

Pont Bodfal Newydd, Gwynedd

Briff Gwyllo Archeolegol / Archaeological Watching Brief



Ymddiriedolaeth Archeolegol Gwynedd
Gwynedd Archaeological Trust

Pont Bodfal Newydd, Gwynedd

Briff Gwyllo Archeolegol / Archaeological Watching Brief

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Front Cover image: General view of the topsoil strip (archive reference: G2716_007)

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CRYNHODEB ANHECHNEGOL

Comisiynwyd Ymddiriedolaeth Archeolegol Gwynedd yn 2022 gan Griffiths Civil Engineering and Construction i wneud briff gwyllo archeolegol yn ystod gwaith i ailosod pontydd ym Mhont Bodfal, Pwllheli, Gwynedd. Cynhaliwyd y briff gwyllo yn ystod gwaith tir cychwynnol a nodweddion allweddol wedi'u targedu, gan gynnwys hen ras felin a chwarel graean a nodwyd yn flaenorol o fapio hanesyddol. Cofnodwyd proffil y ras felin ynghyd ag ôl troed y chwarel; canfuwyd bod y ddwy nodwedd wedi cael eu haelion fwriadol. Ni nodwyd unrhyw weithgaredd archeolegol ychwanegol yn ystod y briff gwyllo.

NON-TECHNICAL SUMMARY

Gwynedd Archaeological Trust was commissioned in 2022 by Griffiths Civil Engineering and Construction to undertake an archaeological watching brief during bridge replacement works at Pont Bodfal, Pwllheli, Gwynedd. The watching brief was conducted during initial groundworks and targeted key features, including a former mill race and gravel quarry that were previously identified from historic mapping. The profile of the mill race was recorded along with the footprint of the quarry; both features were found to have been deliberately backfilled. No additional archaeological activity was identified during the course of the watching brief.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was commissioned by Griffiths Civil Engineering and Construction to undertake an Archaeological Watching Brief during bridge replacement works at Pont Bodfal, Pwllheli, Gwynedd (NGR SH34263658; postcode: LL53 6DN; Figure 01). The existing bridge was damaged and closed to traffic and a temporary bridge and road had been in operation downstream. The replacement bridge and road were designed on a similar alignment to the temporary set up and the groundworks and the watching brief was undertaken between April and May 2022 during initial groundworks. As part of the watching brief, GAT excavated a trench across the location of a former mill race (PRN 90074) that was partly within the works corridor.

The watching brief was monitored by Gwynedd Archaeological Planning Service and undertaken in accordance with an approved written scheme of investigation ([Appendix I](#)). In line with the regional Historic Environment Record (HER) requirements, the HER was contacted at the onset of the project to ensure that any data arising was formatted in a manner suitable for accession to the HER and follows the guidance set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (The Welsh Archaeological Trusts, 2018). The HER Event Primary Reference Number for this project was 46226. The watching brief was undertaken in accordance with the following guidance:

- Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 1.1 (The Welsh Archaeological Trusts, 2018);
- Standard and Guidance for Archaeological Excavation (Chartered Institute for Archaeologists, 2020);
- Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (Chartered Institute for Archaeologists, 2020);
- Management of Archaeological Projects (English Heritage, 1991);
- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015); and
- Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015).

Gwynedd Archaeological Trust is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA).

1.1 Aims and Objectives

The key aims and objectives were to:

- establish the date and nature of any archaeological remains identified and assess their implications for understanding the historical development of the area, in conjunction with the known archaeological record, which included post-medieval quarrying and mill activity;
- to place the results in context (if applicable), with reference made to *A Research Framework for the Archaeology of Wales Version 03, Final Refresh Document* (March 2017);
- if no additional archaeological activity is identified, establish why this may be the case.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

An archaeological assessment and geophysical survey of the bridge replacement area was completed by GAT at Pont Bodfal in 2020 (GAT Report 1526). The report highlighted that the existing bridge was constructed in 1805, replacing a bridge that had become dangerous. The Bodvel estate survey and maps of 1802 (X/Vaynol/4212) demonstrate that the bridge was built on the same line as the previous one that it replaced. The bridge and its predecessor were noted to be a significant element of the transport links in the area since post-medieval or possibly earlier. The fields to the south of the bridge, where the replacement bridge/road are to be located, were noted to be mainly improved pastureland. Two post-medieval features: a former gravel pit (Primary Reference Number (PRN) 90073; GAT Report 1526 Feature 1; NGR SH34343656) and the mill race for Melin Rhyd Hir (PRN 90074; GAT Report 1526 Feature 2; NGR SH32323654 C) were noted to survive as visible low earthworks in the improved pastureland, and the mill race also noted to run in a channel under the embanked approach to original bridge. No prehistoric, Roman or medieval archaeology were identified within the assessment/evaluation area.

The geophysical survey results were dominated by a wide area of very high responses on the east side of the river, downstream of the current bridge, which were interpreted as an area of strongly magnetic buried bedrock (GAT Report 1526 Anomaly 1); the location of this anomaly matched that of the former quarry site identified on historic mapping (PRN 90073). The survey report highlighted that the magnitude of Anomaly 1 would tend to mask any coincident archaeological anomalies and this likely includes the quarry. Areas of magnetic noise (GAT Report 1526 Anomalies 4 and 5) just to the west of Anomaly 1 were interpreted as geology. Two isolated linear anomalies (GAT Report 1526 Feature 3 and 4; PRNs 90075/NGR SH34363654 and 90076/NGR SH34373655 respectively) were interpreted as modern drains or services although the survey suggested an archaeological origin cannot entirely be ruled out. A third linear anomaly (GAT Report 1526 Anomaly 7), running alongside the modern road, was interpreted as a service trench or other disturbance associated with the road.

It was recommended in the report a 20m long and 2m wide trench should be dug in advance of ground operations across the former mill race (Feature 2), and a profile across its section drawn and recorded archaeologically; this could be carried out either before or during the carrying out of site groundworks. A comprehensive archaeological watching brief was also recommended during groundworks across the rest of the site, with time allowed for the recording of any archaeological features identified; this would allow for sufficient recording of the quarry pit (Feature 1). The extent of the quarry is visible on the Ordnance Survey

Caernarvonshire County Series Map 1-inch to 25-mile (Sheets XL.2, XL.3, XL.6 and XL.7) First Edition published 1889 (cf. Figure 03).

3 METHODOLOGY

3.1 Introduction

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, 2020).

The watching brief was completed between April and May 2022 and monitored groundworks undertaken by *Griffiths Civil Engineering and Construction* and included compound installation and foundation level works for the realigned road. In addition, a trench was excavated across the former mill race.

As detailed on YGC Drawing No. 7118 SC 200 (Figure 02), the scheme was segregated into chainages, which were equidistant markers 10m apart that ran from the eastern end of the scheme (chainage CH000.000), where the new road alignment diverted from the existing A497, to the western end of the scheme, where the new road re-joined the A497 (chainage CH670.000). The YGC Drawing located GAT Report 1526 features at the following locations:

- Feature 1: Former Quarry (PRN 90073)
- Feature 2: Mill Race (PRN 90074)
- Feature 3: Linear Geophysical Anomaly (PRN 90075)
- Feature 4: Linear Geophysical Anomaly (PRN 90076)

The *Griffiths Civil Engineering and Construction* site compound was located between chainages CH255.000 and CH300.000, incorporating the location of GAT Report 1526 Feature 3.

3.2 Fieldwork Methodology

The watching brief monitored the construction groundworks as far as the glacial horizon, archaeological horizon or limit of excavation, whichever was encountered first. All attendances and photographs were recorded using GAT pro-formas and included topsoil and subsoil depths, as well as the composition of the glacial horizon. All encountered subsurface features were recorded on GAT pro-formas with detailed notations and photographs with an appropriate scale; they were located via GPS (Trimble R8 GPS unit). Sections and plans were drawn at a minimum 1:10 scale using GAT pro-forma permatrace. All archaeological features/deposits/structures encountered were manually cleaned and examined to determine extent, function, date and relationship to adjacent activity. The following excavation strategy was applied: 50% sample of each sub-circular feature, 25% sample of each linear feature (terminal ends and intersection points with other features were prioritised); discrete features were 100% excavated. Any features that comprised a spread of material rather than a cut feature were completed in quadrants (if fully extant) or 100% excavated if present as a discrete spread. Photographic images were taken using a digital SLR (Nikon D3100) camera set to maximum resolution (4,608 x 3,072) in RAW format and archived in TIFF format using Adobe Photoshop. A total of 16 photographic images were taken (archive reference numbers G2716_001 to G2716_016; cf. [Appendix II](#) for the photographic metadata).

3.3 Data Management Plan

The fieldwork data has been used as the basis for the physical and digital dataset archives and used to compile the project report. The physical archive has been stored in a designated project folder and the location confirmed in the Trust project database; the digital dataset has been stored on a dedicated Trust server, with the location confirmed in the Trust project database via a specific hyperlink. There is no de-selected digital data.

External datasets for the regional HER and RCAHMW are as follows:

- HER: digital report (PDF format) and Event PRN summary (Microsoft Excel format); the report and dataset have been prepared in accordance with the required standards set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1); and
- RCAHMW: a digital report (PDF format) and digital archive dataset have been prepared in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. The dataset includes:
 - Photographic metadata (Microsoft Access);
 - Photographic archive (TIFF format);
 - Project Information form (Microsoft Excel);
 - File Information form (Microsoft Excel) – Microsoft Word report text final;
 - File Information form (Microsoft Excel) – Photographic metadata (general);
 - File Information form (Microsoft Excel) – Adobe PDF report final; and
 - File Information form (Microsoft Excel) - Photographic metadata (detail).

