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High Status Medieval Sites and their Environs 2014-2015

Tŷ Newydd Motte
Recording and Evaluation Excavation

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

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Project No. G2366

Report No. 1223

Prepared for: Cadw

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Cover photograph: Motte, ditch and southern bank in spring

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SUMMARY

Archaeological work was carried out at Tŷ Newydd motte, Llannor to record deposits in the motte ditch that had been subjected to erosion. A management plan has been produced to repair and mitigate the erosion and other potential disturbance to the monument. A topographic survey of the site was carried out as far as was possible given the vegetation cover. Geophysical surveys of the field east of the motte were carried out revealing linear anomalies that might have been related to a bailey or early field systems. A trench was dug to investigate the possible bailey, but this failed to find any defensive ditch or firm evidence of the existence of a bailey.

Ruling out the presence of a bailey at the site the works also raised questions about the bank around the south side of the motte, which may be a much later addition, rather than an original feature of the monument. No dating evidence was found, although samples have been recovered from the ditch fill that might be dated. Very few artefacts were recovered, with the most significant being a Neolithic leaf-shaped arrowhead, presumably a casual loss and not related to any features found during the excavations.

1. INTRODUCTION

Tŷ Newydd motte, also known as Y Mount (PRN 1532, NPRN 302309), is located within a small area of woodland near Llannor on the Llŷn Peninsula (SH 3465 3829) (figures 1, 2 and 11, plate 1). The trees mean that root action and wind-blown tree damage are on-going threats, and badgers have caused much disturbance of the site. The motte is surrounded by a ditch or moat, retained by a bank on the southern side. A field ditch runs into this moat, which carries water in wet weather. There is a breach in the southern bank to allow the water to flow out. Serious and on-going erosion was identified by Jamie Davies in 2013 and was described in his undergraduate thesis (Davies 2013a). Run-off after heavy rain had eroded a channel that was undercutting the motte and southern bank (plate 2). Cadw were concerned about the damage and wished to halt the erosion and develop a management plan for the site; this led to its investigation as part of this project.

The motte and an area of the field to the east are scheduled (CN096) (figure 2). The area to the east was included in the scheduling because earthworks suggest the possible presence of a bailey in this area. The Royal Commission report the presence of a cobbled area in this field (RCHAMW 1964, 82), possibly also supporting this idea. The opportunity was therefore also taken to investigate the possibility a bailey. Geophysical surveys using magnetometry (gradiometer) and resistivity were carried out and these informed the positioning of an evaluation trench to test the nature of the anomalies detected.

2. METHODOLOGY

2.1. Aims and objectives

The aim of the work was to identify the level of erosion and its impact on the site, to record eroded surfaces and to devise a management plan for the site. The opportunity was taken to discover more about the site by investigating the possible bailey. The investigation involved gradiometer and resistivity surveys and a trial trench. The archaeological work was undertaken by Gwynedd Archaeological Trust (GAT) and the management plan, which is included in a separate report, was devised by Andre Berry of AQB Historic Landscapes.

2.2. Geophysical survey

Introduction
The survey examined the fields to the north and east of Tŷ Newydd motte. All other areas around the monument were wooded and unsuitable for survey. The fields contained a slightly raised earthwork platform that had been interpreted as a bailey. The area around this consisted of wet grassland crossed by drainage ditches. Much of the supposed bailey had been previously surveyed by Jamie Davies (2013a, 25-46) as part of a project examining the earth and timber castles of the Llŷn Peninsula. The gradiometer results showed low levels of magnetic enhancement and a scatter of ferrous anomalies. The resistivity results detected the edge of the earthwork platform and this was assumed to be the limit of the bailey. A break or irregularity in the north-eastern side was interpreted as being an entrance. The interior contained some variations that were interpreted as the stone walls of a hall but the anomalies were diffuse and the interpretation requires further confirmation.

The previous survey examined an area of 60m x 40m that did not cover the entire area of the possible bailey and did not extend beyond it. Experience at other sites has shown that larger areas of survey can often allow anomalies to be seen in the context of the geophysical responses produced in the surrounding landscape and this can aid interpretation and reveal peripheral features. It was therefore decided to carry out larger areas of both gradiometer and resistivity survey covering the complete area of the putative bailey and as much of the environs of the motte as possible. Gradiometer survey is considerable quicker than resistivity and a larger area was surveyed. Much of the ground to the north-east of the raised platform was waterlogged making it unsuitable for resistivity survey.

The survey was carried out by David Hopewell and John Burman between 23/5/2014 and 6/6/2014. Conditions were generally good; the fields contained long grass but this was not a major hindrance to the survey.

Instrumentation
The magnetometry survey was carried out using a Bartington Grad601-2 dual Fluxgate Gradiometer. This 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 Grad601 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. It must therefore be stressed that a lack of detectable anomalies cannot be taken to mean that that there is no extant archaeology.

The Bartington Grad601 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 mu-metal 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.

The resistivity survey was carried out with a Geoscan FM15 twin electrode array. Resistivity is a survey technique that uses probes to introduce an electrical current into the soil, measuring the resistance of the soil to

the passage of the current. The twin electrode array actually uses four probes; a mobile pair is mounted a fixed distance apart on a frame. One of these probes introduces a current into the ground and the other takes a voltage measurement. A pair of stationary probes connected by long trailing leads provides a return path for the current probe and reference voltage for the voltmeter. This is then used to calculate the resistivity of the soil. Resistivity quantifies how strongly a given material opposes the flow of electric current. There are many factors that influence the resistivity of buried deposits, water content being the most obvious. A wet ditch fill will have a low resistivity compared to drier soil around it, stones in a wall, or a compacted gravel surface will probably have a higher resistivity. Unlike magnetometry, this technique is sensitive to climatic factors that alter the water content of the soil.

Data Collection
Both the gradiometer and resistivity meter include on-board data-loggers. Readings in the surveys were taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval in the gradiometer survey was 1.0m and readings were logged at intervals of 0.25m along each traverse giving 1600 readings per grid. The resistivity survey used the same traverse interval but readings were taken every metre. These are the standard resolutions for general archaeological prospection. The grid was set out using a Trimble R6 GPS system to an accuracy of +- 30mm.

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 (Fig. G1 and G3) 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 (Fig. G2 and G4) 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.

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.

In the magnetic data 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 resistivity data is often processed using a high-pass filter. This reduces large-scale variation in the data caused by natural changes in the soil making smaller anomalies more visible. Grey-scale plots are always somewhat pixelated 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 smoothed using the “graduated shade” function in ArchaeoSurveyor 2. This calculates a continuously interpolated value for every pixel. Each pixel value is calculated by generating cubic spline curves from all the data points in both the X and Y axes. 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.

2.3. Excavation and recording

Between 15th and 19th September 2014 (inclusive) GAT carried out archaeological excavation and recording at the site. This included the excavation of a 20m by 2m evaluation trench across part of the possible bailey area and cleaning and recording the erosion sections in the motte ditch.

Evaluation trench
The trench was positioned using survey quality Global Positioning System (GPS) equipment to ensure that it was located over features identified in the geophysical surveys (figure 3). It was aligned west-south-west to east-north-east fairly close to the corner of a scarp visible as an earthwork on the ground. The east-north-eastern end of the trench extended beyond this scarp to investigate one or more potential ditches identified in this area in the

geophysical surveys. The trench was opened with a mini-digger under constant archaeological supervision (plate 3). Topsoil and ploughsoil were removed by the mini-digger to expose the natural substrate and any archaeology dug into it. The topsoil was stored next to the trench and the area was reinstated once the excavation and recording was completed.

At the east-north-eastern end of the trench the machine was used to remove what was initially interpreted as ditch fill as a ditch was expected in this location. It very quickly became clear that the deposit was not ditch fill but a natural deposit and excavation with the machine was stopped, except for the very end of the trench where the machine was used to deliberately dig into the natural deposits to allow their nature to be recorded.

The entire length of the trench was then cleaned by hand and features identified were excavated by hand. These were recorded by notes on proforma context sheets, by photography and by hand drawn plans and sections at appropriate scales. A section was drawn along the full length of the west-north-western side of the trench. Photography used a digital camera set to the highest resolution. Most of this work was carried out by a small team of volunteers under professional supervision.

As the trench was almost entirely within the scheduled area this work was carried out under Scheduled Moment Consent.

As fewer features were found in the main trench than expected there was time for a small additional investigation. While recording the site for the Inventory the Royal Commission were told of an area of cobbles that had been found by the farmer to the east of the motte (RCHAMW 1964, 82). The location of this was pointed out to the Ordnance Survey as being at SH 3470 3832 (OS card SH 33 NW 5).This grid reference places the location of the cobbles within a hollow running across the site. As this appeared to be an unlikely place for a cobbled surface and it was assumed that the grid reference was not very precise. On the eastern side of this hollow was a slightly raised, fairly level area, which seemed much more likely to be the location of a cobbled surface. This area was outside the scheduled area so it was decided to dig two small trial pits in an attempt to locate the cobbling (see figure 3 for locations). The pits initially measured 1m by 1m and were dug by hand through the topsoil and ploughsoil to the undisturbed deposits below. The first pit dug (trench 2) contained no stones. The next pit (trench 3) contained numerous stones and this was expanded to 1m by 2m to investigate these a little more. Two small hollows were identified in the natural and these were fully excavated by hand but proved to be animal burrows. No further excavation was carried out and the stones were recorded in plan only. This trench was photographed and planned by hand.

All three trenches were located by survey quality GPS, and this equipment was also used to survey the visible earthworks in the immediate area of the potential bailey.

Recording the erosion in the motte ditch

The water erosion in the motte ditch had created several vertical faces and these were cleaned by hand to expose the deposits in section. The erosion had created a hollow in the side of the motte and this was squared off slightly to allow the relationships between the different layers to be seen and understood more easily, but removal of deposits was kept at a minimum to avoid making the erosion worse.

Once cleaned the sections were photographed and drawn by hand at a scale of 1:10. Kubiena tins were used to take three block samples of the deposits and two bulk samples were taken of the most organic deposits.

The tree cover prevented the use of the GPS equipment around the motte so stations were established with the GPS in the field to the east. These were used to locate a total station theodolite (TST) survey of the site. The TST was used to locate the drawn sections and to record the limit of the erosion scar. However this would have made little sense without having an accurate plan of the motte to show the context of these features. The present digital OS mapping show the motte as a very regular feature lacking the detail visible on the ground. It was therefore decided to carry out as full a topographic survey of the motte as possible. This was hindered by the tree cover and much of the northern side was entirely inaccessible due to brambles and other dense vegetation. It cannot, therefore, claim to be a complete and definitive survey. The survey did not attempt to show all the detailed scarps and platforms covering the motte as the vast majority of these, if not all of them, are the result of badgers digging setts. A detailed record of these features may be worthwhile but would be best done once the trees on the motte have been felled and possibly a 3D model generated from photographs would provide the most accurate and efficient record.

2.4. Report and archiving

This report describes the background and methodology of the project, the results of the fieldwork, and provides recommendations for scheduling and future research.

The digital archive generated from the project will be archived with the RCAHMW, who share with Historic Scotland a facility for the active curation of files.

2.5. Public engagement

A small team of experienced volunteers carried out much of the excavation and recording work under the supervision of two GAT staff (plate 4). An evening tour of the site was advertised for the public on 18th September, where Jane Kenney explained the archaeological work being carried out and the results found and Jamie Davies described the historical background of the site. This was attended by 6 people and was well received (plate 5).

2.6. Copyright

3. RESULTS

3.1. Geophysical survey

Gradiometer survey

Figures 4 and 5

There was an unusually low level of magnetic variation in the soil across the whole site. A scatter of iron spikes was detected, caused by small pieces of metallic iron in the soil; probably a result of material from the farmyard added to the topsoil during manuring. The variation in the soil was however in the range of +-3nT, compared to a typical variation of about +-15nT on most sites in north Wales. This is probably a result of low levels of natural magnetic iron oxides in the soil. The data on the grey-scale plot was clipped to +-3nT revealing a range of anomalies.

The edge of the earthwork platform was defined by a slight negative anomaly (1). The earthwork was also characterised by an increase in noise (2), either indicating magnetic enhancement from activity such as burning or a spread of material used to raise or level the ground surface.

A linear anomaly toward the north-east end of the survey area is visible on the ground as a silted ditch or former field boundary (3). A similar anomaly (4) in the field the north is probably another drain or former boundary. Two other narrow linear features in this area (5 and 6) meander slightly and are probably drains or ditches from an earlier phase of agriculture. Feature 5 although partially masked by noise appears to predate the current field boundary. The area to the west of these three linear features is considerably more magnetically noisy (7 and 8) than elsewhere on the survey, possibly a result of different agricultural practices in different former fields. A patch of increased enhancement at the north (9) is the result of a recent bonfire. Few other anomalies are visible, weak narrow linear features (10 and 11) are probably the result of ploughing or erosion from paths or wheel ruts.

Resistivity survey
Figures 6 and 7

A clear linear anomaly (12), probably a drain with a high moisture content, runs along the north-eastern edge of the survey. The only other clear anomaly is a curvilinear feature (13) running across the northern end of the possible bailey. This is a low resistivity anomaly suggesting a cut feature. A possible continuation (14) is intermittently visible along the southern side. The area bounded by these anomalies is generally more variable than elsewhere on the survey and has a higher resistivity probably as a result of being drier that the surrounding field. The variation is generally diffuse suggesting spreads of material or differential drying. Some very slight linear anomalies (15) were detected running at right angles to each other. There is a possibility that these could be building foundations but they are too weak to allow definite interpretation and could alternatively be interpreted as having an agricultural origin as a result of crossing plough marks.

Conclusions
The two surveys failed to produce any conclusive evidence about the nature of the earthwork platform previously interpreted as a bailey. The gradiometer survey detected ditches elsewhere in the fields, thus demonstrating a good potential for the detection of cut features in this area, but did not identify any clear anomaly around the earthwork. A slight increase of magnetic noise within the earthwork could indicate domestic or other activity but could equally be interpreted as a spread of material designed to raise the level of a small field above the level of the surrounding wetland. The resistivity survey emphasised the raised and drier nature of the feature but did not detect any definite defences. The faint rectangular or linear anomalies in the interior were to be targeted by the trial excavation.

The fact that two different surveys did not detect a substantial ditch or any other defensive structure is significant. Geophysical survey alone cannot, however, provide proof that a feature does not exist and the edge of the earthwork was also to be investigated by the trial trench.

3.2. Topographic survey, Lidar data and aerial photographs

The topographic survey showed that the motte was oval rather than circular (figure 3). The mound of the motte measures about 25m by 22m at its base and the summit measures about 11.6m by 4.6m. It is about 4.5m high. The motte is covered with shelves, platforms and ramps, but most of these are certainly the result of badgers digging sets and even the larger features may be the result of several badger spoil heaps combined. However a more coherent ramp on the northern side of the motte could possibly be original, although this only runs up part of the mound and does not act as an access path from base to summit (plate 6).

