
Anglesey Biogas, Gwalchmai Anglesey



Archaeological Assessment

GAT Project No. 1882

Report No. 601

August 2005

Anglesey Biogas, Gwalchmai, Anglesey

Archaeological Assessment

Report No. 601

Prepared for Meyrick Estate Management

August 2005

By

Andrew Davidson
Illustrations by Tanya Berks

ANGLESEY BIOGAS, GWALCHMAI, ANGLESEY

ARCHAEOLOGICAL ASSESSMENT (G1882)

Summary

An archaeological assessment has been undertaken of an area of land west of Gwalchmai, lying between the farms of Cae'r Glaw and Clegyr Mawr. Though there is evidence for prehistoric and medieval settlement within the area, only one site, a Bronze Age burnt mound, lies close to the development area. It is recommended that a programme of field evaluation is undertaken to ensure no related sites lie within the study area. The proposed access track will link to Telford's Holyhead road, and there will be an impact upon some elements that are contemporary with the construction of the road. Recommendations are made for recording in advance of construction.

1. INTRODUCTION

Meyrick Estate Management have asked Gwynedd Archaeological Trust to undertake an archaeological assessment of a plot of land, centred on SH 3778 7692, west of the village of Gwalchmai, in advance of development of a proposed new Biogas plant (see fig 1).

A detailed brief has not been prepared for this project, however the work will be monitored by Gwynedd Archaeological Planning Service on behalf of the Local Planning Authority. The assessment has been conducted according to the guidelines specified in *Standard and Guidance for Archaeological Desk-based Assessment* (Institute of Field Archaeologists, 1994, rev. 1999).

2. SPECIFICATION AND PROJECT DESIGN

An initial report was requested from Gwynedd Archaeological Trust, assessing the likely archaeological impact of the plans and suggesting mitigatory measures.

The basic requirement was for a desk-top survey of the area of interest in order to assess the likely impact of the scheme on the archaeological and heritage features within the area. The importance of known archaeological remains was to be assessed and areas of archaeological potential to be identified. Measures to mitigate any impact on the archaeological resource were to be suggested.

Gwynedd Archaeological Trust's proposals for fulfilling these requirements were as follows:

- a) to identify and record the cultural heritage of the area to be affected*
- b) to evaluate the importance of what was identified (both as a cultural landscape and as the individual items which make up that landscape)*
- c) to recommend ways in which damage to the cultural heritage can be avoided or minimised*

3. METHODS AND TECHNIQUES

3.1 Desk-top Study

Consultation of maps, computer and written records and reference works relating to the study area and its environs, which make up the Historic Environment Record, was undertaken at Gwynedd Archaeological Trust. Records (including early Ordnance Survey maps, tithe maps and schedules, estate maps and papers and reference works - see bibliography) were also consulted in the library and the archives of the University of Wales, Bangor, and the county archives at Llangefni. Aerial photographs which make up the collection held by Countryside Council for Wales were examined.

3.2 Field visit

The site was visited on 11 August, 2005. This part of the assessment involved visiting the study area and its environs, assessing any sites identified during the desk-based study, and assessing any other sites which may exist as above ground features. All sites noted were photographed and their present condition recorded.

3.3 Report

All available information was collated, and, where relevant, sites were allocated to a category of importance as defined below. Recommendations for further evaluation are given in the relevant sections of this report.

The categories listed below follow the guidelines given in *Planning and the Historic Environment: Archaeology* (Welsh Office circular 60/96). The allocation of a site to a category defines the importance of the archaeological resource of that site.

The following categories were used to define the importance of the archaeological resource.

Category A - Sites of National Importance.

This category includes Scheduled Ancient Monuments (SAM's), Grade I and II* (and some Grade II) Listed Buildings and sites of similar quality, i.e. those which would meet the requirements for scheduling or listing at the top two grades. There is a presumption in favour of preservation of all such sites and their settings should they come under threat. Such sites might include those that survive principally as buried remains.

