Figure 07). The grids were tied into the Ordnance Survey grid using a Trimble R8 high precision GPS system. The survey was completed using a Bartington Grad 601-2 dual fluxgate gradiometer and carried out at standard resolution with a 1.0m traverse interval and 0.25m sample interval.

The Bartington Grad 601-2 dual fluxgate gradiometer uses a pair of Grad-01-100 sensors. These are high stability fluxgate gradient sensors with a 1.0m separation between the sensing elements, giving a strong response to deeper anomalies. The instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetized iron oxides which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil, therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials which can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Strong readings are also produced by archaeological features such as hearths or kilns as fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalized magnetic enhancement around settlement sites. Not all surveys can produce good results as results can be masked by large magnetic variations in the bedrock or soil or high levels of natural background "noise" (interference consisting of random signals produced by material with in the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features. The Bartington Grad 601 is a hand held instrument and readings can be taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 500mm apart. Their cores are driven in and out of magnetic saturation by a 1,000Hz alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output. The gradiometer can detect anomalies down to a depth of approximately one meter. The magnetic variations are measured in nanoTeslas (nT). The earth's magnetic field strength is about 48,000 nT; typical archaeological features

produce readings of below 15nT although burnt features and iron objects can result in changes of several hundred nT. The machine is capable of detecting changes as low as 0.1nT.

2.4.2 Data Collection

The gradiometer includes an on-board data-logger. Readings are taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval is 1.0m and readings are logged at intervals of 0.25m along each traverse. Marked guide ropes are used to ensure high positional accuracy during the high resolution survey. The data is transferred from the data-logger to a computer where it is compiled and processed using TerraSurveyor v.3.0.33.10 software. The data is presented as a grey scale plot where data values are represented by modulation of the intensity of a grey scale within a rectangular area corresponding to the data collection point within the grid. This produces a plan view of the survey and allows subtle changes in the data to be displayed. This is supplemented by an interpretation diagram showing the main feature of the survey with reference numbers linking the anomalies to descriptions in the written report. It should be noted that the interpretation is based on the examination of the shape, scale and intensity of the anomaly and comparison to features found in previous surveys and excavations etc. In some cases the shape of an anomaly is sufficient to allow a definite interpretation e.g. a Roman fort. In other cases all that can be provided is the most likely interpretation. The survey will often detect several overlying phases of archaeological remains and it is not usually possible to distinguish between them. Weak and poorly defined anomalies are most 4 susceptible to misinterpretation due to the propensity of the human brain to define shapes and patterns in random background “noise”. An assessment of the confidence of the interpretation is given in the text.

2.4.3 Data Processing

The data is presented with a minimum of processing although corrections are made to compensate for instrument drift and other data collection inconsistencies. High readings caused by stray pieces of iron, fences, etc. are usually modified on the grey scale plot as they have a tendency to compress the rest of the data. The data is however carefully examined before this procedure is carried out as kilns and other burnt features can produce similar readings. The data on some ‘noisy’ or very complex sites can benefit from ‘smoothing’. Grey-scale plots are always somewhat pixellated due to the resolution of the survey. This at times makes it difficult to see less obvious anomalies. The readings in the plots can therefore be interpolated thus producing more but smaller pixels and a small

amount of smoothing based on a low pass filter can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see. Any further processing is noted in relation to the individual plot.

2.4.4 Aims and Objectives

The key aim and objective of the geophysical survey is to:

- establish the extent to which potential archaeological remains survive at the location of the development.

If previously unknown potential archaeological features are identified through geophysical survey, they may need to be evaluated with trial trenches or targeted excavation to confirm their existence and to establish their date and function, and following on from this, to assess the implications of the findings on the current understanding of the historical development of the area. Any archaeological features encountered during the trial trenching or targeted excavation may require preservation by record, i.e. further investigation, or preservation in-situ that may require amending the layout of the proposed development.

2.5 Dissemination

Following completion of the stages outlined above, the following dissemination has been applied:

1. A copy of the GAT report has been provided to the Caulmert Ltd. and;

2. A paper and digital report have been provided to the regional Historic Environment Record, Gwynedd Archaeological Trust along with all relevant digital information , in accordance with the *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1);

3. A digital report and archive (including photographic data) has been prepared for submission to the Royal Commission on Ancient and Historic Monuments Wales, in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. Digital information includes the photographic archive and associated metadata.

3 RESULTS

3.1 Desk based assessment

3.1.1 Location and geological summary

The study area, forming proposed residential development on land, is located at Lon Pant y Cudyn, Benllech, Ynys Môn (NGR SH51618268; Figure 01). The development area measured 0.8ha and was located west of the A5025 road, within a field of semi-improved open pasture which rises about 2m in height to the south. It was formerly pasture overgrown with weeds bramble and bracken. The development site is located on the north western edge of the town of Benllech, Ynys Mon. The development area is bounded at the edge of the northern expansion of the settlement of Benllech, immediately south of Efail Newydd. It is bounded a modern housing estate at Pant y Briallu to the west, further residential housing at Bryn Seriol to the south, a small area of woodland to the east and a pasture field to the north (Figure 01).

The site slopes from south to north, its highest point in the southern corner stands at 55.5m AOD. The extreme southern edge of the field appears to have been quarried out, forming the southern edge of a gently sloping plateau which falls away towards the centre of the field into a shallow east - west aligned valley at a height of approximately 50m AOD.

The underlying geology consists of carboniferous limestone of the Clwyd Limestone Group with fragmented outcropping (Smith and George 1961, 59). overlain by Devensian Till, being stagnogleyic argillic brown earths of the Flint Association (BGS 1980, 2019).

3.1.2 Statutory and non-statutory designations

There are three Scheduled Monuments (SMs) within 1km of the study area. The first two of these are of prehistoric date, and the date of the third is uncertain.

- A prehistoric enclosed hut circle, Scheduled Monument AN043, is located 367m to the southwest at NGR SH51318243 (Figure 01);
- A prehistoric burial chamber, Scheduled Monument AN004, is located 258m to the east at NGR SH5097182401 (Figure 01);
- The site of a possible small megalithic burial chamber, Scheduled Monument AN094, is located 490m to the southwest at NGR SH51918266 (Figure 01). The site was excavated in 1965 after it was discovered when new sewers were dug nearby and the site cleared for the erection of a bungalow.

There is one Listed Building within 1km of the study area Rhos Boeth (Primary Reference Number (PRN) 11,191; SH5152083750; Grade II LB Ref: 5732), located 1km north of the site. In addition, a number of Listed Buildings lie just outside this range.

The study area lies within the *Historic Landscape Character Area (LCA) 9: Red Wharf Bay* which is described as including 'the historic settlement of Moelfre and the more modern, tourist based settlement at Benllech. Further inland the LCA abuts the rural, agricultural heartland of Anglesey, which is typified by mixed patterns of field sizes and settlement, and has a gently rolling land form. Within this, areas of wetland and mire exist' (Isle of Anglesey Council 2011, 39-42).

3.1.3 Environmental remains and soil morphology

The presence of important environmental remains within the study area is considered to be a low possibility, although the wet low lying ground at the northern end of the study area appears to be heavily disturbed with modern services. The higher ground within the field to the south is a possible area for prehistoric and later activity, and therefore the lower lying wetter areas to the north and west may preserve important environmental deposits. The 25 inch first edition Ordnance Survey map of 1889 (Figure 03) and 1945 aerial photograph (Figure 07) shows open pasture at these dates, and it can be suggested that the fields have undergone improvement. It is not therefore thought likely that a programme of environmental sampling should be carried out, but the results of any geotechnical work that has been undertaken could be studied to help to determine the presence or otherwise of environmental deposits.

3.1.4 *Historical and archaeological background*

3.1.4.1 Prehistoric and Roman

The wider area is rich in evidence of early prehistoric activity three sites of Neolithic and Bronze Age date within 1km of the study area relating to funerary and ritual activity, of which two are Scheduled Monuments, although one is of a dubious authenticity. A prehistoric burial chamber at Pant y Saer (PRN 3,601), Scheduled Monument AN004, is located 258m to the east of the study area at NGR SH5097182401. The site was excavated by Lindsay-Scott in 1933, and a rectangular chamber which presents its sides to the cardinal points, 2.44m long by 1.83m wide, its length being in direction east to west. The capstone is 2.74m square, with its south corner resting on the ground. It contained a cist grave which lay northwest by southeast, diagonal to the burial chamber. Many fragments of human and animal bones were found and seashells (Lindsay-Scott 1933, 185-228).

The site of a possible small megalithic burial chamber at ‘Goose Pen’, Drws y Nant (PRN 3,610), Scheduled Monument AN094, is located 490m to the southwest at NGR SH51918266. The site was excavated in 1965 after it was discovered when new sewers were dug nearby and the site cleared for the erection of a bungalow. This has been interpreted as a not entirely convincing small low 'burial' chamber. It is now in the garden of Drws y Nant and in a built up area. The capstone supported by uprights and blocks at west side and by recent concreted pillars at east, and stands on gently sloping hillside above the coast with two large orthostats one being 2.2 x 1.2m and standing just to south. Cadw recently reclassified this as a 'goose house' (Smith, 2003).

The site for a possible Bronze Age standing stone (PRN 3,458) is located to the northwest at NGR SH51258360. This is based on place name evidence only, with three fields centred at SH51258360 are known as *meinir*.

Settlement activity in the later prehistoric period is represented by the enclosed hut circle at Pant y Saer (Scheduled Monument AN043; PRN 3,627), located 367m to the southwest of the study area at NGR SH51318243 (Figure 01). This site was excavated by Phillips in the early 1930s (Phillips 1934, 1-36) and it contains two roundhouses and two rectangular buildings. The smaller roundhouse had an internal diameter of c. 6.7m and an entrance facing east, while the larger roundhouse was c. 9m in diameter with an entrance facing west, being orientated towards the other roundhouse entrance. The buildings were all constructed

from stone-faced walls, which utilized large angular blocks, with rubble and earth cores. Some pits were identified and these contained fills rich in stone and finds, with one feature containing animal bones and a small flint scraper (Phillips 1934, 16). Fragments of later Iron Age briquetage and Roman pottery were recovered from cracks in the natural rock floor of the large roundhouse, revealing an occupation sequence spanning the later Iron Age and Romano-British period. A large fragment of a rotary quern was found on top of the floor context, and a rock outcrop on the eastern side of the building was interpreted as furniture, providing a seat for example (Phillips 1934, 6).

