EVALUATION OF SCHEDULING PROPOSALS 2012-13

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

EVALUATION OF SCHEDULING PROPOSALS 2012-13

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1. INTRODUCTION

Gwynedd Archaeological Trust has carried out Cadw grant-aided scheduling enhancement surveys of different site types from the Prehistoric to medieval periods. All monuments of each site type in Gwynedd were assessed and scheduling recommendations were made. In all of the projects there were sites of potential national importance that were proposed for scheduling that required further assessment before scheduling could be considered. These were typically sites that exist as relatively undefined earthworks, sites known only from cropmarks, extensive field systems that have not been planned and overgrown sites. The aim of this project is to assess a range of sites and gain enough information to allow a better assessment of the potential of the sites and to produce revised scheduling recommendations.

The 2012-13 project aims to examine five sites that were previously assessed during the Prehistoric, Roman and Other Sites Monument Evaluation Project (2008-10) and the Deserted Medieval Chapels Scheduling Enhancement Project (2010-11). These are, the possible Roman watchtower at Pen Bryn-yr-Eglwys, the medieval field system Hwylfa'r Ceirw on the Great Orme, a site comprising a series of concentric ovoid enclosures at Cefn Deuddwr and two possible early chapel sites on Anglesey.

Three principal evaluation techniques will be used where appropriate, namely, trial trenching, geophysical survey and topographical survey.

2. FIELDWORK

2.1 Pen Bryn-yr-Eglwys PRN 2514 SH29309243

2.1.1 Background

A roughly square platform with dimensions of around 7m x 9m stands on the highest point of Carmel Head. Local tradition records that there was once the ruin of a church on this site. Stone from the ruin was supposed to have been carried away and used to build a new wing on the local church. The small size, alignment and remote location of the site suggest that it was probably not a church. Following the excavation of a similar structure on Holyhead Mountain Peter Crew suggested that it is a Roman watchtower (Crew 1981). This could either be one of a pair overlooking the entrance to the naval base at Holyhead or part of a string of watchtowers extending around the coast.

2.1.2 Methodology

The site consists of a bank describing a square with rounded corners, with overall dimensions of 14m x 14m (Fig.1). The outer limits appear to consist of a spread of material, eroded from the bank. The break of slope at the top of the bank is probably a better indicator of the original dimensions of the structure at about 9m square. The southern part of the structure is overgrown with gorse.

The excavation was designed to sample the site and provide information about the nature and condition of the buried archaeology for scheduling enhancement purposes. The trench was designed to trace the expected line of any surviving masonry. Any features revealed after the removal of overburden would then be sampled. The excavation was carried out over four days starting on the 21st August 2012. The work was directed by the author with assistance from Iwan Parry both from Gwynedd Archaeological Trust. The project was run as a community

excavation with the help of three experienced volunteers. Weather conditions were generally good.

2.1.3 Results

An area of 6m x 4m was stripped of turf by hand. This represented a quadrant of the expected structure with one side examining more of the tail of bank (see Fig. 1 for trench locations). The shallow topsoil was removed revealing a bank of earth and stone. The bank was wider and higher in the western corner. This appeared to be additional spoil from a hollow to the south-west of the trench, presumably an unofficial excavation. This was covered in the same thin topsoil as the rest of the site so did not appear to be a recent feature.

No *in situ* masonry was visible at this level so an L-shaped trench was excavated along the south-east and south-west sides of the stripped area in order to determine the level of undisturbed archaeology (Fig.2). The trench crossed the bank in two places (context group 007 on the south-east and 008 on the south-west). The bank at 008 was, as expected, overlaid by a layer of spoil (010) from the hole to the south-west. In both cases the bank was found to consist of a collection of randomly orientated stones in an orange/brown silty matrix (003 and 011).

Bank 007 on the south-east was more pronounced than 008 and was a rounded heap of stones and earth, loose towards the top and better consolidated towards the base. No structure was visible until the base where a stone in the section (024) and another in the excavation trench seemed to mark the extent of the bank and could be interpreted as the remains of facing. The stones were in a matrix of dark red/brown silt (025) sitting on the bedrock (014). The south-eastern half of the trench below the bank was excavated down to bedrock (Fig 3). This appeared to have been levelled to produce a good foundation by packing stones into any voids along with reddish brown soil derived from the natural substrate (021). This was similar to the naturally shattered surface of the bedrock but contained some rounded stones and a residual, small, flint-pebble thumbnail scraper dating from the late Neolithic or Early Bronze Age, thus demonstrating that it was not undisturbed natural. A small area of stone-free silt (020) on top of the bedrock and under the front edge of the bank appeared to be undisturbed natural substrate, and may indicate the extent of the wall foundations. To the north-east of the bank was a layer of relatively stone-free silt and grit that appeared to have eroded from the bank and was overlying bedrock. Two conjoining pieces of Roman pottery were recovered from this context. The interior of the building contained a mixed deposit of mid-grey silty loam (015/016) with patches of gravel and stones. Little structure could be seen in this deposit but the orientation of stones close to the bank suggested that there were erosion or tip lines from the adjacent bank. The deposit was generally quite variable and seemed to have been disturbed and mixed. Beneath this was a layer of reddish brown, more consolidated, silty clay (026) and a hard yellow deposit (009) that were interpreted as being the uneven and truncated remains of a floor level. Both 015, 026 and the rubble contained pieces of lime mortar. No good quality facing or building stone remained and no mortared stone was recorded in the rubble. The generally disturbed nature of the deposits suggested that the site had been very comprehensively robbed of stones

Bank 008 on the south-west was relatively slight after the removal of the layer of spoil (010) from the nearby hole. Again no structure was visible, just a variable spread of randomly orientated stones in silty clay. Excavation revealed a band of loose shattered stone and gravel containing many voids (011). The south-east edge was diffuse and cut into a layer of grey silty loam with frequent stones (16) that appeared to be a somewhat more uniform version of (015). The north-western side was less well defined but seemed to be cut [012] into a deposit of stone tumble in loose grey earth (017). Excavation revealed a clear cut [027] on the south-eastern side that was also defined by a layer of larger stones, best interpreted as the remains of foundations. The stones continued for about 0.9m to the north-west where they petered out

and were sitting on bedrock. Further excavation revealed a 0.2m deep cut containing the possible foundation stones and reddish silt (013), possibly cut into bedrock at the north-west. This also appeared to be the remains of a heavily robbed wall foundation.

A square area 2.2m x 1.9m over the corner of the structure was also cleared of overburden and loose rubble, down to a deposit of more consolidated rubble in orangey brown silt (037) with a darker matrix (038) in the inner corner. A further sherd of Roman pottery was recovered from the rubble. Clearance revealed a fairly clear corner to the rubble with bedrock to the north-east and probable natural substrate to the north-west. Two possible lines of facing or, at least, edges of foundations could be seen. The outer (031 and 034) consisted of a single broken line of flat stones on natural or bedrock. The inner (032 and 035) was more convincing with two courses in places. No further excavation was carried out. The pottery was examined by Peter Webster and was found to be almost certainly from the Roman period but not datable with any more accuracy.

2.1.4 Conclusions

The mixed deposits and banks of loose stone over slight remains of foundations suggest that the local stories of the stone being carried from a "church" at this location to build a new wing on the local church was, at least in part, correct. The site appears to have been comprehensively robbed of all useful stone. The pieces of mortar indicate that there had been a building at the location containing at least some mortared stone. The Roman pottery and complete lack of any later finds suggests a Roman date. The site is likely to be another watchtower, as suggested by Peter Crew, but has been almost totally destroyed by stone robbing.

2.2 Concentric Ovoid Enclosures, Cefn Deuddwr PRN 1241 SH30623055

2.2.1 Background

The site was first mentioned in *Arch Camb* in 1923 in an account of some sites that Ellis Davies visited during a week's holiday in Pwllhelli in June 1922 (Davies 1923, 308):

"Concentric Earthen Rings. In the *rhos* just behind Cefn Deuddwr, Mynytho and belonging to the Rev. H. J. Manley rector of Llanbedrog, there are three circular, almost pear-shaped, banks of earth, one within another with a biggish stone, about 4 ft x 3 ft 6 ins in the centre. The outer ring measures about 70 yds, the middle 46 yds, and the inner 25 yds. What might this earthwork be?"