The bank runs along the southern and south-western side of the monument, creating the impression of a ditch on this side, which is about 4m wide (plate 1). The “ditch” becomes wider towards the north-west where it appears not as a ditch but a broad hollow. This hollow is possibly over 13m wide at its widest point, although dense brambles prevented this area being inspected fully (plate 7). On the north-western to eastern side of the monument this ditch/hollow is dug into the slope with no bank and is up to about 3m deep. A field ditch runs into the northern side of this hollow.

The bank has a breach through it on the southern side, with large beech trees growing on either side of the breach. The Royal Commission (1964, 82) mention this breach, so it is not a very recent feature. The bank is up to 2.0m high on the downhill side, and at its widest point is 8.7m wide. The bank ends on the western side of the monument with a fairly neat terminus and is replaced, after a gap, by a very straight, narrow bank/wall running north-west to south-east. This continues the line of the north-eastern side of a level area that runs up to and past the western side of the monument. The bank is a fairly recent boundary bank or wall.

The level area has a long rectangular shape and is about 130m long and up to 15m wide. It runs north-west to south-east and continues the line of a track running into it from the north-west but the main area appears to be too wide to be a track. This area appears on the OS 25 inch maps (figure 7), where it is shown to be partially enclosed by walls and partially open into the garden of Tŷ Newydd. A path runs through this garden towards the motte, opening into this area, suggesting that the area was an integral part of the garden, possibly a lawn. At present its north-western end is blocked by a dump of stone rubble and it is very wet and over grown.

To the east of the motte a broad scarp (up to 2.0m high and about 10m) runs north-east apparently from the end of the bank around the monument (figure 3). It becomes much narrower and shallower towards its north-eastern

end, where it turns north-west and becomes even slighter. This feature defines the limits of the proposed bailey (PRN 59861). The scarp forms one side of a shallow channel, which opens out at its south-eastern end. A linear anomaly detected by the resistivity survey (figure 7 (12)) ran along this channel. There is a slight curving scarp to the east of this channel, up to 0.3m high, and a shallow hollow near the southern boundary of the field. Other features further east in the field were not included in the detailed topographic survey but can be seen on the Lidar data supplied to the Gwynedd Historic Environment Record (HER) by National Resources Wales.

The lidar data (figures 9 and 10) show the most easterly scarp recorded in the topographic survey to be more of a right-angled corner than seen on the ground and part of a small enclosure, probably the corner of a field. Ridge and furrow can be seen crossing this and the scarps to the west. There are more linear features to the east running roughly parallel north-west to south-east. The clearest of these can also be seen on the ground and is the remains of a field boundary (centred on SH 34734 38341) seen on an aerial photograph of 1945 (Sortie 4535 frame 3134) (figure 11). One of the other linear features is shown on the same photograph as having the remains of a hedge and this is also a field boundary, going out of use at that time. These parallel boundaries are recorded as PRN 59862. Crossing the eastern boundary of this field an oval enclosure (SH 3480 3841, PRN 59863) can be seen measuring about 79m by 60m and defined by a low bank about 4.5m wide. This feature can be seen on the ground west of the field boundary. The bank is less than 0.1m high in most places and is rather disturbed but can be seen quite clearly. Between this feature and the linear features (PRN 59862) broad, low ridge and furrows (PRN 59864) can be seen on the ground, which are not visible on the lidar data. The ridges run north-west to south-east (centred on SH34773835), and are low and poorly defined but are about 7m wide, consistent with medieval ridge and furrow. The lidar also suggests south-west to north-east aligned ridge and furrow crossing the possible field boundary corners described above in the western part of the modern field.

About 280m to the north of the motte an arcing bank or scarp can be seen in the Lidar data (SH 34676 38592), which is 114m across and opens to the north. This is close to the location of an enclosure identified as a cropmark on an aerial photograph in 1990 (PRN 4383, NPRN 402183). A plan of this enclosure is given in Ward and Smith (2001, figure 2) and they describe it as "A sub-circular enclosure, approximately 50m in diameter", and interpret it as a "possible prehistoric or Romano-British settlement" (ibid, 9). The scarp shown on the Lidar is clearly larger than the original enclosure but may form a concentric line of defence around it. A slope model created by Jamie Davis from the Lidar data (Davis 2013, figure 13) reveals the original enclosure and does show that the outer scarp is concentric to this. In any case it appears to be too early in date to have any direct significance to the motte.

3.3. Evaluation trenches

See appendix II for full list of contexts with descriptions.

Trench 1(centred on SH 34696 38309)
Figures 13 to 17, see figure 3 for location of trench
Under 0.42m of topsoil and ploughsoil an orange-brown natural silt (1003) was exposed (plate 8). This is the loess-like silt often found in north-west Wales and presumably deposited during peri-glacial conditions at the end of the last ice age. This silt covered the entire trench except the east-north-eastern end where deposits were very different. Just at the point where it was expected from the geophysical evidence (figure 5 (1), figure 7 (12)) that a ditch would be encountered a pale grey silt (1007) mottled with considerable iron and manganese oxides replaced (1003) (plate 9). This was initially thought to be ditch fill but on excavation it was seen to merge into a mottled yellow-brown silt (1029). Like (1007) this had numerous concretions of manganese oxide but it was crazed with ice cracks. Context (1029) in turn merged with (1026) below (plate 10). This was a very firm red-brown silt with mottling and crazing due to ice cracking. The ice cracking in these deposits, as well as their very clean and undisturbed nature, demonstrated that they were natural deposits. It appears that the broad shallow hollow running north-west to south-east across the field to the east of the motte was not a ditch but a natural channel. This seems to have been infilled in glacial or early post-glacial times by silt deposits that have then been subjected to frost cracking due to peri-glacial conditions.

Cutting into the edge of this channel on its western side was a terrace-like cut sloping at an angle of about 45 degrees [1021]. This seems to be the feature that has caused the earthwork, forming a corner near where the trench was dug. From its appearance in the trench it is likely that this feature is a lynchet, produced by ploughing cutting into the natural slopes and making a steeper, more clearly defined edge. The earthwork corner would therefore then appear to be the corner of a small field. At the base of the lynchet cut was a land drain [1027] with a neatly constructed stone lining (1023) (plate 11). This must have been constructed after the

lynchet had developed and is likely to date from after the small field was incorporated into the larger present field. The base of the scarp, as the lowest point in this area of the field, was probably the most appropriate location for a drain. There was no visible trace of the land drain cutting through the lower, waterlogged ploughsoil (1021), but it seems highly unlikely that it was dug from the level of the natural and must have cut through the ploughsoil, but this cut having been backfilled with the same material and then ploughed was no longer visible in section.

No trace of a substantial ditch was therefore identified in the east-north-eastern end of the trench. However there were slight linear features running across the trench. Towards the east-north-eastern end were two roughly parallel shallow gullies ([1010] and [1017]). These ran north-west to south-east. Feature [1017] was quite well defined with shallow but quite steep sides and a flat base. It was 0.4m wide and 0.07m deep. Feature [1010] was much less clear and its sides were gradually sloping and often difficult to identify. It was up to 0.9m wide and 0.12m deep. Both were filled with orange brown silt with occasional stones and gravel, mottled with iron oxide. Feature [1017] had what appeared to be a stakehole [1019] cut into its base and may have been part of a fence line or other boundary feature forming the edge of the small field defined by lynchet [1021]. In this case [1010] was probably also related to the field boundary.

At the west-south-western end of the trench was another linear feature [1009] running straight across the trench from north-east to south-west (figures 14 and 16, plate 12). Although shallow this was quite well-defined with fairly steep sides and a flat base. It was 1m wide and 0.24m deep, and filled with orange brown silt with occasional stones. It is likely that this was an agricultural feature. There is a possibility that this feature was the beam slot for a building, but further excavation would be required to demonstrate this. Along the south-eastern side of this feature was a grey-brown silty deposit (1015) with iron oxide mottling, up to 0.5m wide and 0.12m deep. This was excavated as if it was the fill of a feature, but it was very poorly defined and was probably not a genuine feature but the result of leaching adjacent to gully [1009].

None of these features corresponded to the linear anomalies seen on the resistivity survey even though the trench was located to target the corner of one of the more distinct anomalies. The evidence from the excavation therefore suggests that these anomalies are not archaeological features. This is supported by one anomaly extending well down the scarp that probably defined the field in this area. It seems unlikely that a building would have been constructed on this slope without any trace being visible on the surface. It is therefore suggested that the resistivity anomalies are large frost cracks in the glacial deposits below the surface orange silt. Frost cracks are usually polygonal rather than having nearly 90 degree angles but they can be variable.

Trench 2

See figure 3 for location of trench

Trench 2 (located at SH 34709 38328) measured 1m by 1m and was dug to a depth of 0.34m. There was no differentiation between ploughsoil and topsoil and these deposits were 0.34m deep. Beneath the ploughsoil was a grey silt with occasional stones and iron oxide mottling. This seemed to be a natural deposit and no archaeological features were revealed. There was certainly no cobbled surface present.

Trench 3

Figure 18, see figure 3 for location of trench

Trench 3 (located at SH 34705 38333) measured 2m by 1m and was dug to a depth of 0.4m. The topsoil, the active organic horizon, was a dark grey silt (3001) and the ploughsoil (3002) was slightly lighter and contained considerable amounts of iron and manganese oxides forming concreted lumps. Under the ploughsoil was a deposit of stones (3003), in grey brown silt matrix. One stone was over 0.5m long and was a sloping flat slab (plate 13). The other stones are much smaller, no more than 0.2m long, and are sub-rounded. There was no clear patterning to their distribution. Natural (3004) was exposed in the north-eastern end of the trench and this was a yellow brown slightly clayey silt with iron and manganese oxide concretions. Two holes ([3006] and [3008]) were seen cut into the natural but on excavation these proved to be animal burrows.

The nature of the stone deposit could not be determined in the small test pit. It is possible that this formed the remains of the base of a field wall, although there was no firm evidence of the stones having been deliberately laid. The stones were too irregular for this to have been a deliberate cobbled surface but the stones in this area could have been encountered by the farmer and interpreted as a cobbled surface as related to RCAHMW. The test pit may therefore have located the position of this reported feature and could be the focus for future work in the area.

While no medieval finds were discovered a fine leaf-shaped flint arrowhead was recovered from this test pit. It was found near one of the animal burrows and may have been moved from its original location by burrowing but there is no evidence it was related to any archaeological feature and is probably just the result of casual loss.

3.4. Motte ditch deposits

Figures 19 to 22
The water erosion had formed an elongated irregular channel [4008] with steep sides, c.11m long, 2.8m wide max, and 0.88m deep cutting into the fills of the ditch and the natural below (plate 2). On the north-western side it had probably undermined an old badger burrow causing part of the lower side of the motte to collapse revealing a small area of the motte make-up.

Cleaning up the erosion sections revealed the sequence of ditch fills and showed that the ditch had been cut into deposits of clean sand that extended under the motte itself (plate 14). Similar deposits seen in different sections were given different context numbers until it could be demonstrated that they were the same deposit.

At the base of the sections was a clean friable light to mid brownish grey sand with iron oxide mottling (4006, 4015, and 4027/4020). There was an expectation that the ditch would be deep and defensive in character so it was initially thought that this deposit could be ditch fill. However it was too clean and entirely free from organic matter, making it appear very ancient. Work on exposing the sections also demonstrated that the sand continued under deposits that were convincing as *in situ* parts of the motte. It is therefore almost certain that this sand is a natural deposit, presumably a fluvio-glacial deposit forming a thick well-sorted layer over the boulder clay (plates 16-18).

The position of the erosion sections did not allow a profile of the ditch [4007/4029] to be seen and only one short section gave a good impression of the edge of the ditch. This showed a fairly steep side, although much of that was composed of the edge of the motte material. It appears that much of the ditch was created not by cutting down but rather by building the motte and the southern bank up. Little of the base of the ditch was seen apart from in one section where it appeared to be flat over all but with very prominent undulations. These were probably caused by people walking in the soft deposits in the base of the ditch and pushing up some of the natural deposits.

In the base of the ditch there was a thin deposit (4005/4015), about 0.15m thick, of light grey brown loamy sand. This may have been the start of the development of a turf layer before the ditch started filling in. Most of the ditch was filled by a soft very dark grey brown silt with abundant organic matter (4004, 4014, 4011, and 4030). This had clearly built-up in waterlogged conditions. Sealing this was a sequence of brown silts and silty sands that had eroded from the motte (plates 16-18).

The composition of the motte itself was only seen in a small area and here a layer of grey brown silt (4019) with small cobbles was overlaid by a light yellowish grey sand with occasional larger stones (4018) (plate 15). Between these was a brownish-grey silt with no stones (4024), which resembled a buried soil. This may indicate a pause in the construction of the motte but might be better interpreted as a lens of turf that is part of the construction or that had collapsed from the side of the motte during construction. The sandy deposits forming the motte support the idea that the natural sand running under the site was used in its construction.

3.5. Finds

Very few finds were recovered from the site. Occasional sherds of post-medieval pottery from the topsoil were not retained, as they were considered to be of minimal archaeological value. As metal-detecting had not been proposed in the scheduled monument consent it was not possible to carry out a metal-detecting survey of the possible bailey area, but a metal-detector was used to recover metal objects from the spoil excavated from trench 1.

Seven iron objects were recovered from the topsoil and ploughsoil in trench 1 by metal detecting. These weigh a total of 284g and include 3 large hand-made nails (figure 23). As these are from the topsoil it is impossible to say if the nails originate from a structure nearby, a structure on the motte or whether they have been introduced in manure and could have come from Tŷ Newydd or other buildings in the area.

Arrowhead (PRN 59865)
By George Smith
A leaf-shaped arrowhead (SF01) was recovered from the ploughsoil (3002) in trench 3 ((SH34703833) see figure 18 for find location). It was found just adjacent to animal burrow [3006] and had probably been moved from its original location by burrowing, but the original location must have been close by. There were no features in trench 3 that could be associated with the arrowhead.

The leaf-shaped arrowhead is made of yellow-brown flint, 26mm long, 17mm broad and 2.5mm thick (figure 23). It is finely worked with shallow invasive, all-over, bifacial pressure flaking. No original cortex or primary flake surface remains. Parts of the edges have fine abrupt secondary flaking or rubbed edges to finish the shaping. The tip has been broken off by a clean snap break and the break has the same patina as the rest so probably is as old as the arrowhead itself, rather than more recent. The break is probably not an impact fracture so possibly accidental and not deliberate as some flake facets are truncated by the break and there has been no secondary flaking after the break occurred. The arrowhead would have been about 35mm long originally.

Artefacts of yellow-brown flint occur frequently in Mesolithic and Neolithic material from Llŷn and must derive from pebble flint available locally. This piece is very fresh and suggests that it had not been subject to surface exposure or to plough damage prior to being found. Arrowheads often occur as isolated examples, presumably through loss, or as broken examples, presumably discarded. The lack of other pieces of flint here suggests that this is an isolated loss, rather than part of settlement activity.