A possible promontory fort has also been identified from crop-marks at Efail Newydd (NPRN 406,350) at NGR SH52088328, which is east of the study area.

Whilst there are no known archaeological features within the study area itself, there is significant archaeology in the wider area, including the three prehistoric Scheduled Monuments noted above.

3.1.4.2 Medieval

Llanfair Mathafarn Eithaf was part of the *commote* of Tindaethwy and *Cantref* of Rhgosyr in medieval times. The parish church of St. Mary, Llanfair Mathafarn Eithaf lies 1.02km west southwest of the study area (PRN 3,614, 6987; SH5066482891; Listed Building Grade II*, ref.: 5375). The nave of the church is medieval in date, from at least the 14th century, with the chancel added in the 15th century. However the survival of fragments of 12th to 13th century gravestones indicates that there was a church on the site from at least that time (Haslam *et al.* 2009, 168). There have been many 17th century and later alterations to the building (RCAHMW 1937, 69).

Benllech as we know understand it is almost entirely a modern development, however a mill is mentioned in the Extent of Anglesey 1352 (Carr 1971-2, 240), shared by eight freemen. This was possibly located at SH52038268 (PRN 36,117). 'Melin y Penllech' and 'Y Benllech' are mentioned in documents of 1453 and 1483 (Baron Hill MSS I, 214 and 216). Red Wharf Bay and Benllech was said to be a free settlement in medieval times and comprised 23 family groups (Jones-Pierce 1951, 3).

3.1.4.3 Post-Medieval

A Grade II Listed Building (Ref: 5732) at Rhos Boeth (PRN 11,191; SH5152083750), is considered to be of 18th Century date. It has one storey and a loft and is of mortared rubble masonry. It has end chimneys with dripstones and capping. It is 1.01km north of the study area. Two nonconformist chapels are recorded on the Gwynedd HER; at Benllech (PRN 7,746; SH51878304), 370m north east of the study area, and the Libanus Chapel 313m northeast of the study area (PRN 7,743; SH51768283). Melin Castell Bwchgwyn, a mill of the industrial era is located at NGR SH 51528227 (PRN 36,116) although little of this survives today. It is located 374m south southwest of the study area. The site of another industrial mill, Melin Marchog (PRN 5895; SH 51508220) is located 470m south of the study area. A post-medieval garden platform feature (PRN 27,533; NGR SH 51008280), is located at Cae Trefor, 565m west of the study area.

In terms of post-medieval to modern land use and development, an examination of the Ordnance Survey First to Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheet of the area (Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889, 1900 and 1920 respectively; cf. Figures 02 to 04) shows the development area within an enclosed and open fields that have been altered to the east and south by the construction of modern properties. Benllech begins to be developed around the crossroads 320m to the south. Overall, this information demonstrates the gradual change in local development and industry prior to the later twentieth expansion characterised by modern Benllech. This is reflected in the local Pevsner guide, which succinctly summarises Benllech as a “Seaside resort (with) some older buildings of c. 1900 on the main road, otherwise a combination of C20 housing for the retired, and holiday jumble” (Haslam, et. al., 2009: 113).

The field pattern of the wider area is dominated by large straight-edged rectilinear fields, which can be expected to be as a result of 18th to 19th century reorganisation and improvement. There are also some irregularly shaped fields that may be earlier in date. Some of the elements shown on the tithe map of 1843 (Figure 05) may however be remnants of an earlier less regular pattern (Smith 1997, 5).

No previous archaeological work is believed to have been carried out either within the study area or within the vicinity of it.

3.1.5 Cartographic evidence

The tithe map of the parish of Llanfair Mathafarn Uchaf of 1843 indicates that the study area and a proportion of the surrounding area formed part of plot 146, and close to 140a (Figure 02). All the field boundaries do not appear to have been shown, rather only the separate tenancies, so the date of the field boundaries cannot be implied from the tithe map. The land was mainly the property of the Marquess of Anglesey of Plas Newydd, Llanedwen, and the details given in the tithe apportionment are given below, and are shown as part of larger holdings. The numbers are those shown on the tithe map, with those covering and adjacent to the study area shown in **bold** (Figure 02).

Landowners	**Occupiers**	**Numbers Referring to the Plan**	**Name and Description of Land and Premeses**	**Quantities in Statute Measure A R P**
The Most Noble the Marquis of Anglesey	Harry Williams William Richard	**140a** 113 117 66 227	Tyddyn Tudyn	18 1 25
The Most Noble the Marquis of Anglesey & William Williams in Moiety	William Williams	**146** 171 188	Part of Tyddyn Fadog	27 1 28

An examination of the Ordnance Survey First to Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheet of the area (Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889, 1900 and 1920 respectively; cf. Figures 03 to 05) shows the development area within an enclosed field that matches the current boundaries. On the first two editions the plot is located in an area described as “Upper Benllech”. On the first edition two springs are located close to the development area, with a spring visible 20m to the west and another 120m to the east; two irregular shaped plots to the immediate east of the development site are recorded as overgrown areas of furze (gorse) and osers (a wetland willow). On the second edition map, two quarries have been established next to the development area, with one in each of the overgrown fields; small trackways are also visible running to the quarries from the east.

On the third edition, only the southern quarry and trackway are present, with a small square shaped plot and property visible in the northern former quarry site. On the first edition the farmstead to the immediate south of the development area is a rectangular block called *Marian Adda*, which is then replaced by three properties called Bryn-Arfon, Isca and Bryn Adda. The *Ship Inn* visible on the first and second edition 180m to the southeast is replaced by the third edition with the much larger Glanrafon Hotel, whilst new large properties are visible east of the main road. Overall, this information demonstrates the gradual change in local development and industry prior to the later twentieth expansion characterised by modern Benllech.

3.1.6 Artefact potential

The potential for the recovery of archaeological artefacts is thought to be low to moderate. The presence of significant archaeological activity in the wider area suggests that it is possible that prehistoric artefacts may be encountered, but there are no specific indications that they are present in the study area. The results of the geophysical survey suggests that there is a moderate potential for archaeological activity dating to medieval or prehistoric times on the higher ground to the south that may provide artefactual evidence. As the study area lies at the interface between the lower wetter ground and the raised dryer ground to the south and east the area may have been a focus for activity that resulted in the deposition and loss of material culture artefacts. The potential for the recovery of post-medieval artefacts is thought to be moderate, as the area appears to have been intensively exploited in post-medieval times.

3.1.7 Aerial photographs and LiDAR

RAF aerial photograph 106G/UK655 frame 3131 taken on 13th August 1945 was examined (Figure 07). It showed the study area of Lôn Pant y Cudyn clearly and in detail. The boundaries were noted to be the same as is currently the case. The field is also shown to be improved pastureland, without the overgrowth seen subsequently. The surrounding area is shown prior to the recent expansion of housing development, so field boundaries subsequently lost under the development are shown, particularly to the south of the study area.

There are vague suggestions of former paleo-channels to the west of the study area and leading towards it, but these are by no means clear and no new archaeological features were identified from the aerial photograph.

The 2m DTM LiDAR data, obtained from the Lle portal (https://lle.gov.wales/home) shows the general topography of the area well, indicating that the lower lying ground to the north forms part of a small west – east valley surrounded by higher ground (Figure 06). No previously unidentified archaeological features were noted.

3.2 Walkover survey

The initial walk-over survey was carried out on 5th December 2018. An irregular plot of land, bounded to the north, west and part of the eastern edges by overgrown hedgerows. These have mature trees within them, including beach, alder and rowan, which suggests that they are of some antiquity (Plates 06-07, 09). On the east side there is an area of rock outcrop which forms the boundary (Plate 09). To the south-west the boundary is modern, being alongside the back garden boundaries of the new housing estate to the south-west, with the modern gated entrance to the north-west (Plate 01). The plot is undulating, rising up to 2m from the north to the south (Plate 14). The low lying part of the field was noted to be somewhat waterlogged. There were patches of open grass, along with decayed bracken, thick bramble and other vegetation up to 0.5m in height over much of the site (Plates 02-04, 06), however this was cleared in April 2019 after which the site was visited again (Plates 15-16). The site was seen to be of an undulating character, with a marked slope from south-east to north-west and at the head of a small east-west valley (Figure 06).

Probable GI works were noted in four places across the site, consisting of four 2m by 2m squares of disturbed ground which had been levelled and backfilled (Plates 11-12). These indicated that the topsoil consisted of light orangey brown sandy silt with much evidence of bioturbation and survival of organic material, that latter due probably to a somewhat waterlogged character.

Close to the gated entrance, and 20m in to the east of it three manhole covers were observed, indicating the presence of services crossing the field (Plate 05). The sound of water flow was observed, indicating that it is sewerage or drainage related, and the services were confirmed to run eastwards across the field during the site visit of 23rd April 2019.

With the exception of the hedgerows and boundaries, which may be old and were shown on the 1st edition Ordnance Survey map (Figure 03), and the modern services noted (Plate 05), no archaeological features were observed. The undulating nature of the field and its higher ground to the south is thought likely to be as a result of the underlying geology. The fact that there are two springs located close by to the north-west on the 1st edition Ordnance Survey Map (Figure 03) may help top explain why the ground was so wet away from the higher ground to the south.

3.3 Geophysical survey

The proposed development site had been largely cleared of bracken and bramble prior to the survey. Two large stands of bramble remained in the southern corner of the field however, making this area inaccessible for the survey. The overgrown northwest and northeast corners, and parts of the northern and southern edges, of the development area footprint were also omitted from the survey for the same reason.