The site was planned by RCAHMW (Fig. 5) but the description in the Inventory (1964, 63-4) adds little to Davies' description apart from noting:

"Two unshaped boulders lie on the long axis of the structure. The outer bank has been extensively robbed on the N and NW"

The Ordnance Survey NAR card (SH33SW 4, 1971) records a local tradition of an open air chapel:

"No change, this earthwork is traditionally the site of an open air chapel, the banks presumably forming the seats or benches." (Information from Mr J. G. Jones, Wellington, Mynytho)

The site is not shown on any of the first three editions 25" OS maps (1899 to 1918) or the 1841 Llangian tithe map. The field containing the site is simply listed on the tithe schedule as "enclosure" belonging to Robert Morris of Wellington House. At this time the area in which

the site stands was close to the corner of a large field containing several footpaths. This was probably an area of unimproved and recently enclosed common land. The house Cefn Deuddwr and a patchwork of smaller fields lie to the south-east.

The north-west side of the site was truncated by a new drive to Cefn Deuddwr in recent years. Local residents and historians have been contacted as part of the project but nobody was aware of the site and it is reported that the site has been heavily overgrown for as long as anybody can remember. It must have been clear when RCAHMW surveyed it (sometime prior to 1964) and there was no record that the site was heavily overgrown when it was surveyed by the OS in 1971 and 1975. The Trust is grateful to all who provided information about the site and local history: Glenys Jones, Rhys Mwyn, Dyfed Evans, Harri Parri, Dr Eurwyn Wiliam and Handel Evans.

The site is currently in the grounds of Cefn Deuddwr which is now a holiday home.

2.2.2 Methodology

The site was very heavily overgrown with 1.5m high, bracken, brambles and blackthorn. This was cleared using a brush-cutter and handsaw. The area was then surveyed using a Trimble high resolution GPS system (accuracy +-5mm). A hand-dug 1m wide trench was cut through the three banks on the south western side of the site. The site was also carefully scanned with a metal detector. All signals were investigated and stratigraphy was carefully monitored during the recovery of any artefacts. No items were detected that were below the level of the upper humic layers, so all items were recovered and their positions plotted using the GPS system. Obviously modern items that were close to the surface, such as beer tins and screws were discarded without a record being made.

2.2.3 Results

2.2.3.1 The Survey

A plan of the site was produced, (Fig. 6). The site comprises three concentric banks.
All are roughly pear-shaped in plan, almost flat-topped and about 1.3m wide. The outer has dimensions of 11m x 8m (from the edge of the bottom of the bank) although this has been truncated by 1 to 1.5m on the north-eastern side by the driveway. It is about 0.45m high. The main body of the bank terminates about half way along the south-western side although there are faint traces around the north-western end of the monument. It was not possible to ascertain whether the bank had been "extensively robbed" as noted by the RCAHMW, or had never been built to the same height around the north-western end of the site.

The second bank has dimensions of 8.2m by 6.2m (truncated by about 0.3m), and is about 0.3m high. The third has dimensions of 5.6m x 3.5m and is 0.25m high. This has a large stone with dimensions of about 1.2m x 1.0m set into, and standing above, the height of the bank.

The banks at the south-eastern side of the site, i.e. the pointed end of the pear-shape, have a low point and the ditch between them is wider. This could be interpreted as an entrance or possibly a drain.

2.2.3.2 The excavation

A 1m wide trench was excavated through the three banks on the south-western side of the site (Fig. 7). All three were covered with a layer of black humus containing frequent bracken rhizomes (002). This was deepest within the ditches between the banks. This probably represents the build-up of humus since the site became overgrown. The main body of the banks was beneath this layer. The outer bank (005) consisted of randomly orientated stones,

and turf, sitting on the uneven surface of the natural substrate (light-grey, gleyed, clayey silt 001). The second bank (007) comprised a mass of stones in a matrix of dark-grey humic silt sitting on the natural reddish-orange silt. The inner bank was constructed from greyish loam that continued into the interior of the inner enclosure, probably indicating that it had been simply mounded up from the central area. The subsoil beneath the inner two banks was very stony with many angular rocks protruding into the layers above.

2.2.3.3 The metal detecting survey

The site was carefully metal detected. A scatter of very recent debris was found consisting of beer tins, nails staples etc. all probably originating from the nearby garage belonging to Cefn Deuddwr. Three other finds were located immediately beneath the humic layer; presumably the ground surface prior to the site being overgrown.

SF01. An 1899 penny slightly worn, perhaps indicating a loss in the first or second decade of the 20th century.
SF02. A base-metal undecorated disc button with a soldered loop. Late 19th/ early 20th century
SF03. A short length of iron chain, heavily corroded.

2.2.4 Interpretation and conclusions

This is an unusual site; there are no obvious parallels in north Wales. It appears to be too sharply defined to be prehistoric; the ditches would almost certainly have silted up if the site was of great antiquity. An open air preaching site as suggested by the tradition recorded by the OS would make sense morphologically. The large stone could be seen as the focus of the site with the highest banks arrayed in front of it. The second bank is lower behind the stone and the outer bank does not continue here. RCAHMW suggests that the outer bank had been truncated in this area. The earthwork, however, ends in a regular fashion and according to the published plan (Fig.5), drawn before the site was truncated by the drive to Cefn Deuddwr, the bank terminates in roughly the same place on either side and it could be argued that it had never been constructed around this end of the monument. The finds are more significant than the stray finds recovered from most fields. It was noted that there was none of the usual material such as 18th-19th century pottery in the topsoil that commonly occurs from manuring. The fields to the north are certainly largely unimproved, as presumably is the area around the site. The finds are therefore significant, in that they were probably lost on the site as opposed to have been redeposited from elsewhere.

This information still falls short of proving the origins of the site. An origin during one of the Methodist revivals of 1750, 1859 or 1904-5 is a possibility. The coin suggests the latest but it seems unlikely that the local memory of the site would have been lost so quickly, and also that there was no record of this when the site was first recorded in 1923.

The site generated a lot of interest in the local community and it is still possible that further information may emerge.

2.3 Field System, Hwylfa'r Ceirw SH76538399 PRN 839

2.3.1 Background

The site lies on the Great Orme, a limestone headland off the north coast of Wales, that is connected to the mainland by a broad isthmus of alluvium and sand upon which the town of Llandudno has been built. There is a wide range of well-preserved archaeology on the Orme including Bronze Age copper mines and extensive remains of early field systems, most of which are thought to be medieval. Hwylfa'r Ceirw is often used as an example of the well-preserved early fields and cultivation ridges on the Great Orme and aerial photographs have appeared in several publications. It is, however, a surprisingly complex site containing several phases of agriculture, medieval settlement, mining sites, and an ore processing area. It is not particularly easy to understand on the ground, in part due to increasing encroachment of bracken and gorse. Further investigation was recommended when the site was first put forward for scheduling.

A basic plan and description of the site had previously been published by Mary Aris in *Historic Landscapes of the Great Orme* (1996). This was mostly produced from aerial photographs and more details of the condition and survival of the site were needed in order to make scheduling recommendations. It was therefore decided to carry out a detailed survey of the remains as part of the current project. The extent of the survey was determined by the edge of a series of north-facing natural shelves which are a major factor in the distribution of the archaeology. There are further field systems to either side of the survey area but the Hwylfa'r Ceirw system can be seen as a discreet block of agricultural activity bounded by natural features.

2.3.2 Methodology

The original intention was to survey the area using a high resolution GPS system. Unfortunately due to a lack of good phone signal no correctional data was available. An initial site visit showed that some parts of the area were still quite overgrown with bracken and gorse, even at the end of winter. The most detailed source of information was found to be a series of aerial photographs in particular one from 1947 (Plate 3,CPE/UK/1939/4218 20th January 1947). A recent aerial photograph was accurately registered in MapInfo and exported into Adobe Illustrator. Other photographs were then added as layers and a combination of three vertical photographs taken in 1947, 2006 (Bluesky coverage) and 2009 (Getmapping coverage) was used as a basis for an outline transcription. The range of photographs was essential for comprehensive mapping because they were taken with illumination from different angles, thus showing different directions of boundaries and cultivation ridges.

The transcription and photographs were then taken out on site and further details added. Corrections were also made to the transcription, along with a basic written and photographic record. The resulting plan is shown on Fig. 9. Many of the features had already been recorded on the HER as a result of an aerial mapping project (Davidson & Jones 2001) and an assessment of Parc Farm (Davidson 2003). They were, however, recorded only as single grid references with minimal or no description. Several additional features were recorded and assigned new PRNs.

The combination of aerial photograph transcription and the addition of detail on site allowed a detailed map to be produced and was probably more thorough than a conventional topographic survey alone. The features recorded are listed below as a gazetteer in PRN order followed by a synthesis and recommendations. Revisions to HER site-types and NGRs are noted. Fieldwork showed that some sites shown on the 1947 aerial photograph have subsequently been destroyed by agriculture.

