

PENRHYN QUARRY, BETHESDA: SOIL STRIP

Archaeological Watching Brief



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Penrhyn Quarry, Bethesda: Soil Strip

Archaeological Watching Brief

Project No. G2541

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Prepared for: Welsh Slate

November 2017

Written by: Stuart Reilly

Front cover image: Start of soil strip and watching brief
(Archive image G2541_001).

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Plate 03: Depth of topsoil (01). Scale 1x1m (archive reference: G2541_010);

Plate 04: Depth of deposit (02). Scale 1x1m (archive reference: G2541_009);

Plate 05: Concentration of earthfast boulders. Scale 1x1m (archive reference: G2541_027);

Plate 06: North face of drystone wall [04]. Scale 1x1m (archive reference: G2541_006);

Plate 07: East facing section through drystone wall [04]. Scale 1x1m (archive reference: G2541_022);

Plate 08: North face of bank of soil (05). Scale 1x1m (archive reference: G2541_022);

Plate 09: Area soil stripped. No scale (archive reference: G2541_018).

NON TECHNICAL SUMMARY

Dirprwy Ymddiriedolaeth Archeolegol Gwynedd gan Welsh Slate i ymgymryd briff gwylio archeolegol yn ystod sribed pridd o'r gornel dde ddwyrain o Chwarel Penrhyn ymlaen ymestyniad y chwarel. Mae'r ardal dynodedig i'r sirped pridd mewn lleoliad gwybyddus o weithgaredd archeolegol. Ddaru'n uniongyrchol agos i weddillion anheddiad cyn-hanesyddol hwyr a chorlan cell-llusol mawr. Arweiniadydd y sribed pridd mewn ardal o dir cliried i borfa ucheldir gyda nodweddion creigiau rhewlifol yn gyson ymwithio allan o'r ddaear.

Nag oedd yna dyddodion neu nodwedion archeolegol ei dynoda yn ystod yr sribed pridd, oherwydd cyfyngiadau amser, ni cafodd yr holl arwynebedd clustnodi ei stripedu.

Gwynedd Archaeological Trust (GAT) was commissioned by Welsh Slate to undertake an archaeological watching brief during a soil strip of the south west corner of Penrhyn Quarry in advance of extending the quarry. The area designated for the soil strip is located in a known area of archaeological activity. It is immediately adjacent to the remains of a late prehistoric settlement and large multi-cellular sheepfold. The soil strip was conducted in an area of cleared ground for rough upland pasture and was characterised by glacial earthfast boulders that regularly protruded out of the ground.

No archaeological deposits or features were identified during the soil strip but, due to time constraints, not all of the allocated area was stripped.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was commissioned by *Welsh Slate* to undertake an archaeological watching brief during a soil strip of the south west corner of Penrhyn Quarry in advance of extending the quarry (centred on NGR SH6096863842; Figure 01). The area to be soil stripped is positioned to the immediate south east of recent archaeological evaluation (GAT report forthcoming) and geophysical survey work in relation to the remains a probable late prehistoric settlement (PRN 5380).

The soil strip was undertaken by plant and staff of Welsh Slate during the week commencing 6th November 2017 and lasted two working days.

The watching brief was completed in accordance with the following guidance:

- Standard and Guidance for Archaeological Watching Brief (Chartered Institute for Archaeologists, 2014);
- Management of Archaeological Projects (English Heritage, 1991);
- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015);
- Historic Environment Record (HER) Guidelines for Archaeological Contractors (Version 1.3; draft) (Gwynedd Archaeological Trust, 2014); and
- Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015).

The watching brief was monitored by the Gwynedd Archaeological Planning Services (GAPS). It was undertaken further to the submission of an approved project design by GAT (cf. Appendix I).

Gwynedd Archaeological Trust is certified to ISO 9001:2008 and ISO 14001:2004 (Cert. No. 74180/A/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

1.1 Aims and Objectives

In accordance with the Chartered Institute for Archaeologists Standards and Guidance, the archaeological watching brief was undertaken as a formal programme of observation and investigation during groundworks to identify any archaeological remains. The key aims were to:

- establish the extent to which archaeological remains survive at the site;
- establish the date and nature of archaeological remains at the site and assess their implications for understanding the historical development of the area; and
- establish the depth of archaeological remains and the quality, value and level of preservation of any deposits.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Penrhyn Quarry lies within the Dyffryn Ogwen Landscape of Outstanding Historic Interest: 28 (CCW, Cadw, ICOMOS 1998) and forms one of the most important elements of this landscape. Penrhyn Quarry was formalised during the 18th century when Richard Pennant acquired a number of small local workings but slate is thought to have been extracted in this area as early as the 13th century. Infrastructure including railways, quarrymen's cottages and a quay at Porth Penrhyn were constructed at the end of the 18th and start of the 19th centuries. The quarry dominated both the slate industry and the surrounding landscape throughout the 19th century. Today the quarry continues to be run as a commercial venture and markets a variety of slate products.

As well as the extensive industrial archaeological remains that exist within the locality, mainly associated with the extraction of slate, the uplands around Bethesda and Nant Ffrancon contain extensive and very well-preserved relict remains of prehistoric and later land use.

An archaeological assessment of the proposed realignment zone was undertaken by GAT in November 2009 (GAT report 837). The assessment identified a number of sites, the majority relating to a late prehistoric settlement (PRN 5380) and a post-medieval multi-cellular sheepfold (PRN 29,989). In order to better identify the significance of the archaeological remains and identify appropriate mitigation an archaeological survey and a phase of field evaluation was undertaken (GAT reports 880 and 899) in July and September 2010 respectively (Figure 02).

The programme of field evaluation examined four sites identified during the desk based assessment and archaeological survey. These included a cleared terraced area (Feature 20), a suspected prehistoric structure (Feature 16), a possible burial cairn (Feature 15), and a possible ruined hut circle with sheepfold rebuild (Feature 14). The results of the evaluation proved the suspected prehistoric structure as being of natural origin. Furthermore, it showed that there was no evidence that the sheepfold utilised an earlier hut circle and nor that there were any associated buried remains present on the cleared terrace area. It did however show that a relatively complex level of archaeology was revealed at the possible burial cairn site (Feature 15), and the evaluation indicated the presence of archaeological remains and archaeological excavation of the entire feature was recommended as appropriate mitigation prior to the extension works.

The excavation was completed in December 2012 (GAT report 1105), and revealed a roughly rectangular stone structure, measuring approximately 7m by 5m, and aligned east-

west. The date and function of this structure was uncertain. However, given its shape and size, it was most likely the remains of a post-medieval peat and/ or hay drying platform. The report recommended an archaeological watching brief as appropriate mitigation during the extension works.

Two watching briefs were completed in areas to the northeast and southeast of Feature 12 in 2013 (GAT report 1131) and 2014 (GAT report 1266) respectively. The watching briefs confirmed that the natural topography of the site was fairly close to the surface, lying on average only 0.2m below ground level and consisting of a light orange sandy clay. A large number of natural sub-angular stones and boulders were located throughout the site, with only a few small patches being relatively stone free. No archaeological features or deposits were uncovered during either of the watching briefs.

A programme of detailed recording and targeted trenching was complete across Feature 12 in 2015 (GAT report 1238). Feature 12 (trackway) was surveyed and photographed prior to the excavation of a trial trench towards its southern end. No evidence of any surface was uncovered, and it is likely that the trackway was created by the removal of stones along its length, and that the depth was due to the general use of the trackway. No finds were uncovered during the excavation, and therefore a date for the trackway is uncertain. However, given the close proximity to the possible medieval Hafod (Feature 13) it is likely to be of a comparable date. Two further features (Feature 10 and 17) were fenced off so as to be avoided during the realignment works.