Anomalies are grouped in the following text as *probable*, *possible* or *other*. The difference between being of *probable* or *possible* archaeological origin is one of confidence in their interpretation. Anomalies identified within the dataset that form recognisable archaeological patterns or seem to be related to a deliberate historical act have been interpreted as being of *probable* archaeological origin.

Features of *possible* archaeological origin tend to be more amorphous anomalies which may have similar magnetic attributes in terms of strength or polarity but are difficult to classify as being either archaeological or natural.

Other anomalies are those which either do not require further archaeological work (historically mapped field boundaries for example), or are of little archaeological value, or are assessed to have a non-archaeological origin.

The results of the geophysical survey are shown as an XY trace plot (Figure 09), a minimally processed greyscale plot with the raw data clipped to +/- 15 nT (Figure 10), a de-striped greyscale plot of the +/- 15 nT clipped data (Figure 11), and as an interpretive plot (Figure 12). The numbered anomalies refer to numerical labels on the interpretative plot.

3.3.1 Probable archaeology

A number of magnetic responses were recorded that are interpreted as of definite archaeological interest. A group of weak negative linear and curvilinear anomalies were identified in the central and southern part of the field (1 – 5). They most likely represent the remains of earthen banks where soil of a lower magnetic signature relative to the background top soil has been built up. Anomalies (1-5) may therefore be the remains of early field boundaries or enclosures that predate the field system recorded on historic mapping. .

An arcing weak positive curvilinear anomaly (6) has been identified within these possible enclosures. This anomaly most likely results from an infilled cut feature whose fill is

magnetically enhanced compared to the surrounding soil matrix. Anomaly (6) may therefore be the remains a former ditched enclosure probably related to early settlement.

3.3.2 Possible archaeology

Two areas of relatively high negative response were identified in the centre of the field (8). These may be infilled cut features that are archaeological in origin, however they don't form any coherent pattern. It is also possible that they are tree throws, geological anomalies resulting from natural magnetic variation, or result from ground disturbance for modern services indicated by the manhole covers to the north east (see below).

3.3.3 Other anomalies

3.3.3.1 Agricultural activity – ploughing

A series of northwest – southeast aligned parallel linear anomalies (7) in the southern part of the field are likely to be cultivation ridges resulting from historic agricultural activity. Their alignment parallel with the western field boundary suggests they may be associated with the modern field system.

3.3.3.2 Magnetic debris

An area of numerous high and moderately high dipolar responses (positive anomalies with an associated negative response) was identified in the north western corner of the field close to the entrance. The ground here has been recently disturbed and visibly contains high quantities of ferrous metal debris. A similar area of numerous dipolar responses is recorded in the south-eastern corner of the field. Again this is as a result of an accumulation of ferrous metal debris, a consequence of domestic rubbish being tipped into the field from the residential area to the south.

A number of isolated dipolar responses (not individually marked on Figure 12) are distributed across the survey area and are a result of ferrous metal debris in the topsoil.

3.3.3.3 Magnetic disturbance

Three high magnitude positive anomalies with an associated negative response (not individually marked on Figure 12) are recorded on the lower ground in the northern part of the field. These are modern ferrous metal manhole covers.

The western, and parts of the southern and eastern, edges of the field showed high amplitude bipolar disturbance from modern ferrous metal fencing materials enclosing it.

3.4 Gazetteer of features

The feature listed below, identified during the walk-over survey, is shown on Figure 01. The 'C' after the grid reference indicates that it is the central point of a linear feature.

Feature Number	01
Site name	Field Boundary on the South-East side of the proposed development plot
PRN number	80231
Grid reference	SH51638265 C
Period	Post-medieval
Site type	Field Boundary
Assessment category	C
Description	A field boundary, consisting of rough local fieldstone placed on top of outcropping limestone, extending for a length of about 20m and nowhere more than four courses in height (Plate 9).
Impact	Unlikely
Recommendation for further assessment/evaluation	None
Recommendation for mitigatory measures	Avoidance

Feature Number	02
Site name	Possible Archaeological Features identified on the Geophysical Survey
PRN number	80259
Grid reference	SH51638265 C
Period	Unknown
Site type	Possible field boundaries and enclosures
Assessment category	E
Description	A number of magnetic responses were recorded during the geophysical survey that are interpreted as being of archaeological interest. A group of weak negative linear and curvilinear anomalies were identified in the central and southern part of the field (1 – 5; Figure 12). They most likely represent the remains of earthen banks where soil of a lower magnetic signature relative to the background top soil has been built up. These may therefore be the remains of early field boundaries or enclosures that predate the field system recorded on historic mapping. An arcing weak positive curvilinear anomaly (6; Figure 12) has been identified within these possible enclosures. It may therefore be the remains a former ditched enclosure probably related to early settlement.
Impact	Considerable
Recommendation for further assessment/evaluation	Evaluation by trial trenching
Recommendation for mitigatory measures	Await the results of the trial trenching

4 CONCLUSION & RECOMMENDATIONS

4.1 Conclusion

The desk-based assessment noted that whilst there were no known archaeological sites within the study area, the wider area was noted to contain archaeological evidence from the prehistoric through to medieval times. The wider area is rich in evidence of early prehistoric activity three sites of Neolithic and Bronze Age date within 1km of the study area relating to funerary and ritual activity, of which two are Scheduled Monuments, although one is of a dubious authenticity. Settlement activity in the later prehistoric period is represented by the enclosed hut circle at Pant y Saer, located to the southwest of the study area. The parish church of St. Mary, Llanfair Mathafarn Eithaf lies west southwest of the study area. Whilst there is evidence for dispersed settlement from the medieval times onwards, Benllech as we know it is entirely a late 19th to 20th century phenomenon. The field systems noted in the wider area are dominated by large straight-edged rectilinear fields, which can be expected to be as a result of 18th to 19th century reorganisation and improvement. There are also some irregularly shaped fields that may be earlier in date.

The walk over survey, carried out on 5th December 2018, identified only one feature, remnants of a drystone wall placed on outcropping on the south-east side of the proposed development plot (Feature 01). Much of the rest of the plot was covered in undergrowth and brambles, so the area was re-visited on 23rd April 2019 once clearance had taken place. Whilst the nature of the topography of the field was much clearer, no new archaeological features were identified, although further evidence for the services and manhole covers were noted across the ground to the north of the plot, crossing it east-west.

The magnetometer survey of the development identified an area of probable archaeology (Feature 02). The anomalies within it consist of the remains of early banked linear field boundaries or enclosures (1-5) and a curvilinear ditch which may indicate an early settlement site (6). Two anomalies that may be of archaeological origin were also identified (8), however these may both be natural or modern features. Less archaeologically significant cultivation ridges (7) were also identified. The remaining anomalies result from areas of ground disturbance and ferrous metal debris, manhole covers, smaller ferrous objects and ferrous enclosure fencing around the fields.

4.2 Recommendations

Given the identification of probable archaeological remains during the geophysical survey (Feature 02), it is recommended that a further programme of archaeological evaluation is implemented for anomalies 1, 2, 3, 4, 5 and 6 prior to the commencement of any proposed construction related groundworks at the site in order to verify their existence and determine their character, function and date. This should take the form of **evaluation trial trenching,** probably 20m long and 2m (an excavator bucket width) wide which should target the features, with additional trenches in blank areas to give comparative information. This should cover a proportion of about 5% of the study area. The area to the north of the site which is known to be heavily disturbed by groundworks associated with the services that cross the site, should be excluded from archaeological evaluation.

The drystone wall encountered (Feature 01) should be avoided if possible, but if this is not possible a basic record should be made.

5 SOURCES CONSULTED

5.1 Primary Sources

Aerial Photographic Unit, Welsh Government, Cardiff

RAF 106G/UK655 frame 4134 taken 13th August 1945

Anglesey Archives, Llangefni

WSH 11/23 Photograph of the Lime Kiln, Benllech
WQT/34/1-83 Land tax for the Parish of Llanfair Matharn Eithaf for 1718-1876
WQT 105/1-4 Window tax for the Parish of Llanfair Matharn Eithaf for 1719, 1756, 1760, 1765

National Archives

Tithe map and apportionment for the Parish of Llanfair Matharn Eithaf for 1843

5.2 Secondary Sources

1. British Geological Society 1980 Soil Survey of England and Wales. Soils of Wales Sheet 2
2. British Geological Survey, 2019, Geology of Britain viewer [Accessed 30/04/2019] website http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps
3. Carr, T. 1971-2 'The Extent of Anglesey 1352', Trans. of the Anglesey Antiquarian Society, 150-272
4. Chartered Institute for Field Archaeologists, 2014, Standard and Guidance for Archaeological Geophysical Survey
5. English Heritage, 1991, Management of Archaeological Projects
6. English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE).
7. Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) (Version 1.1)
8. Haslam, R, Orbach, J. and Voelcker, A. 2009 Gwynedd (Pevsner Architectural Series)

9. Hedgerow Regulations 1997 Statutory Instrument 1997 No. 1160
10. Isle of Anglesey Council 2011 Ynys Môn. The Isle of Anglesey. Anglesey Landscape Strategy Update 2011
11. Jones, G.R.J. 1955 ‘The Distribution of Medieval Settlement in Anglesey’, Trans. of the Anglesey Antiquarian Society, 27-96
12. Jones-Pierce, T. 1951 ‘Medieval Settlement in Anglesey’, Trans. of the Anglesey Antiquarian Society, 1-33
13. Lidar Data viewed at the Lle portal (https://lle.gov.wales/home)
14. Lindsay-Scott, W. 1933 ‘The Chambered Tomb of Pant-y-Saer, Anglesey’, Archaeologia Cambrensis 88, 185-228
15. Ordnance Survey First Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889.
16. Ordnance Survey Second Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1900.
17. Ordnance Survey Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1920.
18. Phillips, C.W. 1934 ‘The Excavation of a Hut Group at Pant-y-Saer in the parish of Llanfair Mathafarn Eithaf, Anglesey, Archaeologia Cambrensis 89, 1-36
19. Royal Commission on Ancient and Historic Monuments of Wales 1937 An Inventory of the Ancient and Historical Monuments of Anglesey
20. Royal Commission on Ancient and Historic Monuments of Wales 2015 Guidelines for digital archives
21. Smith, G. 1997 Moelfre to Benllech Sewage Pumping Main (G1453). Archaeological Assessment. Unpublished GAT Report No. 241
22. Smith, G., 2003 Prehistoric Funerary and Ritual Monument Survey: West Gwynedd and Anglesey. Unpublished GAT Report No. 478
23. Smith, B. and George, T.N. 1961 British Regional Geology. North Wales (HMSO, London)
24. Soilscapes, 2019, Cranfield Soil and Agrifood Institute Soilscapes viewer, [Accessed 30/04/2019] website http://www.landis.org.uk/soilscapes/
25. Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists, 2014).
26. The Hedgerows Regulations 1997. A Guide to the Law and Good Practice (HMSO)
27. The Welsh Archaeological Trusts, 2018, Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) (Version 1.1)

Figure 01: Location of assessment area (outlined red) and local archaeological features. Based on Ordnance Survey 1:10000 County Series Map Sheets SH58. Scale 1:10000 @A4. © Crown Copyright. All Rights Reserved. License Number AI100020895

Figure 02: Detail from the Tithe Map of the Parish of Llafair Mathafarn Uchaf of 1843 with the study area highlighted in red.