3.4 Selection Strategy

As defined in *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (Chartered Institute for Archaeologists, 2020) section 3.3.1, a project specific selection strategy and data management plan should be prepared. In support of this, the Chartered Institute for Archaeologist (CIfA), have stated that it is “widely accepted that not all the records and materials collected or created during the course of an Archaeological Project require preservation in perpetuity. These records and materials constitute the Working Project Archive which will be subject to Selection, in order to establish what will be retained for long-term curation”. The aim of selection is to ensure that all the elements retained from the Working Project Archive for inclusion in the Archaeological Archive are appropriate to establish the significance of the project and support “future research, outreach, engagement, display and learning activities”. Selection should be “focused on selecting what is to be retained to support these future needs, rather than deciding what can be dispersed” and can be qualified by a selection strategy, which details the project-specific selection process, agreed by all parties (including client and/or landowner), which will be applied to a Working Project Archive prior to its transfer into curatorial care as the Archaeological Archive.

The selection strategy has taken into account:

- The aims and objectives of the project.
- The brief and/or Written Scheme of Investigation (WSI)).
- The Collecting Institution’s collection policy and/or deposition guidelines.
- Local and regional research frameworks.
- Relevant thematic or period specific research frameworks.
- The project’s Data Management Plan (DMP).
- Internal recording and reporting policies.
- Material-specific guidance documents.

The project specific selection strategy is reproduced as [Appendix III](#).

4 RESULTS

The watching brief monitored the initial stages of the groundworks. The priority areas included the location of the former quarry (GAT Report 1526 Feature 1 / PRN 90073), the Mill Race (GAT Report 1526 Feature 2 / PRN 90074) and two linear geophysical anomalies (GAT Report 1526 Features 3 and 4; PRNs 90075 and 90076 respectively). The location of Feature 2 was investigated at the start of the scheme, whilst the locations of Features 1, 3 and 4 were monitored during the establishment of the site compound area.

The course of the mill race was located in advance by the main contractor surveying team (Plate 1). A section was excavated through the mill race 9.91m southwest of the temporary carriageway at NGR SH3433936562/chainage CH3334.00 (Plate 2). At the location targeted, the mill race was orientated northeast to southwest and measured 0.95m in width and 0.56m in depth; the mill race was sealed by the topsoil horizon (context (1001)) and cutting the glacial horizon (context 1002), which was a mid-orange clay. The profile of the mill race was very regular, with a flat base and steep sloping sides (Figure 04) and was filled by a uniform deposit (context (1004)) that comprised a dark orange-brown sand/silt with infrequent small to medium rounded and sub-angular stone inclusions, similar to the topsoil horizon (Plate 3). No evidence of successive deposits were present to suggest the feature was left to fill naturally over time and it was thought more likely it was deliberately backfilled during the twentieth century to level the feature (Plate 4). No artefacts were recovered from the confines of the targeted area.

The compound area was located at NGR SH34383655, between scheme chainages CH255.000 and CH300.000, incorporating the location of GAT Report 1526 Feature 3. The area was stripped to a mean depth of 0.4m and did not exceed the topsoil horizon (context (1001) cf. Plates 5 and 6); geotextile membrane and imported hardstanding was then used as foundation material for the compound. The topsoil was identified as a light brown silt/sand with small/medium moderate stone inclusions; modern debris was also identified within this horizon. No evidence of Feature 3 was identified within the confines of the monitored area.

The carriageway groundworks within the location of the former gravel quarry identified a thicker topsoil horizon with a mean depth of 0.5m; the composition of the topsoil was similar to that identified during the compound strip. The quarry outline was visible beneath the topsoil, cutting the glacial horizon and matching the location and footprint visible on Ordnance Survey historic mapping (cf. Figure 03; Plates 7, 8 and 10). The quarry was located 18m south of the existing carriageway and measured up to 44m in width; the quarry had been backfilled at surface level with a mixture of post-medieval building rubble that included brick, tile and glass, as well fragments of pottery, food jars and iron. Beyond the footprint of the quarry, the surrounding

area was characterised by the glacial horizon, present as a mid-orange clay. No evidence of Feature 4, a geophysical linear anomaly, was identified within the monitored areas.

The general carriageway groundworks at the eastern end of the scheme were monitored, with the scheme route running close to and integrating with the existing road. A 4m wide strip was completed, 1.5m south of the existing road (Plates 9 to 11). The topsoil had a mean depth of 0.3m, shallower than elsewhere but of similar composition, and directly sealed the glacial horizon, with no apparent subsoil interface. The glacial horizon at this location was a mid-orange/brown sand/clay with patches of gravel and sand, and small to medium rounded and sub-angular stones (Plate 14). No archaeological activity was identified.

5 CONCLUSION

Gwynedd Archaeological Trust was commissioned by Griffiths Civil Engineering and Construction to undertake an archaeological watching brief during bridge replacement works at Pont Bodfal, Pwllheli, Gwynedd. The watching brief focussed on the location of known and suspected features, as previously identified during the assessment phase. The location of a mill race and quarry pit were known from historic mapping, whilst a geophysical survey had suggested additional linear features were present. The profile of the mill race was defined and identified as relatively shallow steep sided ditch with a flat base that appeared to have been deliberately backfilled during the twentieth century. The outline of the gravel pit was clearly visible within the scheme footprint and the watching brief was able to confirm that it was backfilled and levelled with imported building waste. The area was characterised by relatively deep topsoil over the gravel pit, with shallower topsoil elsewhere; no subsoil interface was apparent and the glacial horizon was directly sealed by the topsoil. The geophysical linear anomalies were not identified within the monitored areas, but this may be a reflection of the shallow nature of the groundworks in parts or that they only existed within the topsoil horizon. No additional archaeological activity was identified during the watching brief.

6 SOURCES CONSULTED

1. A Research Framework for the Archaeology of Wales, Current Research Framework Documents 2017 (<https://archaeoleg.org.uk/documents2017.html>)
2. Chartered Institute for Archaeologists, 2020, Standard and Guidance for Archaeological Watching Brief
3. Chartered Institute for Archaeologists, 2020, Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives
4. Chartered Institute for Archaeologists, 2020, Updated Guidelines to the Standards for Recording Human Remains
5. English Heritage, 1991, Management of Archaeological Projects
6. English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE)
7. Evans, R and Hopewell D. 2020. Pont Bodfel Pwllheli, Gwynedd: Archaeological Assessment and Evaluation. Gwynedd Archaeological Trust Report 1526.
8. Royal Commission on Ancient and Historic Monuments of Wales, 2015, Guidelines for digital archives
9. The Welsh Archaeological Trusts, 2018, Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 1.1