The most recent archaeological evaluation conducted by GAT took place in September 2017. It involved the hand excavation of six trial trenches and 30 test pits that encompassed GAT features 2 to 6 and 9, a series of enclosures and paddocks (Figure 02). This was supplemented by a magnetometer survey and magnetic susceptibility survey being conducted of the site by Tigergeo in recent weeks. The initial results (Figure 03) revealed large magnetic variation across the area surveyed which may "*indicate high (natural) iron content to the soils*" (Tigergeo; email correspondence). The survey did not extend to the edge of the quarry lane that currently divides the Upper Terrace from the settlement but it can be postulated that it is unlikely magnetically rich archaeological features (such as hearths) extend into the upper terrace. The one possible exception would be the northwest corner of the strip area, as there were consistently high readings adjacent to the multi-cellular sheepfold (PRN 29,989).

3 METHODOLOGY

3.1 Introduction

An archaeological watching brief can be divided into four categories:

- comprehensive (present during all ground disturbance)
- intensive (present during sensitive ground disturbance)
- intermittent (viewing the trenches after machining)
- partial (as and when seems appropriate)

The watching brief was completed on a comprehensive basis due to its close proximity to PRN 5380 and potential for the survival of archaeological subsurface remains.

3.2 Fieldwork Methodology

- All attendances were recorded using GAT watching brief pro-formas.
- Photographic images were taken using a digital SLR (Nikon D3100) camera set to maximum resolution (4,608 × 3,072 14.2 effective megapixels) in RAW format and has been converted to TIFF and JPEG format for archiving using Adobe Photoshop. In total 28 photographs were taken for this watching brief. A complete table of metadata with details of each photographic image taken, including descriptions and directions of shot, were produced using Microsoft Access (archive images G2541_001 to G2541_028; see [Appendix II](#) for a reproduction of the metadata).

4 WATCHING BRIEF RESULTS

The area to be stripped was the remnants of feature 20, a cleared terrace located to the immediate south of late prehistoric settlement (PRN 5380) and a post-medieval multi-cellular sheepfold (PRN 29,989). The area was defined to the south by a drystone wall, a wire and post fence along the west and a slate track way used for access to the drainage leat to the north. The terrace was covered in a mixture of rough long grass and rushes (Plate 01), with large concentrations of glacial earthfast boulders, notably along the north western corner of the terrace.

Prior to the commencement of the soil strip, the GAT archaeologist spoke with the quarry manager, who outlined how the groundworks would be conducted. The quarry manager was aware of the GAPS suggestion (via email) of the soil strip commencing work at the farthest point from the access/egress point and work downslope towards the access track along the northern limit of the area to be stripped. It was pointed out that it would be impractical and unsafe to start along the southern boundary, beside the drystone wall, as due to the gradient of the slope the plant operator would be unable to see the area to be stripped properly. Instead the quarry manager instructed the plant operator to commence the strip along the eastern edge, beside the active area of the quarry, and to work north-south, toward the drystone wall. The spoil was initially cast behind the machine (Plate 02) and then placed onto the dumper once the area along the eastern edge had been fully stripped to allow it to be investigated and then signed off by the GAT archaeologist before progressing further.

The watching brief of the soil strip commenced on 8th November 2017. The soil strip was conducted by a 360° (36 ton) excavator fitted with a fixed toothed bucket. The soil was stripped in a measured, methodical manner under close inspection by the archaeologist present. The topsoil (Context 01) within the area stripped was predominantly a dark brown peaty loamy clay with an average depth of 0.25m (Plate 03) mixed with the occasional small to medium sized sub-angular stone. The only variation was in the south east corner of the strip area; within 15.0m of the drystone wall there was a deposit of fine, cohesive light greyish brown silty gravel (Context 02) with a depth of 0.20m that sealed the topsoil (Plate 04). These deposits overlaid a compact light brown gravelly clay natural (Context 03) that included frequent medium to large sub-angular and sub-rounded stones. Earthfast glacial boulders were present throughout the area soil stripped and varied in concentration, with the greatest frequency being along the centre and northern edge of the terrace (Plate 05).

The drystone wall [Context 04] which demarcated the southern boundary of the soil strip area was also removed as part of the land clearance. It was toppled by the excavator in 10.0m

lengths to the level of the last course to allow these stones to be inspected by an ecologist for the presence of amphibians and reptiles; none were found. The wall extended the length of the strip area (Plate 06), approximately for a distance of 51.0m and continued beyond, with an average height of 1.40m and a width that varied from 0.60m at the base and tapered to 0.40m at the top (Plate 07). The wall was composed of locally sourced stone. Once it had been demolished it became evident that the wall had been built directly on top of the natural (Context 03) and the eastern section of the wall, for a distance of 20.0m, had a bank of soil (similar in colour and composition as (02)) against its southern face (Plate 08). Given the composition and location of the bank (Context 05), like (02), it was most likely the result of run-off and collection of sediment from quarry activity, especially given that a main access track for this section of the quarry was located immediately adjacent to the wall.

The area demarcated by Welsh Slate for soil strip and the extension of the quarry was not completed within the allocated two working days. The area that was stripped was roughly 'L'-shaped in plan, (Figure 04) being concentrated along the southern and eastern boundary of the soil strip area (Plate 09). This was deemed sufficient to allow quarry work in this area to continue for the short term. The area stripped in the two working days measured 60.0m long by 19.0m wide along the eastern strip and 51.0m by 14.6m in the southern strip. No archaeological deposits or features were identified within the area stripped.

5 CONCLUSIONS

Gwynedd Archaeological Trust (GAT) was commissioned by *Welsh Slate* to undertake an archaeological watching brief during a soil strip of the south west corner of Penrhyn Quarry in advance of extending the quarry.

The watching brief of the soil strip did not uncover archaeological deposits or features but did provide an opportunity to observe and record the construction and make-up of the drystone wall [Context 04]. The manner in which the soil was stripped, using a large 360° excavator fitted with a toothed bucket, was not conducive in aiding in the identification of subtle and/or small archaeological features, despite the measured manner in which the excavator driver worked. If viable, it would be strongly recommended to use a smaller 360° excavator fitted with a toothless bucket for the remaining area to be stripped.

The area stripped for this round of quarry works was approximately half of what had been intended and the remaining section will need to be monitored as an archaeological watching brief given its closer proximity to late prehistoric settlement (PRN 5380) and the greater probability of uncovering magnetically rich archaeological features, as indicated by the recent geophysical surveys. The next stage of the soil strip and accompanying watching brief is likely to take place in 2018.

6 SOURCES CONSULTED

1. Chartered Institute for Archaeologists, 2014, *Standard and Guidance for Archaeological Excavation*
2. Chartered Institute for Archaeologists, 2014, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*
3. English Heritage, 1991, *Management of Archaeological Projects (MAP2)*
4. Gwynedd Archaeological Trust 2009 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Assessment*, GAT unpub report #837
5. Gwynedd Archaeological Trust 2010a *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Survey*, GAT unpub report #880
6. Gwynedd Archaeological Trust 2010b *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Evaluation*, GAT unpub report #899
7. Gwynedd Archaeological Trust 2012 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Excavation of suspected Bronze Age Cairn (Feature 15)*, GAT unpub report #1105
8. Gwynedd Archaeological Trust 2013 *Proposed Quarry Realignment Project, Penrhyn Quarry, Bethesda Archaeological Watching Brief: Phase 1A - Interim Report*
9. Gwynedd Archaeological Trust 2014 *Proposed Quarry Realignment Project, Penrhyn Quarry, Bethesda Archaeological Watching Brief Interim Report #1266*
10. Gwynedd Archaeological Trust 2015 *Proposed Quarry Realignment Project, Penrhyn Quarry, Bethesda Archaeological Evaluation (Feature 12) Report #1238*
11. Gwynedd Archaeological Trust, 2014, *Historic Environment Record (HER) Guidelines for Archaeological Contractors* (Version 1.3; draft)
12. Historic England, 2015, *Management of Research Projects in the Historic Environment (MoRPHE)*