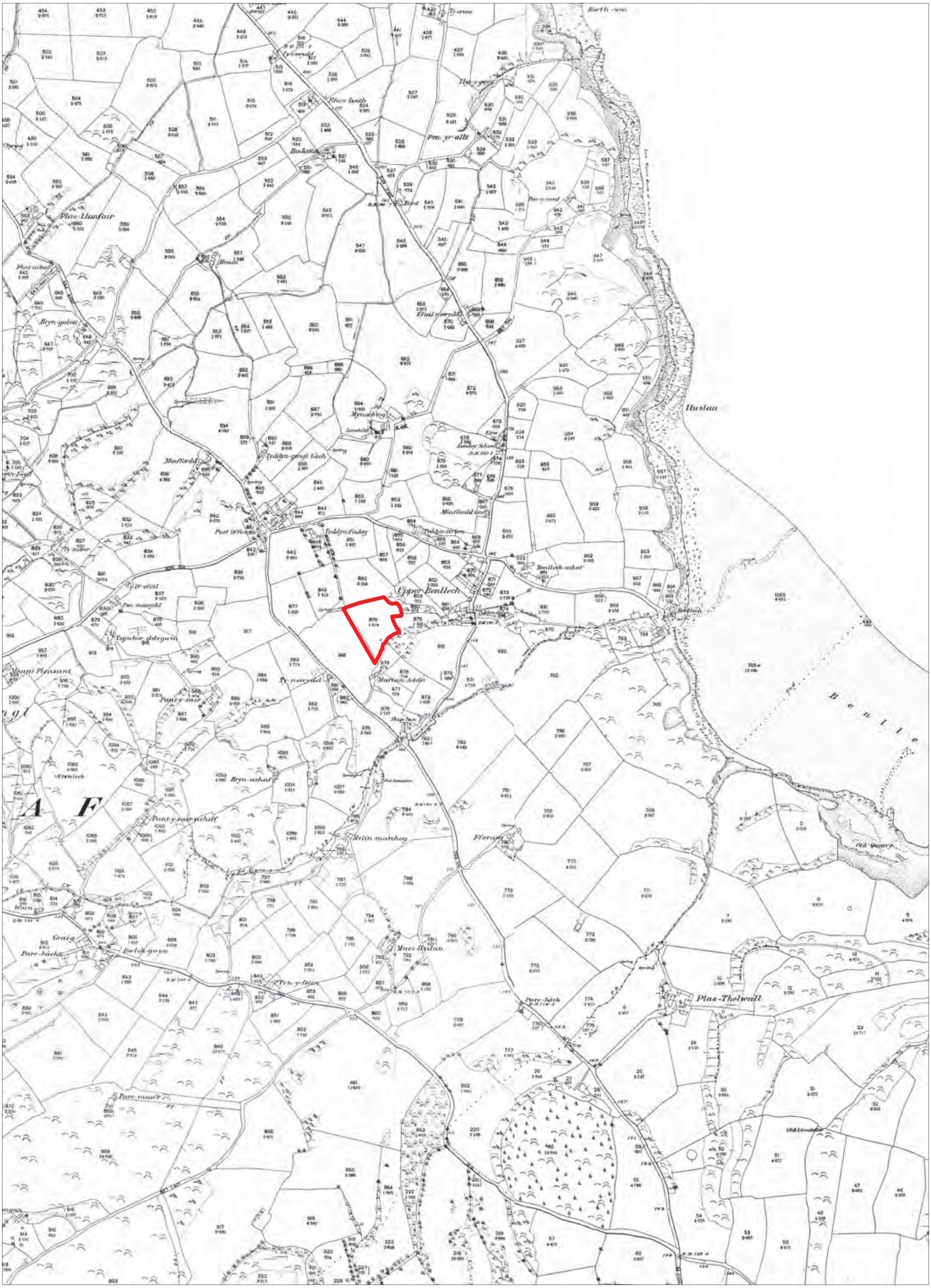


Figure 03: Reproduction of Ordnance Survey First Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889. Scale 1:10000 @A4.

Figure 04: Reproduction of Ordnance Survey Second Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1900. Scale 1:10000 @A4.

Figure 05: Reproduction of Ordnance Survey Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1920. Scale 1:10000 @A4.