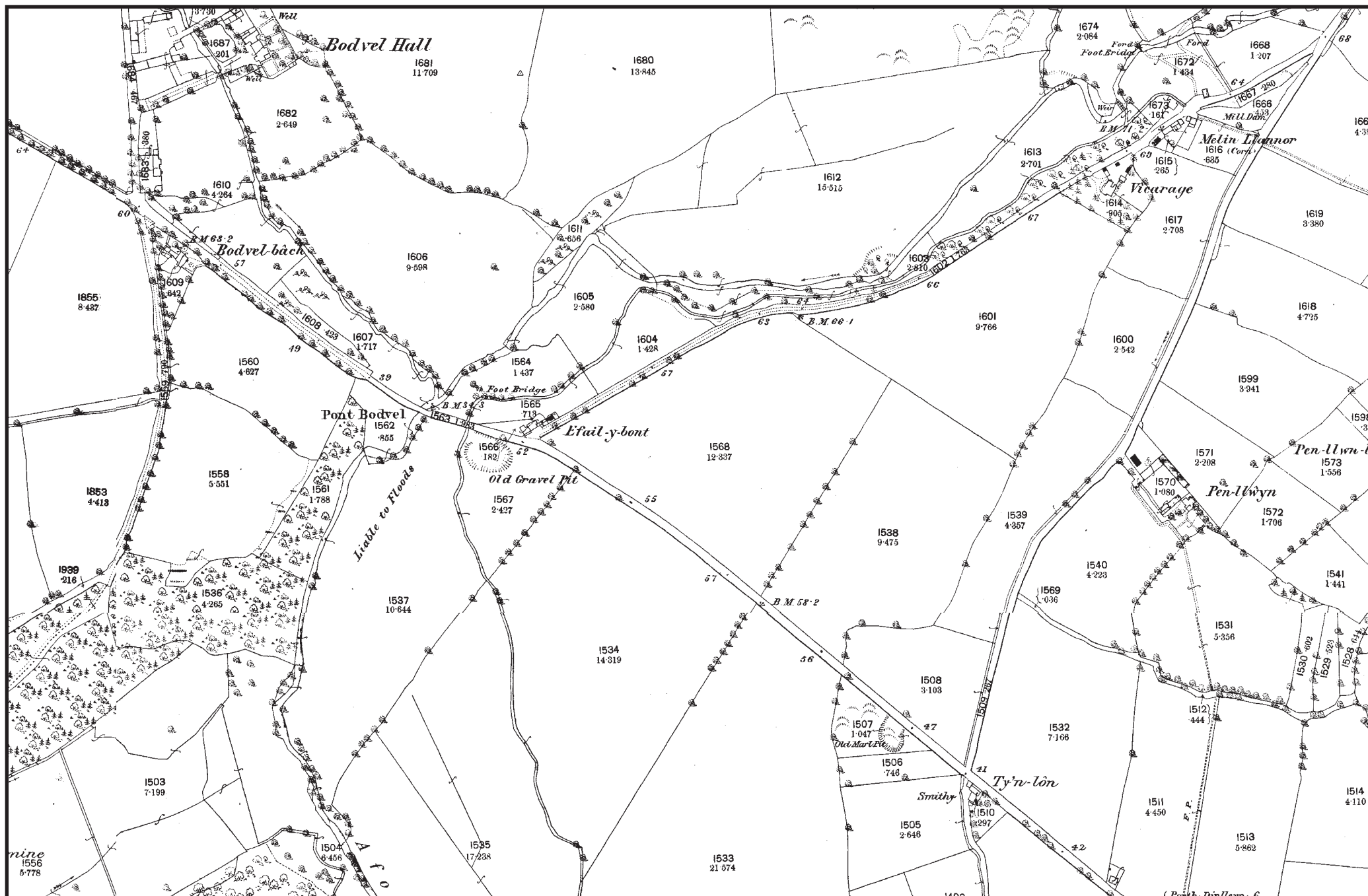


FIGURE 03: Reproduction of Ordnance Survey County Series Map 1-inch to 25-mile (Sheets XL.2, XL.3, XL.6 and XL.7) First Edition published 1889. Scale 1:5000@A4

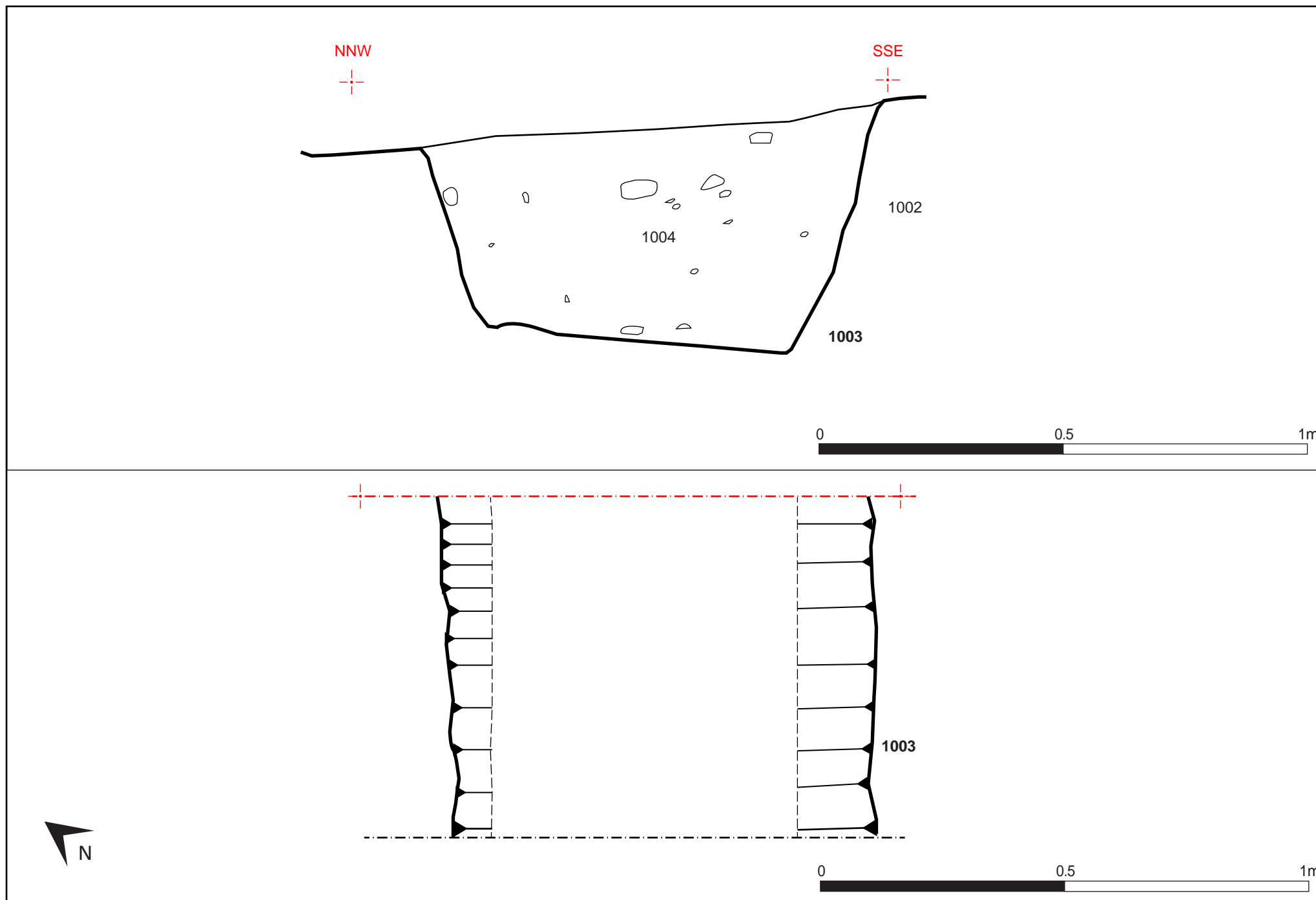


Figure 04: Plan and West-Facing Section of Mill Race [1003]/PRN 90074. Scale: 1:10@A4.



Plate 1: Pre-excitation image showing line of mill race (PRN 90074; Feature 2) adjacent to the new carriageway; scale not used; view from SW (archive reference: G2716_001).



Plate 2: Topsoil removal over the mill race (PRN 90074; Feature 2); scale 1x1m; view from SW (archive reference: G2716_002).



Plate 3: West-facing section (context [1003]) through the mill race (PRN 90074; Feature 2); scale not used; view from W (archive reference: G2716_003).



Plate 4: General view of the mill race (PRN 90074; Feature 2) and topsoil stripping; scale not used; view from NW (archive reference: G2716_004).



Plate 5: View of topsoil strip on the corner of the compound area - no possibility of seeing the archaeology; scale 1x1m; view from NE (archive reference: G2716_005).



Plate 6: General view of the topsoil strip; scale 1x1m; view from N (archive reference: G2716_007).



Plate 7: View of the former gravel pit (PRN90073; Feature 1) with the topsoil removed; scale 1x1m; view from SW (archive reference: G2716_006).



Plate 8: General view of the former gravel pit (PRN90073; Feature 1) ; scale 1x1m; view from W (archive reference: G2716_008).



Plate 9: General working shot showing topsoil stripping; scale not used; view from NW
(archive reference: G2716_009).



Plate 10: General view of the stripped area; scale not used; view from N
(archive reference: G2716_010).



Plate 11: View of topsoil stripping of the Efailnewydd link road section; scale not used; view from SW (archive reference: G2716_011).



Plate 12: General view along trench showing the former gravel pit (PRN90073; Feature 1); scale 1x1m; view from SW (archive reference: G2716_014).



Plate 14: View of west facing section through sand; scale 1x1m; view from W (archive reference: G2716_016).

APPENDIX I

Gwynedd Archaeological Trust Written Scheme of Investigation

PONT BODFAL NEWYDD, GWYNEDD (G2716)

WRITTEN SCHEME OF INVESTIGATION FOR
ARCHAEOLOGICAL WATCHING BRIEF

Historic Environment Record Event Primary Reference Number
46226

Prepared for

Griffiths Civil Engineering and Construction

March 2022



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

FOR INTERNAL QUALITY MANAGEMENT PURPOSES ONLY

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

FOR COMPLETION BY FIELDWORK STAFF ONLY

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

PONT BODFAL NEWYDD, GWYNEDD (G2716)

PROJECT DESIGN FOR ARCHAEOLOGICAL WATCHING BRIEF

Prepared for *Griffiths Civil Engineering and Construction*, February 2022

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1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by Griffiths Civil Engineering and Construction to prepare a written scheme of investigation (WSI) for an Archaeological Watching Brief during bridge replacement works at Pont Bodfal, Pwllheli, Gwynedd (NGR SH34283660; postcode: LL53 6DN; [Figure 01](#)). The existing bridge is damaged and closed to traffic and a temporary bridge and road are currently in operation downstream. The replacement bridge and road will be on a similar alignment to the temporary set up and groundworks are currently scheduled from April 2022. The watching brief will monitor the intrusive groundworks, and will be undertaken in accordance with the following guidance:

- Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 1.1 (The Welsh Archaeological Trusts, 2018);
- Standard and Guidance for Archaeological Watching Brief (Chartered Institute for Archaeologists, 2020);
- Standard And Guidance for The Creation, Compilation, Transfer and Deposition Of Archaeological Archives (Chartered Institute for Archaeologists, 2020);
- Management of Archaeological Projects (English Heritage, 1991);
- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015); and
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Gwynedd Archaeological Trust is certified to ISO 9001:2015 and ISO 14001:2015 (Cert. No. 74180/B/0001/UK/En) and is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA).

1.1 Aims and Objectives

The key aims and objectives are to:

- establish the date and nature of any archaeological remains identified and assess their implications for understanding the historical development of the area, in conjunction with the known archaeological record, which includes post-medieval quarrying and mill activity;
- to place the results in context (if applicable), with reference made to *A Research Framework for the Archaeology of Wales Version 03, Final Refresh Document* (March 2017);
- if no additional archaeological activity is identified, establish why this may be the case.