13. Royal Commission on Ancient and Historic Monuments of Wales, 2015, *Guidelines for digital archives*

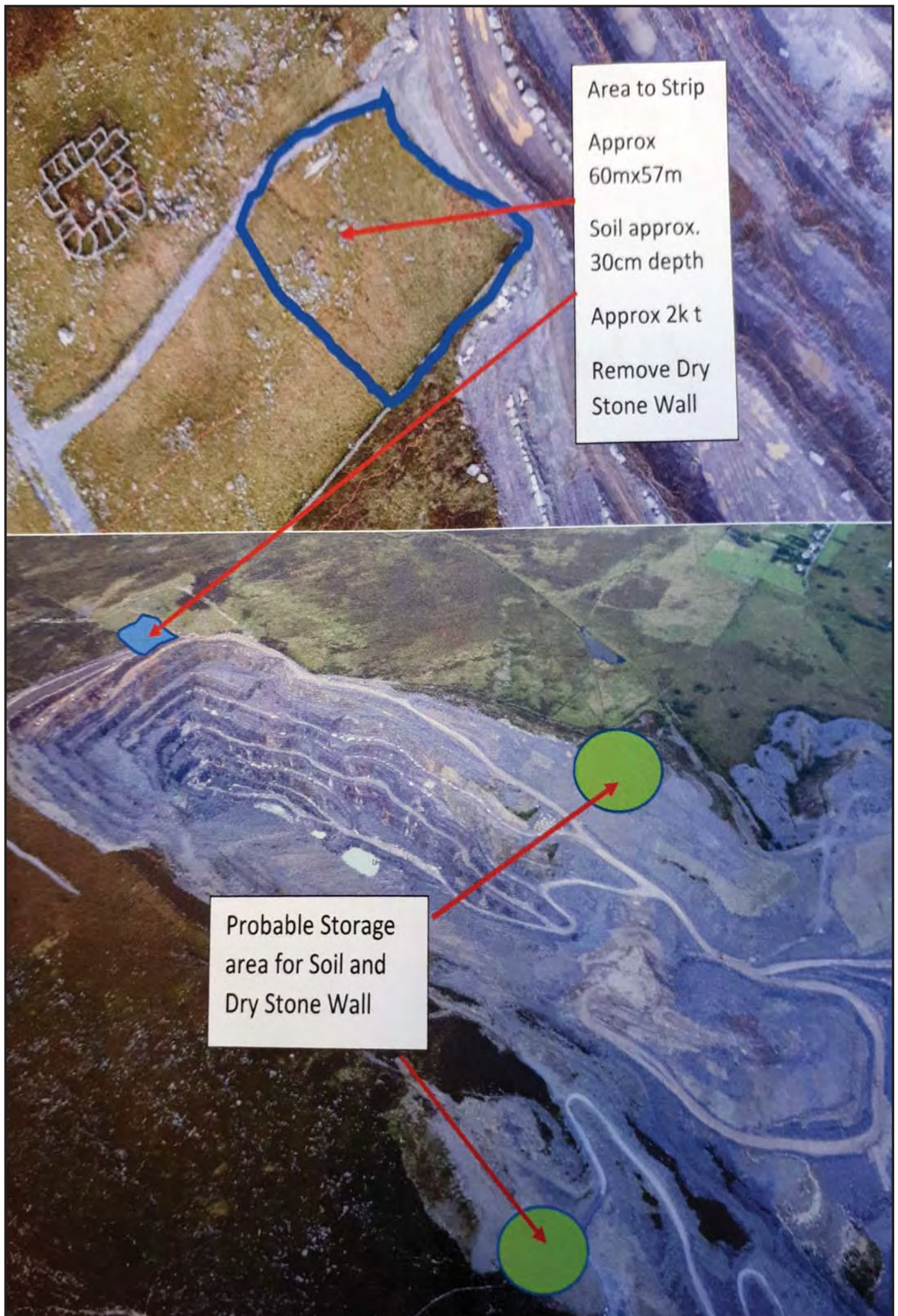


Figure 01 - Reproduction of Welsh Slate Ltd location plan of topsoil strip area.

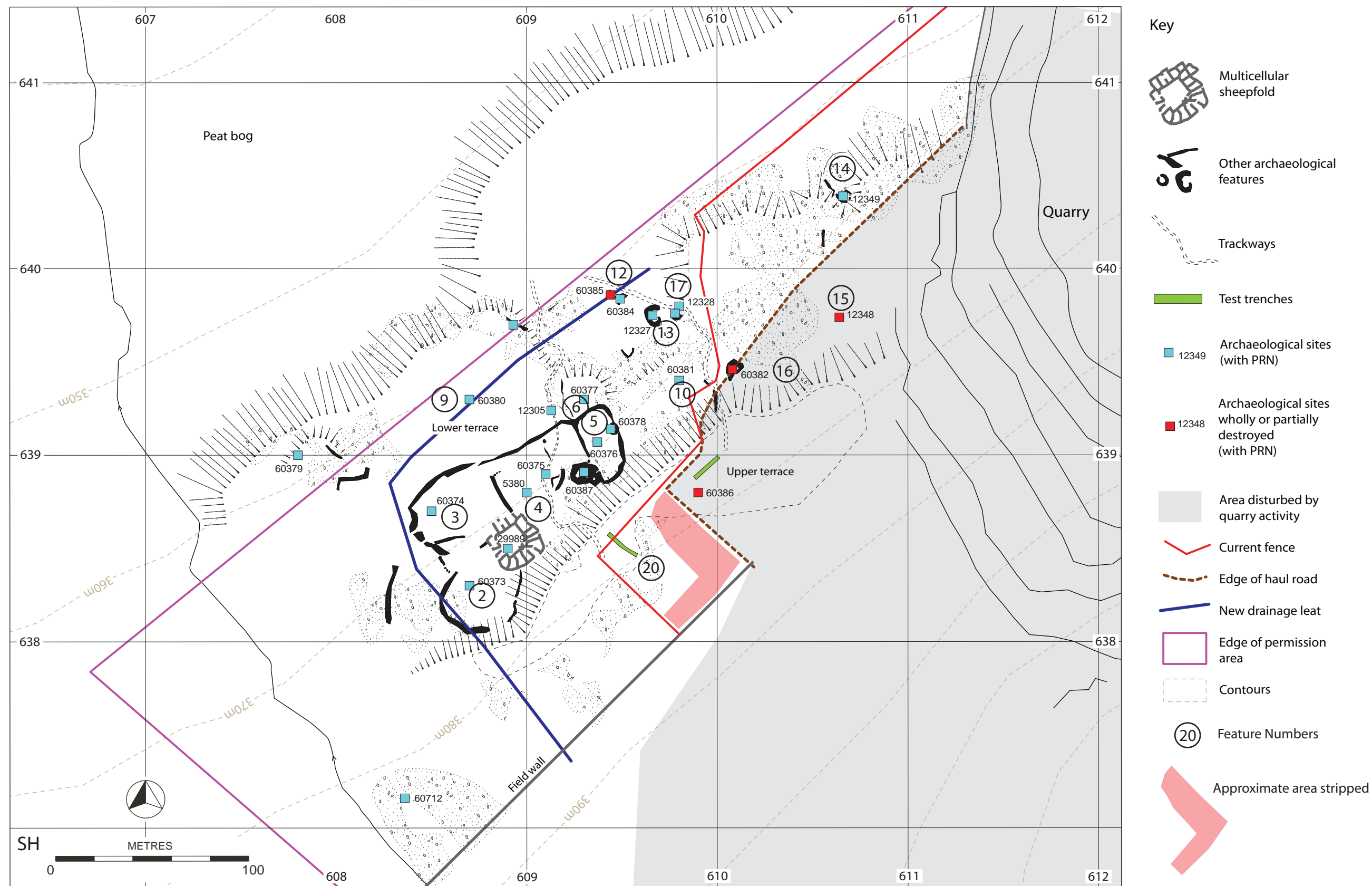
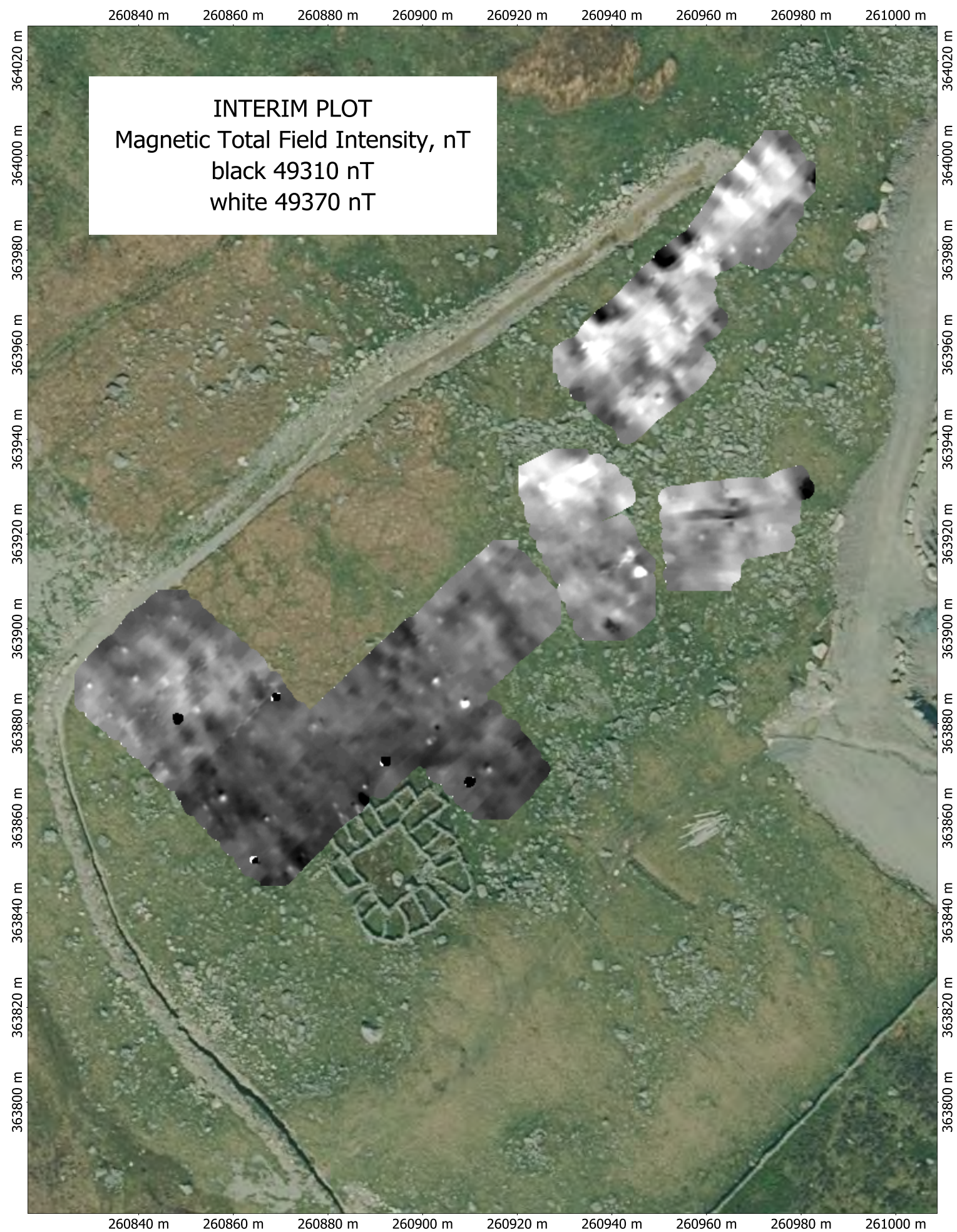