Category B - Sites of Regional Importance

This includes sites that would fulfill the criteria for listing at grade II (if a building), but not for scheduling (if a relict archaeological site). Nevertheless, such sites are of scheduling or listing (grades I or II*), 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

These sites are not of sufficient importance to justify a recommendation for preservation if threatened, but nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and Damaged Sites

These are sites, which are of minor importance, or are so badly damaged that too little remains to justify their inclusion in a higher category. For these sites, rapid recording either in advance 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. By the end of the assessment there should be no sites remaining in this category.

Definition of field evaluation techniques

Field evaluation is necessary to allow the reclassification of the category E sites, and to allow the evaluation are areas of land where there are no visible features, but for which there is potential for sites to exist. Two principal techniques can be used for carrying out the evaluation: geophysical survey and trial trenching.

Geophysical survey

This technique involves the use of a magnetometer, which detects variation in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetised iron oxides, which tend to be concentrated in the topsoil. Features cut into the subsoil and back-filled or silted with topsoil contain greater amounts of iron and can therefore be detected with the gradiometer. Strong readings can be produced by the presence of iron objects, and also hearths or kilns.

Other forms of geophysical survey are available, of which resistivity survey is the other most commonly used. However, for rapid coverage of large areas, the magnetometer is usually considered the most cost-effective method. It is also possible to scan a large area very rapidly by walking with the magnetometer, and marking the location of any high or low readings, but not actually logging the readings for processing.

Trial trenching

Buried archaeological deposits cannot always be detected from the surface, even with geophysics, and trial trenching allows a representative sample of the development area to be investigated. Trenches of an appropriate size can also be excavated to evaluate category E sites. These trenches typically measure between 20m and 30m long by 2m wide. The turf and topsoil is removed by mechanical excavator, and the resulting surface cleaned by hand and examined for features. Anything noted is further examined, so that the nature of any remains can be understood, and mitigation measures can be recommended.

Definition of Mitigatory Recommendations

Below are the measures that may be recommended to mitigate the impact of the development on the archaeology.

None:

No impact so no requirement for mitigatory measures.

Detailed recording:

Requiring a photographic record, surveying and the production of a measure drawing prior to commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

Basic recording:

Requiring a photographic record and full description prior to commencement of works.

Watching brief:

Requiring observation of particular identified features or areas during works in their vicinity. This may be supplemented by detailed or basic recording of exposed layers or structures.

Avoidance:

Features, which may be affected directly by the scheme, or during the construction, should be avoided. Occasionally a minor change to the proposed plan is recommended, but more usually it refers to the need for care to be taken during construction to avoid accidental damage to a feature. This is often best achieved by clearly marking features prior to the start of work.

Reinstatement:

The feature should be re-instated with archaeological advice and supervision.

4 RESULTS OF ASSESSMENT

4.1 Topographic description

Anglesey is an island separated from the north Wales coast by the Menai Strait, a long and narrow sea water channel. The north-east to south-west orientation of the Strait follows the trend of the Caledonian mountain building belt, also reflected in the ridges and valleys of Anglesey. A series of ancient faults run parallel to the Strait, of which the Berw fault (which the R Cefni follows) is the principal one on Anglesey. The island is tilted from the north-east to south-west, and thus the natural ridges and drainage pattern, enhanced by the last glaciation, follows this directional trend to give a corrugated effect of ridges separated by shallow valleys. The study area lies close to the base of the east side of one of the valleys, between 40m and 50m OD, with two ridges of Coedana Granite lying one to the west and one to the east. That to the east has been (and still is being) quarried for stone, and earlier quarries used to lie on the western ridge also. The Coedana granite is overlain by glacial drift, and soils of the Brown Earth group. A small stream runs along the lowest point of the valley, feeding into a former lake (Llyn Mawr) which used to feed the mill of Strydan.

4.2 Archaeological and historical background

(Note: numbers following site names are the Primary Reference Number (PRN) of the Historic Environment Record held at Gwynedd Archaeological Trust).