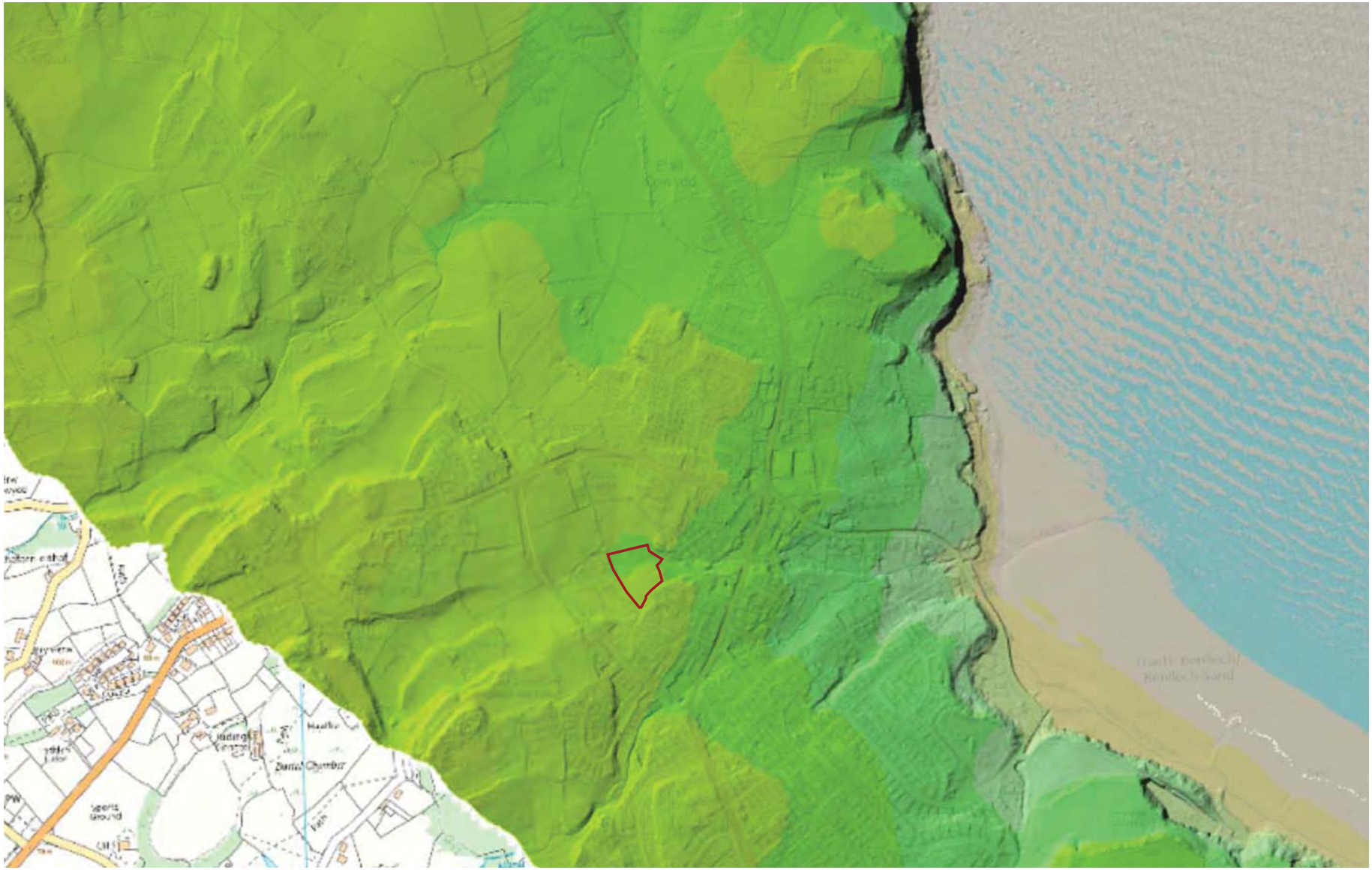
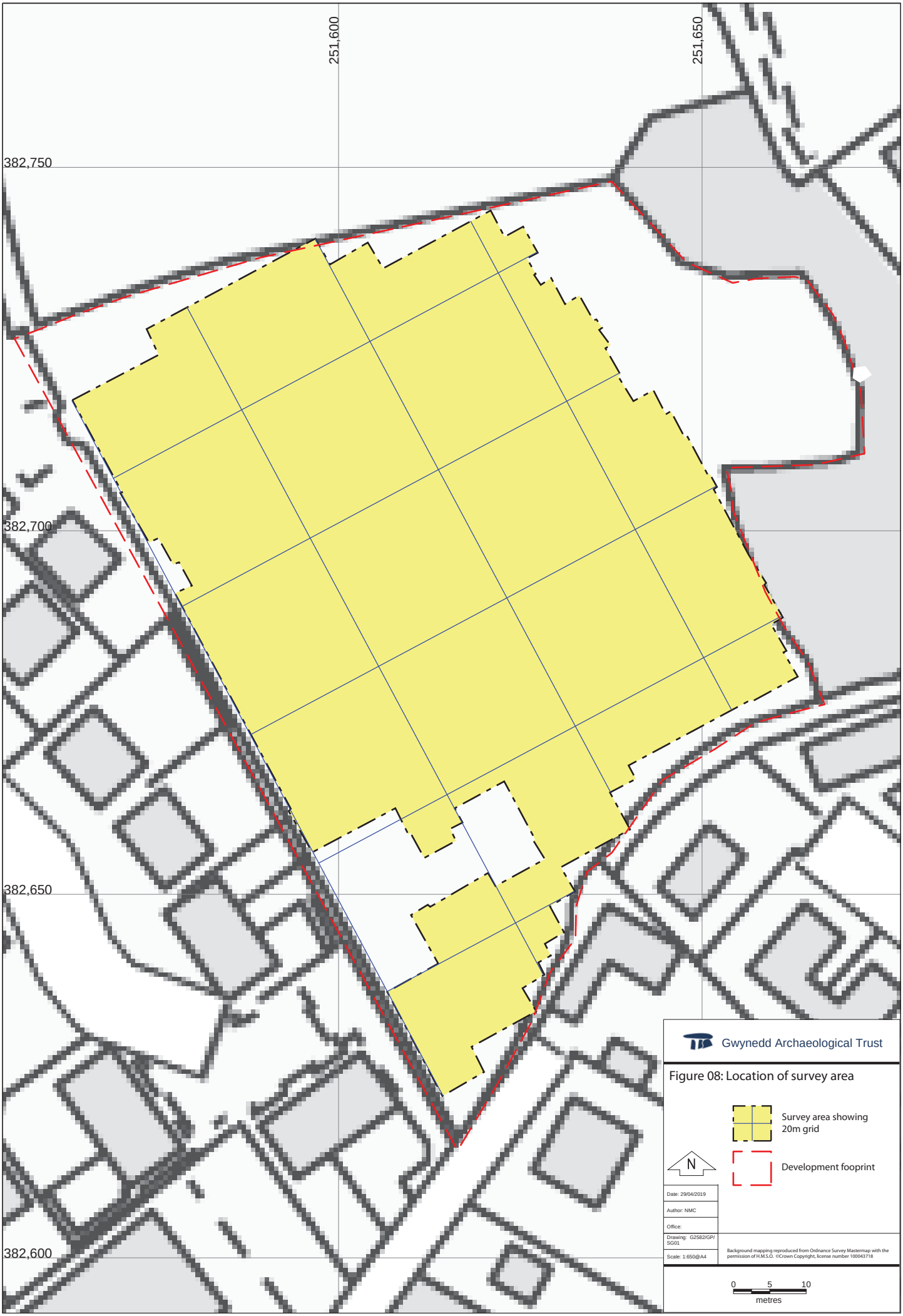
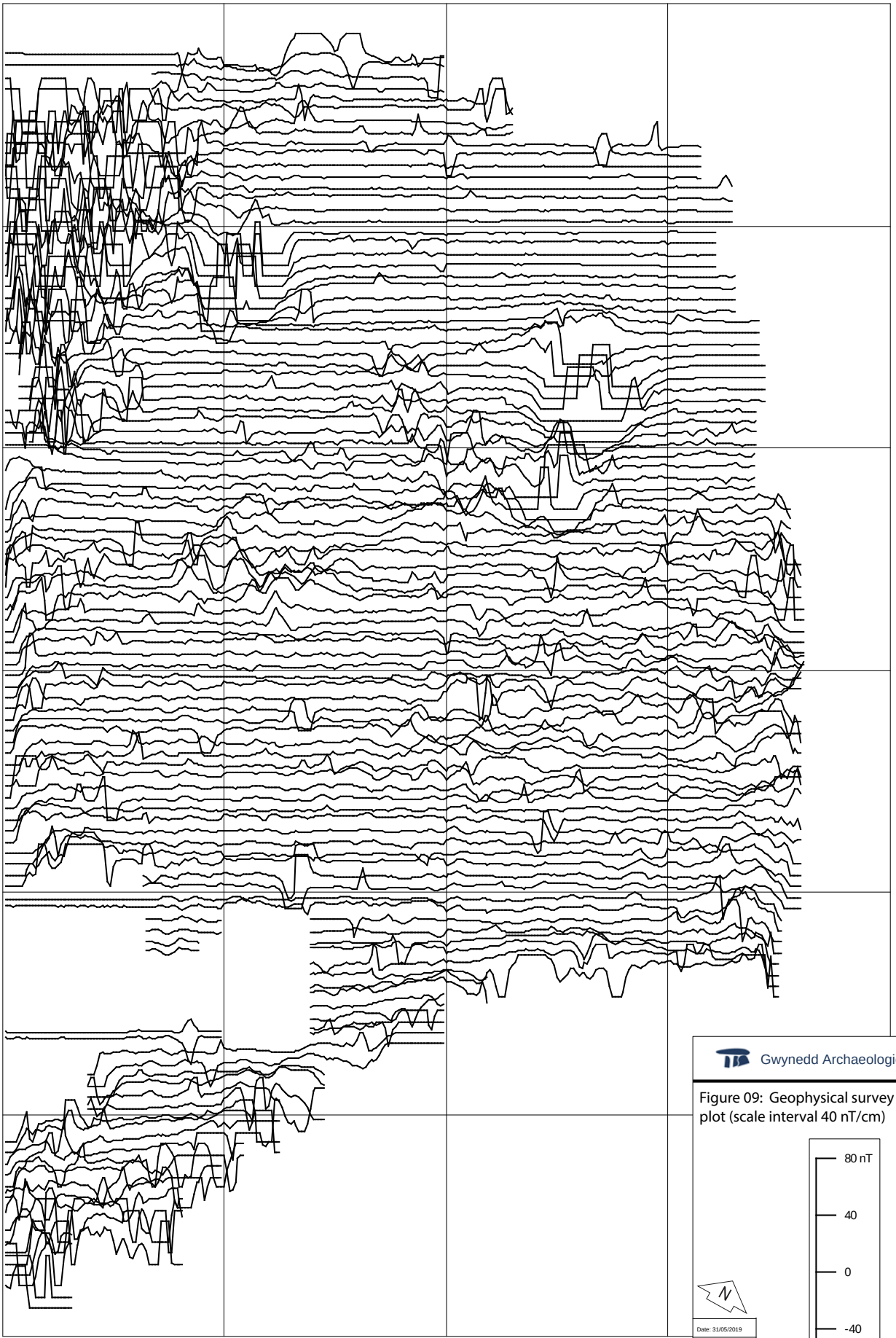


Figure 06: Lle Portal LiDAR data showing the development area at Lon Pant y Cudyn (outlined in red). The higher ground is noted to the south

Figure 07: Detail from RAF aerial photograph 106G/UK655 frame 3131 taken on 13th August 1945, with the Lon Pant y Cudyn area outlines in red (not to scale).


251,600
251,650
382,750
382,700
382,650
382,600
Gwynedd Archaeological Trust
Figure 08: Location of survey area
Survey area showing 20m grid
Development fooprint
N
Date: 29/04/2019
Author: NMC
Office:
Drawing: G2582/GP/SG01
Scale: 1:650@A4
Background mapping reproduced from Ordnance Survey Mastermap with the permission of H.M.S.O. ©Crown Copyright, license number 100043718
0 5 10
metres



Gwynedd Archaeological Trust

Figure 09: Geophysical survey XY trace plot (scale interval 40 nT/cm)

80 nT
40
0
-40
-80 nT

N

Date: 31/05/2019
Author: NMC
Office:
Drawing: G2582/GP/XY01
Scale: 1:500 @ A4

0m 20m


251,600
251,650
382,750
382,700
382,650
382,600
Gwynedd Archaeological Trust
Figure 10: Geophysical survey greyscale plot (raw data clipped to +/- 15 nT)
15 nT
0 nT
-15 nT
N
Date: 30/05/2019
Author: NMC
Office:
Drawing: G2582/GP/GS01
Scale: 1:650@A4
Background mapping reproduced from Ordnance Survey Mastermap with the permission of H.M.S.O. ©Crown Copyright, license number 100043718
0 5 10
metres


251,600
251,650
382,750
382,700
382,650
382,600
Gwynedd Archaeological Trust
Figure 11: Geophysical survey greyscale plot (raw data clipped to +/- 15 nT and de-striped)
15 nT
0 nT
-15 nT
N
Date: 29/04/2019
Author: NMC
Office:
Drawing: G2582/GP/GS02
Scale: 1:650@A4
Background mapping reproduced from Ordnance Survey Mastermap with the permission of H.M.S.O. ©Crown Copyright, license number 100043718
0
5
10
metres