Figure 02 - Quarry Realignment Zone and Archaeological Features (reproduced from GAT Report 1397)



PQG171 Penrhyn Quarry, Gwynedd
DWG 00 Site map with initial magnetic results plot

Orthographic Scale: 1:1000 @ A4 Spatial Units: Meter. Do not scale off this drawing
File: PQG171.map Copyright TigerGeo Limited 2017







Plate 01: The upper terrace prior to the soil strip. Scale 1x1m (archive reference: G2541_010).



Plate 02: Eastern edge of area stripped of soil. Scale 1x1m (archive reference: G2541_007).



Plate 03: Depth of topsoil (01). Scale 1x1m (archive reference: G2541_010).



Plate 04: Depth of deposit (02). Scale 1x1m (archive reference: G2541_009).



Plate 05: Concentration of earthfast boulders. Scale 1x1m (archive reference: G2541_027).



Plate 06: North face of drystone wall [04]. Scale 1x1m (archive reference: G2541_006).



Plate 07: East facing section through drystone wall [04]. Scale 1x1m (archive reference: G2541_022).



Plate 08: North face of bank of soil (05). Scale 1x1m (archive reference: G2541_022).



Plate 09: Area soil stripped. No scale (archive reference: G2541_018).

APPENDIX I – REPRODUCTION OF GWYNEDD ARCHAEOLOGICAL TRUST PROJECT DESIGN

EXTENSION TO PENRHYN QUARRY, BETHESDA –
SOIL STRIP
(G2541)

PROJECT DESIGN FOR ARCHAEOLOGICAL
WATCHING BRIEF

Prepared for

Welsh Slate

October 2017

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Approvals Table				
	Role	Printed Name	Signature	Date
Originated by	Document Author			
Reviewed by	Document Reviewer			
Approved by	Principal Archaeologist			

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

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

Name

Signature

Date

EXTENSION TO PENRHYN QUARRY – SOIL STRIP

PROJECT DESIGN FOR ARCHAEOLOGICAL WATCHING BRIEF

Prepared for *Welsh Slate*, October 2017

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1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by *Welsh Slate* to prepare a project design for an archaeological watching brief during a soil strip of the south west corner of Penrhyn Quarry in advance of extending the quarry (centred on NGR SH6096863842; Figure 01). The soil strip will cover an approximate area of 60m by 57m and a depth of 0.30m. The area to be soil stripped is positioned to the immediate south east of recent archaeological evaluation and geophysical survey work in relation to the remains a probable late prehistoric settlement (PRN 5380).

The soil strip will be undertaken by plant and staff of Welsh Slate during the week commencing 6th November 2017 and is estimated to take two working days.

The watching brief will be completed in accordance with the following guidance:

- Standard and Guidance for Archaeological Watching Brief (Chartered Institute for Archaeologists, 2014);
- Management of Archaeological Projects (English Heritage, 1991);
- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015);
- Historic Environment Record (HER) Guidelines for Archaeological Contractors (Version 1.3; draft) (Gwynedd Archaeological Trust, 2014); and
- Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015).

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

Gwynedd Archaeological Trust is certified to ISO 9001:2008 and ISO 14001:2004 (Cert. No. 74180/A/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists and a member of the Federation of Archaeological Managers and Employers (FAME).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Penrhyn Quarry lies within the Dyffryn Ogwen Landscape of Outstanding Historic Interest: 28 (CCW, Cadw, ICOMOS 1998) and forms one of the most important elements of this landscape. Penrhyn Quarry was formalised during the 18th century when Richard Pennant acquired a number of small local workings but slate is thought to have been extracted in this area as early as the 13th century. Infrastructure including railways, quarrymen's cottages and a quay at Porth Penrhyn were constructed at the end of the 18th and start of the 19th centuries. The quarry dominated both the slate industry and the surrounding landscape throughout the 19th century. Today the quarry continues to be run as a commercial venture and markets a variety of slate products.

As well as the extensive industrial archaeological remains that exist within the locality, mainly associated with the extraction of slate, the uplands around Bethesda and Nant Ffrancon contain extensive and very well-preserved relict remains of prehistoric and later land use.

An archaeological assessment of the proposed realignment zone was undertaken by GAT in November 2009 (GAT report 837). The assessment identified a number of sites, the majority relating to a late prehistoric settlement (PRN 5380) and a post-medieval multi-cellular sheepfold (PRN 29,989). In order to better identify the significance of the archaeological remains and identify appropriate mitigation an archaeological survey and a phase of field evaluation was undertaken (GAT reports 880 and 899) in July and September 2010 respectively (Figure 02).