1.2 Monitoring Arrangements

The watching brief will be monitored by the Gwynedd Archaeological Planning Service (GAPS). The content of this WSI and all subsequent reporting by GAT must be approved by GAPS prior to final issue. The GAPS Planning Archaeologist will be kept informed of the project timetable and subsequent progress and findings. This will allow time to arrange monitoring visits and attend site meetings (if required) and enable discussion about the need or otherwise for further works (if required) as features of potential archaeological significance are encountered. GAPS contact details are:

- Jenny Emmett | jenny.emmett@heneb.co.uk | 07920264232.

1.3 Historic Environment Record

In line with the GAT Environment Record (HER) requirements, the HER will be contacted at the onset of the project to ensure that any data arising is formatted in a manner suitable for accession to the HER and follows the guidance set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (The Welsh Archaeological Trusts, 2018). In line with this guidance, all submitted reporting will need to include the equivalent of a non-technical summary in Welsh and English at the front of the report combined with short bilingual summaries of the principal Historic Assets recorded during the event. These requirements are mandatory. The GAT HER enquiry number for this project is GATHER1598 and the event Primary Reference Number (PRN) is 46226.

The GAT HER will also be responsible for supplying PRNs for any new identified and recorded assets.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

An archaeological assessment and geophysical survey of the bridge replacement area was completed by GAT at Pont Bodfal in 2020 (GAT Report 1526). The report highlighted that the existing bridge was constructed in 1805, replacing a bridge that had become dangerous. The Bodvel estate survey and maps of 1802 (X/Vaynol/4212) demonstrate that the bridge was built on the same line as the previous one that it replaced. The bridge and its predecessor were noted to be a significant element of the transport links in the area since post-medieval or possibly earlier. The fields to the south of the bridge, where the replacement bridge/road are to be located, were noted to be mainly improved pastureland. Two post-medieval features: a former gravel pit (Primary Reference Number (PRN) 90073; GAT Report 1526 Feature 1; NGR SH34343656) and the mill race for Melin Rhyd Hir (PRN 90074; GAT Report 1526 Feature 2; NGR SH32323654 C) were noted to survive as visible low earthworks in the improved pastureland, and the mill race also noted to run in a channel under the embanked approach to original bridge. No prehistoric, Roman or medieval archaeology were identified within the assessment/evaluation area.

The geophysical survey results were dominated by a wide area of very high responses on the east side of the river, downstream of the current bridge, which were interpreted as an area of strongly magnetic buried bedrock (GAT Report 1526 Anomaly 1); the location of this anomaly matched that of the former quarry site identified on historic mapping (PRN 90073). The survey report highlighted that the magnitude of Anomaly 1 would tend to mask any coincident archaeological anomalies and this likely includes the quarry. Areas of magnetic noise (GAT Report 1526 Anomalies 4 and 5) just to the west of Anomaly 1 were interpreted as geology. Two isolated linear anomalies (GAT Report 1526 Feature 3 and 4; PRNs 90075/NGR SH34363654 and 90076/NGR SH34373655 respectively) were interpreted as modern drains or services although the survey suggested an archaeological origin cannot entirely be ruled out. A third linear anomaly (GAT Report 1526 Anomaly 7), running alongside the modern road, was interpreted as a service trench or other disturbance associated with the road.

It was recommended in the report a 20m long and 2m wide trench should be dug in advance of ground operations across the former mill race (Feature 2), and a profile across its section drawn and recorded archaeologically; this could be carried out either before or during the carrying out of site groundworks. A comprehensive archaeological watching brief was also recommended during groundworks across the rest of the site, with time allowed for the recording of any archaeological features identified; this would allow for sufficient recording of the quarry pit (Feature 1). The extent of the quarry is visible on the Ordnance Survey Caernarvonshire County Series Map 1-inch to 25-mile (Sheets XL.2, XL.3, XL.6 and XL.7) First Edition published 1889 (cf. [Figure 03](#)).

3 METHODOLOGY

3.1 Introduction

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, 2020).

The watching brief will monitor groundworks undertaken by *Griffiths Civil Engineering and Construction* to prepare a written scheme of investigation during bridge replacement works, to include compound installation and foundation level works for the bridge and realigned road. The watching brief will include the 20m long and 2m wide trench should be dug in advance of ground operations across the former mill race (Feature 2). The groundworks are currently scheduled from April 2022.

Based on information with YGC Drawing No. 7118 SC 200 (Figure 02), the scheme has been segregated into chainages, which are equidistant markers 10m apart that run from the eastern end of the scheme (chainage CH000.000), where the new road alignment diverts from the existing A497, to the western end of the scheme, where the new road re-joins the A497 (chainage CH670.000). The YGC Drawing locates GAT Report 1526 features at the following locations:

- Feature 1: Former Quarry, between chainages CH260.000 and CH320.000;
- Feature 2: Mill Race, at chainage CH334.000;
- Feature 3: Mill Race, at chainage CH275.000; and
- Feature 4: Mill Race, at chainage CH285.000.

The *Griffiths Civil Engineering and Construction* site compound will be located between chainages CH255.000 and CH300.000, incorporating the location of GAT Report 1526 and *Griffiths Civil Engineering and Construction* have proposed undertaken groundworks within the location of the archaeological features first, along with the site compound, within the following schedule:

- CH250.000 to CH340.000: 04/04/2022 to 13/04/2022, to include the location of the archaeological features;
- CH000.000 to CH250.000 (northbound route): 14/04/2022 to 29/04/2022;
- CH340.000 to CH380.000: 03/05/2022 to 09/05/2022;
- CH420.000 to CH460.000: 23/05/2022 to 27/05/2022;
- CH460.000 to CH670.000 (northbound route): 27/06/2022 to 12/07/2022;
- CH460.000 to CH670.000 (southbound route): 19/08/2022 to 31/08/2022; and
- CH000.000 to CH190.000 (southbound route): 26/09/2022 to 30/09/2022.

All plant and machinery will be supplied and operated by *Griffiths Civil Engineering and Construction* and will include:

- 13tonne and 21tonne tracked excavators;
- Articulated dump truck; and
- 13tonne roller.

3.2 Fieldwork Methodology

- The trench across Feature 2 will be opened using plant operated by *Griffiths Civil Engineering and Construction* and managed by the GAT team. The trench will be opened perpendicular to the mill race and will be cleaned and recorded in plan, followed by a hand excavated section, to allow the profile of the race to be identified and recorded. The trench will be recorded using a GAT trench pro-forma, along with a scaled drawing, using GAT permatrace ([Appendix I](#)), of the mill race in plan and profile; the location of the trench will be located using a Trimble R8 GPS unit;
- The scheme wide watching brief will monitor the foundation level groundworks as far as the glacial horizon, archaeological horizon or limit of excavation, whichever is encountered first. *The project archaeologist(s) will be afforded sufficient time and opportunity to investigate any archaeological activity, or suspected archaeological activity, encountered. It is recommended that a toothless bucket is used whenever possible during the groundworks;*
- All attendances and photographs will be recorded using GAT pro-formas (cf. Appendices [II](#) and [III](#)). The records will include topsoil and subsoil depths, as well as the composition of the glacial horizon. All encountered subsurface features will be recorded on GAT pro-formas with detailed notations and will be recorded photographically with an appropriate scale, located via GPS and a measured survey completed, either hand drawn or using a Trimble R8 GPS unit;
- Photographic images will be taken using a digital SLR camera set to maximum resolution in RAW format; a photographic record will be maintained on site using GAT pro-formas and digitised in *Microsoft Access* as part of the fieldwork archive and dissemination process. Photographic images will be archived in TIFF format using Adobe Photoshop; the archive numbering system will start from **G2716_001**. A photographic ID board will be used to record site code, image orientation and any relevant context numbers; scale bars of appropriate size and quantity will be used, both for general images and for individual features/feature groups.
- Any archaeological features/deposits/structures encountered will be manually cleaned and examined to determine extent, function, date and relationship to adjacent activity. The following excavation strategy will generally apply: 50% sample of each sub-circular feature, 25% sample of each linear feature (terminal ends and intersection points with other features will be prioritised). However, if discrete features are identified, these will be 100% excavated (this may be applicable to Features 3 and 4). Any features that comprise a spread of material rather than a cut feature, will be completed in quadrants (if fully extant) or 100% excavated if present as a discrete spread. The former quarry

(Feature 1), will be recorded using photography and a survey of its outline (if identifiable) using the Trimble R8 GPS unit;

- Any required sections and plans to be drawn at a minimum 1:10 scale using GAT A4, A3 or A2 pro-forma permatrace (whichever is appropriate to the size/scale of the drawing); section datums will be recorded.

Should dateable artefacts, human remains and/or ecofacts be recovered, an **interim fieldwork report** will be submitted summarising the results of the mitigation, along with recommendations for a post-excavation assessment and analysis (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

Whilst human remains are not expected, if any human remains are identified that cannot be preserved in situ, any excavation 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.

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 grave) and stored in a suitable manner within GAT premises. If significant quantities of human remains are encountered, a human osteologist should 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 who will assist in devising the excavation, recording and sampling strategy for features containing human remains. The osteologist should 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* (Chartered Institute for Archaeologists, 2017).

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 *The Role of the Human Osteologist in an Archaeological Fieldwork Project (Historic England, 2018)*.