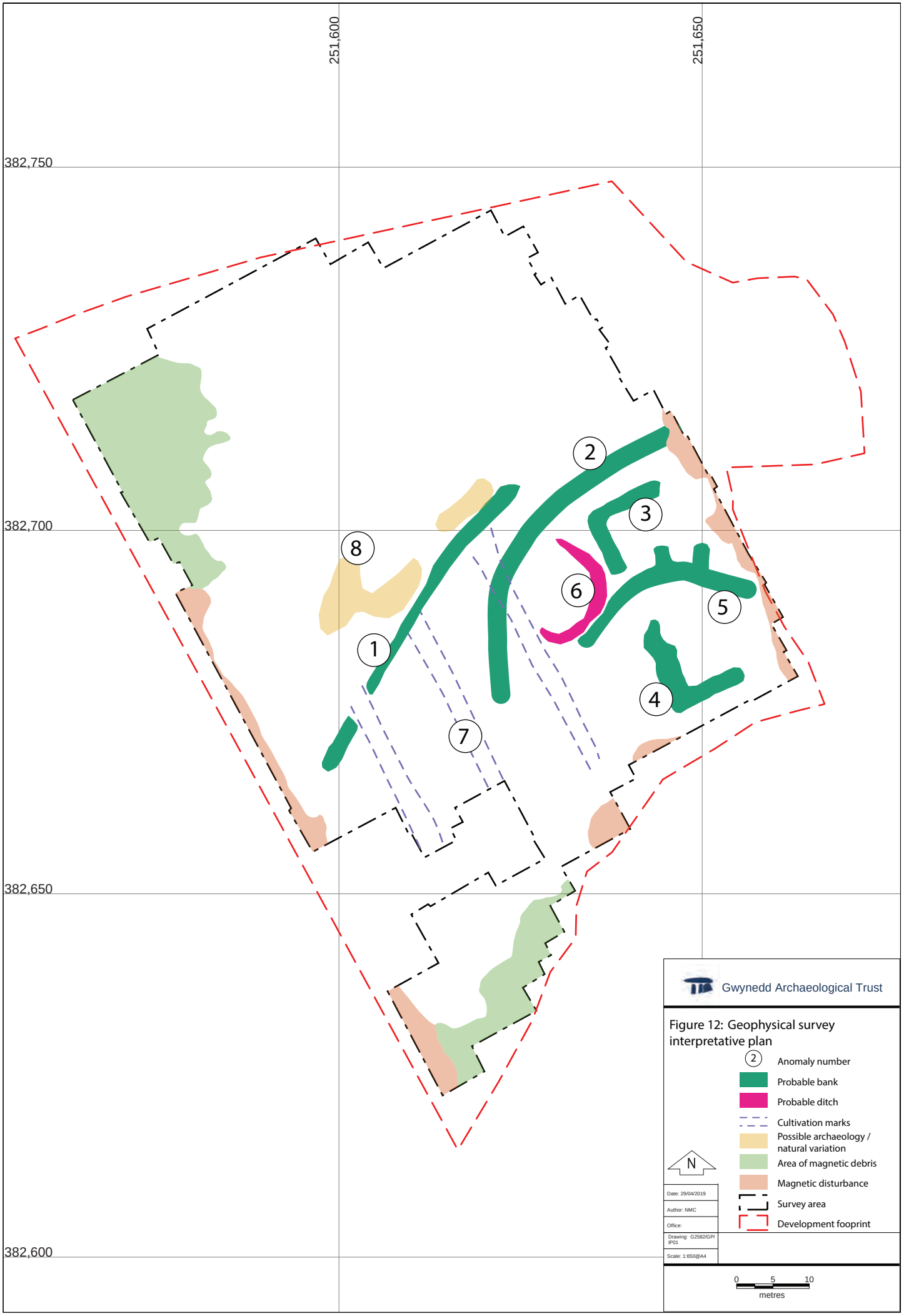

251,600
251,650
382,750
382,700
382,650
382,600
1
2
3
4
5
6
7
8
Gwynedd Archaeological Trust
Figure 12: Geophysical survey interpretative plan
2 Anomaly number
Probable bank
Probable ditch
Cultivation marks
Possible archaeology / natural variation
Area of magnetic debris
Magnetic disturbance
Survey area
Development fooprint
N
Date: 29/04/2019
Author: NMC
Office:
Drawing: G2582/GP/IP01
Scale: 1:650@A4
0 5 10
metres

Plate 1: Wide angled view showing gated entrance to survey plot at Lon Pant y Cudyn; scale: not used (archive reference: G2582_004).

Plate 2: View of survey area east of Lon Pant Y Cudyn; scale: not used (archive reference: G2582_002).

Plate 3: View of survey area east of Lon Pant Y Cudyn sowing tree bounded area to the east; scale: not used (archive reference: G2582_003).

Plate 4: General view from the centre of the field looking west towards the housing estate; scale: 1x2m (archive reference: G2582_005).

Plate 5: View showing two manhole covers about 20m east of gated entrance; scale: 1x2m (archive reference: G2582_006).

Plate 6: View of northern site boundary showing bramble and old hedgerow; scale: 1x2m (archive reference: G2582_008).

Plate 7: View along irregular eastern boundary showing bramble and mature trees beyond; scale: 1x2m (archive reference: G2582_009).

Plate 8: General view showing the eastern corner of the field, with evidence for ground investigation works; scale: 1x2m (archive reference: G2582_010).

Plate 9: View of rock outcrop boundary on the southeastern side of the plot, approximately 2.2m high; scale: 1x2m (archive reference: G2582_012).

Plate 10: General view from the southeast corner of the plot towards the gated entrance; scale: 1x2m (archive reference: G2582_013).

Plate 11: General view looking towards the gated entrance of the western corner of the site, with housing to the southwest; scale: 1x2m (archive reference: G2582_014).

Plate 12: View looking towards the southern corner of the plot near the entrance gate; scale: 1x2m (archive reference: G2582_015).

Plate 13: General view across the development plot; scale: 1x2m (archive reference: G2582_016).

Plate 14: General view showing the boundary between the development plot and the modern housing development to the southwest; scale: 1x2m (archive reference: G2582_017).

Plate 15: General view across the development plot subsequent to plot clearance in April 2019; scale: 1x2m. View from the north (archive reference: G2582_021).

Plate 16: General view showing the boundary between the development plot and the modern development subsequent to the plot clearance. View from the south ; scale: 1x2m (archive reference: G2582_017).

APPENDIX I

Gwynedd Archaeological Trust approved written scheme of investigation, October 2018.

LON PANT Y CUDYN WSI (G2582)

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL ASSESSMENT & EVALUATION (GEOPHYSICAL SURVEY)

Prepared for Caulmert Ltd.

October 2018

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Approvals Table				
	Role	**Printed Name**	**Signature**	**Date**
Originated by	Document Author	JOHN ROBERTS		12/10/18
Reviewed by	Document Reviewer	ROBERT EVANS		12/10/18
Approved by	Principal Archaeologist	JOHN ROBERTS		12/10/18

Revision History			
Rev No.	**Summary of Changes**	**Ref Section**	**Purpose of Issue**

All GAT staff should sign their copy to confirm the project specification is read and understood and retain a copy of the specification for the duration of their involvement with the project. On completion, the specification should be retained with the project archive:

Name Signature Date

LON PANT Y CUDYN WSI (G2582)

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL ASSESSMENT & EVALUATION (GEOPHYSICAL SURVEY)

Prepared for *Caulmert Ltd.*, October 2018

CONTENTS

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by Caulmert Ltd. to prepare a written scheme of investigation for an archaeological assessment and evaluation (geophysical survey) in advance of a proposed residential development on land at Lon Pant y Cudyn, Benllech, Ynys Môn (NGR SH51618268; Figure 01). The development area measures 0.8ha and is located west of the A5025 road, within a field of semi-improved open pasture

The assessment will be undertaken from December 2018 and will conform to the following guidelines:

- *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* Version 1.1 (The Welsh Archaeological Trusts, 2018);
- *Guidelines for digital archives* (Royal Commission on Ancient and Historic Monuments of Wales, 2015);
- *Management of Archaeological Projects* (English Heritage, 1991);
- *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Historic England, 2015); and
- *Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014).

The assessment will be monitored by Gwynedd Archaeological Planning Services (GAPS); the content of this written scheme of investigation and all subsequent reporting by GAT must be approved by GAPS prior to final issue.

The Historic Environment Record Enquiry Reference Number for this project is GATHER1011 and the Event Primary Reference Number is 45329.

GAT is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

A brief examination of the regional Historic Environment Record demonstrates that the assessment area is not within an area of known archaeological activity, although prehistoric assets are present within the wider area, including the following:

- A prehistoric enclosed hut circle, Scheduled Monument AN043, is located 330m to the southwest at NGR SH51318243 (Figure 01);
- A prehistoric burial chamber, Scheduled Monument AN004, is located 680m to the southwest at NGR SH5097182401 (Figure 01);
- The site of a possible small megalithic burial chamber, Scheduled Monument AN094, is located 250m to the east at NGR SH51918266 (Figure 01). The site was excavated in 1965 after it was discovered when new sewers were dug nearby and the site cleared for the erection of a bungalow;

In terms of post-medieval land use and development, an examination of the Ordnance Survey First to Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheet of the area (Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889, 1900 and 1920 respectively; cf. Figures 02 to 04) shows the development area within an enclosed field that matches the current boundaries. On the first two editions the plot is located in an area described as “Upper Benllech”. On the first edition two springs are located close to the development area, with a spring visible 20m to the west and another 120m to the east; two irregular shaped plots to the immediate east of the development site are recorded as overgrown areas of furze (gorse) and osers (a wetland willow). On the second edition map, two quarries have been established next to the development area, with one in each of the overgrown fields; small trackways are also visible running to the quarries from the east. On the third edition, only the southern quarry and trackway are present, with a small square shaped plot and property visible in the northern former quarry site. On the first edition the farmstead to the immediate south of the development area is a rectangular block called *Marian Adda*, which is then replaced by three properties called Bryn-Arfon, Isca and Bryn Adda. The *Ship Inn* visible on the first and second edition 180m to the southeast is replaced by the third edition with the much larger Glanrafon Hotel, whilst new large properties are visible east of the main road. Overall, this information demonstrates the gradual change in local development and industry prior to the later twentieth expansion characterised by modern Benllech. This is reflected in the local Pevsner guide, which succinctly summarises Benllech as a “Seaside resort (with)

some older buildings of c. 1900 on the main road, otherwise a combination of C20 housing for the retired, and holiday jumble" (Haslam, et. al., 2009: 113).

3 METHODOLOGY

3.1 Assessment (Desktop Study)

A desk-based assessment is defined as “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage….Significance is to be judged in a local, regional, national or international context as appropriate” (CIfA 2014, 4).