The programme of field evaluation examined four sites identified during the desk based assessment and archaeological survey. These included a cleared terraced area (Feature 20), a suspected prehistoric structure (Feature 16), a possible burial cairn (Feature 15), and a possible ruined hut circle with sheepfold rebuild (Feature 14). The results of the evaluation proved the suspected prehistoric structure as being of natural origin. Furthermore, it showed that there was no evidence that the sheepfold utilised an earlier hut circle and nor that there were any associated buried remains present on the cleared terrace area. It did however show that a relatively complex level of archaeology was revealed at the possible burial cairn site (Feature 15), and the evaluation indicated the presence of archaeological remains and archaeological excavation of the entire feature was recommended as appropriate mitigation prior to the extension works.

The excavation was completed in December 2012 (GAT report 1105), and revealed a roughly rectangular stone structure, measuring approximately 7m by 5m, and aligned east-

west. The date and function of this structure was uncertain. However, given its shape and size, it was most likely the remains of a post-medieval peat and/ or hay drying platform. The report recommended an archaeological watching brief as appropriate mitigation during the extension works.

Two watching briefs were completed in areas to the northeast and southeast of Feature 12 in 2013 (GAT report 1131) and 2014 (GAT report 1266) respectively. The watching briefs confirmed that the natural topography of the site was fairly close to the surface, lying on average only 0.2m below ground level and consisting of a light orange sandy clay. A large number of natural sub-angular stones and boulders were located throughout the site, with only a few small patches being relatively stone free. No archaeological features or deposits were uncovered during either of the watching briefs.

A programme of detailed recording and targeted trenching was complete across Feature 12 in 2015 (GAT report 1238). Feature 12 (trackway) was surveyed and photographed prior to the excavation of a trial trench towards its southern end. No evidence of any surface was uncovered, and it is likely that the trackway was created by the removal of stones along its length, and that the depth was due to the general use of the trackway. No finds were uncovered during the excavation, and therefore a date for the trackway is uncertain. However, given the close proximity to the possible medieval Hafod (Feature 13) it is likely to be of a comparable date. Two further features (Feature 10 and 17) were fenced off so as to be avoided during the realignment works.

The most recent archaeological evaluation conducted by GAT took place in September 2017. It involved the hand excavation of six trial trenches and 30 test pits that encompassed GAT features 2 to 6 and 9, a series of enclosures and paddocks (Figure 02). This was supplemented by a magnetometer survey and magnetic susceptibility survey being conducted of the site by Tigergeo in recent weeks. The initial results (Figure 03) revealed large magnetic variation across the area surveyed which may "*indicate high (natural) iron content to the soils*" (Tigergeo; email correspondence). The survey did not extend to the edge of the quarry lane that currently divides the Upper Terrace from the settlement but it can be postulated that it is unlikely magnetically rich archaeological features (such as hearths) extend into the area to be stripped. The one possible exception would be the northwest corner of the strip area, as there were consistently high readings adjacent to the multi-cellular sheepfold (PRN 29,989).

3 METHODOLOGY

3.1 Watching Brief

An archaeological watching brief is defined by the Chartered Institute for Archaeologists as a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive (CiFA, 2014).

An archaeological watching brief can be divided into four categories:

- comprehensive (present during all ground disturbance)
- intensive (present during sensitive ground disturbance)
- intermittent (viewing the trenches after machining)
- partial (as and when seems appropriate).

Following consultation with GAPS, GAT will conduct a **comprehensive** watching brief of the soil strip given its close proximity to PRN 5380 and potential for the survival of archaeological subsurface remains.

3.2 Fieldwork Methodology

- The soil strip will be conducted using a 36 ton (Caterpillar 336) 360° excavator fitted with a fixed rock bucket and 30 ton dumper to remove the spoil;
- During the watching brief, all attendances and identified features will be recorded using GAT watching brief pro-formas ([Appendix I](#));
- Photographic images will be taken using a digital SLR (Nikon D40) camera set to maximum resolution (3008 × 2000 6.1 effective megapixels) in RAW format and will be converted to TIFF and JPEG format for archiving using Adobe Photoshop; a photographic record will maintained on site using GAT pro-formas ([Appendix II](#)) and digitised in *Microsoft Access* as part of the fieldwork archive and dissemination process. Photographic images will be archived in TIFF format; the archive numbering system will start from **G2541_001**. When possible, a photographic ID board will be used during the watching brief to record site code, image orientation and any relevant context numbers.
- Any archaeologically significant subsurface remains will be recorded photographically, with detailed notations and a measured survey;
- Any archaeological features/deposits/structures encountered will be manually cleaned and examined to determine extent, function, date and relationship to adjacent features. If encountered, the following minimum strategy will initially apply: 50% sample of each sub-circular feature, 10% sample of each linear feature. *In the event of the identification of extensive/complex remains (for example burials, structures or preserved wooden or organic artefacts), additional time, resourcing and costs may be required for GAT to complete an appropriate programme of works; this may also incur a delay to the soil strip and subsequent quarry related work;*
- Any required sections and detailed elevations to be drawn at a minimum 1:10 scale using GAT A4 or A2 pro-forma permatrace;
- Any required plans to be at a minimum 1:20 scale. Plans will be drawn on GAT A4 or A2 pro-forma permatrace;
- Should dateable artefacts, human remains and/or ecofacts be recovered, an **interim report** will be submitted summarising the results of the watching brief, along with an assessment of potential for analysis post-excavation project design (in line with the

MAP2 process). *Additional time, resourcing and costs will be required to undertake any post-excavation programme of works.*

3.3 Human Remains

If any human remains identified cannot be preserved in situ and are to be excavated, this will take place under appropriate regulations and with due regard for health and safety issues. In order to excavate human remains, a Ministry of Justice licence is required under Section 25 of the Burials Act 1857 for the removal of any body or remains of any body from any place of burial. In accordance with the Ministry of Justice licence, recovered remains will be reburied once the investigation and/or assessment/analysis are complete; the remains should be reburied inside the church as close as practical to their original location.

Non-fragmented skeletal remains will be excavated using wooden tools and collected and stored in polyethylene bags (with appropriate references for context, grave number, et al) and placed in a lidded cardboard archive box (note: separate boxes for each individual) and stored in a suitable manner within GAT premises. If significant quantities of human remains are encountered, a human osteologist will be contacted and appointed to advise the team during the fieldwork. The osteologist will be an external appointment:

Dr. Genevieve Tellier

Tel: 01286 238827

Email: northwalesosteology@outlook.com

The osteologist will assist in devising the excavation, recording and sampling strategy for features containing human remains. The osteologist will also help to ensure that adequate post-excavation processing of human remains is carried out so that the material is in a fit state for assessment during the post-excavation stage. For inhumations, this will involve washing, drying, marking and packing.

If human remains are recovered that are deemed suitable for further assessment/analysis, this will be completed in accordance with the osteologist's requirements and with *Human Bones from Archaeological Sites Guidelines for producing assessment documents and analytical reports* (Historic England, 2004).

3.4 Ecofacts

Due to the location of the site, it is possible that waterlogged/organic deposits will be encountered. Bulk samples will not be taken in the first instance by GAT from any waterlogged/organic deposits/peat deposits, but the GAT archaeologist will monitor and record the depth and context of the deposit or deposits. Based on initial results and potential, e.g., an extensive depth or survival of organic deposits, recourse may be made to a specialist for advice on palaeoenvironmental assessment and analysis strategy. In this instance the specialist will be:

Lucy Whittingham

Project Manager (post-excavation)

AOC Archaeology

Tel: 0208 843 7380

Email: lucy.whittingham@aocarchaeology.com

Should any archaeological features be identified that include sealed deposits deemed suitable for dating, samples will be taken of not less than 40 litres for bulk samples (or 100% if the feature is smaller). The sampling strategy will be undertaken in accordance with the principles set out in *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (Historic England, 2011).

Any ecofact samples taken from human burials will be completed in accordance with an appointed osteologist's guidance.

3.5 Artefacts

Diagnostic artefacts will be retained for further examination and identification. Pottery sherds of 19th and 20th century date will be examined on site and the context from which they were retrieved noted but the sherds will not be retained. The artefacts will be treated according to guidelines issued by the UK Institute of Conservation (Watkinson and Neal 2001) in particular the advice provided within *First Aid for Finds* (Rescue 1999) and Historic England.