2.3.3 Results

2.3.3.1 Gazetteer

Enclosure S of Hwylfa'r Ceirw
PRN 644 SH76498398 (revised)
A record of the rectangular enclosure or field formed by PRNS 15370 and 36621-3 wrongly named as Hwylfa'r Ceirw on early OS maps

Hwylfa'r Ceirw Stone Row
PRN 649 SH76568409
A double row of small orthostatic stones. Initially thought to be a prehistoric ceremonial site, a more recent origin seems more likely. It is aligned with one side of the enclosures and fields to the south (36622-3) which also use orthostatic stones in their construction. It is also aligned at the north with a relatively easy way, between precipitous cliffs, to lower pastures and the coast.

Ffynnon Rhufeinig
PRN 651 SH76558386
The well lies in an alcove built into the boundary wall of Parc Farm, though the opening is accessed from outside the farm. The well consists of a small stone-built well chamber probably constructed at the same time as the boundary of Parc in the mid 19th century. This presumably superseded an earlier structure.

Hut Platforms, E of Ffynnon Rhufeinig
PRN 796 SH76838390 (revised)
Two well-preserved long-hut platforms cut into the slope above St Tudno's Church. The two long huts are cut into the bottom of the slope and terraced out to the east. The southernmost has dimensions of 7.0m x 4.0m, the northern 6.0m x 3.5m with an adjoining sub-circular paddock. Both have surviving masonry which is mostly grassed over. The area is becoming overgrown with gorse, blackthorn and bracken.

Field System, Hwylfa'r Ceirw
PRN 839 SH76538399 (revised)
An overall PRN for the field system

Ore processing site.
PRN 800. SH76608390
An area of about 80m x 80m covered with a series of banks and hollows. This was previously recorded as an enclosed hut group on Gwynedd HER. This is also traditionally supposed to be an area of Roman ore processing associated with Ffynnon Rhufeinig. There is however nothing to suggest Roman origins. Lewis (1996) notes that "A cursory examination of this site confirmed the presence of remnant tips of fine dolomitic spoil similar to that of Ffynnon Galchog" The remains are undated. Outflow or tipping at the north-east seems to overly the cultivation ridges (15375) although it could be argued that the cultivation avoided the toxic or unproductive area of spoil. A linear bank running down to the lower part of the area at the south could be interpreted as a barrow run or even one side of a leat.

It should also be noted that these deposits have almost certainly been disturbed by the construction of the road, Parc Farm boundary wall and the modern superstructure of Ffynnon Rhufeinig. Tipping and redeposition of the processing debris during these activities makes interpretation of the phasing of features in the area almost impossible without excavation.

The northern part of this area of activity almost certainly extends beyond the road and boundary to into the holdings of Parc. Sites 36630 and 6461 are probably part of the same complex.

Cultivation terraces W of Old Rectory
PRN 5460 SH76708398 (revised)
Previously listed on the Gwynedd HER as "Trackways (?)" these are a series of stepped cultivation terraces, about 6m wide and 1m high. They are almost certainly spade-dug and not a result of ploughing. They appear to overlie the ridge and furrow at the base of the slope (15519 to 15521)

Quarry, Nr Ffynnon Rhufeinig
PRN 5461SH76508385
Two small quarries to the south and west of Ffynnon Rhufeinig. Quarried into a steep natural slope. Possibly associated with ore processing site to the NW (800)

DRS, Ffynnon Rhufeinig
PRN 7509 SH76838390 (revised)
Duplicate of 796

Quarry, Possible
PRN 15272 SH76338391
Small quarry visible on 1947 aerial photograph (CPE/UK/1939/4218 20th January 1947)
No longer visible

Bank, Possible
PRN 15273 SH76338390
Possible bank visible on 1947 aerial photograph. No longer visible

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15370 SH76498398
Cultivation ridges within rectangular enclosure, wrongly named as Hwylfa'r Ceirw on OS maps from 1900 onwards. Possibly spade-dug (Aris, 96) although the eastern boundary appears to be plough-dragged over earlier cultivation ridges 15375.

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15371 SH76448399 (revised)
Low cultivation ridges, probably medieval

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15372 SH76528388
Low cultivation ridges, cuts earlier cultivation ridges 15373. Probably earlier than at least some elements of ore processing site 800 and possibly earlier than building 36629

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15373 SH76488391
Low cultivation ridges, probably medieval, cut by later cultivation 15372. Probably earlier than at least some elements of ore processing site 800 and possibly earlier than building 36629

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15374 SH76498395
Cultivation ridges, a continuation of 15370 in a separate terraced field.

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15375 SH76588396
An extensive area of cultivation ridges, possibly medieval. It is set out as a series of 6 smaller fields, with terraced boundaries ranging from 0.8m high to almost imperceptible.

Cultivation Ridges, NW of St Tudno's Church
PRN 15376 SH76658405
Slight remnants of cultivation ridges

Field Bank, NW of St Tudno's Church PRN 15377 SH76678406c (revised)
Low earthen bank. Mining waste from site 15377 overlies this

Field Bank, Parc
PRN 15393 SH76358387
Field bank visible on 1947 aerial photograph. Destroyed by field improvements and ploughing

Field Bank, Parc PRN 15394 SH76358384
Field bank visible on 1947 aerial photograph. Destroyed by field improvements and ploughing

Cultivation Ridges, Parc
PRN 15395 SH76388382 (revised)
Cultivation ridges visible on 1947 aerial photograph. Destroyed by field improvements and ploughing

Cultivation Ridges, Parc
PRN 15396 SH76328385 (revised)
Cultivation ridges visible on 1947 aerial photograph. Destroyed by field improvements and ploughing

Cultivation Ridges, Parc
PRN 15397 SH76348388
Cultivation ridges visible on 1947 aerial photograph. Destroyed by field improvements and ploughing

Cultivation Ridges, Parc
PRN 15417 SH76508377

Cultivation ridges visible on 1947 aerial photograph. Denuded by field improvements and ploughing but still surviving as very slight earthworks.

Cultivation Ridges, Ffynnon Rhufeinig
PRN 15418 SH76638383
Cultivation ridges, probably medieval. Cut by Parc boundary

Cultivation Ridges, Parc
PRN 15419 SH76448377
Cultivation ridges visible on 1947 aerial photograph. Destroyed by field improvements and ploughing

Cultivation Ridges, Llety'r Fadoc
PRN 15480 SH76398395
Low cultivation ridges, probably medieval

Cultivation Ridges, Llety'r Fadoc PRN 15483 SH76418403
Possible slight cultivation ridges

Field Bank, St Tudno's Church PRN 15518 SH76758390
Earthen field bank

Cultivation Ridges, St Tudno's Church PRN 15519 SH76768395 Cultivation ridges in a series of terraced fields. Possibly medieval. Same group of fields as 15520 and 15521.

Cultivation Ridges, St Tudno's Church PRN 15520 SH76748399
Cultivation ridges in a series of terraced fields. Possibly medieval. Same group of fields as 15519 and 15521.

Cultivation Ridges, St Tudno's Church PRN 15521 SH76728402
Cultivation ridges in a series of terraced fields. Possibly medieval. Same group of fields as 15520 and 15519.

Field Bank, St Tudno's Church PRN 15522 SH76808397
Earthen field bank

Shaft and Mining Spoil, Nr. Hwylfa'r Ceirw PRN 20734 SH76628410 (revised)
Vertical shaft and piles of mining waste shown on OS 25” 1889 edition

Bank PRN 28422 SH 76458396
Low earth bank

Cultivation Ridges, PRN 28423 SH76448398c
Duplication of 15371

Field bank, Hwylfa'r Ceirw
PRN 36618 SH76478393
Earth bank 0.8m high 2.0m wide, truncated at north and cut by road at south

Terrace, Hwylfa'r Ceirw
PRN 36619 SH76538393
Terrace/lynchet incorporating natural break of slope, 1m to 2m high

Field Bank, Hwylfa'r Ceirw
PRN 36620 SH76478399
Field boundary; an earth bank forming a terrace above cultivation ridges 15370 and 15374

Field bank, Hwylfa'r Ceirw
PRN 36621 SH76508397
Field boundary; a terrace following the line of cultivation ridges 15374, diverts to the south at the eastern end following a fork in the cultivation ridges caused by a later phase of cultivation.

Field bank, Hwylfa'r Ceirw
PRN 36622 SH76508399
Field boundary; a terrace following the line of cultivation ridges 15370. Earth bank 0.5m high containing a row of orthostatic stones.

Field bank, Hwylfa'r Ceirw
PRN 36623 SH76538397

A rough terrace of earth and random stone. More regular at the north with surviving orthostats. This probably formed the western boundary of cultivation ridges 15375 but has been disturbed by later use of 15370 and 15374.

Field bank, Hwylfa'r Ceirw
PRN 36624 SH76598402
Low bank, mostly following a natural break of slope

Mining trial
PRN 36625 SH76608414
Two shallow hollows and associated spoil.