Leaf-shaped arrowheads are type artefacts of the Early Neolithic although examples have been found in Early Bronze Age contexts. Similar examples have been found at Early Neolithic chambered tombs on Anglesey and in Ardudwy and in an Early Neolithic settlement at Parc Bryn Cegin, Bangor. The shape of this example is the commonest type of leaf-shaped arrowheads and it falls midway in the overall size and shape class of recorded leaf-shaped arrowheads and the class 3B as described by Green (1984, 20-24). It is slightly on the small size of the mean and Green has recognised that smaller examples are commonest in Western Britain, probably as a result of the reliance on smaller pieces of raw material there (Green 1980, 67-68).

4. DISCUSSION

4.1. The motte and ditch

The topographic survey has improved the representation of the motte as existing OS surveys show a circular motte with a concentric ditch. The Royal Commission (RCAHMW 1964, 82) accurately noted the “large hollow excavated on the N.N.W.”, rather than a concentric ditch of even width. Their interpretation of this hollow as a quarry for the motte is almost certainly correct. The slope of the hill would enable a ditch/quarry dug on the uphill side to supply enough material for the motte, and probably for the bank was well. By using the sloping ground less material would have been needed to create the motte as *in situ* material could be used for much of the height of the motte on the uphill side. This means that the ditch on the downhill side would not have had to be very deep, if it was needed at all.

The underlying bedrocks of this area are Ashgill Rocks; mudstones, siltstones and sandstones, but more importantly the superficial deposits are Quaternary tills, including “outwash sand and gravel deposits from seasonal and post glacial meltwaters” (Geology of Britain Viewer). Much of this part of the peninsula is covered by these deposits but they are very variable. The motte seems to have been deliberately located on a pocket of sand, making construction as quick and easy as possible.

The quarry hollow was converted into a ditch or even a moat by the addition of the bank on the southern and western sides. The present author has doubts about the date of bank and whether there was a complete ditch or moat around the motte when it functioned as a defensive site. The bank is essentially a dam and there is nothing to prevent attackers breaching it on the southern side and draining the moat, which in any case would not have been deep, making it seem a poor design defensively. Also only a recent, narrow, straight bank joins the main bank to the higher ground to the north, and then only after a gap (figure 3). The vegetation cover makes it difficult to search for an earlier bank continuing through here but none could be seen.

It is peculiar that the bank on the western side of the monument extends into the level area to the west, possibly a lawn, instead of this being designed around the monument. It almost appears that the eastern boundary of this possible lawn was designed to exclude the motte from the garden then, later, the bank was built over part of that

boundary, causing the whole monument to be included as part of the garden. The construction of the bank with the inflowing field ditch would lead to the creation of a water filled moat around the motte. It seems likely that the current breach in the southern side of the bank was originally an outflow, possibly with a sluice to control the water level. The gap between the western end of the main bank and the narrow bank would provide access from the garden to the moat. Mrs Jones of Murmur y Nant, who has lived near the site all her life, remembers stories of the ditch holding water and of small boats being used on the moat. However the OS 25 inch maps from 1st (1889) to 3rd (1918) edition show trees growing on the ditch, so it was not a water-filled moat at that time. It seems likely that a water-filled moat was a garden feature for Tŷ Newydd, and it is possible that the bank was originally constructed for that purpose rather than part of the original defences.

Tŷ Newydd is recorded on the OS card (OS card SH33NW13) as a late 17th century house with later additions but the Royal Commission suspect that it is the remains of, or replacement for, a larger house, which originally extended further east, making it centrally placed in relation to the gardens (NPRN 16971). The first reference to the name 'Y Tuy Newydd', comes in 1648 from a marriage settlement, and the house was certainly on the current site by 1682 as a date stone with that date has been found in the house (Williams 1999). The square garden immediately to the south of the house might be the remains of a 17th century formal garden but the wider gardens appear more 18th century in style and it is within these that the moat might fit. A list of books belonging to Owen Lloyd junior, dating to 1690, includes 6 books on plants and gardening, suggesting that he was interested in gardening. He was about 20 when he left Tŷ Newydd to study in London, so possibly he had a hand in redesigning the garden in his youth. He only lived in Tŷ Newydd for a year after returning from London before moving to Bangor and then living in Llanllyfni (Williams 1999 and pers. com.). He therefore had little chance later in life to have created the garden. Whether Owen Lloyd was responsible for a formal garden at Tŷ Newydd or not his involvement with the house seems too early for him to have been responsible for creating the moat as part of an 18th century-style romantic garden landscape. The date this occurred, if indeed it is correct to see the bank as a later addition, is therefore unknown.

The current works have provided no dating evidence for the motte itself and its history is unclear. The history of this site has been considered in detail by Jamie Davies (2013a and b). He discovered an unpublished document in the RCAHMW archive suggesting that the site was occupied by one of the native elite of the area in the 12th or 13th century and proposing there may have been a timber dwelling on the site as a predecessor to Tŷ Newydd (the New House). It is still possible that some of the anomalies identified on the resistivity survey are the remains of a timber building, and that feature [1009] from the present excavation is a beam slot related to this. However the present work has been unable to prove this.

The motte itself is typical of the Norman period and although it may have been used later it is likely to have been constructed in the late 11th century. Davies concludes that it was unlikely to have been constructed during the week long raid of the Normans into the Llŷn Peninsula in 1075, which is the only documented record of Normans in the area (Davies 2013b, 98). He considers that the motte is likely to date from the 1081-1093 occupation by the Normans of north-west Wales, but it is also possible that the style of castle was rapidly adopted by local lords and that it was built then as a defence against the Normans or against other native lords. The sands on which the motte is build would have made its construction easy and fast, so it is possible that it was built quickly and used for only a short period in response to rapidly changing local conditions.

4.2. The proposed bailey

The evaluation trench failed to find a defensive ditch as would be expected if the land to the east of the motte held a bailey. In fact it suggested that the potential ditches detected on the gradiometer and resistivity surveys were not ditches but the remains of infilled palaeo-channels of probable late ice age or early post-glacial date. Certainly the main linear anomaly detected in the resistivity survey (figure 7 (12)) is produced by a channel of this type. The earthwork visible on the ground surface is best explained as the boundary of a small field enhanced by ploughing into a lynchet. The anomaly proposed as a possible southern boundary to a bailey on the resistivity survey does not correspond to any feature on the ground, which here is sloping away quite distinctly to the south. Some of the linear features identified inside the area also seem to fit awkwardly to the slope of the ground and the existing earthworks. The evidence from the evaluation trench suggests that these are not genuine archaeological features, but are probably geological. However the presence of some building remains cannot be ruled out. The fact that the gully [1009] aligned with one of the resistivity anomalies could possibly indicate that it was part of a large structure but might be most likely to indicate that these are agricultural furrows running across the site. The gradiometer survey picked up similar anomalies that are probably furrows or ploughmarks running almost at right angles, suggesting at least two phases of cultivation in this area. The strong magnetic

signal picked up across this area by the gradiometer is likely to correspond to the orange, iron rich silt (1003) seen in the base of the trench.

It must be concluded that this work has disproved the existence of a bailey on this side of the motte and makes the existence of remains of undefended buildings less likely.

Trench 3 has located the possible reason for the report of a cobbled surface to the east of the motte. While the stone deposit does not appear to be a cobbled surface a much wider area would need to be excavated to be sure of its nature and origin, whether natural or man-made.

4.3. Other features

While there may not be a bailey in the field to the east of the motte there does seem to be remains of at least two phases of field systems. The scarp initially thought to define the bailey and another sub-rectangular scarp to the east are suggestive of small rectangular fields typical of Iron Age farming. The possibilities of these being early is supported by the traces of ridge and furrow seen on the Lidar data running right across these, not respecting their boundaries (figures 9 and 10). These early fields may be related to the sub-oval enclosure (PRN 59863), which is possibly Iron Age in character.

These ridges and furrows are probably medieval. Certainly the north-west to south-east ridge and furrow in the eastern part of the modern field is very suggestive of a medieval date. Many of the north-west to south-east field boundaries in this area appear to enclosed groups of ridges and preserve their alignment. The geophysical survey detected another boundary on the same alignment in the field to the north of the motte (figure 5, (4)). Further support for an open field in this area is given by the name of a farm to the south-east being called Llain-goetre. “Llain” is a term meaning “strip” used to refer to arable strip fields. There appears to have been open strip fields in this area, and although it is presumed that they are later in date than the construction of the motte, it is not impossible that these fields were first set out when the motte was in use, largely obliterating remains of earlier “celtic fields”.

4.4. Future research

A soil monolith in a kubiena tin 20cm long was taken from the motte ditch to include layers 4014, 4015 and 4016. Two additional samples were taken in smaller tins from layers 4014 and 4015 (figure 22). Bulk soil samples of 10 litres each were taken from the same layers. Layer 4014 is one of the main ditch fills, 4015 is a possible buried soil in the base of the ditch and 4016 is the natural sand that the ditch was cut into.

It is recommended that these soil samples are analysed for pollen and plant macrofossils by James Rackham of the Environmental Archaeology Consultancy. Although the larger monolith was taken with the aim of carrying out a soil micromorphological study Rackham considers that this would be unlikely to give any useful information.

The two bulk samples would be processed and assessed for plant, insect and other biological remains, possibly even parasite eggs from faecal material dumped into the ditch.

The pollen would be sampled from the two small kubiena tins, which have been wrapped in cling film to keep them moist, and stored in the fridge to maintain pollen preservation.

The value of both the bulk samples and the pollen rather relies on the ability to date the deposits. Broadly dated deposits have some value, but if the motte ditch has been dug out and cleaned in the past and the deposits could be of any date over the last few hundred years then the results may not be worth the cost of analysis, particularly if the ditch floor has been disturbed by trampling. The possibility, discussed above, that the ditch is a fairly recent addition to the monument also means that analysis of the deposits may not be justified. It is therefore recommended to obtain a radiocarbon date on selected organics from the samples. The pollen and bulk sample analysis would only be carried out if the date falls within the medieval period. However the pollen analysis may also be of assistance in dating the ditch, especially if it is late as the pollen of introduced species might be present.

Further work could valuably be done in the area without expensive excavation. A small trench to investigate the stone deposit found in trench 3 would be useful. A full topographic survey of the entire field to the east of the motte would help place the motte in its context. This field has various subtle earthworks, some of which can be seen on the Lidar data, as described above, including the remains of a probable medieval field system. These and the oval enclosure (PRN 59863) would be worthwhile recording in detail. Geophysical survey of this enclosure might indicate whether it is a settlement and a small excavation trench could clarify its date.

5. ACKNOWLEDGEMENTS

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Aerial photograph from Cardiff Aerial Photography Unit
Sortie 4535 (original sortie number 106G/UK 664), frame 3134, date 14th August 1945

7. APPENDIX I: Relevant NMR and HER records

7.1. List of sites on figure 1

HER

PRN	Site Name	Type	Period
439	Inscribed Stone, Holy Cross Church, Llannor	Inscribed Stone	Early Medieval
1532	Tŷ Newydd Motte and Bailey Castle, Llannor	Motte And Bailey	Medieval
1534	Standing Stone, Tir Gwyn	Standing Stone	Bronze Age
2264	Holy Cross Church, Llannor	Church	Medieval
3651	Flint Flakes, Findspot, Cae Maenhir	Findspot	Prehistoric
4383	Enclosure, W of Mela, Llannor	Enclosure	Prehistoric
6472	Bodfel Township	Township	Medieval
6532	Penmaencybi Medieval Township	Township	Medieval
6540	Penmaencyfail Medieval Township	Township	Medieval
7029	Llannor Parish Church	Church	Medieval; Post-Medieval
7312	Early Christian Burials, Llannor	Burial	Early Medieval
11939	Bodfel Hall, Boduan	Building	Post-Medieval
12271	Llanerch	Building	Post-Medieval
12586	Mela, Hay Barn	Building	Post-Medieval
35997	Tŷ Newydd Gardens, Llannor	Garden	Post-Medieval
35998	Pond and Leat, W of Tŷ Newydd	Pond	Post-Medieval

NMR

NPRN	Site Name	Type	Period
7017	Llannor Chapel (Bethania; Welsh Calvinistic Methodist)	Chapel	Post Medieval
7018	Pentre-Uchaf Calvinistic Methodist Chapel (Pentreuchaf), Pentre-Uchaf, Pwllheli	Chapel	Post Medieval
16971	Tŷ Newydd	House	Post Medieval
26047	Bodfel Hall, Llannor	Gatehouse	Post Medieval;17th Century
26705	Llanerch	House	Post Medieval?
31400	Mela, Hay Barn	Barn	Post Medieval?
86287	Bodvel Hall, Garden, Pwllheli	Country House Garden	Medieval?
86390	Gwninger; Cwning Gaer, Garden, Boduan	Country House Garden	Post Medieval
86507	Tŷ Newydd, Gardens, Llannor	Country House Garden	Post Medieval
301081	Holy Cross Church, Llannor	Church	Medieval; Post Medieval
302309	Y Mount	Motte	Medieval
308088	Tir-Gwyn, Standing Stone II (N)	Standing Stone	Bronze Age
402183	Mela, Cropmark enclosure west of	Enclosure	Unknown
406787	National School, Llannor	National School	Post Medieval
408479	Cottage Near Tŷ Newydd, Llannor	Cottage	Post Medieval
411677	Melin Llannor, Site of	Corn Mill	Post Medieval
417636	Hen Siop, Llannor	Building	Post Medieval

7.2. Details of sites at Tŷ Newydd

NMR
NPRN 16971: Tŷ Newydd, Llannor
Period: Post medieval
Thought to be a l.17th C. house with later additions. (source Os495card; SH33NW13)
The scale of the house does not seem appropriate for the extensive gardens that can be associated with it (Nprn86507). AP's (RCAHMW AP965035/46) appear to show traces of a larger structure immediately to the E, centrally placed in relation to the garden enclosure on the S (OS 1891). RCAHMW AP965035/45-6, J.Wiles 22.09.03

NPRN 86507: Tŷ Newydd, Gardens, Llannor
Period: Post medieval
1. An area of former gardens, c.170m E-W by 120m, to the S of Tŷ Newydd.
OS 1891 depicts a square enclosure, c.30m across, traces of which can be seen on AP in a pasture field (RCAHMW AP965035/45-6), immediately S of what may have been the site of a now vanished mansion (see Nprn16971). This axis is extended by an apparent open swathe through the wooded area, further to the S. The area around the motte (Nprn302309), on the SE, may have been included in the garden area. J.Wiles 22.09.03
2. This garden is depicted on the Second Edition Ordnance Survey 25-inch map of Caernarvonshire XXXII, sheet 15 (1900). Its main elements on that map include woodland, possible formal garden, walled garden and a possible viewing platform. C.H. Nicholas, RCAHMW, 10th August 2006.