Any waterlogged artefacts (e.g. wood or leather) that are to be recovered for post-excavation assessment and analysis will be processed in accordance with *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage, 2011) and specifically in accordance with Brunning and Watson (2010) for waterlogged wood and English Heritage (2012) for waterlogged leather. In such cases an external specialist will be contacted to agree an appropriate sampling and recovery strategy via:

Lucy Whittingham

Project Manager (post-excavation)

AOC Archaeology

Tel: 0208 843 7380

Email: lucy.whittingham@aocarchaeology.com.

All finds are the property of the landowner; however, it is Trust policy to recommend that all finds are donated to an appropriate museum (in this case STORIEL Ffordd Gwynedd, Bangor, Gwynedd, LL57 1DT) where they can receive specialist treatment and study. Access to finds must be granted to the Trust for a reasonable period to allow for analysis and for study and publication as necessary. Trust staff will undertake initial identification, but any additional advice would be sought from a wide range of consultants used by the Trust, including National Museums and Galleries of Wales at Cardiff.

All finds of treasure must be reported to the coroner for the district within fourteen days of discovery or identification of the items. Items declared Treasure Trove become the property of the Crown, on whose behalf the National Museums and Galleries of Wales acts as advisor on technical matters, and may be the recipient body for the objects.

The National Museums and Galleries of Wales will decide whether they or any other museum may wish to acquire the object. If no museum wishes to acquire the object, then the Secretary of State will be able to disclaim it. When this happens, the coroner will notify the

occupier and landowner that he intends to return the object to the finder after 28 days unless he receives no objection. If the coroner receives an objection, the find will be retained until the dispute has been settled.

GAT will contact the landowner (Welsh Slate Limited) for agreement regarding the transfer of artefacts, initially to GAT and subsequently to the relevant museum (STORIEL, Ffordd Gwynedd, Bangor LL57 1DT). A GAT produced pro-forma will be issued to the landowner where they are given the option to donate the finds or to record that they want them returning to them once analysis and assessment has been completed. If artefacts are transferred to STORIEL, this must be in accordance with their guidelines.

3.6 Monitoring Arrangements

The GAPS Archaeologist will be informed of the project timetable and of the subsequent progress and findings. This will allow the GAPS Archaeologist time to arrange monitoring visits and attend site meetings (if required) and enable discussion about the need or otherwise for FAWDs (if required) as features of potential archaeological significance are encountered. The curator contact details are:

- Jenny Emmett jenny.emmett@heneb.co.uk | 01248 370926; and
- Ashley Batten ashley.batten@heneb.co.uk | 01248 370926

3.7 Fieldwork Archiving

Following the completion of the fieldwork, a programme of fieldwork archiving will be completed based on following task list;

1. Pro-formas: all cross referenced and complete;
2. Photographic Metadata: completed in *Microsoft Access* and cross-referenced with all pro-formas;
3. Survey data: downloaded using a Computer Aided Design package;
4. Sections: all cross referenced and complete – site matrix produced;
5. Plans: all cross referenced and complete;
6. Artefacts (if relevant): quantified and identified; register completed;
7. Ecofacts (if relevant): quantified and register completed;
8. Context register (if relevant): quantified and register completed;

All data will be processed, final illustrations will be compiled and a report will be produced which will detail and synthesise the results of the targeted excavation programme.

3.8 PROCESSING DATA, ILLUSTRATION, REPORT AND ARCHIVING

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

1. Non-technical summary
2. Introduction
3. Background
4. Methodology
5. Results
6. Conclusions and further recommendations
7. List of sources consulted.
8. Appendix I – approved GAT project specification
9. Appendix II – photographic metadata
10. Appendix III – context register (if relevant)
11. Appendix IV – ecofact register (if relevant)
12. Appendix V – artefact register (if relevant)

Should dateable artefacts and ecofacts be recovered, an **interim report** will be submitted summarising the results, along with an assessment of potential for analysis project design (in line with the MAP2 process).

Illustrations will include plans of the location, site plans and sections. Historical maps, when appropriate and if copyright permissions allow, will be included. A draft copy of the report will be sent to GAPS and to the client prior to production of the final report.

4 DISSEMINATION AND ARCHIVING

A draft report (or interim report) will be submitted within one month of fieldwork completion (December 2017); a final report will be submitted to the regional Historic Environment Record within six months of project completion (May 2018). If appropriate, accompanying digital data in the form of a project database, GIS table(s) and photographs will also be submitted to the regional Historic Environment Record simultaneously.

The following dissemination will apply:

- A paper report(s) plus digital report(s) will be provided to the client/consultant and GAPS (draft report then final report);
- A paper report plus a digital report will be provided to the regional Historic Environment Record, Gwynedd Archaeological Trust; this will be submitted within six months of project completion (final report only);
- If appropriate, digital information such as the project database, GIS table(s) and photographs, will be submitted to the regional Historic Environment Record at Gwynedd Archaeological Trust within six months of project completion. All digital datasets submitted will conform to the required standards set out in Gwynedd Archaeological Trust's *Historic Environment Record (HER) Guidelines for Archaeological Contractors* (Version 1.3; draft);
- A digital report and archive (including photographic and drawn) data will be provided to Royal Commission on Ancient and Historic Monuments, Wales (final report only);
- Submission of digital information to the Royal Commission on the Ancient and Historical Monuments of Wales shall be undertaken in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. Digital information will include the photographic archive and associated metadata;
- Dependent on the results of the targeted excavation, a summary note or a specific article will be included in the Council for British Archaeology Wales publication *Archaeology in Wales*. This shall be agreed with GAPS, and client in advance of publication along with all publication content. GAPS involvement in the project will be acknowledged therein.

5 PERSONNEL

The project will be managed by Stuart Reilly, Senior Archaeologist GAT Contracts Section with attendances on-site undertaken by a GAT Project Archaeologist. The Project Archaeologist will be responsible for the targeted excavation programme, including all field management duties, e.g., GAPS/client/consultant liaison, osteologist or palaeo-environmentalist liaison (if relevant). The Project Archaeologist will be responsible for completing all on site pro-formas and the fieldwork archive itemised in Sec. 3.7. A Project Archaeologist will also be responsible for submitting a draft final report (or interim report) for project manager review and approval. The report will then be submitted as per the arrangements defined in Sec. 4.

6 HEALTH AND SAFETY

The GAT Project Archaeologist will be CSCS certified. Copies of the site specific risk assessment will be supplied to the client and sub-contractor prior to the start of fieldwork. Any risks and hazards will be indicated prior to the start of work via a submitted risk assessment. All GAT staff will be issued with required personal safety equipment, including high visibility jacket, steel toe-capped boots and hard hat. The Trust subscribes to the SCAUM (Standing Conference of Archaeological Unit Managers) Health and Safety Policy as defined in Health and Safety in Field Archaeology (2007).

7 INSURANCE

Public Liability

Limit of Indemnity- £5,000,000 any one event in respect of Public Liability

INSURER Aviva Insurance Limited

POLICY TYPE Public Liability

POLICY NUMBER 24765101CHC/000405

EXPIRY DATE 22/06/2018

Employers Liability

Limit of Indemnity- £10,000,000 any one occurrence.

The cover has been issued on the insurers standard policy form and is subject to their usual terms and conditions. A copy of the policy wording is available on request.