Trial adit
PRN 36626 SH76618416
Adit cut into rock face and abandoned after a short distance

Rectangular building platform
PRN 36627 SH76608407
Small ruined building. Either a hut, shelter or pen, 4.5m x 2.5m. Tumbled stone walls, grassed over. Eastern side poorly defined. Probably post-medieval and associated with mining trials

Small trial
PRN 36628 SH76548403
A small trial cut into the natural slope.

Possible rectangular building
PRN 36629 SH76548390
A rectangular hollow on the north-western end of the ore processing area has been interpreted in several different ways. Aris (1996 63-4) records that sources, including Pennant, identify this as Llety Fadog, the former residence of prince Madog although an 1861 map places Llety Fadog within the boundaries of Parc to the south (Williams 1861). The rectangular hollow is cut to 1.5m below ground level and unlike most long-huts is not terraced out onto the slope. It also cuts at least one of the phases of cultivation ridges. It is not possible to interpret all of the ore processing area without further work. The majority of the earthworks are almost certainly associated with ore processing, but there could be other features amongst the industrial remains. The possible rectangular building and other hollows do not appear to be a DRS or hut-group and are most likely to be part of the ore processing site. Further investigation by excavation is recommended.

Trackway
PRN 36630 SH76468387
A terrace running to quarry 6461 appears to be a disused trackway. It is embanked on the north side.

Terrace, Hwylfa'r Ceirw
PRN 36631 SH76538397
The largest of 5 terraces within cultivation ridges 15375. This is 0.8m high at its northern end.

2.3.4 Synthesis

The survey area contains several phases of agricultural and industrial features and is a good example of the range of archaeological remains that can be found across the wider landscape of the Orme.

The double stone row (649) that gives the area its name (Hwylfa'r Ceirw, path of the deer) has not been dated and no entirely convincing interpretation has been put forward. It is clearly early enough to pass into local folklore and may be prehistoric although its resemblance to well known examples of stone alignments on Dartmoor and elsewhere is somewhat tenuous. Alternative explanations, and indeed its name, are mostly based on a function as a marked pathway, leading to a natural route down to the lower levels of the Orme and the coast. Its style of construction resembles the orthostatic walls to the south (36622), that are probably medieval or later.

The earliest datable remains within the survey area are medieval, in the form of two platform houses (796) and presumably at least the earlier phases of cultivation ridges. It is likely that these were associated with the medieval township of Cyngreawdr.

It is usually assumed that long curving cultivation ridges are ridge and furrow, formed by medieval ploughing with teams of oxen. This diagnostic pattern is less certain in areas such as the Orme, where topographical constraints often determine the alignment of the ploughing. The earliest fields in the survey (15371, 15880 15375 15373 15519-21, 15397 and 15419) consist of long ridges, mostly running down-slope with a spacing of about 2.5m. This is narrower than most ridge and furrow and is about a third of the width of the ridge and furrow to the east of St Tudno's church (Aris, 69). Most are also fairly straight. Overlying or cutting these fields are smaller plots of cultivation ridges (15370 and 15374) with a 3m spacing along with steep cultivation terraces (5460) with a 6m spacing. Both phases of fields are delineated by earthen banks, the later examples incorporating orthostatic stones. A particularly pronounced area of cultivation ridges 15417, at the south of the survey cuts earlier ploughing but is again narrow with a spacing of 3.3m.

All of the land outside the Parc boundary is marginal. Much of it is steeply sloping and stony, with shallow soil. The sequence of enclosure seems to indicate the progressive use of ever more marginal land. The earlier fields are on relatively level ground whereas the later fields are smaller and required more terracing. The cultivation terraces (5460) are on a very steep slope and must have required a large amount of effort for relatively little gain. Aris argues that the linear, relatively narrow, cultivation ridges in the plots were spade dug. This is likely in the larger fields and certainly seems to be the case in the smaller later enclosures and terraces which would have been too small or too steep to plough. Increasing use of the Orme for pasture in the later 16th century probably marked the end of the use these fields (ibid 95).

The next phase of agriculture was the enclosure of Parc somewhere between the enclosure act of 1843 and the OS map of 1891. The early cultivation ridges survived in pasture at Parc until at least 1947; they are clearly visible on aerial photographs from this time (Plate 3). The survey of 2003 (Davidson) recorded that almost all traces of the earlier agriculture had been ploughed away. The only cultivation ridges that are still recognisable on the ground within the north-eastern part of Parc are 15417.

The ore-processing site has been somewhat disturbed at the north but still represents a large area of activity. This is difficult to interpret; there are a wide range of features, including a regular rectangular feature at the west (36629) and a range of linear and sub-circular banks and hollows elsewhere. Limited excavations by Lewis (1996) confirmed the presence of fine dolomitic spoil similar to that of Ffynnon Galchog suggesting a Bronze-Age date. Aris (1996, 66) suggests that an account in the Caernarvon and Denbigh Herald in 1849 account records 19th century processing here. This may have been associated with the quarries immediately to the south and east (5461) which do not give the impression of any great antiquity. The water source may, of course, have been used for this purpose during several different periods. Further investigation is clearly needed.

The mining trials within the survey area are mostly recorded on the late 19th century ordnance survey maps and probably represent opportunistic delvings by the local inhabitants, perhaps seeking to augment their agricultural income.

2.3.5 Significance and threats

The overall significance of this area is in its well-preserved record of the exploitation of marginal land both by agriculture and to a certain extent by mining. It shows a rare progression of agricultural techniques along with associated settlement. The area to the north of Parc boundary appears to have been relatively undisturbed for several hundred years.

The Great Orme Country Park is managed by Conwy Council. Its development and use is producing ongoing threats to the archaeology. In particular heath-land regeneration work

involving clearance of vegetation and some surface disturbance has the potential to damage sites such as Hwylfa'r Ceirw field system if not properly managed. Other threats include visitor erosion, the provision of access roads and pathways and the development of visitor attractions.

2.3.6 Further research

There are clearly many opportunities for further research. A basic phasing of the remains has been suggested but more definite evidence, including better dating and, in particular, environmental sampling could reveal a lot more about the agriculture and also the ore processing in this area. Hwylfa'r Ceirw is also only a small part of a landscape of great significance extending across much of the Great Orme. This limited area of study shows that the current HER records, which have come from a wide range of sources need to be updated. In particular, sites identified from aerial photographs alone, need to be checked on the ground. There also appears to be a fairly high rate of duplication, due to the density of remains and information coming from different sources.

The level of survey used in this project is relatively swift and produces a good baseline record of the archaeology and would be suitable, perhaps with a little modification, for producing a wider landscape study of the Great Orme.

2.4. Capel Euddog, PRN 2118 SH46558779

2.4.1 Background

This site was recommended for scheduling in the 2011 Deserted Medieval Chapels Scheduling Enhancement Project (Cooke and Davidson 2011). Further investigation using geophysical survey was recommended in the report.

The site lies on a natural terrace above the Afon Goch valley. The farm name to the north (Llaneuddog) and cottage (Capel Euddog), both preserve the name of a former chapel. Local tradition says the site was at SH46568774, and the site is marked there on all Ordnance Survey maps. RCAHMW and the Ordnance Survey both use the name 'Llangadoc' this would appear to be a mistake, possibly for St Cadoc's chapel (PRN 3550). The site is duplicated in the HER; PRN 2118, Capel Llangadog is recorded at close to the correct NGR but is incorrectly named. PRN 8118, Capel Euddog is incorrectly positioned at the cottage with the same name 100mm to the east but appears to be a simple duplication of 2118.

Baynes (1921 No. 55) records the site as follows:
Cappel Euddog. Demolished and the stones used for farm-buildings. The water stoup, used as a pig trough, is preserved at Lligwy.

The site is on the eastern side of a marshy field. There is one surviving subrectangular earthwork that could be the remains of a building. This is surrounded by a series of banks most of which are linear although the earliest earthwork appears to curvilinear scarp. The latter could be interpreted as being part of a circular enclosure with a diameter of about 16m.

2.4.2 Methodology

The survey was carried out in a series of ten 20m grids, which were tied into the Ordnance Survey grid, using a Trimble GPS system, to an accuracy of 30mm. The surveys were conducted using a Bartington Grad 601-2 Dual Sensor fluxgate gradiometer and were carried out at high resolution (0.5 m traverse interval x 0.25m sample interval).

2.4.2.1 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 magnetised 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 because fired clay acquires a permanent thermo-remnant magnetic field upon cooling. This material can also get spread into the soil leading to a more generalised magnetic enhancement around settlement sites.

Not all surveys can produce good results as anomalies 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 within 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 1.0m apart. Their Mumetal cores are driven in and out of magnetic saturation by an 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 metre. 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 instrument is capable of detecting changes as low as 0.1nT.