4.2.1 Prehistoric and Roman archaeology

The presence of any archaeological remains relating to Paleolithic archaeology, that is activity taking place prior to the ending of the last glaciation, is relatively rare, and is unlikely here due to the scouring effects of the glacial ice as it passed through. Mesolithic archaeology is also relatively rare, and is more typically found on lighter soils and closer to the coast. However within Neolithic times (4500BC to 2000BC) there is considerably greater evidence for the occupation of the interior of Anglesey. This is principally in the form of burial sites, the dominant type on Anglesey being the chambered passage grave. A burial chamber formerly lay 800m west of the study area, on the far side of the ridge, on the land of Treban Meurig, however, this was destroyed in the 19th century (PRN 3500). No associated finds are known from the site of the chamber. Although the distribution of burial sites would suggest large areas of Anglesey were settled and farmed during this time, it is not known how much of the interior was cleared and farmed, though it is unlikely that major inroads were made into the climax deciduous woodland much before 2000 BC (see Lynch 1992).

There have been few other early Prehistoric finds from the vicinity of the study area. A collection of flint flakes were found in 'Cors Bodwina' in the 19th century (PRN 2141), and further north-east again a collection of flint flakes and a bronze metal hoard were found in Cors Bodwrog (PRN 2138 and PRN 2144). There are no sites that typify the Early Bronze Age (for example standing stones, round barrows or cairns), close to the study area. The climatic deterioration that accompanied the end of the Early Bronze Age and lasted throughout much of the later Bronze Age may have been, in part, responsible for the change in the archaeological record that saw an increase in weaponry, and the origins of defended enclosures. One such enclosure lies some 1300m north-west of the study area at Werthyr (PRN 3505), a circular earthwork some 100m in diameter, from which has been found a piece of Roman horse harness. Further north again (some 1900m from the study area) a round house of Iron Age date was excavated during the re-laying of a water main (PRN 7619). A stray find of interest is a Roman copper cake (a large round 'cake' of smelted copper) found on the farm of Cefn Ithgroen (now Bodfellion) in 1840. The exact findspot is unknown, and it is difficult to understand its presence here. It is most likely to have come from the copper at Parys Mountain, though there is little direct evidence for Roman exploitation of the ores.

Burnt mounds are sites that are characteristic of the later Bronze Age (usually dating from 1200 BC to 800 BC), though some are earlier. These are mounds of burnt stone associated with a pit that would have contained water. Hot stones were used to heat the water, which was probably used for cooking, though other uses such as fulling of textiles and dyeing have been suggested. The sites form the most frequent field monument of the Late Bronze Age, and are relatively numerous around the study area. One, in particular, lies very close to the route of the access road (see site 1 below), and a characteristic feature of burnt mounds is that they often occur in groups.

4.2.2 Medieval and later periods

The evidence for medieval archaeology within the vicinity of the study area is slight. It lies within the medieval parish of Llanbeulan. The northern part of this parish was, according to an extent made in 1352, occupied by a township called Trefeibion Meurig, the name of which survives in the farm name of Treban Meurig (see Carr 1971-2, 187-8). The township (tref) was described as bond land, of the nature of *trefwelyog*. This was a hereditary form of bond tenure, of which there were four hereditary holdings or *gwelyau*, namely Gwely Pederannuel, Gwely Mab Gwr Beow, Gwely Moelfaenol and Gwely Elidir ap Bleddyn. The second holding may be remembered in the farm name of Pentre Bwaau, that lies alongside Llandrygarn church, whereas the last may be preserved in the farm name of Tyddyn Bleddyn (formerly Bleddyn ap Adda – referred to in a lease of 1602 (Bodorgan Mss 220). The location of the other two is unknown, but one would have been located on or close to the farm of Treban Meurig, and the other perhaps to the west by Treban. This would have included the two water mills of Pandy Treban and Melin Treban, the latter referred to in the 1352 extent. It is probable that the area occupied by the farms of Cae'r Glaw and Clegyr Mawr would have lain within the Treban Meurig holding. Both farms are known to exist by 1725 (Bodorgan Mss 1579), but no earlier evidence has come to light to enable a clearer understanding of their evolution.