INSURER Aviva Insurance Limited

POLICY TYPE Employers Liability

POLICY NUMBER 24765101CHC/000405

EXPIRY DATE 22/06/2018

Professional Indemnity

Limit of Indemnity- £5,000,000 in respect of each and every claim

INSURER Hiscox Insurance Company Limited

POLICY TYPE Professional Indemnity

POLICY NUMBER

HU PI 9129989/1208

EXPIRY DATE 23/07/2018

8 SOURCES CONSULTED

1. Brunning, R and Watson, J 2010, *Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood* (3rd edition)
2. Chartered Institute for Archaeologists, 2014, *Standard and Guidance for Archaeological Excavation*
3. Chartered Institute for Archaeologists, 2014, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*
4. English Heritage, 1991, *Management of Archaeological Projects (MAP2)*
5. English Heritage, 2011, *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation*
6. English Heritage, 2012, *Waterlogged Organic Artefacts, Guidelines on their Recovery, Analysis and Conservation*
7. Gwynedd Archaeological Trust 2009 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Assessment*, GAT unpub report #837
8. Gwynedd Archaeological Trust 2010a *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Survey*, GAT unpub report #880
9. Gwynedd Archaeological Trust 2010b *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Evaluation*, GAT unpub report #899
10. Gwynedd Archaeological Trust 2012 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Excavation of suspected Bronze Age Cairn (Feature 15)*, GAT unpub report #1105
11. Gwynedd Archaeological Trust 2013 *Proposed Quarry Realignment Project, Penrhyn Quarry, Bethesda Archaeological Watching Brief: Phase 1A - Interim Report*

12. Gwynedd Archaeological Trust 2014 *Proposed Quarry Realignment Project, Penrhyn Quarry, Bethesda Archaeological Watching Brief Interim Report #1266*
13. Gwynedd Archaeological Trust 2015 *Proposed Quarry Realignment Project, Penrhyn Quarry, Bethesda Archaeological Evaluation (Feature 12) Report #1238*
14. Gwynedd Archaeological Trust, 2014, *Historic Environment Record (HER) Guidelines for Archaeological Contractors* (Version 1.3; draft)
15. Historic England, 2004, *Human Bones from Archaeological Sites Guidelines for producing assessment documents and analytical reports*
16. Historic England, 2015, *Management of Research Projects in the Historic Environment (MoRPHE)*
17. Royal Commission on Ancient and Historic Monuments of Wales, 2015, *Guidelines for digital archives*
18. Watkinson, D and Neal, V, 2001, *First aid for finds* (3rd edition)

FIGURE 01

Reproduction of Welsh Slate Limited Plan

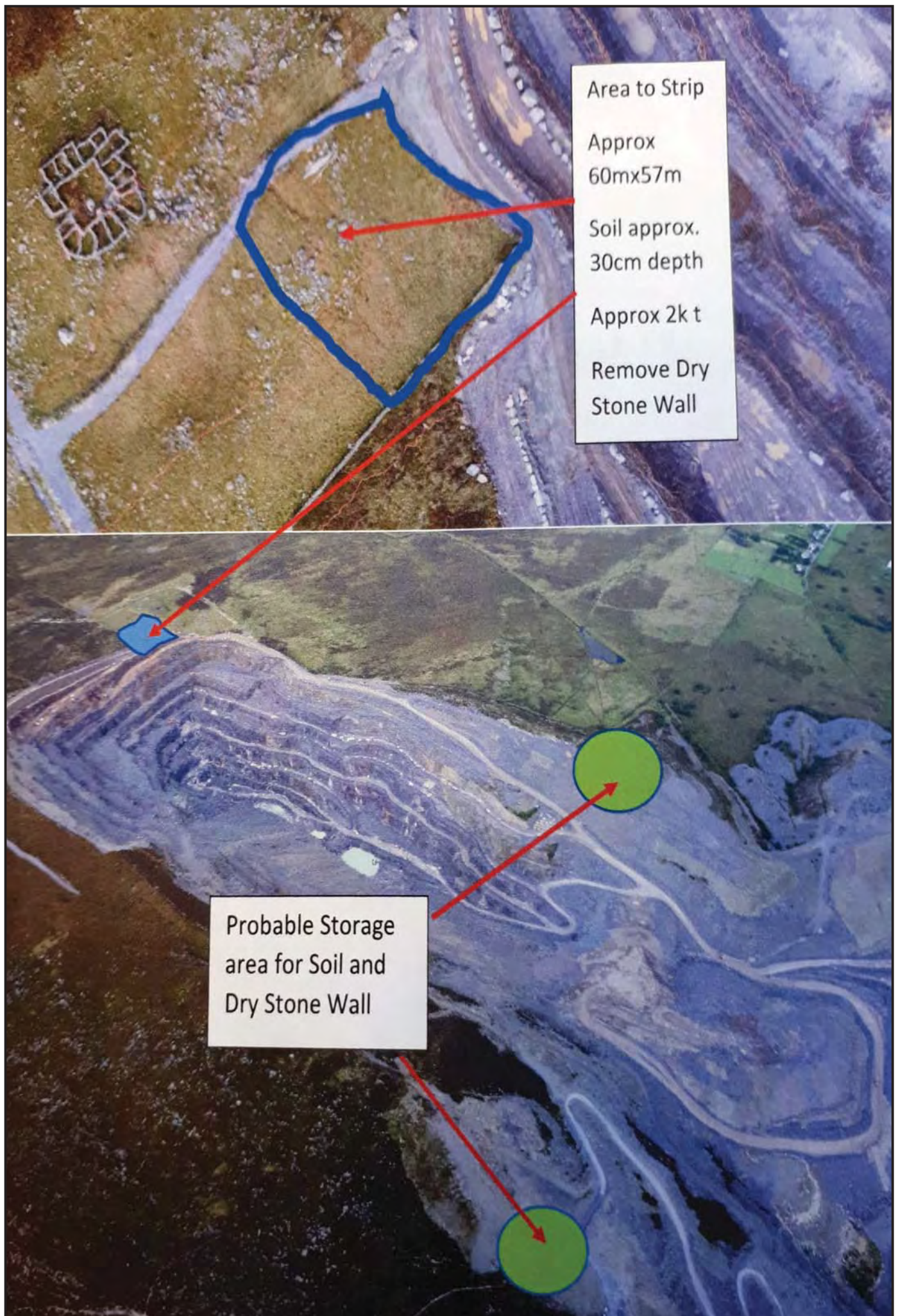


Figure 01 - Reproduction of Welsh Slate Ltd location plan of topsoil strip area.