3.4 Ecofacts

Should any archaeological features and/or sealed deposits be identified that are deemed suitable for assessment and analysis, bulk ecofact samples will be taken by the GAT Project Archaeologist team using 10 litre sampling buckets. The deposits will be assessed and analysed for plant species and charcoal, with the results used to inform agrarian practices and wood fuel use, as well as possibly dating. Initial assessment would be completed by the GAT Project Archaeologist team using wet sieving, with the subsequent species identification assessment completed by an ecofact specialist (Jackaline Robertson | AOC Archaeology | telephone: 0208 843 7380). Any deposits deemed suitable for dating will be submitted to a laboratory specialising in radiocarbon dating (e.g., SUERC).

Any ecofact assessment/analysis proposals will require additional resourcing and cost and will only be undertaken further to agreement with GAPS and the client.

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

3.5 Artefacts

There are known findspots within the local and any diagnostic artefacts recovered during the watching brief 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, in particular the advice provided within *First Aid for Finds* (Watkinson and Neal 2001).

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 Historic England (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, telephone: 0208 843 7380. 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 Storiol, 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 Portable Antiquities Scheme acts as advisor on technical matters, and may be the recipient body for the objects.

The Treasure Valuation Committee, based at the British Museum, and informed by the Portable Antiquities Scheme, 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 (via *Griffiths Civil Engineering and Construction*) for agreement regarding the transfer of artefacts, initially to GAT and subsequently to the relevant museum

(Storiell, Ffordd Gwynedd, Bangor, Gwynedd, 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. Artefacts to be donated will then be transferred to Storiell.

3.6 Working Project Archive

Following the completion of the fieldwork, a working project archive will be created 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 (if relevant): all cross referenced and complete;
5. Plans (if relevant): 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 relevant site archive data will be added to a digital project register specific to this project, which will be prepared in *Microsoft Excel*.

The site archive data will then be processed, final illustrations will be compiled and a report will be produced which will detail and synthesise the results.

3.7 Data Management Plan

The physical archive will be stored in a designated project folder and the location confirmed in the Trust project database; the digital dataset will be stored on a dedicated Trust server, with the location confirmed in the Trust project database via a specific hyperlink. External datasets for the HER and RCAHMW are as defined in the dissemination strategy below. De-selected digital data will be confirmed in an updated Selection Strategy document appended to the final report.

3.8 Reporting

Should extensive archaeology, including dateable artefacts, human remains and/or ecofacts be recovered, an **interim report** will be submitted first summarising the results of the mitigation and providing recommendations for post-excavation assessment and analysis in line with the Historic England MAP2 process. Further to the completion of the post-excavation assessment and analysis, a **final report** will be prepared that will include the following:

1. Non-technical summary (Welsh and English);
2. Introduction;
3. Background;
4. Methodology;
5. Results;
6. Conclusion;
7. List of sources consulted;
8. Figures; to include
 - a. General location plan;
 - b. Detailed location plans specific to targeted area – to each include location of archaeological features (if applicable);
 - c. Plans and sections of archaeological features (if applicable).
 - d. Artefacts (if applicable)
9. Appendix I – approved GAT written scheme of investigation
10. Appendix II – photographic register
11. Appendix III – GAT selection strategy
12. Appendix IV - context register
13. Appendix V – drawing register (if applicable)
14. Appendix VI - artefact register (if applicable)
15. Appendix VII – ecofact register (if applicable)
16. Appendix VIII – specialist reporting (as applicable dependent on results)

The schedule for reporting will be determined by the scale and complexity of any archaeology encountered (or lack thereof), but a fieldwork or interim report will provisionally be submitted within one month of fieldwork completion. All parties will subsequently be informed in of the expected submission date for the final report and archive.

3.9 Dissemination

On final approval, the following dissemination and archiving of the report and digital dataset will apply:

- A digital report(s) will be provided to the client and GAPS (draft report then final report);
- A digital report will be provided to the regional Historic Environment Record; this will be submitted within one month of final report completion, along with a digital dataset comprising an Event PRN summary. The report and dataset will be submitted in accordance with the required standards set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1); and
- A digital report and digital archive dataset will be provided to Royal Commission on Ancient and Historic Monuments, Wales within one month of final report completion; the dataset will be compiled in accordance with the *RCAHMW Guidelines for Digital Archives Version 1* and include:
 - Photographic metadata (Microsoft Access);
 - Photographic archive (TIFF format);
 - Project Information form (Excel);
 - File Information form (Excel) – Microsoft Word report text final;
 - File Information form (Excel) – Photographic metadata (general);
 - File Information form (Excel) – Adobe PDF report final; and
 - File Information form (Excel) - Photographic metadata (detail).

3.10 Selection Strategy

As defined in *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (Chartered Institute for Archaeologists, 2020) section 3.3.1, a project specific selection strategy and data management plan should be prepared. In support of this, the Chartered Institute for Archaeologist (CIfA), have stated that it is “widely accepted that not all the records and materials collected or created during the course of an Archaeological Project require preservation in perpetuity. These records and materials constitute the Working Project Archive which will be subject to Selection, in order to establish what will be retained for long-term curation”. The aim of selection is to ensure that all the elements retained from the Working Project Archive for inclusion in the Archaeological Archive are appropriate to establish the significance of the project and support “future research, outreach, engagement, display and learning activities”. Selection should be “focused on selecting what is to be retained to support these future needs, rather than deciding what can be dispersed” and can be qualified by a selection strategy, which details the project-specific selection process, agreed by all parties (including GAPS, client and/or landowner), which will be applied to a Working Project Archive prior to its transfer into curatorial care as the Archaeological Archive. The selection strategy will be summarised in [Appendix IV](#) and finalised for the final report; the strategy will take into account:

- The aims and objectives of the project.
- The brief and/or Written Scheme of Investigation (WSI)).
- The Collecting Institution’s collection policy and/or deposition guidelines.
- Local and regional research frameworks.
- Relevant thematic or period specific research frameworks.
- The project’s Data Management Plan (DMP).
- Internal recording and reporting policies.
- Material-specific guidance documents.

4 PERSONNEL

The project will be managed by John Roberts, Principal Archaeologist GAT Contracts Section with attendances on-site undertaken by a GAT Project Archaeologists. For the trench across Feature 2 (Mill Race) 2No Project Archaeologists will be present; for remainder of the watching brief, 1No Project Archaeologist will be present, although recourse to additional Project Archaeologist(s) will be sought if required.

The Project Archaeologist(s) will be responsible for following:

- All archaeological watching brief duties on site;
- On-site liaison with *Griffiths Civil Engineering and Construction*;
- GAPS liaison, with regular updates;
- specialist liaison (if relevant);
- completing all on site pro-formas and the fieldwork archive itemised above, including the digital project register;
- for submitting a draft final report (or interim report) for project manager review and approval, to then be submitted as per the arrangements defined above;
- sourcing Primary Reference Numbers (PRN) from the GAT HER for any new features identified;
- completing an event summary and creating or updating PRN data, dependent on results;
- GAT HER and RCAHMW archive submission.

5 HEALTH AND SAFETY

The GAT Project Archaeologist(s) will be CSCS certified. Any hazards, risks and recommended risk mitigation will be identified prior to the start of work in a site specific risk assessment, copies of which will be supplied to the client and sub-contractor prior to the beginning of fieldwork. All GAT staff will be issued with required personal safety equipment, including high visibility jacket, steel toe-capped boots and hard hat. All GAT fieldwork is undertaken in accordance with the Trust's Health and Safety Manual, Policy and Handbook (prepared by Ellis Whittam) and both the Welsh Government's and GAT's guidelines on Covid-19.

6 SOCIAL MEDIA

One of the key aims in the GAT mission statement is to improve the understanding, conservation and promotion of the historic environment in our area and inform and educate the wider public. To help achieve this, GAT maintains an active social media presence and seeks all opportunities to promote our projects and results. With permission, GAT would like the opportunity to promote our work on this scheme through our social media platforms. This could include social media postings during our attendance on-site as well as any postings to highlight results. In all instances, approval will be sought from client prior to any postings.

7 INSURANCE

7.1 Public/Products Liability

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

INSURER Aviva Insurance Limited

POLICY TYPE Public Liability

POLICY NUMBER 24765101CHC/UN/000375

EXPIRY DATE 21/06/2022

7.2 Employers Liability

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

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

INSURER Aviva Insurance Limited

POLICY TYPE Employers Liability

POLICY NUMBER 24765101 CHC / UN/000375

EXPIRY DATE 21/06/2022

7.3 Professional Indemnity

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

INSURER Hiscox Insurance Company Limited

POLICY TYPE Professional Indemnity

POLICY NUMBER PL-PSC10002389775/00

EXPIRY DATE 22/07/2022

8 SOURCES CONSULTED

1. A Research Framework for the Archaeology of Wales, Current Research Framework Documents 2017 (<https://archaeoleg.org.uk/documents2017.html>)
2. Brunning, R and Watson, J 2010, Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood (3rd edition)
3. Chartered Institute for Archaeologists, 2020, Standard and Guidance for Archaeological Watching Brief
4. Chartered Institute for Archaeologists, 2020, Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives
5. Chartered Institute for Archaeologists, 2020, Updated Guidelines to the Standards for Recording Human Remains
6. English Heritage, 1991, Management of Archaeological Projects
7. English Heritage, 2011, Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation
8. English Heritage, 2015, Management of Research Projects in the Historic Environment (MoRPHE)
9. Historic England, 2012, Waterlogged Organic Artefacts Guidelines on their Recovery, Analysis and Conservation
10. Historic England, 2018, The Role of the Human Osteologist in an Archaeological Fieldwork Project
11. Royal Commission on Ancient and Historic Monuments of Wales, 2015, Guidelines for digital archives
12. The Welsh Archaeological Trusts, 2018, Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 1.1
13. Watkinson, D and Neal, V, 2001, First aid for finds (3rd edition)