The medieval landscape was dominated by large open fields lying close to the settlements, and each of the fields was divided into strips for cultivation. Further from the settlements, usually on poorer land, lay paddocks and large common areas for grazing, many of these not being enclosed until the 19th century. It is possible that the study area falls into this category of relatively open grazing land, that was enclosed into rectangular fields in the 18th or 19th century. Certainly in the mid-16th century the freeholders of Trewalchmai were asking for a survey to be undertaken by the Kings Justice Surveyor to determine the boundaries between the 'King's vill of Trebybian Meryc' and Trewalchmai because the 'vills are so nigh together and divided by metes and bounds so uncertain and unknown how far they should extend or where to sever or part' (Lewis and Davies 1954, 4). In 1755 Bodorgan Estate leased the farm of Clegir to Richard Parry, and it is stipulated in the lease that the estate will pay for repairing the wall or fence adjoining 'Trewalchmai Common', though the tenant is to subsequently maintain the wall at his expense (Bodorgan Mss 182). The evidence points to a large area of common grazing, that was perhaps enclosed in the early 19th century – the alignment of the current boundaries with the Holyhead road suggests they may have been built at the same time or just after. Further evidence for open grazing of this area can be found on Lewis Morris's 1725 map (Bodorgan Mss 1579), which shows a small cottage called 'Ty yn y Waen' (roughly translated to 'house in the meadow', but implying a fairly wet area). West of this cottage, and west of the road, lay another cottage called Gorsedd yr Arian.

A network of tracks and roads served the area, and though these are rarely closely dateable, the minor road from Cae'r Glaw to Clegir Mawr was certainly in use by 1725 (Bodorgan Mss 1579), and linked to the road that runs past Treban Meurig – a route that has been identified as possibly medieval or earlier in date (Jones 1955). Telford's road (the present A5) was built c. 1820, probably by Gill, Hodges and Co, who were responsible for the major part of the road construction (Quatermaine *et al* 2003). One of the original rectangular storage depot's, used for storing stone for repairing the road, lies close to the proposed access track (see below).

A water course runs roughly north-south along the lowest point of the valley. It drains the valley bottom, and is called a 'drain' on the Ordnance Survey maps. If it follows the course of a natural stream, it never seems to have been given a specific name. When traced north of Clegir Mawr, it can be seen that the drain was partly fed by a carefully dug leat that runs around the contours of a low hill. This is now dry, but it would have taken water from a feeder of the Afon Caradog. Shortly below the point at which the feeder stream would have entered the Caradog are two mills - Pandy Treban and Melin Treban, and removing this water would have deprived these two mills of a certain amount of water. The 'drain' into which the water was diverted passes under the A5 and formerly entered a pond called Llyn Mawr, which in turn drove a water mill called Strydan. Manuscripts within the Bodorgan collection make it clear that this mill was short of water at times, and thus it would appear that the drain was enhanced in order to take water otherwise destined for the Afon Caradog, into Llyn Mawr for use by Strydan mill. The pool called Llyn Mawr has been drained, and the mill of Strydan ceased to work sometime around 1900.

Quarrying of the Coedana granite took place at both Clegyr Mawr and Cae'r Glaw (Gwalchmai). The former was in operation during the first part of the 19th century, but during the second part was used as a landfill tip. This has now been sealed, and closed as a tip. Cae'r Glaw Quarry was producing stone by 1948, and is still being worked.

4.3 The study area

4.3.1 Statutory protection and environmental designations

The study area contains one site recorded within the Historic Environment Record (formerly the Sites and Monuments Record) maintained by the Gwynedd Archaeological Trust. There are no scheduled ancient monuments or listed buildings within the study area.

4.3.2 Archaeology of the site

The following sites lie adjacent to the proposed development area and access road.

1. Telford's Holyhead Road

Category: B Impact: Slight

The access road to the site will lead off Telford's Holyhead road, requiring a new break to be made within the walling on the north side of the road. Though repaired in places, the masonry appears to be contemporary with the construction of the road. Telford ensured that adequate stone would be available for road repairs by building storage depots at regular intervals (generally no more than a quarter of a mile apart, to allow moving of materials in barrows) which were set out from the edge of the road. Each depot was designed to hold 24 cubic yards of stone (for details see Quartermaine *et al* 2003, 33). One such rectangular depot lies close to the proposed access route. East of the proposed access route the drain (site 4 below) passes under the road. It was not possible to gain access to examine the drain, but it may well be contemporary with the original construction of the road.