The desk-based assessment will involve a study of the following resources:

1. The regional Historic Environment Register ((HER) Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Garth, Bangor, Gwynedd LL57 2RT) will be examined for information concerning the study area, defined as the highlighted plot in Figure 01 and the immediate environs. This will include an examination of the core HER, the 1:2500 County Series Ordnance Survey maps and any secondary information held within the HER. All identified features will be mapped, described and added to a gazetteer of sites and the relative importance of any sites defined;
2. The National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be checked for sites additional to the HER;
3. Aerial photographs from the National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be examined for potential features;
4. On-line catalogue search of the National Library of Wales (Penglais Rd, Aberystwyth SY23 3BU);
5. Archive data, including primary and secondary sources, historic maps and estate maps will be examined at the regional archives (Archifau Ynys Môn / Anglesey Archives, Diwydiannol Bryncefni / Industrial Estate Rd, Llangefni LL77 7JA and Library).. The examination of the archive data will include historic mapping including the local tithe map and schedule;

6. Light Detection and Ranging (LiDAR) data will be examined from the Lle Geo-Portal at http://lle.gov.wales/home for information on potential surface features using digital terrain modelling and digital surface modelling;

3.2 Walkover Survey

A walkover survey will be undertaken that will incorporate the assessment area study area, defined as the highlighted plot in Figure 01 and the immediate environs. All known and new archaeological features on the ground will be located and described them on GAT pro-formas. The sites will then be added to the overall gazetteer and their relative importance defined. The potential for sub-surface archaeology will be estimated and defined.

A photographic record will be maintained in RAW format using a digital SLR set to maximum resolution (Nikon D3000; resolution: 3,872 × 2,592 [10.2 effective megapixels]) and photographic metadata table will be completed and included in the report. Photographic images will be archived in TIFF format; the archive numbering system will start from G2582_001. A handheld GPS unit will also be used during the walkover survey

3.3 Geophysical Survey

3.3.1 Summary

The geophysical survey will be undertaken by GAT staff and will incorporate the assessment area, defined as the highlighted plot in Figure 01and will be carried out in a series of 20m grids, which will be tied into the Ordnance Survey grid using a Trimble R8 high precision GPS system. The survey will be conducted using a Bartington Grad 601-2 dual fluxgate gradiometer with a 1.0m traverse interval and a 0.25m sample interval.

3.3.2 Instrumentation

The Bartington Grad 601-2 dual fluxgate gradiometer uses a pair of Grad-01-100 sensors. These are high stability fluxgate gradient sensors with a 1.0m separation between the sensing elements, giving a strong response to deeper anomalies. The instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetized iron oxides which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil, therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials which can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Strong readings are also produced by archaeological features such as hearths or kilns as fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalized magnetic enhancement around settlement sites. Not all surveys can produce good results as results can be masked by large magnetic variations in the bedrock or soil or high levels of natural background "noise" (interference consisting of random signals produced by material with in the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features. The Bartington Grad 601 is a hand held instrument and readings can be taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 500mm apart. Their cores are driven in and out of magnetic saturation by a 1,000Hz alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output. The gradiometer can detect anomalies down

to a depth of approximately one meter. The magnetic variations are measured in nanoTeslas (nT). The earth's magnetic field strength is about 48,000 nT; typical archaeological features produce readings of below 15nT although burnt features and iron objects can result in changes of several hundred nT. The machine is capable of detecting changes as low as 0.1nT.

3.3.3 Data Collection

The gradiometer includes an on-board data-logger. Readings are taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval is 1.0m and readings are logged at intervals of 0.25m along each traverse. Marked guide ropes are used to ensure high positional accuracy during the high resolution survey. The data is transferred from the data-logger to a computer where it is compiled and processed using ArchaeoSurveyor2 software. The data is presented as a grey scale plot where data values are represented by modulation of the intensity of a grey scale within a rectangular area corresponding to the data collection point within the grid. This produces a plan view of the survey and allows subtle changes in the data to be displayed. This is supplemented by an interpretation diagram showing the main feature of the survey with reference numbers linking the anomalies to descriptions in the written report. It should be noted that the interpretation is based on the examination of the shape, scale and intensity of the anomaly and comparison to features found in previous surveys and excavations etc. In some cases the shape of an anomaly is sufficient to allow a definite interpretation e.g. a Roman fort. In other cases all that can be provided is the most likely interpretation. The survey will often detect several overlying phases of archaeological remains and it is not usually possible to distinguish between them. Weak and poorly defined anomalies are most 4 susceptible to misinterpretation due to the propensity of the human brain to define shapes and patterns in random background "noise". An assessment of the confidence of the interpretation is given in the text.

3.3.4 Data Processing

The data is presented with a minimum of processing although corrections are made to compensate for instrument drift and other data collection inconsistencies. High readings caused by stray pieces of iron, fences, etc. are usually modified on the grey scale plot as they have a tendency to compress the rest of the data. The data is however carefully examined before this procedure is carried out as kilns and other burnt features can produce similar readings. The data on some 'noisy' or very complex sites can benefit from 'smoothing'. Grey-scale plots are always somewhat pixellated due to the resolution of the

survey. This at times makes it difficult to see less obvious anomalies. The readings in the plots can therefore be interpolated thus producing more but smaller pixels and a small amount of smoothing based on a low pass filter can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see. Any further processing is noted in relation to the individual plot.

3.3.5 Aims

The report will include a discussion of the grey scale plot and an interpretation of the any anomalies identified; these anomalies will be presented as either positive or negative, suggesting whether they could be cut features (ditches, pits etc.), or built sub-surface features (e.g., banks). Figures will be included for the grey scale plot and for the anomaly interpretation. The results of the geophysical survey will be used to inform further recommendations for archaeological evaluation and/or mitigation (if relevant).

3.4 Gazetteer

A gazetteer will be compiled for any new sites identified within and within proximity to the specified route (including any identified during the geophysical survey) as well as information sourced from the regional Historic Environment Record; the gazetteer will include:

1. Feature Number
2. Site name
3. PRN number
4. Grid reference
5. Period
6. Site type
7. Assessment category
8. Description
9. Impact
10. Recommendation for further assessment/evaluation
11. Recommendation for mitigatory measures

The following categories will be used to define the assessment category of the archaeological asset:

Category A - Sites of National Importance.
Scheduled Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both. Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.
Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.
Sites which are not of sufficient importance to justify a recommendation for preservation if threatened. Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.
Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category. For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.
Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation.

The impact of the proposed works on any asset will be identified using the following impact criteria, defined either as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

None:

There is no construction impact on this asset.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the asset, *e.g.* part of a trackway or field bank.

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of an asset affecting its overall integrity. Assets falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of an asset or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the asset is unknown, but thought to be in the vicinity of the proposed works.

3.5 Data processing and report compilation

Following completion of the stages outlined above, a report will be produced incorporating the following:

1. Front cover;
2. Inner cover;
3. Figures and Plates List;
4. Non-technical summary (Welsh/English);
5. Introduction;
6. Methodology;
    i. Desk-based assessment;
    ii. Walkover survey;
    iii. Geophysical survey;
7. Results;
    a. Desk based assessment;
        i. Location and geological summary;
        ii. Statutory and non-statutory designations;
        iii. Environmental remains and soil morphology;
        iv. Historical and archaeological background;
        v. Cartographic evidence;
        vi. Artefact potential;
        vii. Aerial photographs and LiDAR;
    b. Walkover survey;
    c. Geophysical survey
    d. Gazetteer of features;
8. Conclusions and recommendations;
    a. Conclusion;
    b. Table of sites and recommendations;
9. Acknowledgements;
10. Bibliography;
    a. Primary sources;
    b. Secondary sources;
11. Figures; inc.:
    - location plan;
    - historic mapping;
    - location plan with identified features;
    - grey scale plot;
    - anomaly identification and interpretation;
12. Appendix I (approved written scheme of investigation);
13. Appendix II (Sites listed on GAT Historic Environment Record);
14. Appendix III (Definition of mitigation terms);
15. Appendix IV (Photographic metadata - walkover survey);

    Back cover.

Illustrations will include plans of the location of the study area and archaeological sites. Historical maps, when appropriate and if copyright permissions allow, will be included.

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. The archaeological assessment outlined in this written scheme of investigation will be submitted in draft format in December 2018; a final report will be submitted to the Historic Environment within six months of submitting the draft report (May 2019).

The following dissemination will apply:

- A digital report(s) will be provided to the client/consultant and GAPS (draft report then final report);
- A paper report plus a digital report will be provided to the regional Historic Environment Record, Gwynedd Archaeological Trust; this will be submitted within six months of project completion (final report only), along with any relevant, digital information such as the project database and photographs. All digital datasets submitted will conform to the required standards set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1); and
- A digital report and archive (including photographic and drawn) data will be provided to Royal Commission on Ancient and Historic Monuments, Wales (final report only), in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. Digital information will include the photographic archive and associated metadata.

4 HISTORIC ENVIRONMENT RECORD

In line with the regional Historic Environment Record (HER) requirements defined in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1), the HER has been contacted at the onset and a HER Enquiry Form has been completed and submitted. The Historic Environment Record Enquiry Reference Number for this project is GATHER1011 and the Event Primary Reference Number is 45329.

Prior to submission of data to the HER on completion of the project, a bilingual event summary document will be prepared in *Microsoft Word* based on the format defined in section 4.2 of *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1).

5 PERSONNEL

The project will be managed by John Roberts, Principal Archaeologist GAT Contracts Section. The desk based assessment will be completed by a Project Archaeologist who will have responsibility for completing compiling the gazetteer, preparing the site archive, liaising with GAPS and *Caulmert Ltd.* and preparing the draft report and final report. The geophysical survey will be undertaken by GAT staff, led by a Senior Archaeologist. The survey results will be incorporated into the assessment report and included in the gazetteer.The project manager will be responsible for reviewing and approving the report prior to submission.