FIGURE 01

Location of Features listed in the gazetteer. The old quarry pit (Feature) 1 is outlined in red, and the former mill race (Feature 2) is shown in blue. Sites on the Gwynedd HER are shown as red dots and are numbered. The base map is taken from OS 1:10 000 sheet SH3436. Scale 1:2500@A4

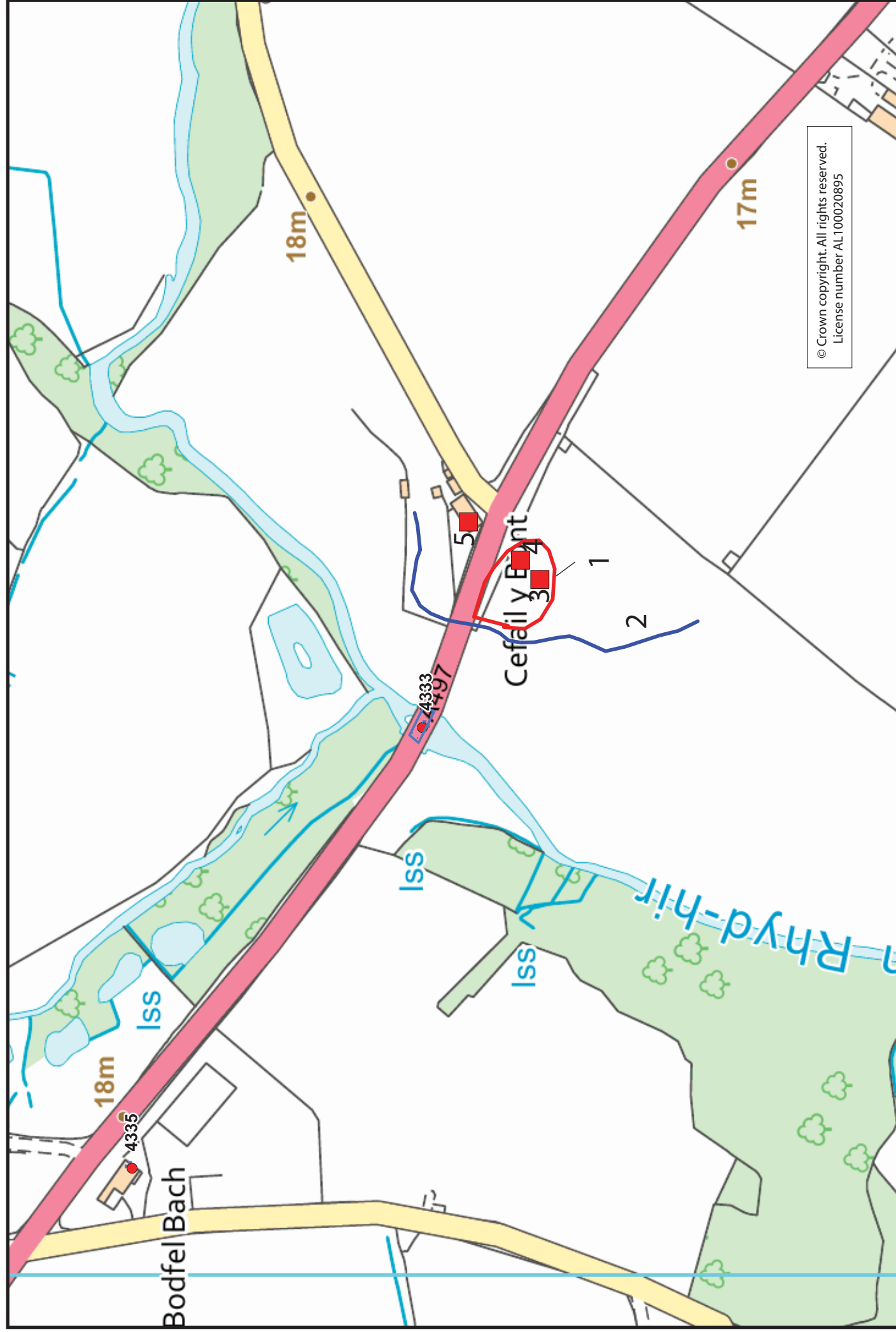


Figure 01: Location of Features listed in the gazetteer. The old quarry pit (Feature 1) is outlined in red, and the former mill race (Feature 2) is shown in blue. Sites on the Gwynedd HER are shown as red dots and are numbered. The base map is taken from OS 1:10 000 sheet SH3436. Scale 1:2500@A4

FIGURE 02

Reproduction of YGC Drawing No. 7118 SC 200

NODIADAU/NOTES

1. All Downfalls in milliwaters shall always otherwise stated.
2. All Downfalls in milliwaters above Onconce Datum.
3. Take up or down and remove existing surfacing material to existing temporary bridge and remove to license up off site.
4. Consideration should be placed to reuse the existing sub base and Class 1A material underneath the approaches to the temporary bridge.
5. The approaches contain approximately 150 tonnes of sub base and 250 tonnes of 1A material.
6. A summary brief of archaeological features between Chicheley 360 and 380 is included in Volume 4 of the Archaeological Assessment Report. A detailed site plan and a full site walkover is included in Volume 4 and 5 of the Archaeological Assessment Report.
7. Vegetation and topographic data is included in Volume 4 of the documents.
8. Vegetation and the clearance shall take place outside of the bird nesting season – start of September to the end of February.
9. Removal of vegetation, hedgerows and 'cuddles' to be supervised under watching brief, ideally in October only when temperatures are above 10°C.
10. All work adjacent to trees is to be undertaken in accordance with BS5837: Trees in relation to design, demolition and construction.
11. Competent tree contractors should be employed to carry out the works in accordance with BS5836: Tree Work and good working

10. All areas within the marked root protection areas must be supported by a detailed engineering assessment and solution, in the AMT report in Volume 6. If this activity, although essential, hedges the opportunity for a design solution, the ECOW must state why this is the case.
11. All tree removal to be completed under the under competent arboriculture supervision and Ecological Code of Works (ECOW) within root protection areas. After completion of the works, the safety of the retained tree should be confirmed.
12. Root protection measures to be implemented in accordance with BS5837:2012 where construction is required in close proximity to retained trees, including use of Terram geotextiles for the over-retained trees.
13. The AMT report advises the production of a tree work schedule by the project arboriculturist.

Allredd/Key

- Existing
Proposed
Site Extent
Trees to be felled and removed off site
Tree to be protected as detailed in AIA and AMS report in Volume 6
Feature 1 – Old Gravel Pit
Feature 2 – Mill Race from Melin

Tree to be protected as detailed in

Feature 1 - Old Gravel Pit

Feature 2 - Mill Race from Melin



EVALUATION / SCHEME .

A497 CYNIL I LIN NEWYDD PONT BODFAL

TETTEL, LIUNJAD / DRAWING TITLE:

SITE CLEARANCE

DAILINWYD GAN : DRAWN BY :	EH / RMO	DTDDAD DAILINWYD : DATE DRAWN :	17/08/21
GWRHWYD GAN : CHECKED BY :	RMO/CE	DTDDAD GWRHWYD : DATE CHECKED :	18/08/21
Takin SCALE:	1 0 1	GRADYDDO : SCALE:	1:500 @ A1

Rhif Lluniad
Drawing No.