2. Burnt mound SH37647655 (approx)

Category: B Impact: Unknown

Remains of a Bronze Age burnt mound have been noticed within this field during ploughing. This was visible as a large area of burnt and fire-cracked stones. Typically these mounds are some 7 or 8 m in diameter, usually horseshoe shaped, and with a pit in the centre of the horseshoe. The exact centre of this mound can not be seen with certainty, but it is thought to lie some 75m west of the proposed track. However, burnt mounds often occur in groups, and another mound may lie close to the observed one, or related structures may lie close by.

3. Former cottage (Ty yn y Waen) SH37677668 (approx)

Category: D Impact: None

A cottage called Ty yn y Waen is marked on the estate map of 1725 (Bodorgan Mss 1579) at this approximate location. It is not shown on the tithe map of 1840, nor on the first edition OS map of 1888, and so it must be assumed to have gone by then, and was perhaps removed during the construction of the present field boundaries (argued above to be about 1820).

4. Drain or leat

Category: D Impact: None

The drain, though presumably following a natural water course as it runs along the bottom of the valley, appears to have been straightened and enhanced to allow it both to act as main drain, and to take water to the mill pond that served Strydan (see above).

5. Field boundaries

Category: D Impact: Slight

The field boundaries that will be crossed by the proposed access road are thought to date from the first quarter of the 19th century, and were possibly built at the same time as the Holyhead road (the Gwalchmai section was constructed about 1820). The boundaries are typically stone-faced earth banks, though where more field stone was available this appears to have been used in preference. There is no evidence for the use of quarried stone within the field banks, though there are occasional tall stone gate-posts that have been quarried.

4.4 Recommendations for mitigation

The majority of the impact upon the known features is related to the construction of the access road rather than the operating plant. The impact and mitigation is discussed for each feature below.

1. Telford's Holyhead Road

The principal impact is likely to be on the parapet wall, where the proposed access road will require the creation of a new opening through the wall. It is recommended a basic record is made of the wall prior to the start of work, and any new work is undertaken in a matching style. It is recommended that the storage depot is avoided and left *in situ*.

2. Burnt mound

The burnt mound as recorded on the Historic Environment Record lies slightly to the west of the proposed access road, and there should not be any direct impact. However, because of the high potential for related sites in the vicinity of the mound it is recommended that a programme of field evaluation is undertaken (involving geophysical survey and/or trial excavation) along the line of the proposed road prior to construction work being started.

3. Former cottage

There is unlikely to be any direct impact on the site of the former cottage, as the map evidence suggests it lay to the west of the proposed access road. No mitigation is proposed.

4. Drain or leat

There is unlikely to be any direct impact upon the drain. A watching brief should be maintained during any works that may impact upon it directly.

5. Field boundaries

These are thought to be early 19th century in date, nonetheless a basic record of their profile and makeup should be undertaken as part of a general watching brief during the early stages of construction.

General recommendations

The evidence suggests the potential for archaeological sites is relatively low, with the exception of the possible presence of Bronze Age burnt mounds, and any structures that may be related to their presence. In order to avoid delays to the construction programme, it is recommended that field evaluation is undertaken along the access road and under the footprint of the principal development. Any archaeological sites found as a result of the evaluation could then be either avoided or excavated. The alternative would be to undertake a watching brief during construction, however this method has the disadvantage that any archaeological excavations that may become necessary would delay construction. Depending upon the results of any field evaluation, it may be necessary to conduct a general watching brief during the early stages of construction to record minor features.

5 BIBLIOGRAPHY

5.1 Archival sources

Llangefni Record Office

Tithe maps for the parish of Llanbeulan

University of Wales, Bangor, dept of mss

Bodorgan Manuscripts, in particular Mss 1579 and 1580.

Ordnance Survey Maps

Anglesey 25" Country Series XII.16 First edition 1888 and second edition 1900

Anglesey 25" County XVII.04 First edition 1888 and second edition 1900

5.2 Published Sources

Carr, A. 1971-2 'The Extent of Anglesey, 1352', *Transactions of the Anglesey Antiquarian Society*.

Lewis, E. A., and Davies, J. C., 1954 *Records of the court of Augmentations relating to Wales and Monmouthshire*.

Lynch, F. M., 1992 *Prehistoric Anglesey* (second edition).

Quatermaine, J., Trinder, B., and Turner, R., 2003 *Thomas Telford's Holyhead Road*.