6 INSURANCE

6.1 Public/Products Liability

Limit of Indemnity- £5,000,000 any one event in respect of Public Liability
INSURER Aviva Insurance Limited
POLICY TYPE Public Liability
POLICY NUMBER 24765101CHC/UN/000375
EXPIRY DATE 21/06/2019

6.2 Employers Liability

Limit of Indemnity- £10,000,000 any one occurrence.
The cover has been issued on the insurers standard policy form and is subject to their usual terms and conditions. A copy of the policy wording is available on request.
INSURER Aviva Insurance Limited
POLICY TYPE Employers Liability
POLICY NUMBER 24765101 CHC / UN/000375
EXPIRY DATE 21/06/2019

6.3 Professional Indemnity

Limit of Indemnity- £5,000,000 in respect of each and every claim
INSURER Hiscox Insurance Company Limited
POLICY TYPE Professional Indemnity
POLICY NUMBER 9446015
EXPIRY DATE 22/07/2019

7 SOURCES CONSULTED

1. English Heritage, 1991, Management of Archaeological Projects
2. English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE).
3. *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1)
4. Haslam, R., Orbach, J. and Voelcker, A. 2009. *The Buildings of Wales: Gwynedd* (Pevsner Architectural Series)
5. Ordnance Survey First Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889.
6. Ordnance Survey Second Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1900.
7. Ordnance Survey Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1920.
8. Royal Commission on Ancient and Historic Monuments of Wales 2015 *Guidelines for digital archives*
9. Standard and Guidance for Archaeological Geophysical Survey (Chartered Institute for Archaeologists, 2014).
10. Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists, 2014).

FIGURE 01

Location of assessment area (outlined red) and local archaeological features. Based on Ordnance Survey 1:10000 County Series Map Sheets SH58. Scale 1:10000 @A4. © Crown Copyright. All Rights Reserved. License Number Al100020895.

Eden
Borth-wen
Ty-newydd
Mast
Fair Acre
5732
60,693
Bodafon
Y Bwthyn
Quarry (dis)
3,458
Caravan Site
60,694
Caravan Site
Pen-y-coed
Plas Llanfair
Efail Newydd
Rhous
Plas Uchaf
Caravan & Camping Site
1,702
Weir
Drain
Lime Kiln (dis)
The Bungalow
Mynachlog
Caravan Park
Huslan
7,746
Ty'n-y-gongl Farm
Caravan Park
Tyddyn Fadog
Ysgol
7,743
Benllech Farm
27,533
Beach Road
Pipeline
5,470
Tynygongl
AN094
36,117
Mean Low Water
3,624
Resr (cov)
Caravan Park
Pant-y-saer
Lon Pant y Cudyn
Pol Sta
Cytiau'r Gwyddelod Enclosed Hut Group
Traeth Benllech/ Benllech Sand
3,606
Slipway
Haulfre
AN043
AN004
Burial Chamber
Bay View Road
Mean High Water
Ffordd Bangor/Bangor Road
36,116
5,895
Sewage Works
Cave
Afon y Marchogion
Bwlch
Upper Breeze Hill
Benllech
7,749
34,753
Burial Ground
3,608
Quarry (dis)
Plas-Thelwal
Parc-mawr
Sea View Cottages
AN154
Coed y Glyn
Croes Wion
5379
Kiln (dis)
AN127
3,609
Dorothea Covert
3,613
Glynceris

FIGURE 02

Reproduction of Ordnance Survey First Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1889. Scale 1:10000 @A4.


Borth-wen
Ty-croes
Tyn-ewydd
Rhos-boeth
Bodafon
Pen-yr-allt
Plas-Llanfair
Plas-uchaf
Bryn-goleu
Efail-newydd
Mynachlog
Tyddyn-gongl-bâch
Minffordd
Post Office
Tyddyn-Fadog
Tyddyn-tirion
Minffordd-isaf
Sunday School
Upper Benllech
Benllech-uchaf
Huslan
Benllech
Ty-mawr
Yr-efail
Pen-meusydd
Ysgubor-ddegwm
Mount Pleasant
Pant-y-saer
Ty-newydd
Marian-Adda
Bryn-uchaf
Melin-marchog
Fferam
Old Quarry
Maes-llydan
Tyn-y-felin
Bwlch-gwyn
Graig
Parc-bâch
Plas-Thelwall
Parc-mawr
Old Limekiln
A F

FIGURE 03

Reproduction of Ordnance Survey Second Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1900. Scale 1:10000 @A4.


Ty-croes
Borth Wen
Ty-newydd
Rhôs-boeth
Bodafon
Pen-yr-allt
Bont
Pen-y-coed
Plâs-Llanfair
Plâs-uchaf
House
Efail-newydd
Bryn-goleu
Cae-merddyn
Minffordd
Tyddyn-gongl-bach
Monachlog
Huslan
Sunday School
Minffordd-isaf
Ty'n-y-gongl Farm
Tyddyn-Fadog
Tyddyn-tirion
Congregational Chapel
Ty-mawr
Ty'n-y-gongl
Yr-Efail
Upper Benllech
Benllech-uchaf
Benllech
Mount Pleasant
Ty-newydd
Bryn-Arfon
Pant-y-saer
Glanrafon Hotel
Bryn-Mathafarn
Fern Hill
Cromlech
Bryn-uchaf
Old Quarry
Trefona
A F
Pant-y-saer-uchaf
Fferam
Breeze Hill
Waen
Graig
Parc-bâch
Bwlch-gwyn
Maes-llydan
Rhianfa
Ty'n-y-felin
Parc-mawr
Goronwy
Groes-eian

FIGURE 04

Reproduction of Ordnance Survey Third Edition Ordnance Survey 1-inch to 25-mile County Series Map Sheets VIII.13, VIII.14, XIV.01 and XIV.02; 1920. Scale 1:10000 @A4.


Benllech
Congregational Chapel
Ty'n-y-gongl
Old Quarry

APPENDIX II

Gwynedd Archaeological Trust Photographic Metadata

PHOTO RECORD NUMBER*	SITE SUB-DIVISION	NGR*	DESCRIPTION*	CONTEXT NUMBER (S)	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATION OF DIGITAL PHOTO*	ORIGINATING ORGANISATION	PLATES
G2582_001	n/a	SH51618268	View of survey area east of Lon Pant Y Cudyn	n/a	WSW	not used	Robert Evans	29/11/2018	Gwynedd Archaeological Trust	
G2582_002	n/a	SH51618268	View of survey area east of Lon Pant Y Cudyn	n/a	SW	not used	Robert Evans	29/11/2018	Gwynedd Archaeological Trust	2
G2582_003	n/a	SH51618268	View of survey area east of Lon Pant Y Cudyn sowing tree bounded area to the east	n/a	WSW	not used	Robert Evans	29/11/2018	Gwynedd Archaeological Trust	3
G2582_004	n/a	SH51618268	Wide angled view showing gated entrance to survey plot at Lon Pant y Cudyn	n/a	SW	not used	Robert Evans	29/11/2018	Gwynedd Archaeological Trust	1
G2582_005	n/a	SH51618268	General view from the centre of the field looking west towards the housing estate	n/a	ESE	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	4
G2582_006	n/a	SH51618268	View showing two manhole covers about 20m east of gated entrance	n/a	ENE	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	5
G2582_007	n/a	SH51618268	View of northern site boundary showing bracken and old hedgerow	n/a	E	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	
G2582_008	n/a	SH51618268	View of northern site boundary showing bramble and old	n/a	WSW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	6

			hedgerow							
G2582_009	n/a	SH51618268	View along irregular eastern boundary showing bramble and mature trees beyond	n/a	NNW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	7
G2582_010	n/a	SH51618268	General view showing the eastern corner of the field, with evidence for ground investigation works	n/a	SW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	8
G2582_011	n/a	SH51618268	General view showing the southeastern side of the field, with evidence for ground investigation works	n/a	NE	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	
G2582_012	n/a	SH51618268	View of rock outcrop boundary on the southeastern side of the plot, approximately 2.2m high	80231	NW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	
G2582_013	n/a	SH51618268	General view from the southeast corner of the plot towards the gated entrance	n/a	SE	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	10
G2582_014	n/a	SH51618268	General view looking towards the gated entrance of the western corner of the site, with housing to the southwest	n/a	SSE	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	11
G2582_015	n/a	SH51618268	View looking towards the southern corner of the plot near the entrance gate	n/a	NNW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	12

G2582_016	n/a	SH51618268	General view across the development plot	n/a	SW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	13
G2582_017	n/a	SH51618268	General view showing the boundary between the development plot and the modern housing development to the southwest	n/a	SE	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	14
G2582_018	n/a	SH51618268	General view looking eastwards across the development plot from inside the gated entrance	n/a	WSW	1x2m	Robert Evans	05/12/2018	Gwynedd Archaeological Trust	
G2582_019	n/a	SH51618268	General view of Lon Pant y Cudyn post undergrowth clearance	n/a	S	1x2m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	
G2582_020	n/a	SH51618268	General view of Lon Pant y Cudyn post undergrowth clearance	n/a	N	1x2m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	
G2582_021	n/a	SH51618268	General view of Lon Pant y Cudyn post undergrowth clearance, showing uncleared nesting area	n/a	N	1x2m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	15
G2582_022	n/a	SH51618268	General view of Lon Pant y Cudyn post undergrowth clearance, showing uncleared nesting area	n/a	S	1x2m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	
G2582_023	n/a	SH51618268	General view of Lon Pant y Cudyn post undergrowth clearance, showing uncleared	n/a	S	1x2m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	16

			nesting area							
G2582_024	n/a	SH51618268	Close view of boundary stone above the rock outcrop on the east side of the field	80231	NW	1x1m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	9
G2582_025	n/s	SH51618268	Wide angle view of rock outcrop and stones above	80231	SW	1x1m	Bethan Jones	23/04/2019	Gwynedd Archaeological Trust	

Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd. LL57 2RT
Ffon: 01248 352535. Ffacs: 01248 370925. email:gat@heneb.co.uk