NPRN 302309: Y Mount, Llannor
Period: Medieval
A ditched motte, c.27.4m in diameter and 6.1m high, having a summit area 8.0m in diameter. The ditch, counterscarped on the S, may have been wet. A cobbled area, c.40m ENE, may indicate the site of buildings. (source Os495card; SH33NW5)
This feature may have been involved in Tŷ Newydd park/gardens (Nprn86507). RCAHMW AP965035/45-6, J.Wiles 22.09.03

NPRN 402183: Mela, Cropmark enclosure west of
Period: Unknown
Cropmarks of a sub-circular ditched enclosure, about 50m in diameter, showing possible internal features, or structures. Source: Ward & Smith 2001 (Stud. Celt. 35), 1-87 [No.7].

NPRN 408479: Cottage near Tŷ Newydd, Llannor
Period: Post medieval
The cottage near Tŷ Newydd is a small, stone-built, one-and-a-half storey cottage. Modern mapping seems to indicate that it has been demolished. S.L. Evans RCAHMW 2008

HER
PRN 1532: Tŷ Newydd Motte and Bailey Castle, Llannor
Period: Medieval
Y Mount, SE of Tŷ Newydd, a motte at about 200ft above O.D. on ground falling gently to the SSE. A large hollow was excavated on the NNW furnished material for the motte and for a bank on the South and lower side to retain water from a small stream in the moat. It has a modern breach for drainage. No outworks can be traced nor an entrance, but a cobbled area is reported in the field to the east. (RCAHMW 1964, 82)
No change. The cobbled area to the east is not visible on the ground but the centre of it at SH34703832 was indicated by Mr J. Gwilym Jones, Mrs L .Williams. Published survey revised (25"). OS card SH33NW 5
No change. OS card SH33NW 5

PRN 4383: Enclosure, W of Mela, Llannor
Period: Prehistoric
Enclosure, roughly circular but probably not a ring ditch, visible as a dark-green parch-mark (ditch) in fields apparently grazed by sheep: dry-ness of surrounding area suggests it may be on a slight rise. Recognised and photographed by Musson and Thompson, 25/07/90.

PRN 35997: Tŷ Newydd Gardens, Llannor
Period: Post medieval

Walled garden and woodland shown on early OS maps. Motte and bailey perhaps incorporated into the garden (PRN 1532). (Ordnance Survey 1889, 1900 & 1918)

8. APPENDIX II: List of contexts from the Tŷ Newydd excavations and recording

8.1. Trench 1

Context no.	Type	Description	Interpretation
1001	Layer	Dark grey sandy silt with few stones	Topsoil
1002	Layer	Mid brown sandy silt with occasional small stones	Ploughsoil
1003	Layer	Friable orange-brown silt with occasional stones	Natural loess-like silt deposit, periglacial
1004	void	Renumbered as 1022	
1005	void	Renumbered as 1021	
1006	Layer	Stony deposit with very pale yellow-brown silt matrix, with lumps concreted by manganese oxide	Thin layer of stones collecting at base of ploughsoil and mixing with the top of the natural
1007	Layer	Pale grey silt mottled with considerable iron and manganese oxide, which creates very hard concreted lumps	Pale surface of natural silts
1008	Fill	Orange brown silt with occasional stones	Fill of [1009]
1009	Cut	Shallow, straight linear feature with fairly steep sides and flat base. Aligned NE-SW. 1m wide and 0.24m deep.	Probable agricultural feature, or perhaps a beam slot
1010	Cut	Shallow, fairly straight linear feature with gradually sloping sides and fairly flat base aligned NW-SE. NE side very indistinct. Up to 0.9m wide and 0.12m deep.	Shallow gully, probably agricultural
1011	Fill	Orange brown silt with occasional stones and gravel, mottled with iron oxide	Fill of [1010]
1012	void	Renumbered as 2002	
1013	void	Renumbered as 3001	
1014	void	Renumbered as 3002	
1015	Fill	Grey-brown silty sand with occasional small stones. Iron oxide mottling.	Fill of [1016]
1016	Cut	Shallow, rather irregular gully with gradually sloping sides and slightly undulating base. Aligned NE-SW. Up to 0.5m wide and 0.12m deep. Not well defined.	Shallow gully, probably agricultural or natural
1017	Cut	Shallow, straight linear feature with fairly steep sides and flat base. Aligned NW-SE. 0.4m wide and 0.07m deep.	Shallow gully, probably agricultural
1018	Fill	Orange brown silt with occasional stones and gravel, mottled with iron oxide	Fill of [1017]

Context no.	Type	Description	Interpretation
1019	Cut	Small sub-circular cut with tapering base. 0.17m diameter, 0.14m deep	Probable stakehole
1020	Fill	Yellowish grey silty sand	Fill of [1019]
1021	Cut	Straight, fairly steep cut edge facing ENE. No opposite side to the cut.	Lynchet/field edge terrace
1022	Layer	Pale grey-brown sandy silt with occasional stones.	Deposit to ENE of lynchet [1021], relict ploughsoil or alluvial deposit
1023	Structure	Small unworked stones lining land drain [1027]. Line of stones down each side and small capping stones over the top.	Land drain lining
1024	Cut	Irregular sub-circular hollow. 0.10m by 0.08m, 0.10m deep	Not convincing, just soft patch in natural
1025	Fill	Yellowish grey silty sand	Fill of [1024]
1026	Fill	Very firm red-brown silt with mottling and crazing due to ice cracking introducing a very pale silt into the cracks.	Natural deposit, possibly fluvio-glacial silt deposit subjected to periglacial frost action
1027	Cut	Linear feature with near vertical sides and flat base. Aligned NW-SE. 0.35m wide and 0.2m deep.	Land drain
1028	Fill	Soft dark grey sandy silt	Fill of land drain [1027]
1029	Layer	Mottled yellow-brown firm silt with few stones but many concreted lumps of manganese oxide. Crazed with ice cracks.	Natural deposit, possibly fluvio-glacial silt deposit subjected to periglacial frost action

8.2. Trench 2

Context no.	Type	Description	Interpretation
2001	Layer	Dark grey silt with few stones, 0.34m deep	Topsoil/ploughsoil
2002	Layer	Slightly clayey grey silt mottled with iron oxide	Natural deposit

8.3. Trench 3

Context no.	Type	Description	Interpretation

Context no.	Type	Description	Interpretation
3001	Layer	Dark grey silt with few stones, 0.15m deep	Topsoil
3002	Layer	Dark grey silt with occasional stones and considerable amounts of manganese oxide concretions, 0.25m deep	Ploughsoil
3003	Layer	Deposit of stones in grey brown silt matrix. One stone is over 0.5m long and is a sloping flat slab. The other stones are much smaller, no more than 0.2m long, and are sub-rounded.	Stone deposit, too irregular to be a cobbled surface
3004	Layer	Yellow brown slightly clayey silt with iron and manganese oxide concretions	Natural
3005	Fill	Soft orange brown clayey sand with some stones	Fill of [3006]
3006	Cut	Small oval cut with irregular base leading to tunnel (0.12m diameter, 0.12m deep)	Animal burrow
3007	Fill	Soft orange brown clayey sand with some stones	Fill of [3008]
3008	Cut	Small sub-oval cut with irregular base leading to tunnel (0.22m diameter, 0.25m deep)	Animal burrow

8.4. Motte ditch

Context no.	Type	Description	Interpretation
4001	Layer	Thin layer of loose, dark brown leaf mould	Leaf mould (same as 4009)
4002	Layer	Soft light grey brown silty sand	General erosion deposit from motte (same as 4010)
4003	Fill	Mid grey brown sandy silt with occasional stones	Upper ditch fill containing eroded material from motte
4004	Fill	Soft very dark grey brown silt with occasional lenses of sandy loam. Abundantly organic.	Organic rich fill of ditch [4007] (same as 4014)
4005	Fill	Soft light grey brown loamy sand with occasional small stones	Basal deposit in ditch [4007], possible stabilisation layer/incipient turf layer (same as 4015)
4006	Layer	Friable light to mid brownish grey sand with iron oxide mottling	Natural sand deposit underlying motte (same as 4006)
4007	Cut	NW side fairly steep and base probably flat. Up to 0.7m deep	Cut for ditch around the motte (same as [4029])
4008	Cut	Irregular cut with steep sides, c.11m long, 2.8m wide max, 0.88m deep	Erosion channel caused by water flowing in motte ditch

Context no.	Type	Description	Interpretation
4009	Layer	Thin layer of loose, dark brown leaf mould	Leaf mould (same as 4001)
4010	Layer	Soft light grey brown silty sand	General erosion deposit from motte (same as 4002)
4011	Fill	Soft dark grey organic clayey silt	Organic fill of ditch [4029] but mixed with some erosion material from motte
4012	Layer	Red brown clayey silt with some organic matter	Erosion from motte
4013	Fill	Soft mid grey brown silt with occasional pebbles	Slump from motte or upper fill of ditch [4007]
4014	Fill	Soft very dark grey brown silt with occasional lenses of sandy loam. Abundantly organic.	Organic rich fill of ditch [4007] (same as 4004)
4015	Fill	Soft light grey brown loamy sand with occasional small stones	Basal deposit in ditch [4007], possible stabilisation layer/incipient turf layer (same as 4005)
4016	Layer	Friable light to mid brownish grey sand with iron oxide mottling	Natural sand deposit underlying motte (same as 4006)
4017	Layer	Dark brown organic silt	Soily slumped material, probably from badger sett.
4018	Layer	Light yellowish grey sand with occasional stones, sub-rounded cobbles up to 0.25m long	Motte material
4019	Layer	Grey brown silt with small cobbles up to 0.12m long	Motte material
4020	Layer	Yellow brown sand	Natural sand
4021	Layer	Soft red brown silt with few stones	Erosion deposit from motte
4022	Fill	Light grey clayey silt, very mixed with some very organic material and some pale clay	Upper fill of ditch [4029] mixed with eroded material from motte or ditch edge
4023	Fill	Soft red brown organic silt	Fill of ditch [4029]
4024	Layer	Brownish-grey silt with no stones	Thin lens between 4018 and 4019. Possible trace of buried soil or collapsed turf
4025	Fill	Soft red brown organic silt	Fill of ditch [4029]
4026	Fill	Yellow brown sandy silt	Lens of erosion overlying ditch fill
4027	Layer	Pale yellowish grey sandy silt with iron staining	Natural deposit
4028	Layer	Soft mid brown organic silt	Erosion deposit
4029	Cut	N side seems fairly gradual but section cuts at a poor angle through the ditch, flat base	Cut for ditch around the motte (same as [4007])

Context no.	Type	Description	Interpretation
		except there are very pronounced undulations possibly caused by people walking in the soft deposits in the base of the ditch.	
4030	Fill	Soft very dark grey clayey silt, with high organic content	Fill of ditch [4029]

9. FIGURES AND PLATES

Figures

Plates

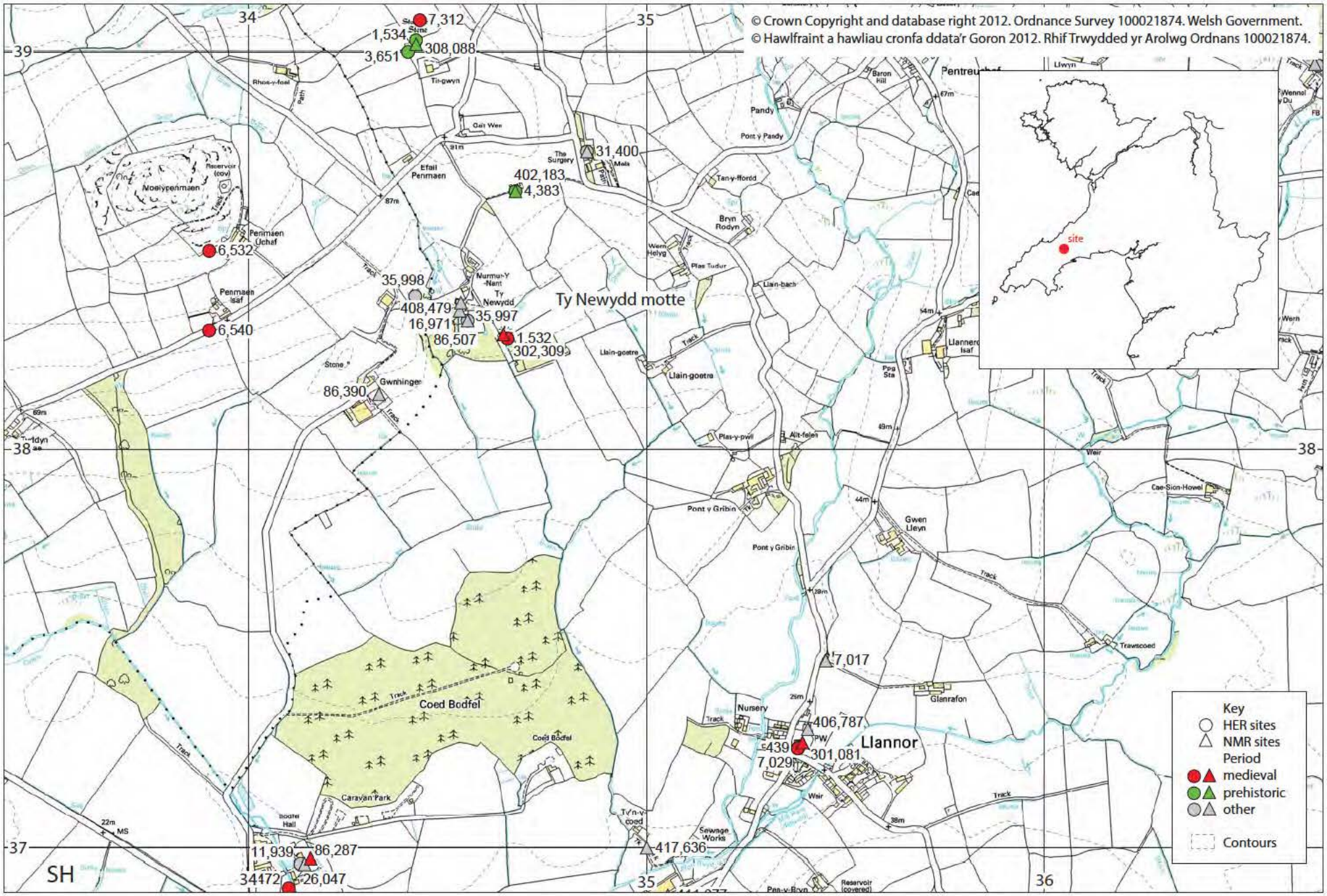


Figure 1. Location of the motte and other sites in the area (see appendix I for list of sites)