2.4.2.2 Data Collection

The gradiometer includes an on-board data-logger. Readings in the surveys are taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval is 0.5m. Readings are logged at intervals of 0.25m along each traverse.

2.4.2.3 Data presentation

The data is transferred from the data-logger to a computer where it is compiled and processed using ArchaeoSurveyor 2 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 features 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 susceptible to misinterpretation due to the propensity for 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.

2.4.2.4 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 low pass filtering can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see.

The interpretation of archaeological anomalies depends on recognising the morphology of a feature in plan. Some archaeological anomalies can be identified with a high degree of confidence, e.g. the distinctive outline of a Roman fort. Most anomalies cannot however be interpreted with a high level of certainty. Linear ditches could be assigned to many periods and functions and very weak anomalies, for example those produced by prehistoric settlement and cemeteries can be difficult to distinguish from natural subsoil variations and periglacial features.

2.4.3 Results

The geophysical survey produced a complex plot with obvious signs of activity around the area of the supposed chapel site (Figs 10 and 11). The anomalies are fairly clearly defined but seem to be on several different alignments.

1. A rectangular negative anomaly with dimensions of 11m x 5m aligned a few degrees off east-west. Negative anomalies usually indicate substantial amounts of stone so it is likely that this indicates the presence of stone foundations. The western end could be apsidal but the results are not clear in this area. This would appear to be the foundations of the building that is traditionally identified as Capel Euddog.

2. One of a series of linear features that appear to belong to a different phase to the stone building (1). This one appears to cut across the corner of the building demonstrating that it is not contemporary. The gradiometer produces a two dimensional plan and cannot show which feature is earliest. It is, however, best interpreted as a small ditch or drain associated with a later enclosure.

3. Another linear feature, perhaps part of the same enclosure as 2.

4. Another linear feature, although a negative anomaly suggesting a wall. It is on roughly the same alignment as anomalies 2 and 3 and may be part of the same enclosure.

5 and 6. Two linear anomalies leading from a gateway into the field, probably hardcore laid down to combat erosion.

7 and 8. Two very faint curvilinear anomalies, corresponding to the roughly circular earthwork in the field. This could be the edge of a circular enclosure associated with the possible church, but both the earthwork and geophysical anomaly are indistinct.

9. A short curving anomaly, perhaps a drain

10. A diffuse linear anomaly running across the field, probably a former field boundary.

11 and 12. Two small oval anomalies that could be interpreted as pits or even graves. They are however not aligned with each other so are less likely to be graves.

13. Diffuse anomaly, probably geological

14 and 15. Two areas of very high magnetic responses. This type of anomaly could be caused by buried scrap iron, intense burning or igneous bedrock close to the surface.

2.4.4 Conclusions

The geophysical survey strongly suggests that there are the foundations of a stone-built rectangular structure in this field. The results are not clear enough to identify any additional diagnostic features of the building with certainty although an apsidal western end is a possibility. There are hints of a circular enclosure, this is however also unclear. The evidence from the survey supports the local tradition of a church in this location and strongly suggests that there is extant archaeology, probably in the form of surviving foundations. Baynes' account of the site in 1921 suggests that most of the upstanding masonry was removed for re-use in farm buildings.

2.5 Capel (site of), Llanddygfael PRN: 3049 NGR: SH3507090330

2.5.1 Background

This site was recommended for scheduling in the 2011 Deserted Medieval Chapels Scheduling Enhancement Project (Cooke and Davidson 2011). Further investigation using geophysical survey was recommended in the report

Baring-Gould and Fisher (1908, ii, 349) record the site as follows:
"Capell de Llan Dogwell is entered in the Valor Ecclesiasticus of 1535. It was a separate parish before being attached to Llanfechell. Parts of the cemetery wall remain".

The site appears to be little changed since it was described by RCAHMW in 1937

"The site, on the west slope of a low natural mound, is marked by twelve small stones irregularly disposed in the form of a circle about 30yds in circumference"

The site stands on a low natural mound in the north end of a small field. The boundary on the north-west deviates from the line of the straight boundaries elsewhere in the area to describe an arc of a circle. This is presumably what has been interpreted as the remaining part of the cemetery wall. Some of the stones recorded by RCAHMW appear to still be present, but seem to be little more than displaced rubble around the north side of the site. Cooke and Davidson suggest that a second mound 20m to the south may be a second structure. Exposed stone strongly suggests that this is bedrock.

2.5.2 Methodology

The survey was carried out in a series of sixteen 20m x 20m grids, which were measured into

known points on the field boundaries. The surveys were conducted using a Bartington Grad 601-2 Dual Sensor fluxgate gradiometer. The surveys were carried out at high resolution (0.5 m traverse interval x 0.25m sample interval) using the same Instrumentation, data collection and processing as Capel Euddog (2.4.2 above) .

2.5.3 Results

The geophysical survey was, unfortunately, completely dominated by highly magnetic bedrock that was close to the surface across the majority of the field. One area produced readings of over 3000nT and geological anomalies of +-50nT were encountered across the majority of the survey, effectively masking any archaeological anomalies which are typically in the range of +-15nT. No archaeological anomalies were detected for this reason and an interpretation plan was therefore not produced.

2.5.4 Conclusions

The geophysical survey was not able to add any information to our knowledge of this site apart from suggesting that the bedrock is close to the surface. The chance of surviving foundations is less likely if the building was built directly onto bedrock.

3. REVIEW OF THE METHODOLOGY

This was the first year of the project and several methods of assessment were used. All were found to be useful and most had some limitations.

1. Geophysical Survey. Gradiometer survey gives a swift assessment of a site where conditions are suitable. It is best used as an initial assessment method or to add information to an otherwise well-recorded site. Sites need to be easily recognised from their shape alone for this method to provide sufficient evidence for scheduling with no other evidence.

2. Topographical survey. This method was shown to be particularly effective for assessing large and complex sites such as field systems that cannot be fully appraised from an ordinary site visit. The act of surveying the site provides a detailed assessment of the full range of features that are present. In some cases transcription of aerial photographs can form a useful part of the survey.

3. Excavation. This is the most time consuming method of assessment. It provides the best assessment of the preservation, form, dating and phasing of buried archaeology. It is, however, destructive, although this can be minimised by only excavating a small area or limiting excavation to the top of the stratified archaeology.

A combination of geophysical survey and trial excavation has been shown to be particularly effective in numerous projects carried out by GAT. The geophysical survey allows very accurate positioning of assessment excavations.

3. ACKNOWLEDGEMENTS

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4. REFERENCES

Aris M., 1996: *Historic Landscapes of the Great Orme*

Baring-Gould S., Fisher, J., 1908-13: *The Lives of the British Saints* 4 vols. London.
Baynes, E. N., 1920 'The old monasteries, abbeys and chapels of Anglesey' *Transactions of the Anglesey Antiquarian Society*, 33-43.

Crew P., 1981: Pen Bryn yr Eglwys *Archaeology in Wales*

Davidson A., 2004: *Deserted ecclesiastical sites in north-west Wales*, GAT Report 532.

Cooke R. and Davidson A., 2011: *Cadw Scheduling Enhancement: Deserted Medieval Chapels* GAT Report 934

Davidson A. & Jones, S., 2001: *The Great Orme Archaeological Management Plan* GAT Report 399

Davidson A., 2003: *Parc Farm, Great Orme, Llandudno: Archaeological Assessment* GAT Report 483

Davies E., 1923: Miscellanea *Archaeologia Cambrensis*

Hopewell D., 2009 *Prehistoric and Roman Sites Monument Evaluation Project 2008-9* GAT Report No. 794

Lewis C. A. 1996: Prehistoric Mining at the Great Orme: Criteria for the Identification of Early Mining (MPhil University of Wales – Bangor, Agricultural and Forest Sciences)

RCAHMW, 1937: *An Inventory of the Ancient Monuments of Anglesey*, (Reprinted 1968)

RCAHMW, 1964: *A Survey and Inventory of the Ancient Monuments in Caernarvonshire*, Vol.III: West 63-4