FIGURE 02

Quarry Realignment Zone and Archaeological Features

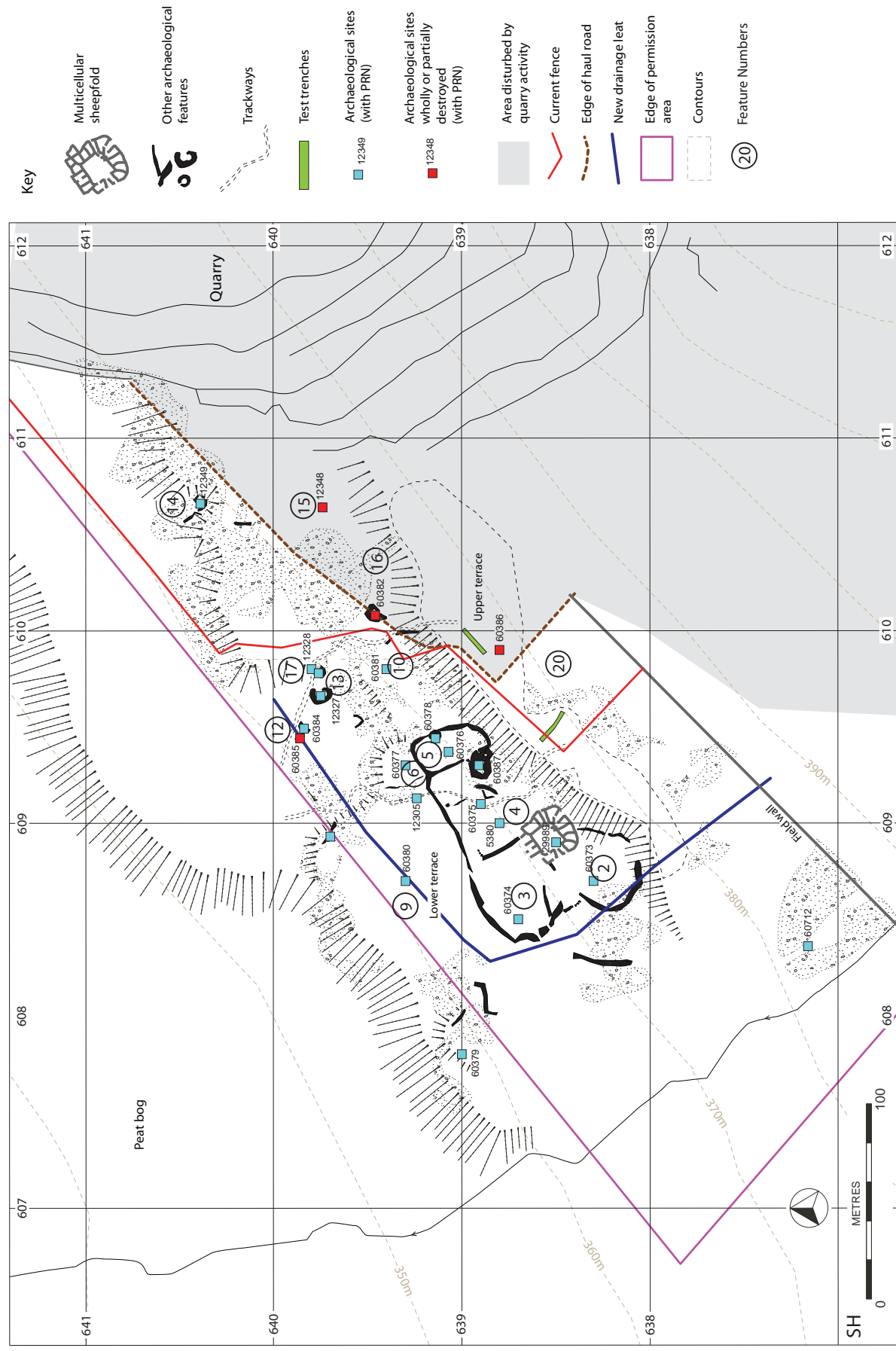


Figure 02 - Quarry Realignment Zone and Archaeological Features (reproduced from GAT Report 1397)

FIGURE 03

Reproduction of Tigergeo Site Map with initial magnetic results plot.

260840 m 260860 m 260880 m 260900 m 260920 m 260940 m 260960 m 260980 m 261000 m

INTERIM PLOT
Magnetic Total Field Intensity, nT
black 49310 nT
white 49370 nT



260840 m 260860 m 260880 m 260900 m 260920 m 260940 m 260960 m 260980 m 261000 m

PQG171 Penrhyn Quarry, Gwynedd
DWG 00 Site map with initial magnetic results plot

Orthographic Scale: 1:1000 @ A4 Spatial Units: Meter. Do not scale off this drawing
File: PQG171.map Copyright TigerGeo Limited 2017



**APPENDIX I - GWYNEDD ARCHAEOLOGICAL TRUST
PHOTOGRAPHIC METADATA PRO-FORMA**

Delete any unwanted photos **immediately** from the camera.

[illegible]

**APPENDIX II - GWYNEDD ARCHAEOLOGICAL TRUST
WATCHING BRIEF PRO-FORMA**

YMDDIRIEDOLAETH ARCHAEOLEGOL GWYNEDD ARCHAEOLOGICAL TRUST		
WATCHING BRIEF DAY RECORD		Date
Project name	Project number	Compiler
Location		
Description		
Times of travelling and on-site		
Drawn record details		
Photographic record details		

**APPENDIX II - GWYNEDD ARCHAEOLOGICAL TRUST
PHOTOGRAPHIC METADATA**

PHOTO RECORD NUMBER*	PROJECT NAME	DESCRIPTION *	CONTEXT NUMBER (S)	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATIO N OF DIGITAL PHOTO*	ORIGINATING ORGANISATIO N	PLATE
G2541_00 1	Penrhyn_Quarry_Extensi on	Start of soil strip and watching brief	N/A	NW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_00 2	Penrhyn_Quarry_Extensi on	Soil strip along eastern edge of extension area	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_00 3	Penrhyn_Quarry_Extensi on	Eastern edge stripped	N/A	NW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_00 4	Penrhyn_Quarry_Extensi on	Eastern edge stripped	N/A	SE	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	1
G2541_00 5	Penrhyn_Quarry_Extensi on	Section of drystone wall that defines the southern limit of the strip	N/A	NW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_00 6	Penrhyn_Quarry_Extensi on	View along the north face of the drystone wall	N/A	NE	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	6
G2541_00 7	Penrhyn_Quarry_Extensi on	Upper Terrace (Feature 20) prior to soil strip	N/A	E	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	2
G2541_00 8	Penrhyn_Quarry_Extensi on	Spoil being loaded onto a dumper truck	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_00 9	Penrhyn_Quarry_Extensi on	Soil depth close to southern edge	N/A	NW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	4
G2541_01	Penrhyn_Quarry_Extensi	Soil depth at	N/A	SE	1x1m	Stuart	10/11/201	Gwynedd	3

PHOTO RECORD NUMBER*	PROJECT NAME	DESCRIPTION *	CONTEXT NUMBER (S)	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATIO N OF DIGITAL PHOTO*	ORIGINATING ORGANISATIO N	PLATE
0	on	mid-point of strip area				Reilly	7	Archaeological Trust	
G2541_01 1	Penrhyn_Quarry_Extensi on	Soil strip (second strip)	N/A	NW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 2	Penrhyn_Quarry_Extensi on	Soil strip along couthern edge beside drystone wall	N/A	S	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 3	Penrhyn_Quarry_Extensi on	Continuation of soil strip and filling dumper truck	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 4	Penrhyn_Quarry_Extensi on	Removing boulders east of centre of strip area	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 5	Penrhyn_Quarry_Extensi on	Soil strip mid- point, eastern edge	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 6	Penrhyn_Quarry_Extensi on	Edge of area stripped (from trackway)	N/A	NNE	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 7	Penrhyn_Quarry_Extensi on	Area stripped - trackway in background	N/A	SSW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_01 8	Penrhyn_Quarry_Extensi on	Post-ex of strip (wide view)	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	9
G2541_01 9	Penrhyn_Quarry_Extensi on	Post-ex of strip	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02	Penrhyn_Quarry_Extensi	Core of	N/A	NE	1x1m	Stuart	10/11/201	Gwynedd	7

PHOTO RECORD NUMBER*	PROJECT NAME	DESCRIPTION *	CONTEXT NUMBER (S)	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO*	DATE OF CREATIO N OF DIGITAL PHOTO*	ORIGINATING ORGANISATIO N	PLATE
0	on	drystone wall				Reilly	7	Archaeological Trust	
G2541_02 1	Penrhyn_Quarry_Extensi on	Face of bank at rear of demolished drystone wall	N/A	NE	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02 2	Penrhyn_Quarry_Extensi on	View along the bank face and demolished drystone wall	N/A	E	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	8
G2541_02 3	Penrhyn_Quarry_Extensi on	Area stripped along southern edge	N/A	SSE		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02 4	Penrhyn_Quarry_Extensi on	Area stripped along southern edge	N/A	SW		Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02 5	Penrhyn_Quarry_Extensi on	Limit of strip beside wire and post fence (western edge)	N/A	SW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02 6	Penrhyn_Quarry_Extensi on	Limit of strip in south west corner	N/A	NE	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02 7	Penrhyn_Quarry_Extensi on	Area not stripped with trackway in foreground	N/A	NNW	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	
G2541_02 8	Penrhyn_Quarry_Extensi on	Limit of strip at north east corner	N/A	NEE	1x1m	Stuart Reilly	10/11/201 7	Gwynedd Archaeological Trust	

APPENDIX III – GWYNEDD ARCHAEOLOGICAL TRUST CONTEXT REGISTER

Context No.	Type	Description	Length	Breadth	Depth/Height	Interpretation
01	Deposit	Topsoil: dark brown peaty loamy clay with the occasional small to medium sized sub-angular stone	n/a	n/a	0.25m	n/a
02	Deposit	Fine, cohesive light greyish brown silty gravel	n/a	n/a	0.20m	Run-off and sediment from quarrying
03	Deposit	Natural: compact light brown gravelly clay	n/a	n/a	n/a	n/a
04	Wall	Drystone boundary wall	51.0m	0.60m	1.40m	Boundary wall
05	Bank	Fine, cohesive light greyish brown silty gravel	20.0m	n/a	0.35m	Sediment from quarrying banked against drystone wall



Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

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