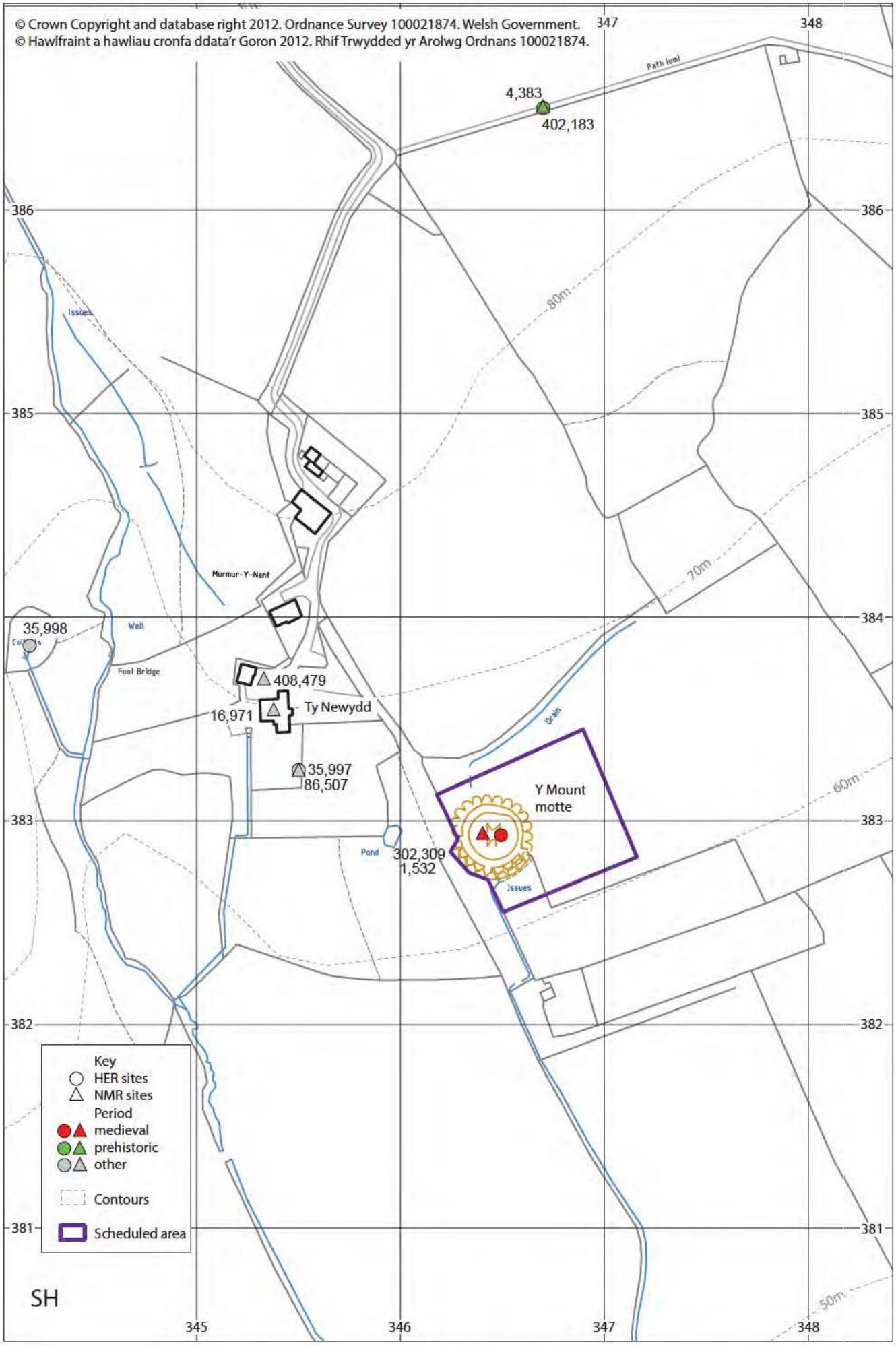


Figure 2. Detailed location of the motte and Tŷ Newydd

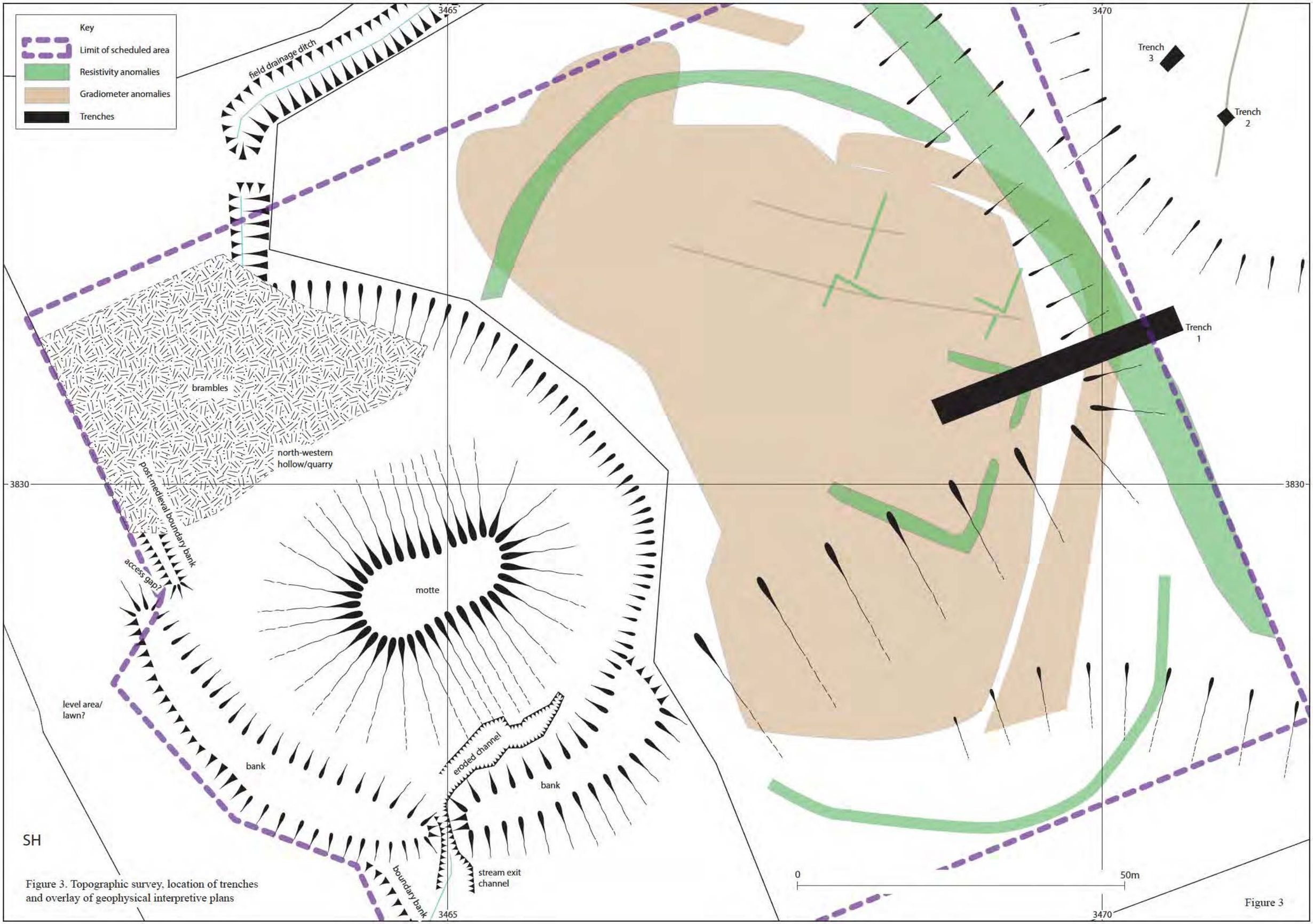


Figure 3. Topographic survey, location of trenches and overlay of geophysical interpretive plans