RCAHMW, 1968 *Inventory of Ancient Monuments of Anglesey*.

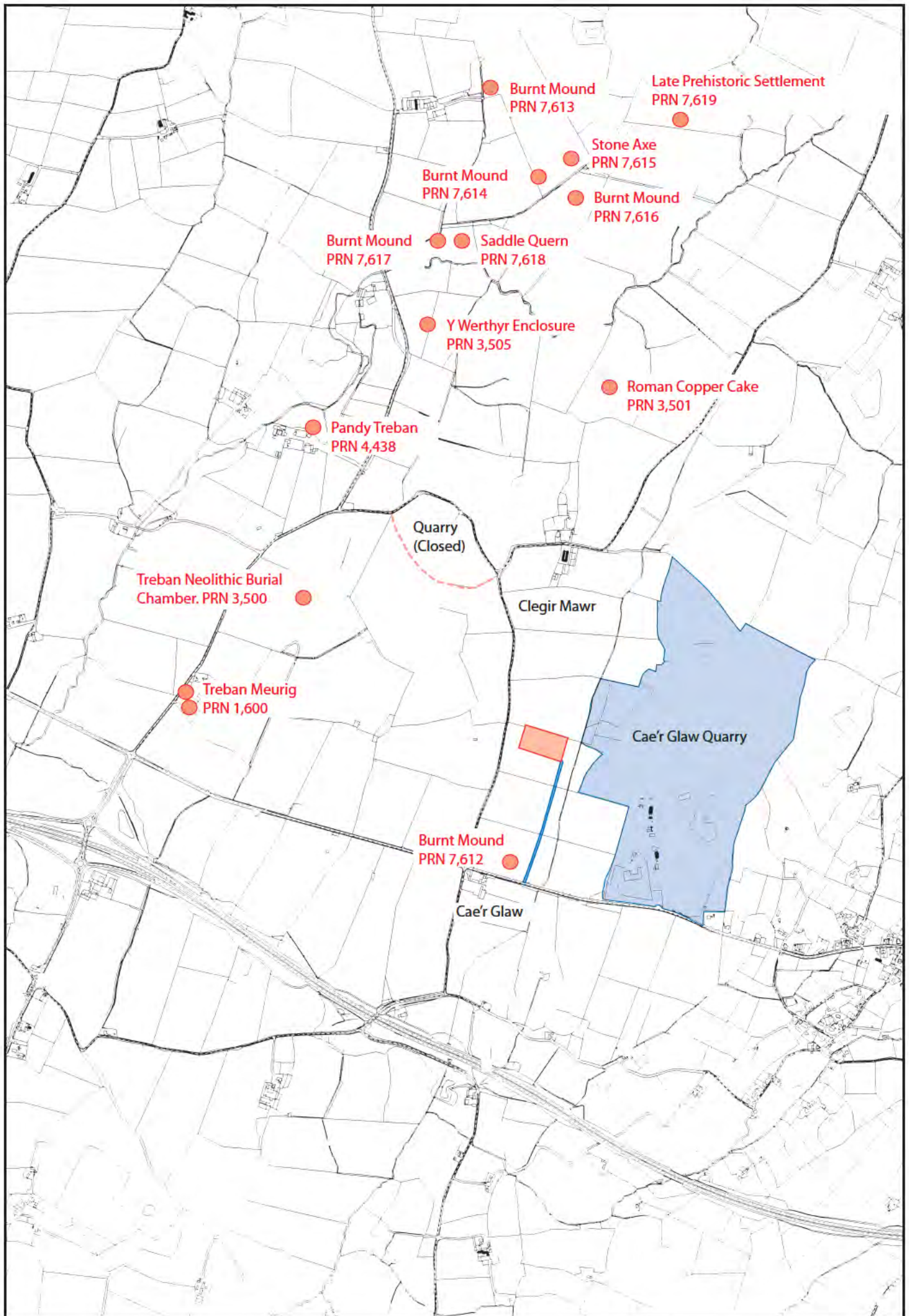


Figure 1. Location Map showing Archaeological Sites (Scale 1, 10000)