NAME _____



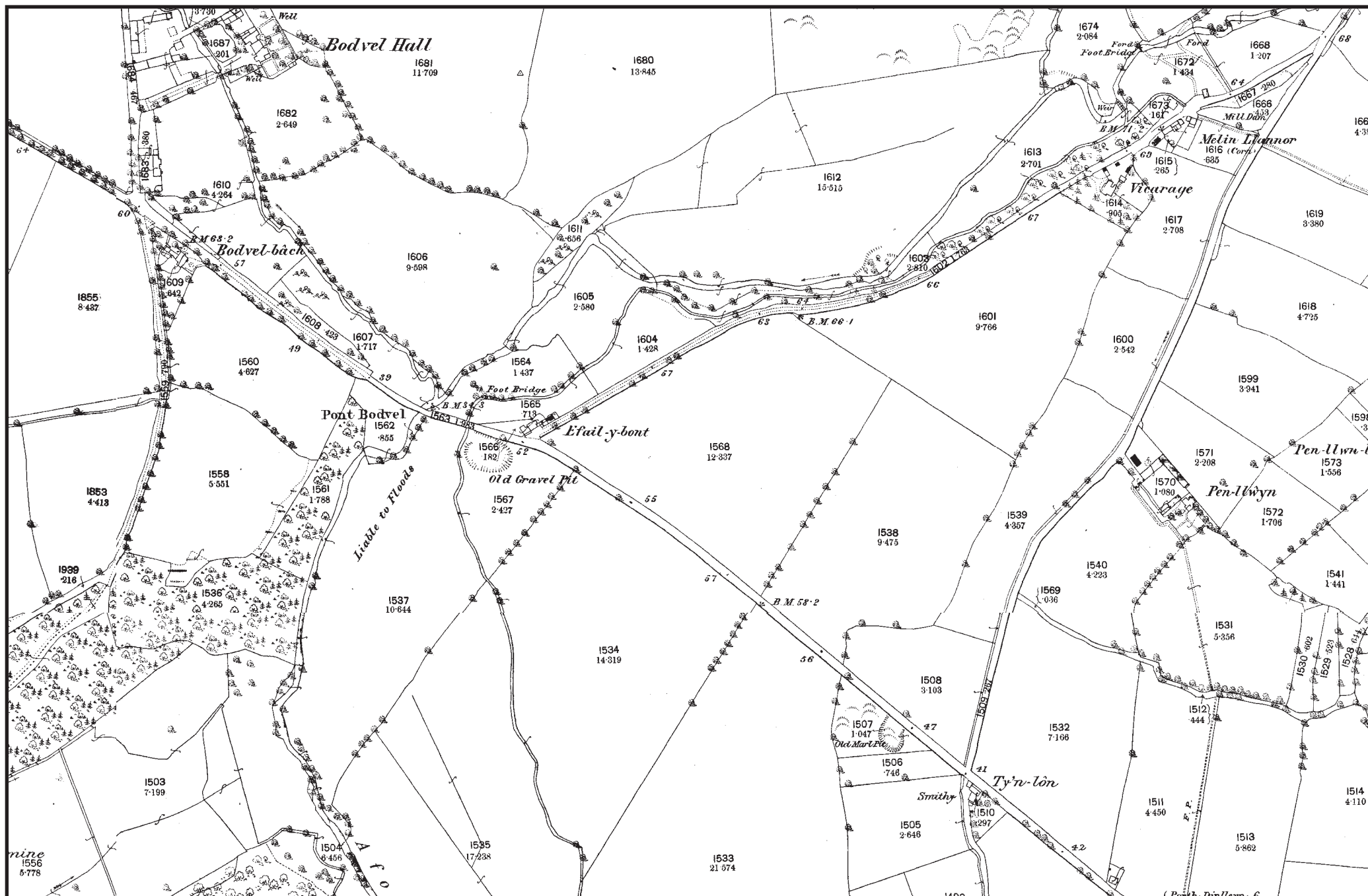


FIGURE 03: Reproduction of Ordnance Survey County Series Map 1-inch to 25-mile (Sheets XL.2, XL.3, XL.6 and XL.7) First Edition published 1889. Scale 1:5000@A4

APPENDIX I

Gwynedd Archaeological Trench Record pro-forma

TRENCH SHEET

Project Name and Number			Trench number	
Trench size		Plans		
Max. trench depth		Sections		
Orientation		Photos		
Date/Initials		Area/chainage		

List of layers and/or features in trench (continue on back of sheet if necessary)

Context No.	Depth below surface	Brief description

General summary



Sketch plan:

Add north arrow:

Sketch section:

Notes:

APPENDIX II

Gwynedd Archaeological 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 III

Gwynedd Archaeological Trust Photographic Metadata pro-forma



Digital Photographic Record

Include main context numbers for each shot, drawing numbers for sections and any other relevant numbers for cross referencing.

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

Regularly upload photographs to computer.

[illegible]

APPENDIX IV

Gwynedd Archaeological Trust Context Selection Strategy

G2716_Pont_Bodfal_Newydd

23/03/2022 v1.0

Selection Strategy

Project Information

Project Management

Project Manager	John Roberts john.roberts @heneb.co.uk
Archaeological Archive Manager	John Roberts john.roberts @heneb.co.uk
Organisation	Gwynedd Archaeological Trust

Stakeholders		Date Contacted
Collecting Institution(s)	GAT Historic Environment Record	17/03/2022
	RCAHMW	On completion of Project Archive
	Storiell, Ffordd Gwynedd, Bangor, Gwynedd, LL57 1DT	If applicable, post-fieldwork based on artefact recovery
Project Lead / Project Assurance	Gwynedd Archaeological Planning Services	18/03/2022
Landowner / Developer	<i>Griffiths Civil Engineering and Construction</i>	28/02/2022

Resources

Resources required Describe the resources required to implement this Selection Strategy, particularly if unusual resources are required.	No unusual resources required outside of GAT normal operating equipment and personnel.
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Context

Describe below the context of this Selection Strategy. You should refer to:

- The aims and objectives of the project;
- Local Authority guidance (including the brief);
- Research Frameworks;
- The repository collection development policy and/or deposition policy;
- Material-specific guidance documents.

Note: This section may be copied from your Project Design/WSI to ensure all Stakeholders receive this context information.

The full aims and objectives of this project are detailed in the project specific WSI.

Gwynedd Archaeological Trust has been asked by Griffiths Civil Engineering and Construction to prepare a written scheme of investigation (WSI) for an Archaeological Watching Brief during bridge replacement works at Pont Bodfal, Pwllheli, Gwynedd (NGR SH34283660; postcode: LL53 6DN; WSI Figure 01). The existing bridge is damaged and closed to traffic and a temporary bridge and road are currently in operation downstream. The replacement bridge and road will be on a similar alignment to the temporary set up and groundworks are currently scheduled from April 2022. The watching brief will monitor the intrusive groundworks.

Gwynedd Archaeological Trust. 2021. Caergwrli Llantrisant Written Scheme of Investigation for Archaeological Mitigation (Strip/Map/Record). Project (G2704).

1 – Digital Data

Stakeholders

Name the individual(s) responsible for the Digital Data Selection decisions (i.e. Archaeological Archive Manager, Project Manager, Collections Curator).

John Roberts (GAT Principal Archaeologist)

Selection

Location of Data Management Plan (DMP)

Selection of digital data elements should be considered in your project's DMP. For the purpose of the Selection Strategy, you can either copy the selection section of your DMP below, or attach it as an appendix to this document. Please indicate here if the DMP is attached.

All digital data will be collected, stored and selected in lines with the Gwynedd Archaeological Trust (GAT) Data Management Plan located on GAT's servers (available on request).

The selection strategy in your DMP should:

- 1.1 Define what digital data will be selected for inclusion in the archaeological archive, how this will be done, and why. Do not forget to consider that specialists may have digital data that should be included in the archaeological archive.
- 1.2 Identify the selection review points during the project (i.e. project planning, data gathering, analysis and reporting and archive compilation).
- 1.3 Reference all relevant standards, policies or guidelines (e.g. digital repository deposition requirements) and specialist advice sought.
- 1.4 Identify any selection decisions that differ from standard guidelines and explain why.

Following the completion of the fieldwork, a working project archive will be created 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 (if relevant): all cross referenced and complete;
5. Plans (if relevant): 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 relevant site archive data will be added to a digital project register specific to this project, which will be prepared in *Microsoft Excel*.

This data will then be used as the basis for the physical and digital dataset archives. Information from these will be used to compile the project report. The physical archive will be stored in a designated project folder and the location confirmed in the Trust project database; the digital dataset will be stored on a dedicated Trust server, with the location confirmed in the Trust project database via a specific hyperlink. External datasets for the HER and RCAHMW are as defined in the dissemination strategy below. De-selected digital data will be confirmed in an updated digital management plan appended to the final report

De-Selected Digital Data

The procedure for dealing with De-selected digital data and what specialist advice informed this process should be recorded in your DMP. Please copy this information here or attach your DMP as an appendix to this document.

It is envisaged that the de-selected material will be retained on the GAT servers for 2 years following the completion of the project at which point they will be reviewed and deleted as necessary in line with the GAT DMP.

Amendments

Detail any amendments to the above selection strategy here.

Date	Amendment	Rationale	Stakeholders

2 – Documents

Stakeholders

Name the individual(s) responsible for the Documents Selection decisions (i.e. Archaeological Archive Manager, Project Manager, Repository Representative).

John Roberts – Principal Archaeologist, Gwynedd Archaeological Trust;
Sean Derby – Historic Environment Record, Gwynedd Archaeological Trust;
Gareth Edwards, *Head of Knowledge and Understanding, RCAHMW*

Selection

Describe your Selection Strategy for the Documents elements of the archaeological archive. To do this you must:

- 2.1 Define which documents will be selected for inclusion in the archaeological archive, how this will be done, and why. Do not forget to consider that specialists may have documents that should be included in the archaeological archive.
- 2.2 Identify the selection review points during the project (e.g. project planning, data gathering, analysis and reporting and archive compilation).
- 2.3 Reference all relevant standards, policies or guidelines (e.g. digital repository deposition requirements) and specialist advice sought.
- 2.4 Identify any selection decisions that differ from standard guidelines and explain why.

- A digital report will be provided to the regional Historic Environment Record; this will be submitted within six months of project completion (final report only), along with a digital dataset comprising an Event PRN summary. The report and dataset will be submitted in accordance with the required standards set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1); and
- A digital report and digital archive dataset will be provided to Royal Commission on Ancient and Historic Monuments, Wales (final report only), in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. The dataset will be prepared in the format required by RCAHMW and will include:
 - Photographic metadata (Microsoft Access);
 - Photographic archive (TIFF format);
 - Project Information form (Excel);
 - File Information form (Excel) – Microsoft Word report text final;
 - File Information form (Excel) – Photographic metadata (general);
 - File Information form (Excel) – Adobe PDF report final; and
 - File Information form (Excel) - Photographic metadata (detail).

De-Selected Documents

Describe the procedure for dealing with De-selected material and what specialist advice has informed this procedure.

It is envisaged that the material de-selected from inclusion in the preserved archive will be duplicates or re-productions created during the analysis phase of the project. De-selected material will therefore either be retained to supplement GAT's research files or recycled.

Amendments

Detail any amendments to the above selection strategy here.