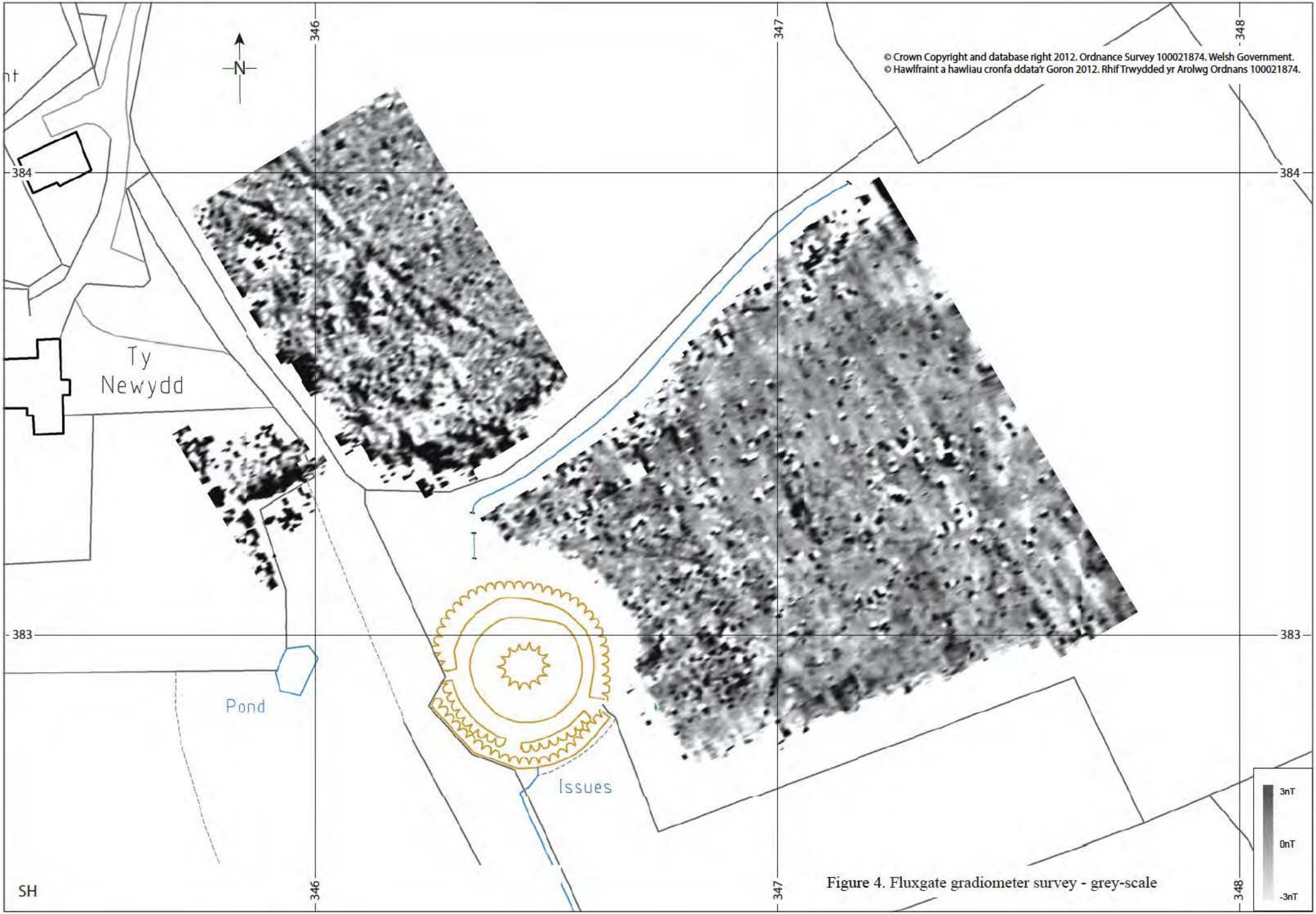


Figure 4. Fluxgate gradiometer survey - grey-scale

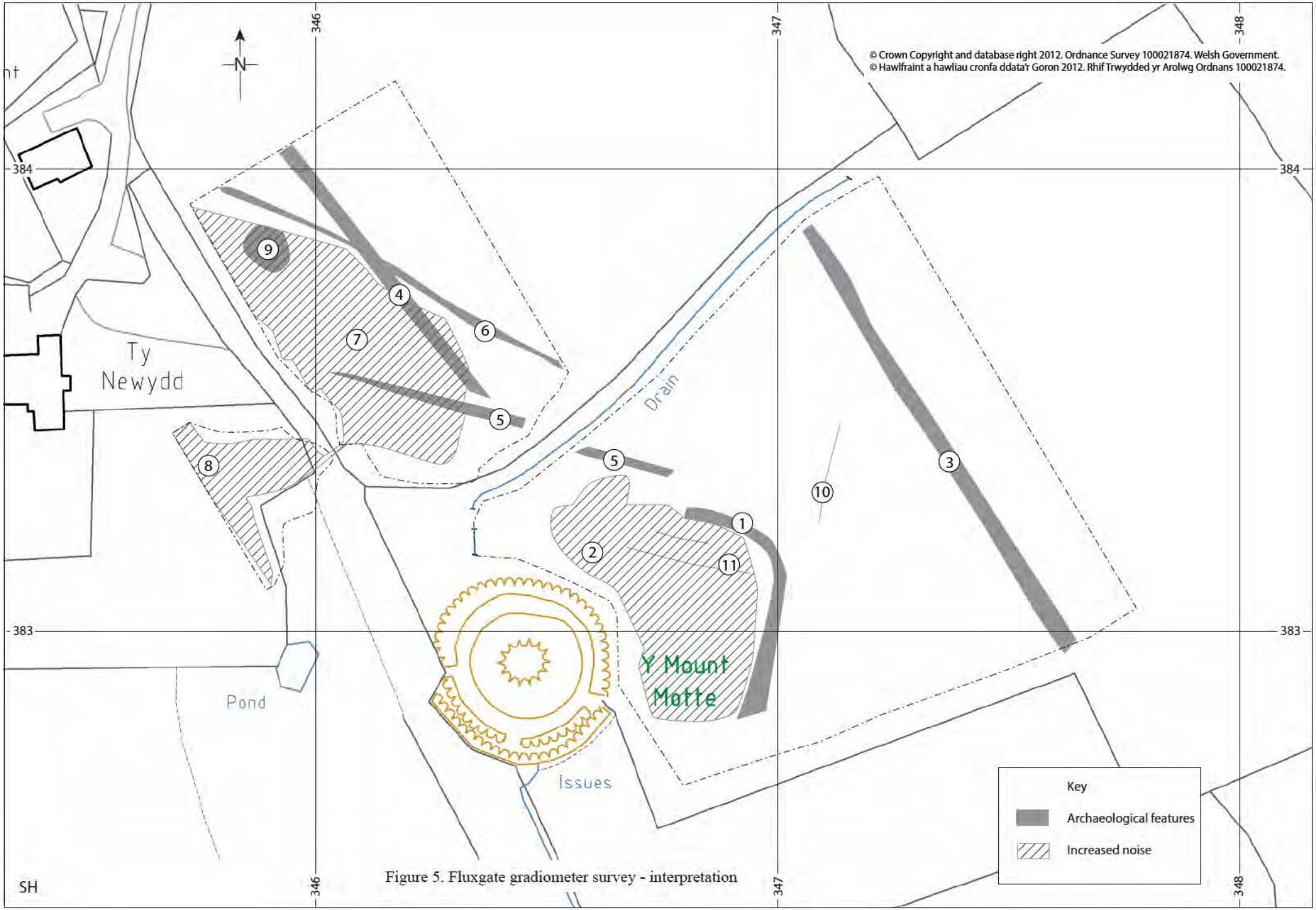


Figure 5. Fluxgate gradiometer survey - interpretation

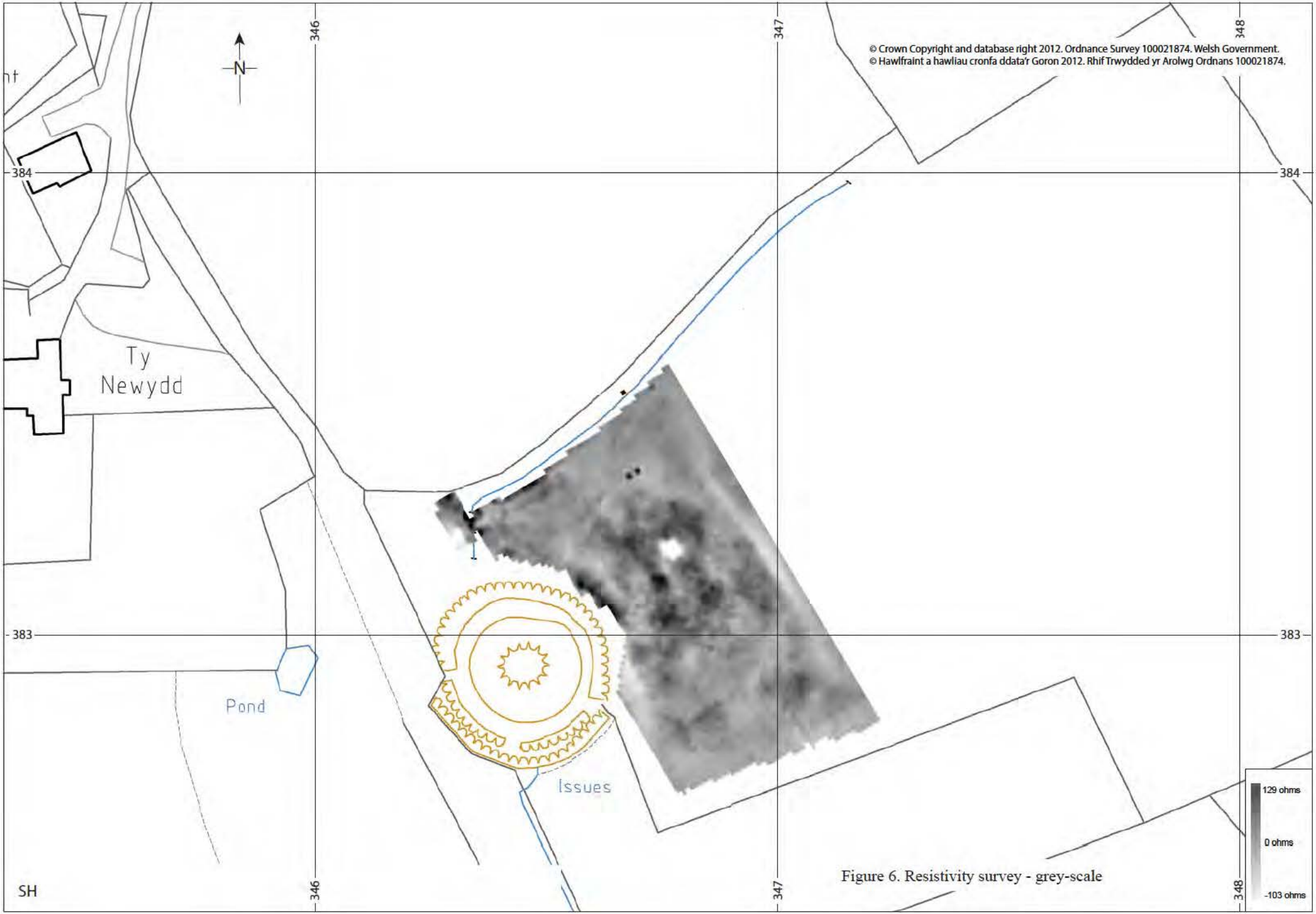


Figure 6. Resistivity survey - grey-scale

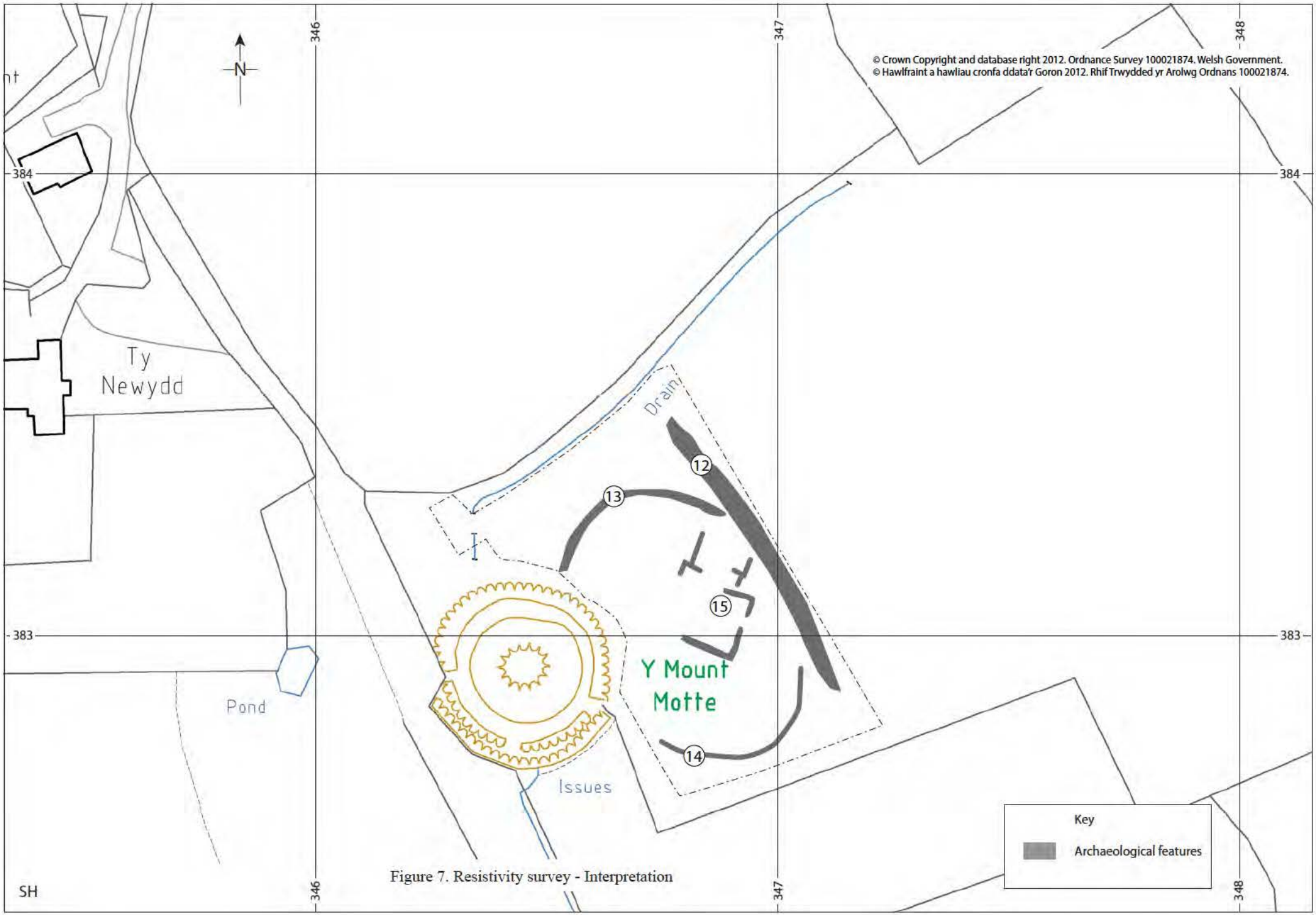


Figure 7. Resistivity survey - Interpretation

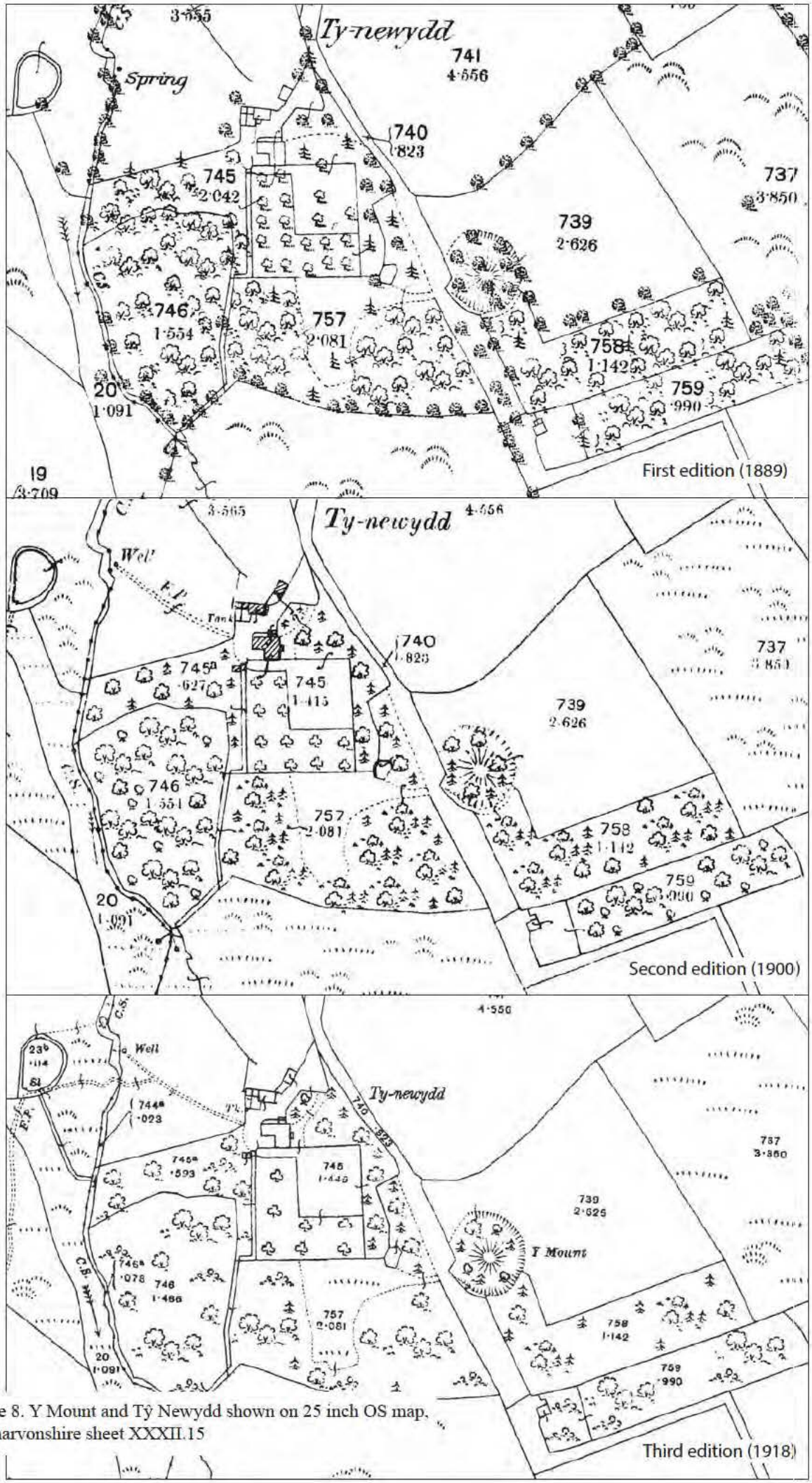


Figure 8. Y Mount and Tŷ Newydd shown on 25 inch OS map, Caernarvonshire sheet XXXII.15

Figure 9. Grey scale version of lidar data with enhanced contrast
© Environment Agency 2014

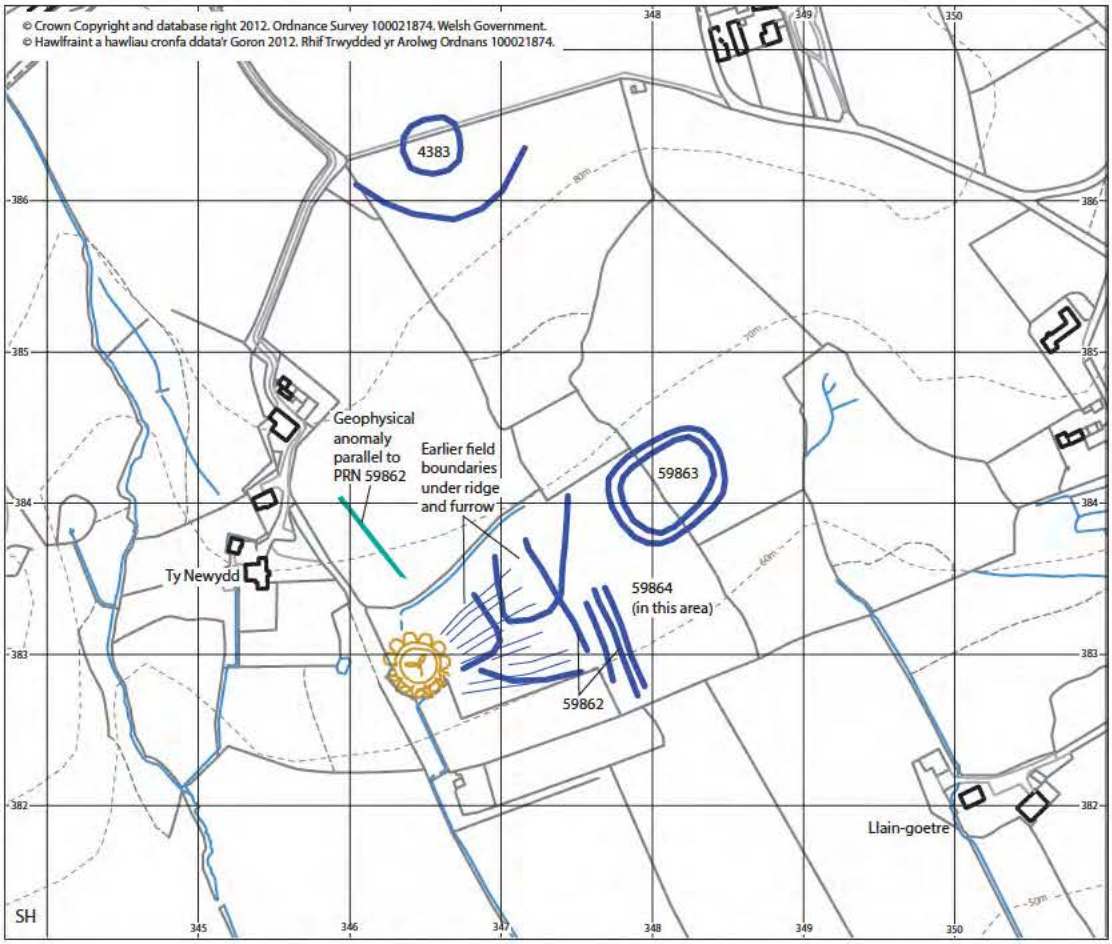


Figure 10. Transcription of lidar data (shown in dark blue).
(The numbers are PRNs referred to in the text)