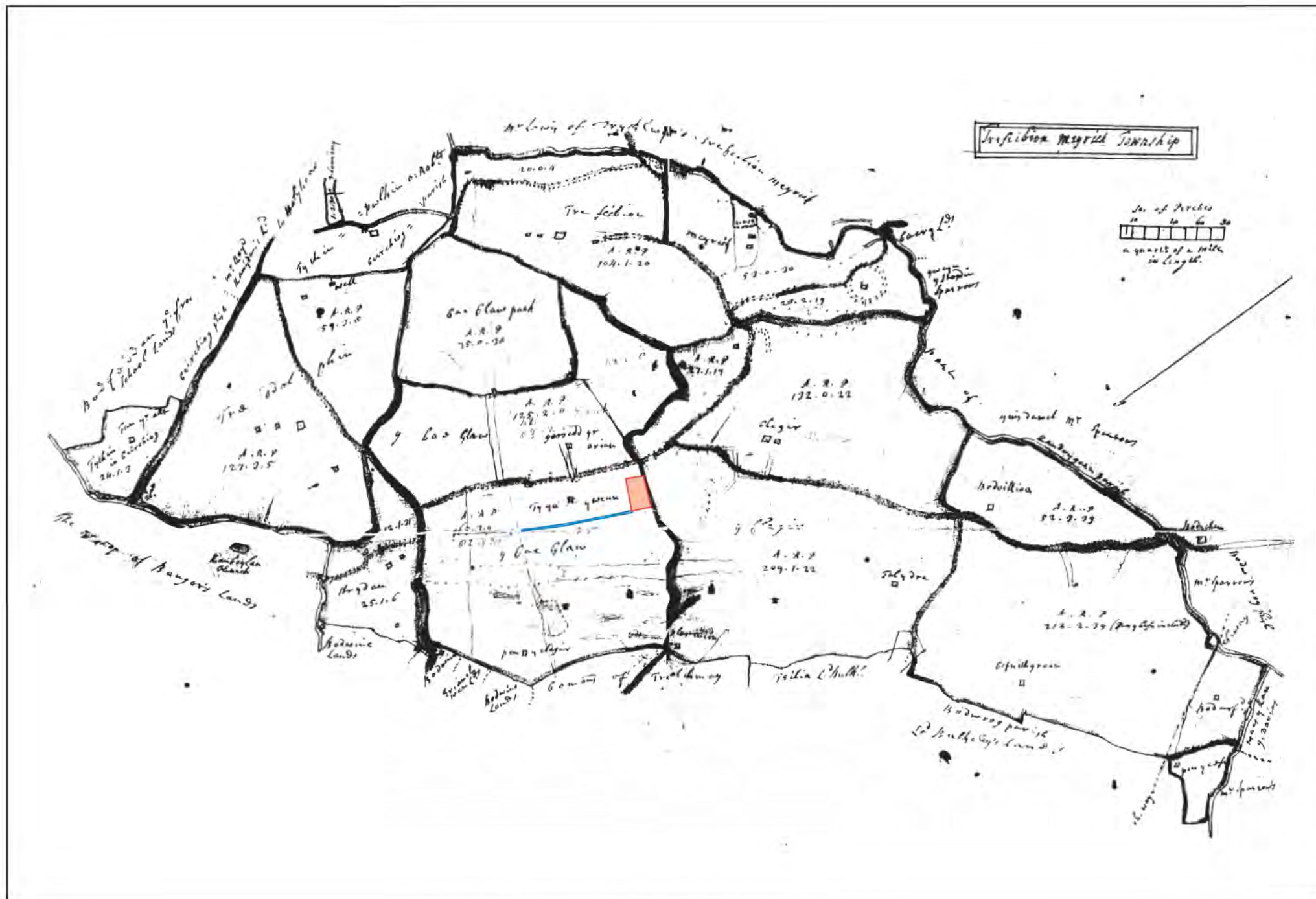


Figure 2. 1725 Bodorgan Estate Map. UWB Badorgan MS 1579.



Figure 3. Tithe Map of Llanbeulan Parish 1840.