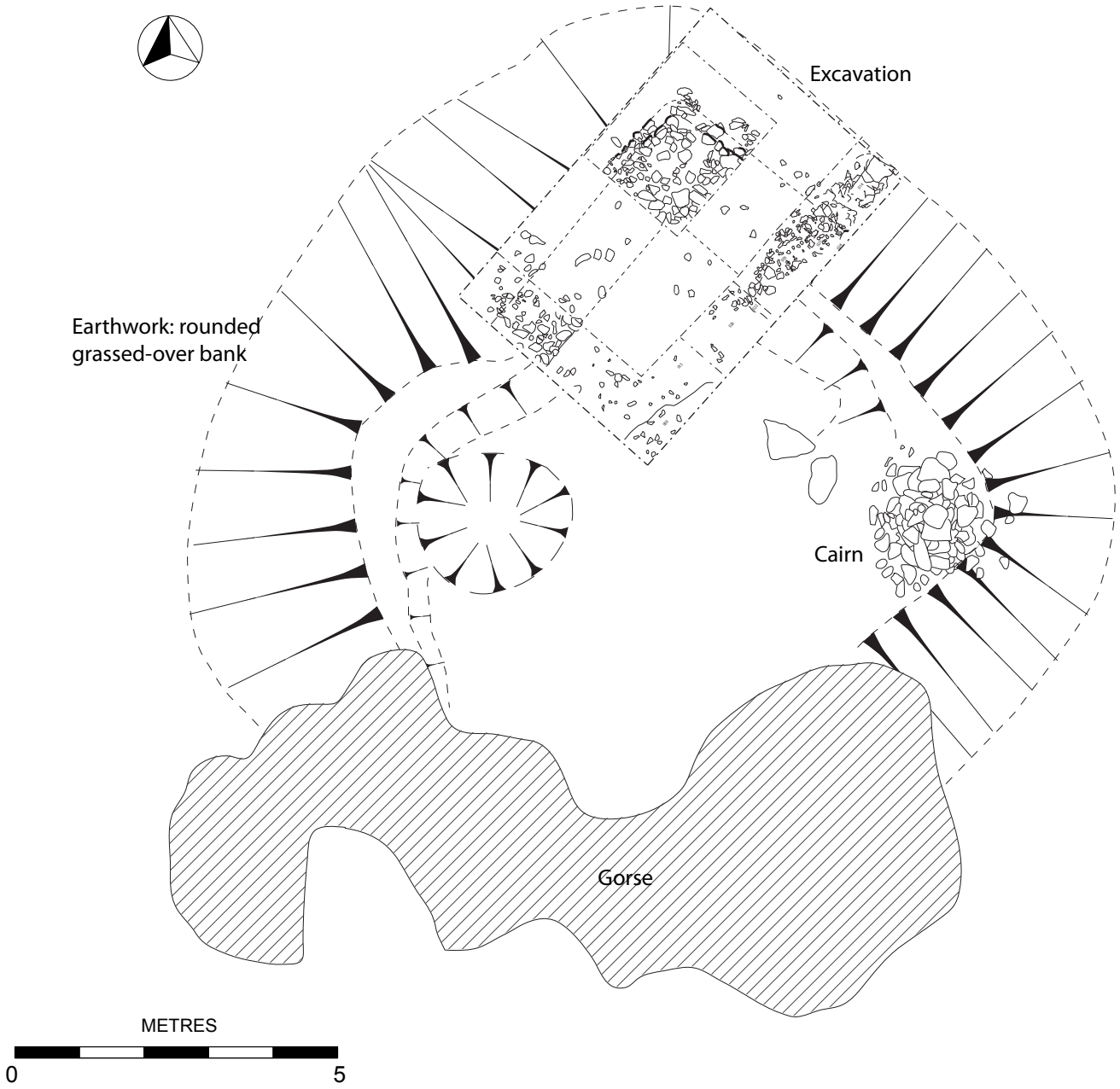

Fig. 1 Pen Bryn-yr-Eglwys site plan

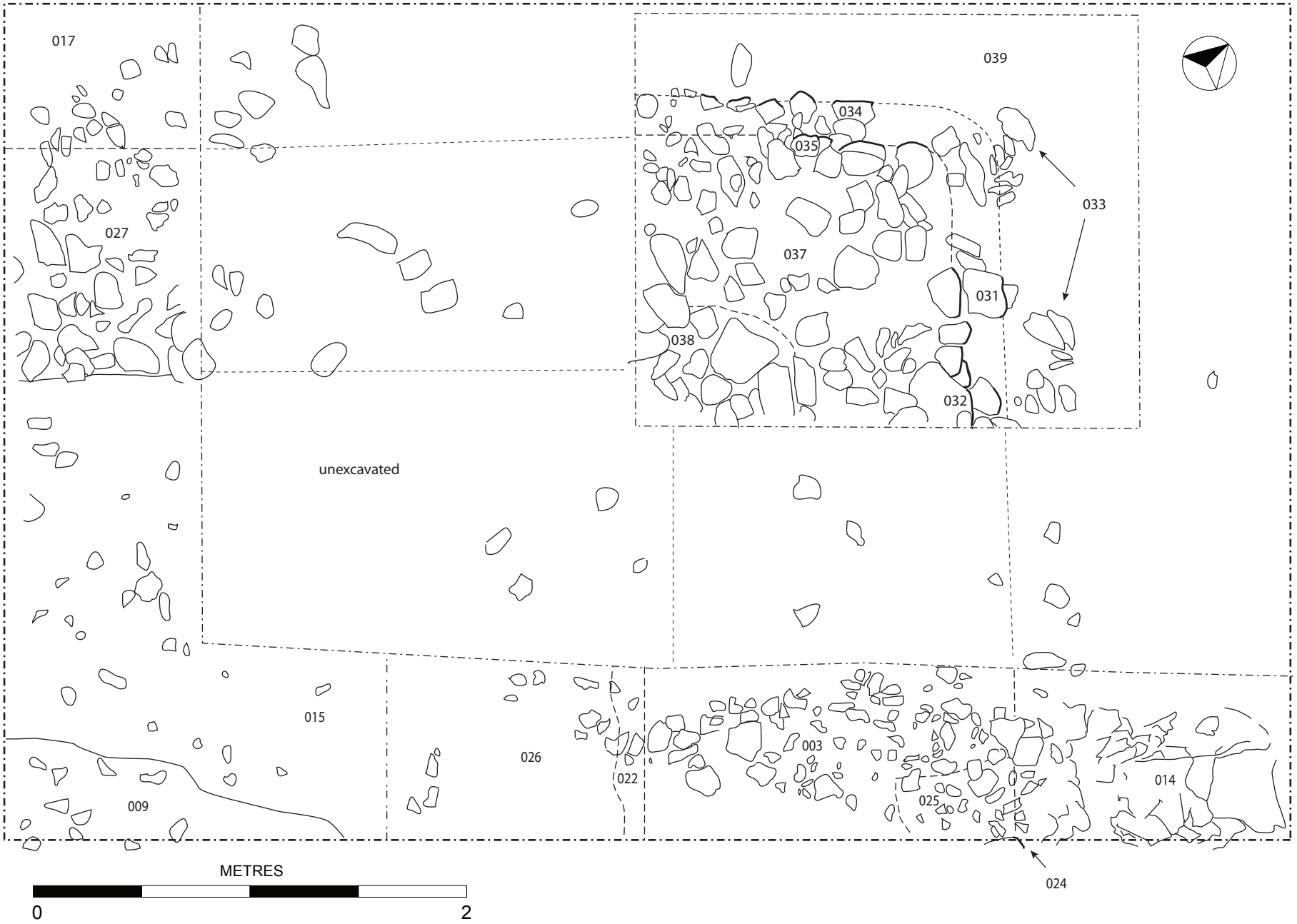

Fig. 2 Pen Bryn-yr-Eglwys Excavation trench

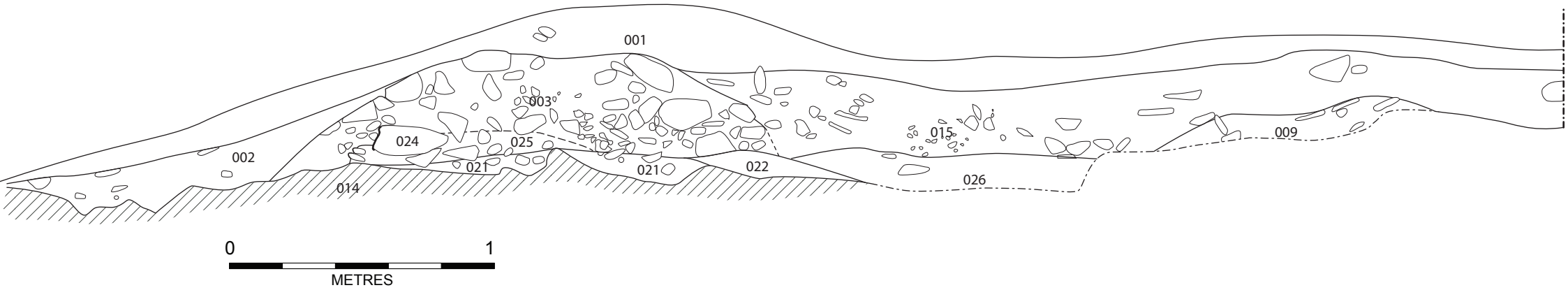

Fig. 3 Pen Bryn-yr-Eglwys north-west facing section through remains of wall and interior