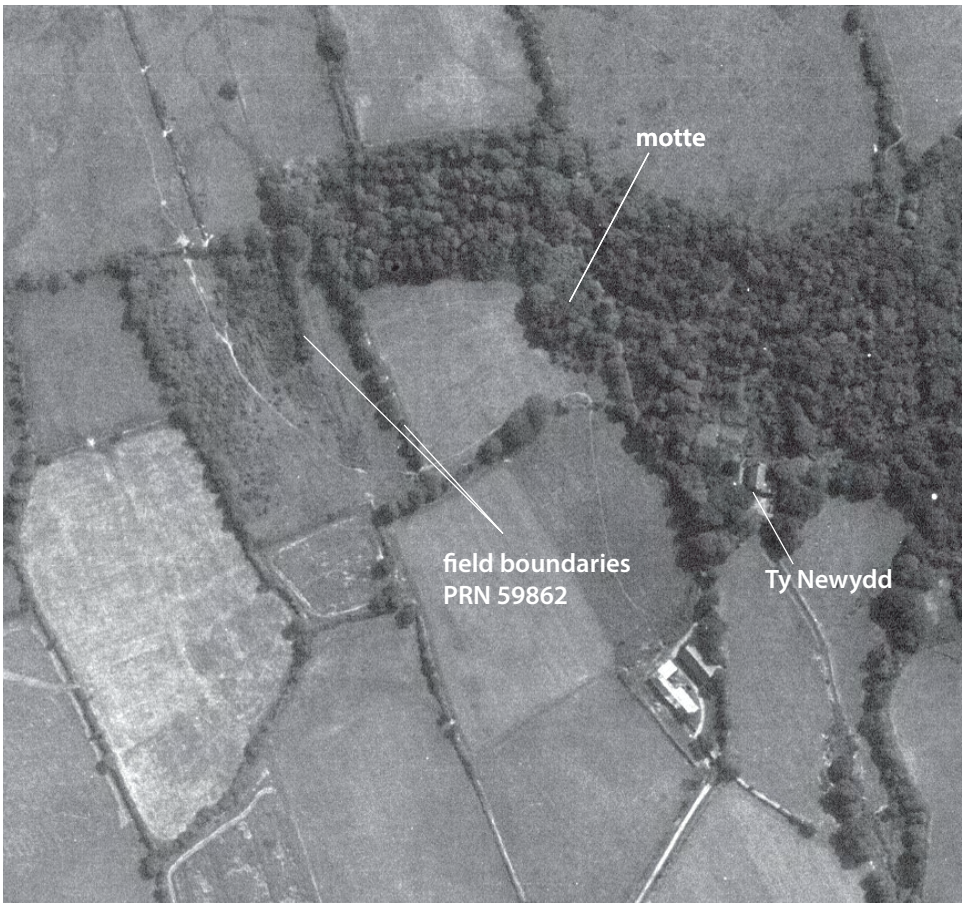


Figure 11. Aerial photograph dated 1945
(Sortie 4535 frame 3134, Cardiff Aerial Photographic Unit)

Figure 12. View of site on recent aerial photograph
(© Next Perspectives. Welsh Assembly Government 2014)

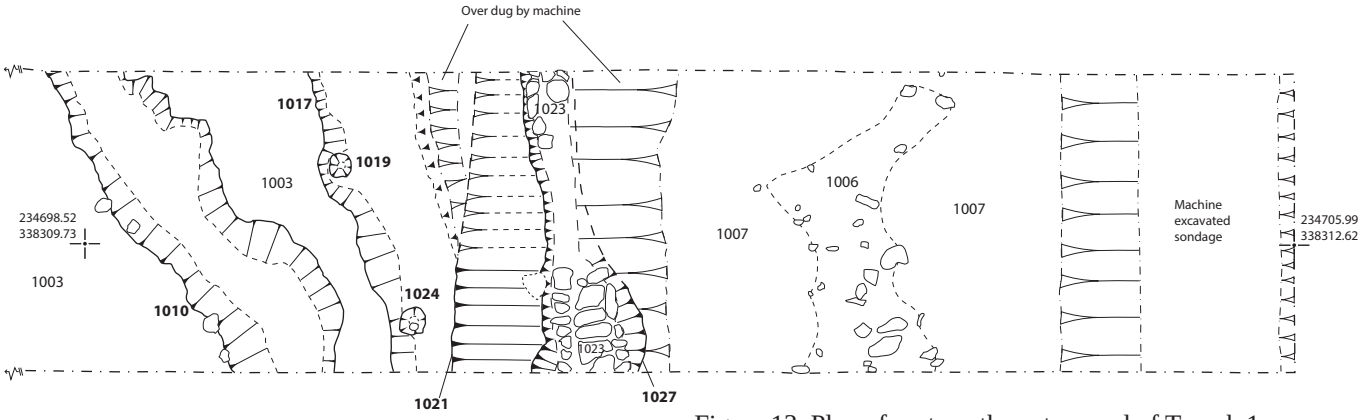


Figure 13. Plan of east-north-eastern end of Trench 1

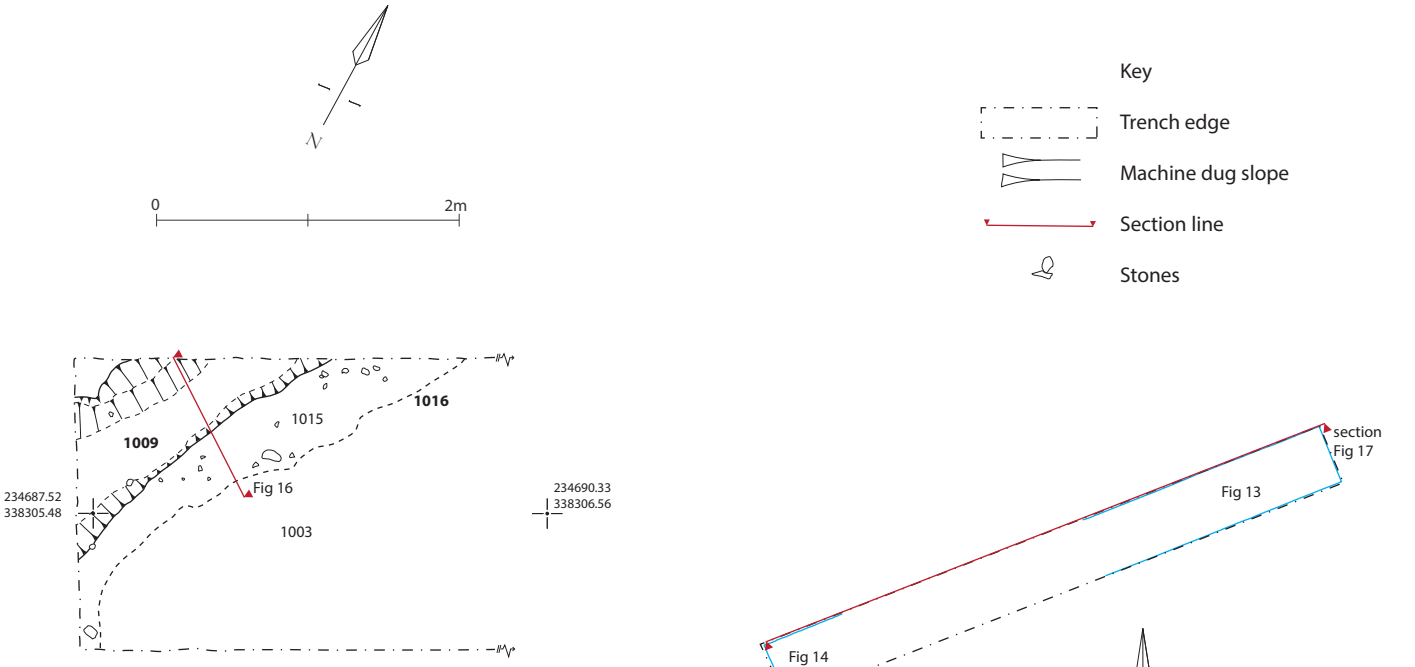


Figure 14. Plan of west-south-west end of Trench 1

Figure 15. Location of figures 13, 14 and 17 in Trench 1

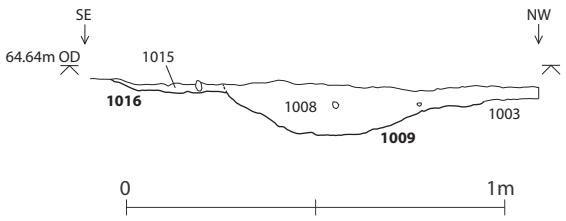


Figure 16. North-east facing section of feature [1009]