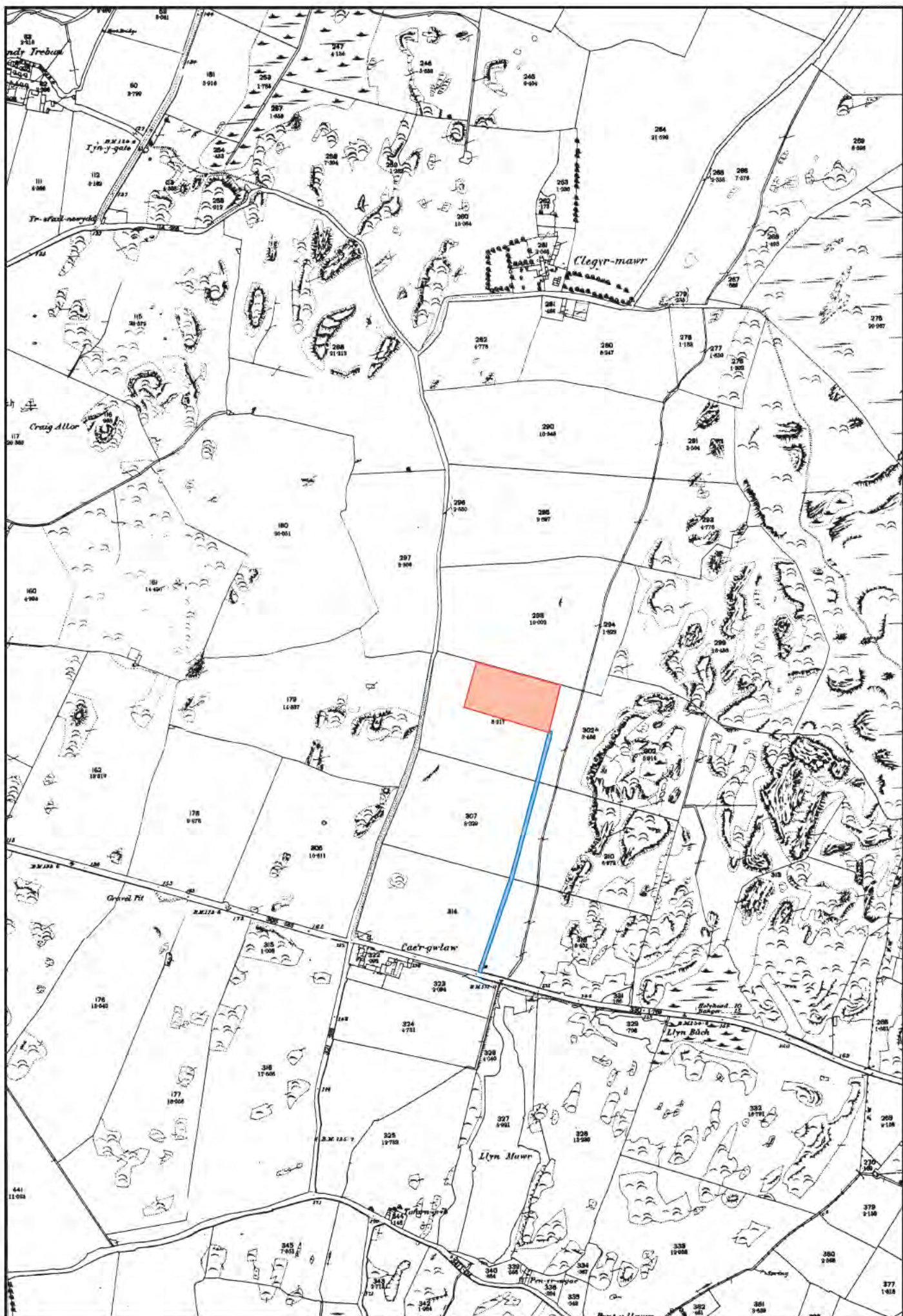


Figure 4. 1st Edition Ordnance Survey 1888. Anglesey County Series XXI.6 & XXI.5. (Scale 1,5000)



Figure 5. Map Showing sites Identified within the Study Area (Scale 1,3000)



Plate 1. Feature 1. Telford's Holyhead Road.



Plate 2. Feature 4. Drain



Plate 3. Development Area and Quarry Beyond.

YMDDIRIEDOLAETH
ARCHAEOLEGOL
GWYNEDD



GWYNEDD
ARCHAEOLOGICAL
TRUST

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