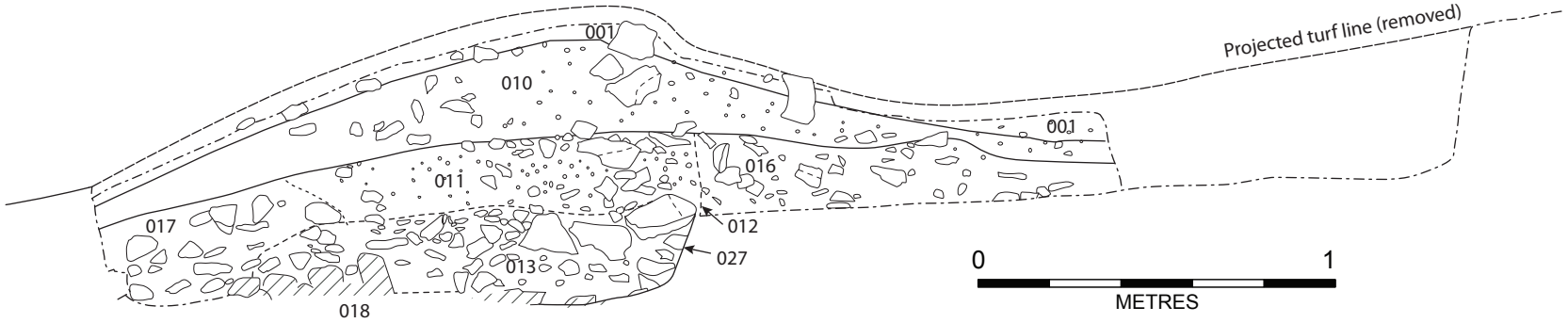

Fig. 4 Pen Bryn-yr-Eglwys south-west facing section through remains of wall and interior

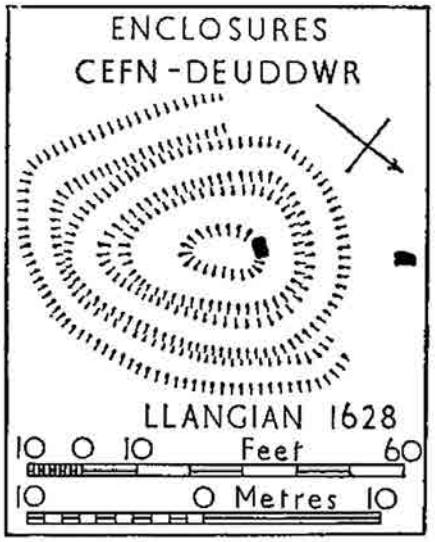

Fig. 5 Cefn Deuddwr (RCAHMW 1964)

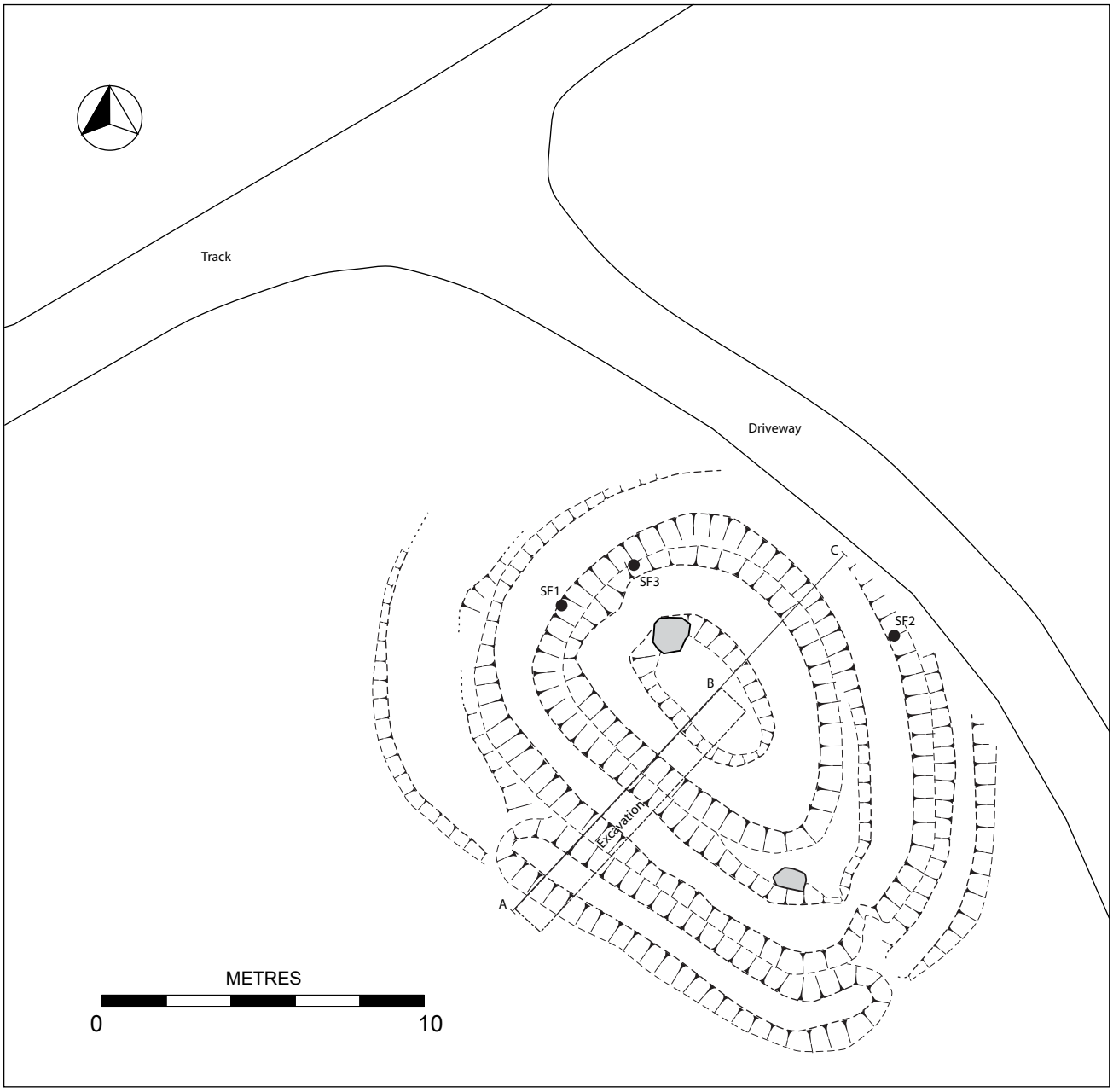

Fig. 6 Cefn Deuddwr, topographic survey and excavation trench

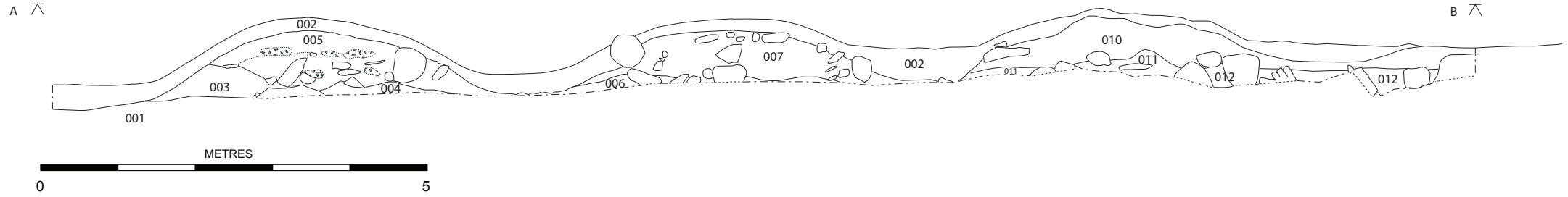

Fig. 7 Cefn Deuddwr: south-east facing section through the banks on the south-west side of the site

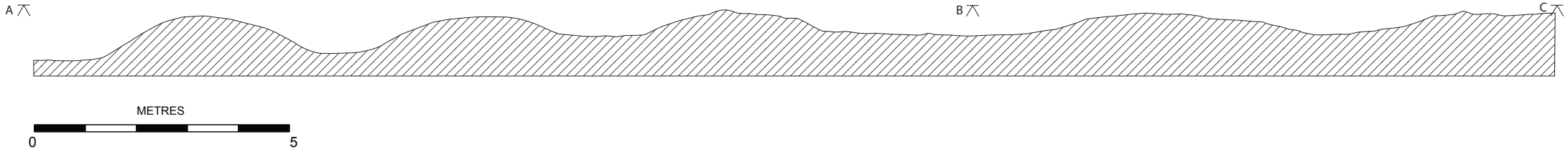

Fig. 8 Cefn Deuddwr: Profile across the centre of the site (SW-NE)