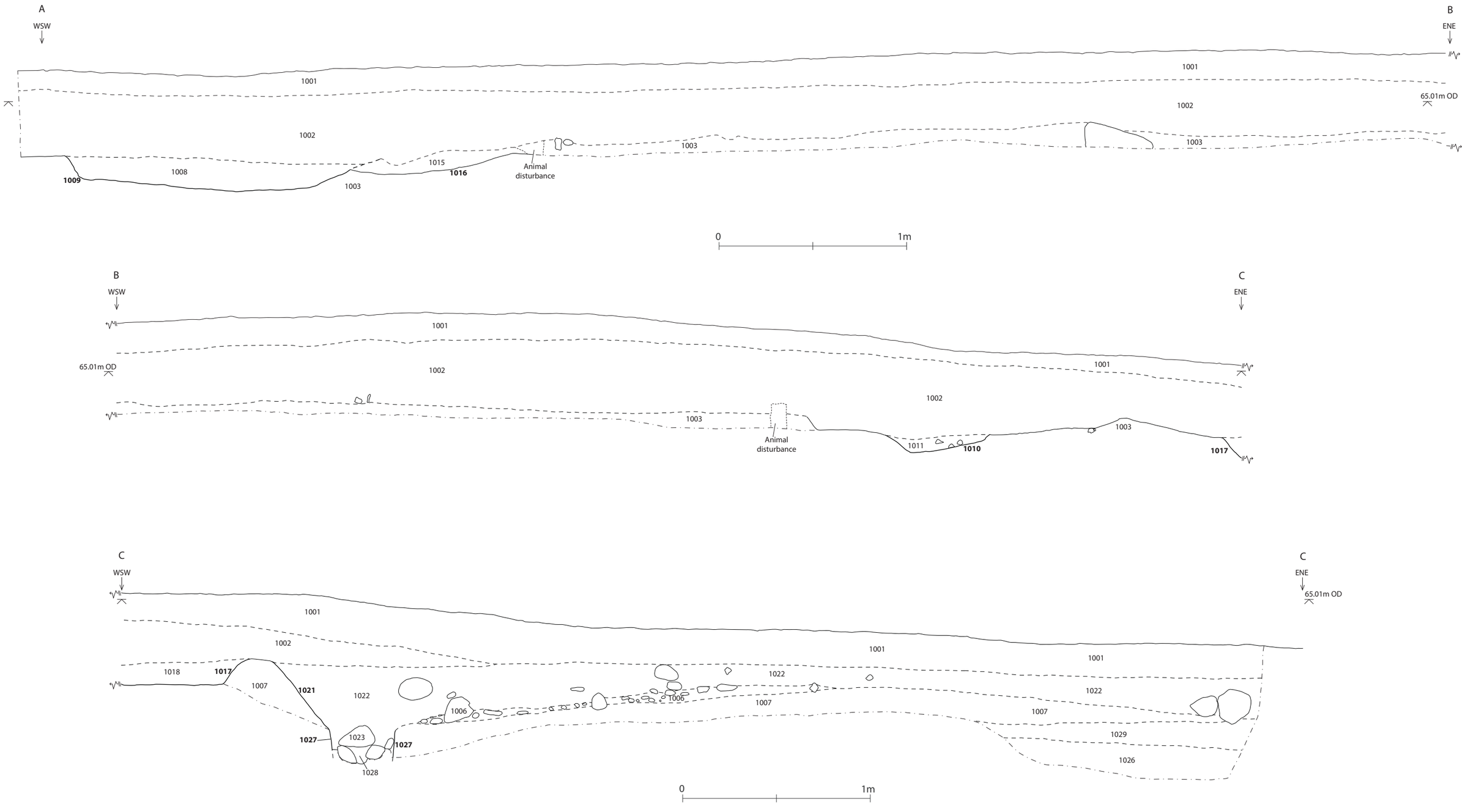


Figure 17. South-south-east facing section of Trench 1

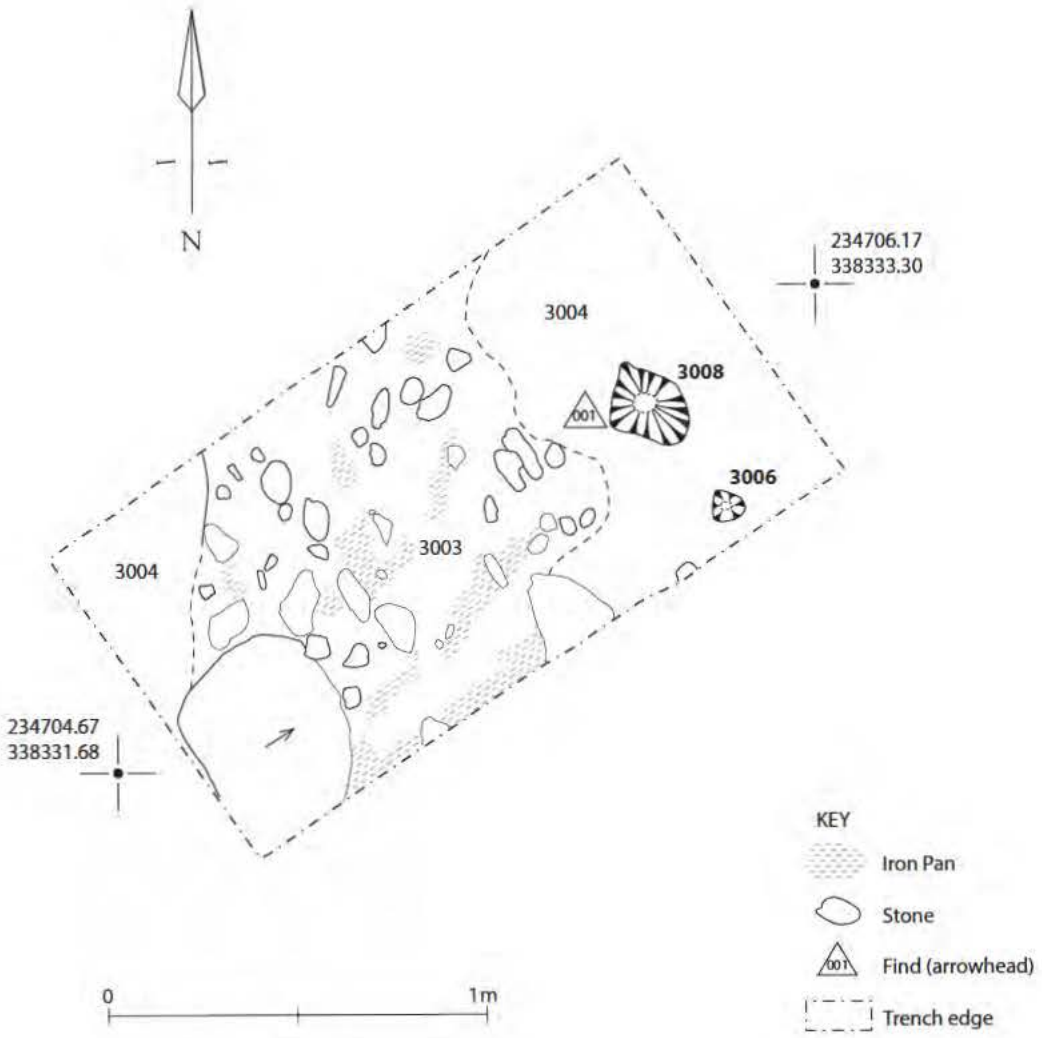


Figure 18. Plan of Trench 3

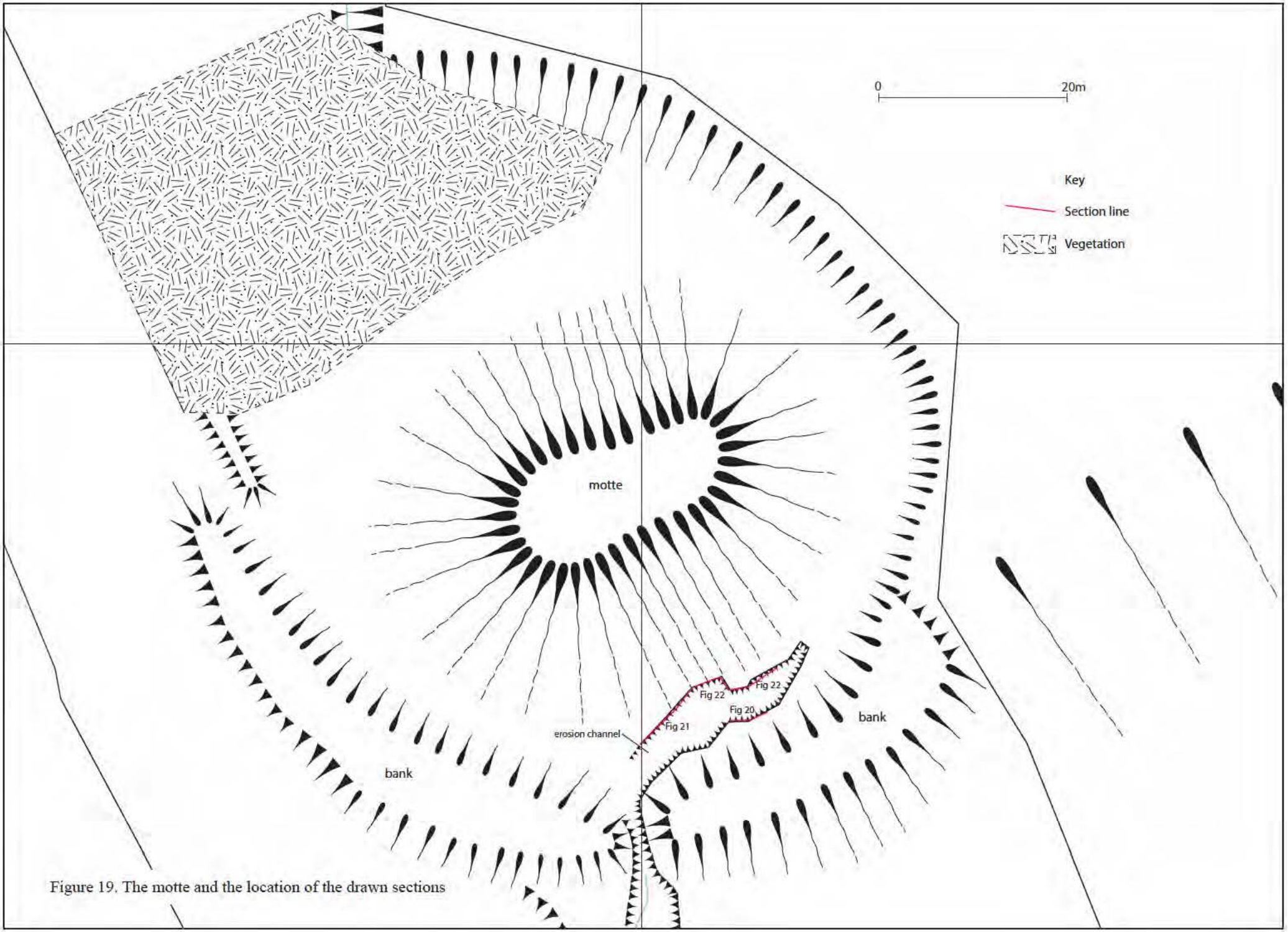


Figure 19. The motte and the location of the drawn sections

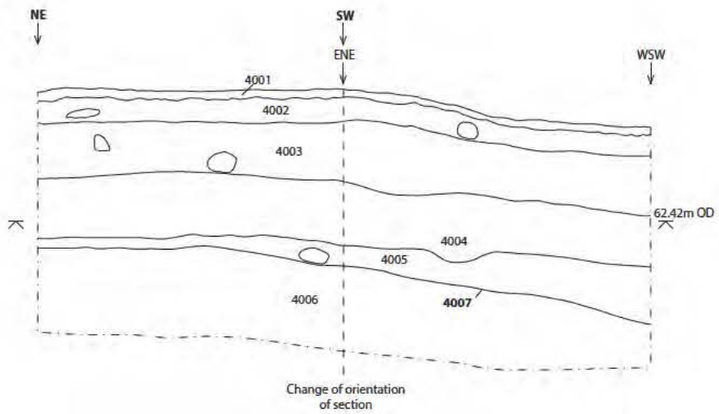


Figure 20. North facing section of motte 'ditch'

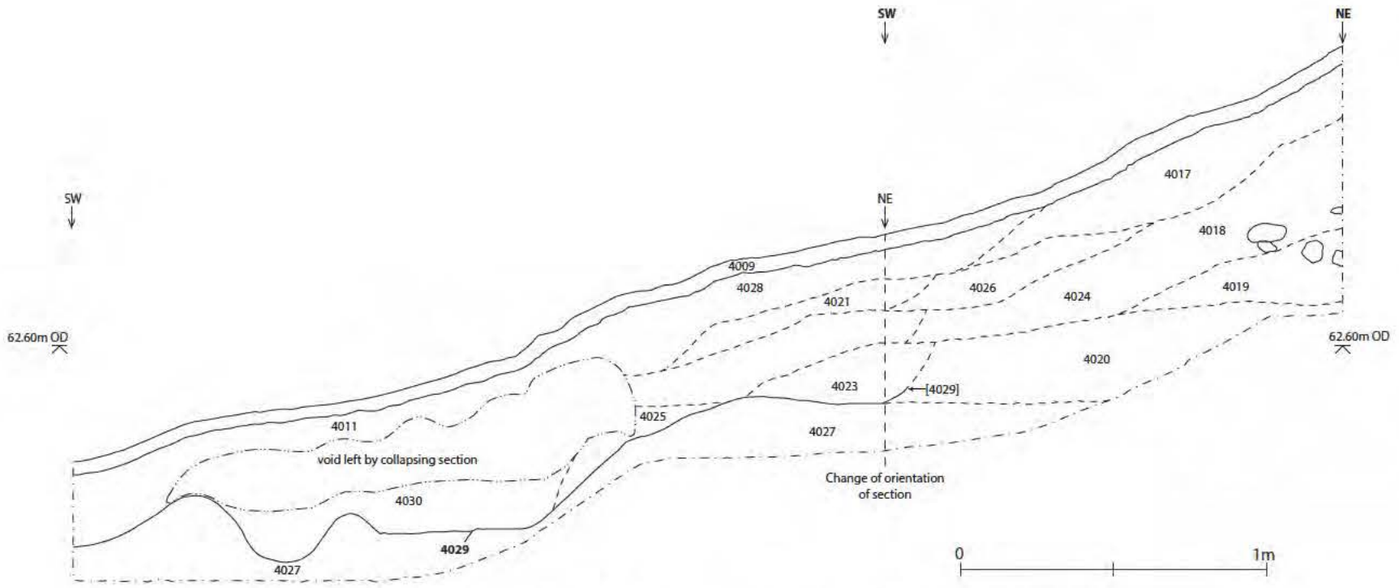


Figure 21. South-east facing section of 'ditch' and motte deposits

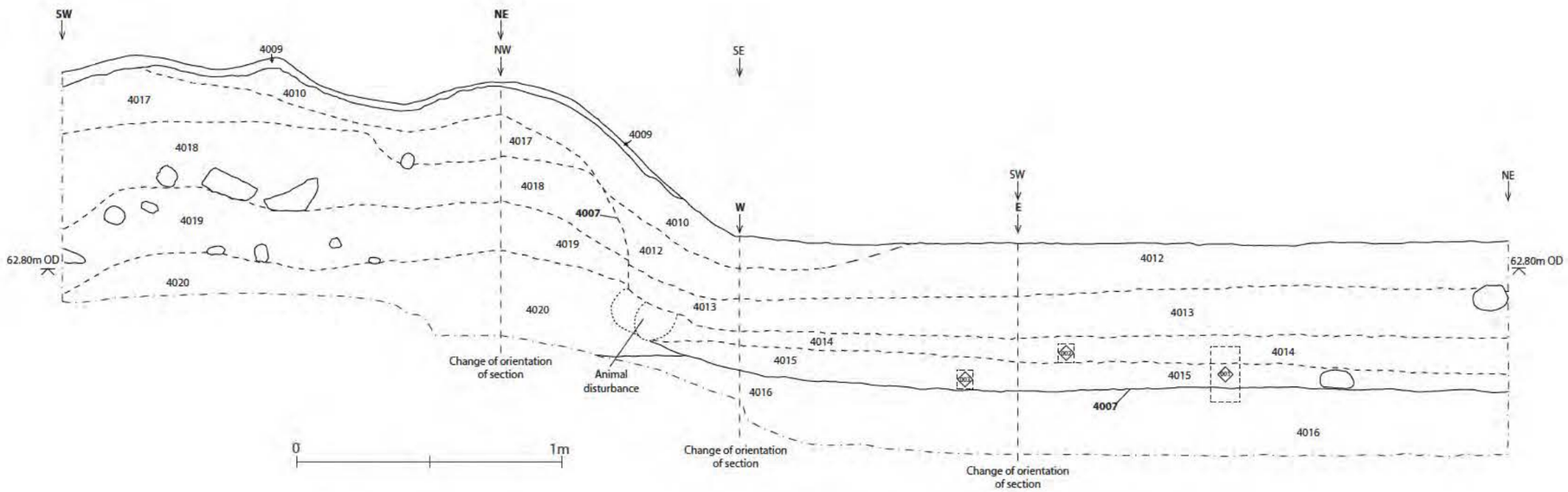
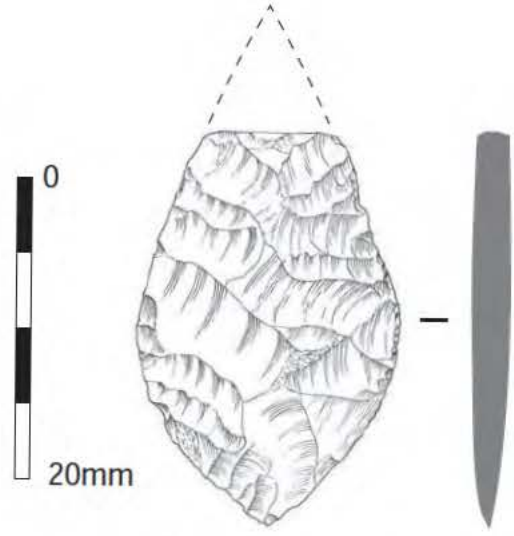


Figure 22. South-east facing and south-west section of 'ditch' and motte deposits

Figures 20 to 22



SF01
Leaf-shaped arrowhead

SF02
Large hand-made nails

Figure 23. Finds from the excavations east of the motte

Plate 1. Motte, ditch and bank on southern side

Plate 2. Erosion channel at foot of southern side of motte

Plate 3. Mini-digger stripping topsoil and ploughsoil from trench 1 under archaeological supervision

Plate 4. Volunteers recording trench 1

Plate 5. Site tour on 18th September

Plate 6. Mounding and ramps on the motte probably all caused by badger activity

Plate 7. Large hollow on north-western side of motte showing vegetation cover

Plate 8. Context (1003), the natural silt over much of trench 1

Plate 9. Context (1007), the palaeochannel fill at the ENE end of trench 1

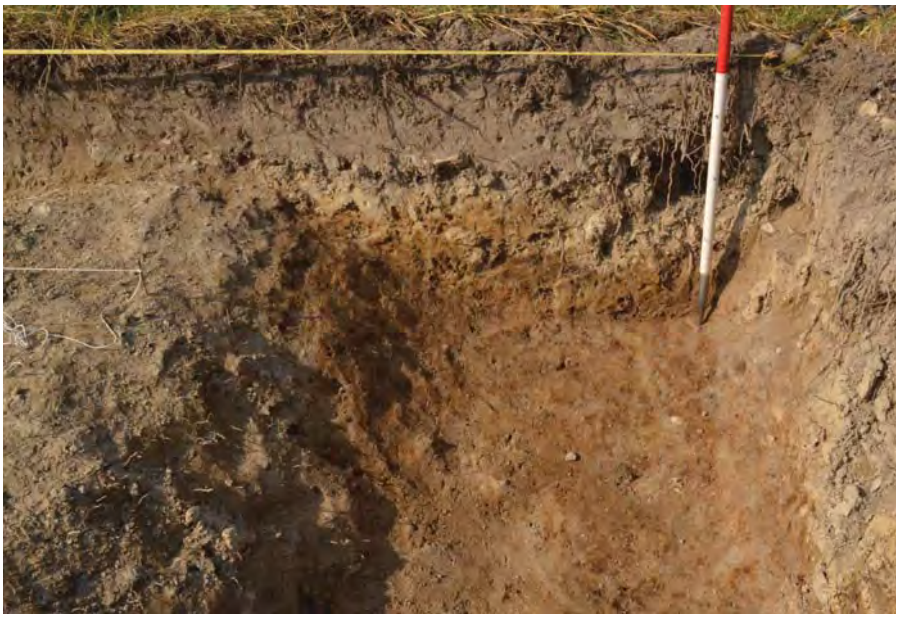


Plate 10. Palaeochannel deposits at the ENE end of trench 1 (contexts 1026 and 1029)

Plate 11. Stone lining (1023) of land drain [1027]

Plate 12. Linear feature [1009]

Plate 13. Stone deposit (3003) in trench 3

Plate 14. Erosion channel at base of motte cleaned up for recording

Plate 15. Deposits forming the motte revealed in section (contexts 4018 and 4019)

Plate 16. Section showing natural sand extending under motte deposits (see figure 22)

Plate 17. Section through ditch deposits and into natural sand (see figure 20)

Plate 18. Detail of ditch deposits (see figure 22)

Cadw

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