Fig. 9 Hwylfa'r Ceirw Field System: Transcription of aerial photographs and topographic survey

Fig. 10 Capel Euddog fluxgate gradiometer survey, grey scale plot

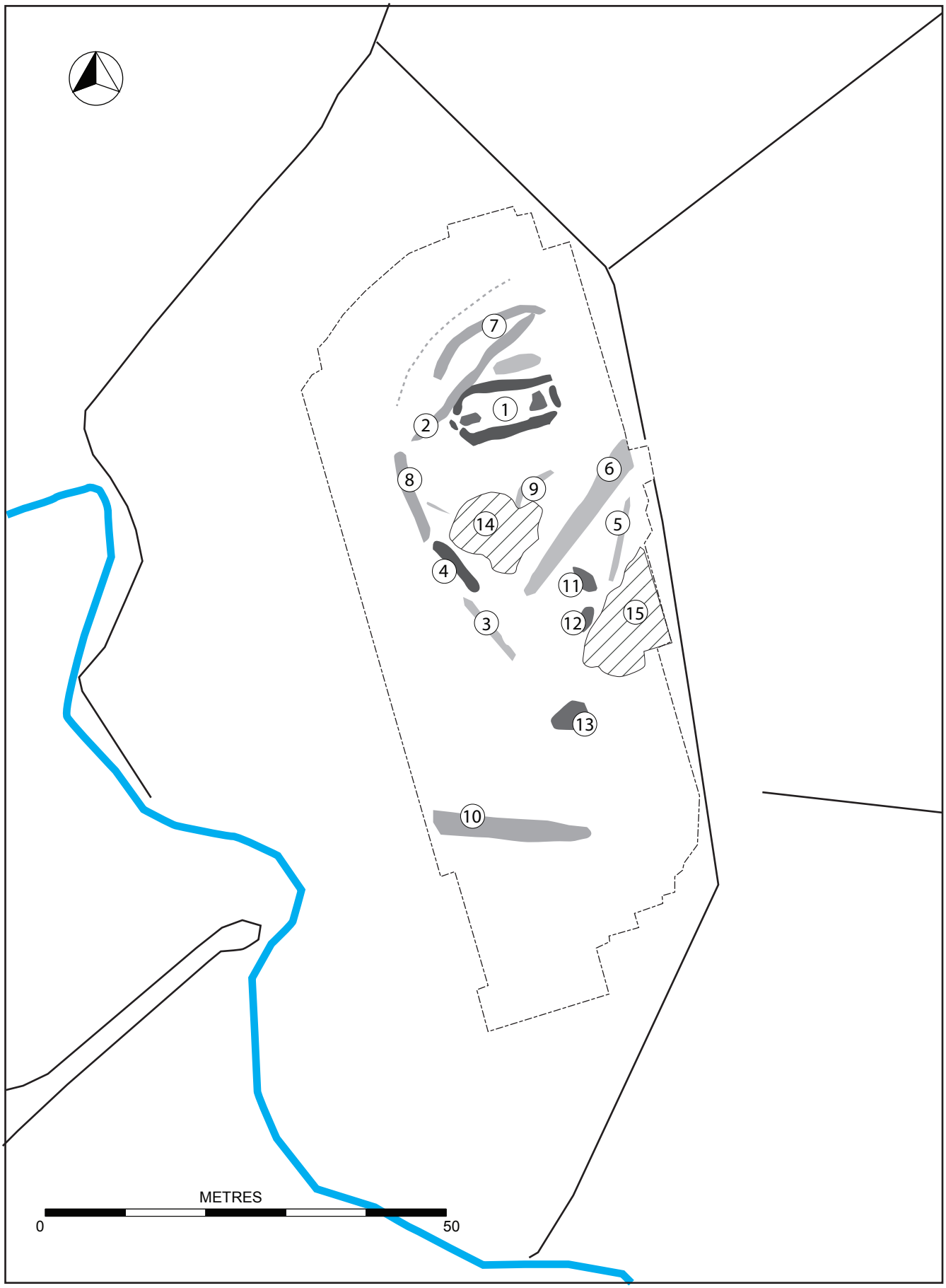

Fig. 11 Capel Euddog fluxgate gradiometer survey, interpretation plan

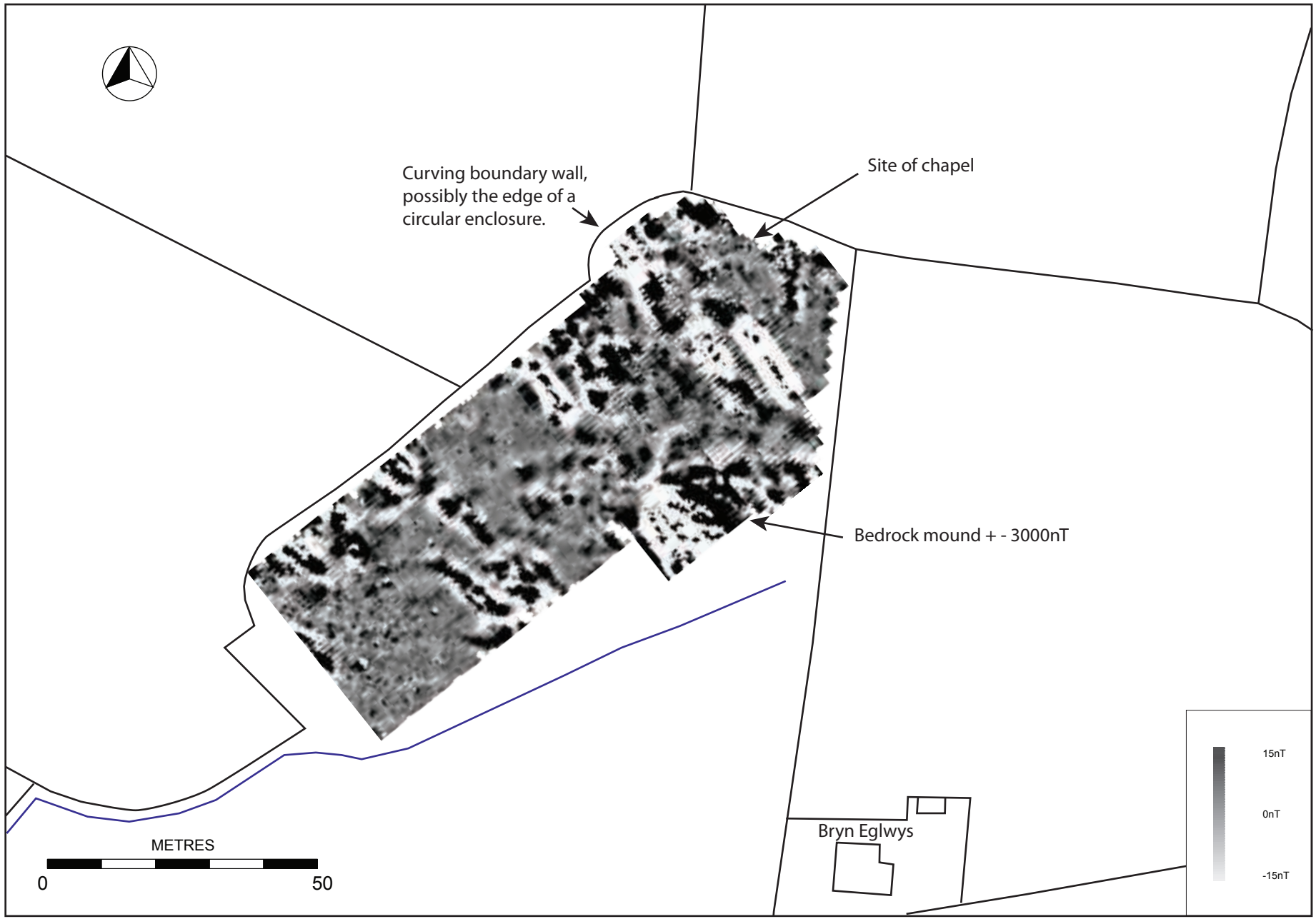

Fig. 12 Capel Llanddygfael gradiometer survey grey-scale plot

Plate 1 Pen Bryn-yr-Eglwys: remains of north-eastern wall during excavation

Plate 2 Pen Bryn-yr-Eglwys: north-western corner after excavation

Plate 3 Hwylfa'r Ceirw field system: Aerial photograph (CPE/UK/1939/4218 20th January 1947)

Plate 4 Hwylfa'r Ceirw: Cultivation terraces (PRN 5460) with St. Tudno's church in the background

Plate 5 Hwylfa'r Ceirw: Ore processing area (PRN 800)

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