Date	Amendment	Rationale	Stakeholders

3 – Materials

Note: This step should be completed for each material component of the archaeological archive. Copy this table for the various materials as required, providing the 'Material Type' and a section identifier (eg. '3.1') for each.

Material type	Bulk Finds	Section 3.	
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Stakeholders

Name the individual(s) responsible for the Materials Selection decisions (i.e. Archaeological Archive Manager, Project Manager, Repository Representative).

John Roberts – Principal Archaeologist, Gwynedd Archaeological Trust;
Tom Fildes –Planning Archaeologist, Gwynedd Archaeological Planning Service;
TBC, *Curatorial Officer at STORIEL*

There are known findspots within the local and any diagnostic artefacts recovered during the watching brief 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, in particular the advice provided within *First Aid for Finds* (Watkinson and Neal 2001).

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 Historic England (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, telephone: 0208 843 7380. 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 Storiell, 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 Portable Antiquities Scheme acts as advisor on technical matters, and may be the recipient body for the objects.

The Treasure Valuation Committee, based at the British Museum, and informed by the Portable Antiquities Scheme, 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 for agreement regarding the transfer of artefacts, initially to GAT and subsequently to the relevant museum (Storiell, Ffordd Gwynedd, Bangor, Gwynedd, 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. Artefacts to be donated will then be transferred to Storiell.

Selection

Describe your Selection Strategy for each material type and or object type. To do this you must:

- 3.1 State the Selection Strategy you are applying to each category of material, how this will be done, and why.
- 3.2 Identify the selection review points during the project (e.g. project planning, data gathering, analysis and reporting and archive compilation).
- 3.3 Reference all relevant standards, policies or guidelines (e.g. thematic, period, and regional, Research Frameworks, repository deposition policies) and specialist advice sought.
- 3.4 Identify any selection decisions that differ from standard guidelines and explain why.

The [Materials Selection Template](#) may be useful in structuring this section.

The full material archive returned to the GAT offices will be reviewed following analysis: Stakeholders (see above) will make selection decisions based on specialists reports and selection recommendations and SDMS collecting policy. The selection will take place during archive completion.

Uncollected Material

If you are practising selection in the field, describe the process that will be applied. To do this you must:

- Detail how you will characterise, quantify and record all uncollected material on site.
- Explain how you will dispose of, or re-distribute, uncollected material.

Any uncollected material will be left on-site to be incorporated into backfill.

De-Selected Material

Describe what you will do with the de-selected material. All processed material should have been adequately recorded before de-selection.

All bulk finds will be assessed and recorded to appropriate standards. De-selected material will be returned to the landowner as agreed by the landowner and curatorial archaeologist.

Amendments

Detail any amendments to the above selection strategy here.

Date	Amendment	Rationale	Stakeholders

Materials Selection Template

This table may be inserted into Section 3 of the main [Selection Strategy Template](#) to help present differing selection strategies for different material types

Find Type	Selection Strategy	Stakeholders	Review Points

APPENDIX II

Gwynedd Archaeological Trust Photographic Metadata

PHOTO RECORD NUMBER	DESCRIPTION	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO	DATE OF CREATION OF DIGITAL PHOTO	ORIGINATING ORGANISATION	PLATES
G2716_001	Pre-excavation image showing line of mill race (PRN 90074; Feature 2) adjacent to the new carriageway	SW	not used	Robert Evans	21/04/2022	Gwynedd Archaeological Trust	01
G2716_002	Topsoil removal over the mill race (PRN 90074; Feature 2)	SW	1x1m	Robert Evans	21/04/2022	Gwynedd Archaeological Trust	02
G2716_003	West-facing section (context [1003]) through the mill race (PRN 90074; Feature 2)	W	not used	Robert Evans	21/04/2022	Gwynedd Archaeological Trust	03
G2716_004	General view of the mill race (PRN 90074; Feature 2) and topsoil stripping	NW	not used	Robert Evans	21/04/2022	Gwynedd Archaeological Trust	04
G2716_005	View of topsoil strip on the corner of the compound area - no possibility of seeing the archaeology	NE	1x1m	Robert Evans	22/04/2022	Gwynedd Archaeological Trust	05
G2716_006	View of the former gravel pit (PRN90073; Feature 1) with the topsoil removed	SW	1x1m	Robert Evans	22/04/2022	Gwynedd Archaeological Trust	07
G2716_007	General view of the topsoil strip	N	1x1m	Robert Evans	22/04/2022	Gwynedd Archaeological Trust	06
G2716_008	General view of the former gravel pit (PRN90073; Feature 1)	W	1x1m	Robert Evans	22/04/2022	Gwynedd Archaeological Trust	08
G2716_009	General working shot showing topsoil stripping	NW	not used	Robert Evans	22/04/2022	Gwynedd Archaeological Trust	09

PHOTO RECORD NUMBER	DESCRIPTION	VIEW FROM	SCALE(S)	CREATOR OF DIGITAL PHOTO	DATE OF CREATION OF DIGITAL PHOTO	ORIGINATING ORGANISATION	PLATES
G2716_010	General view of the stripped area	N	not used	Robert Evans	22/04/2022	Gwynedd Archaeological Trust	10
G2716_011	View of topsoil stripping of the Efailnewydd link road section	SW	not used	Robert Evans	27/04/2022	Gwynedd Archaeological Trust	11
G2716_012	View of cut through the mill race (PRN 90074; Feature 2)	W	1x1m	Robert Evans	27/04/2022	Gwynedd Archaeological Trust	
G2716_013	West facing section through the mill race (PRN 90074; Feature 2)	W	1x1m	Robert Evans	27/04/2022	Gwynedd Archaeological Trust	
G2716_014	General view along trench showing the former gravel pit (PRN90073; Feature 1)	SW	1x1m	Robert Evans	27/04/2022	Gwynedd Archaeological Trust	12
G2716_015	General view along trench showing the former gravel pit (PRN90073; Feature 1)	N	1x1m	Robert Evans	27/04/2022	Gwynedd Archaeological Trust	13
G2716_016	View of west facing section through sand	W	1x1m	Robert Evans	27/04/2022	Gwynedd Archaeological Trust	14

APPENDIX III

Gwynedd Archaeological Trust Selection Strategy

G2716_Pont_Bodfal_Newydd

28/07/2022 v2.0

Selection Strategy

Project Information

Project Management

Project Manager	John Roberts john.roberts @heneb.co.uk
Archaeological Archive Manager	John Roberts john.roberts @heneb.co.uk
Organisation	Gwynedd Archaeological Trust

Stakeholders		Date Contacted
Collecting Institution(s)	GAT Historic Environment Record	17/03/2022
	RCAHMW	On completion of Project Archive
	Storiell, Ffordd Gwynedd, Bangor, Gwynedd, LL57 1DT	If applicable, post-fieldwork based on artefact recovery
Project Lead / Project Assurance	Gwynedd Archaeological Planning Services	18/03/2022
Landowner / Developer	<i>Griffiths Civil Engineering and Construction</i>	28/02/2022

Resources

Resources required Describe the resources required to implement this Selection Strategy, particularly if unusual resources are required.	No unusual resources required outside of GAT normal operating equipment and personnel.
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Context

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- The aims and objectives of the project;
- Local Authority guidance (including the brief);
- Research Frameworks;
- The repository collection development policy and/or deposition policy;
- Material-specific guidance documents.

Note: This section may be copied from your Project Design/WSI to ensure all Stakeholders receive this context information.

The full aims and objectives of this project are detailed in the project specific WSI.

Gwynedd Archaeological Trust was asked by Griffiths Civil Engineering and Construction to prepare a written scheme of investigation (WSI) for an Archaeological Watching Brief during bridge replacement works at Pont Bodfal, Pwllheli, Gwynedd (NGR SH34283660; postcode: LL53 6DN; WSI Figure 01). The existing bridge is damaged and closed to traffic and a temporary bridge and road are currently in operation downstream. The replacement bridge and road were on a similar alignment to the temporary set up and groundworks were undertaken from April 2022. The watching brief monitored the intrusive groundworks.

Gwynedd Archaeological Trust. 2022. Pont Bodfal Newydd Written Scheme of Investigation for Archaeological Watching Brief. Project (G2716).

1 – Digital Data

Stakeholders

Name the individual(s) responsible for the Digital Data Selection decisions (i.e. Archaeological Archive Manager, Project Manager, Collections Curator).

John Roberts (GAT Principal Archaeologist)

Selection

Location of Data Management Plan (DMP)

Selection of digital data elements should be considered in your project's DMP. For the purpose of the Selection Strategy, you can either copy the selection section of your DMP below, or attach it as an appendix to this document. Please indicate here if the DMP is attached.

All digital data was collected, stored and selected in lines with the Gwynedd Archaeological Trust (GAT) Data Management Plan located on GAT's servers (available on request).

The selection strategy in your DMP should:

- 1.1 Define what digital data was selected for inclusion in the archaeological archive, how this was done, and why. Do not forget to consider that specialists may have digital data that should be included in the archaeological archive.
- 1.2 Identify the selection review points during the project (i.e. project planning, data gathering, analysis and reporting and archive compilation).
- 1.3 Reference all relevant standards, policies or guidelines (e.g. digital repository deposition requirements) and specialist advice sought.
- 1.4 Identify any selection decisions that differ from standard guidelines and explain why.

Following the completion of the fieldwork, a working project archive was created 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 (if relevant): all cross referenced and complete;
5. Plans (if relevant): 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 relevant site archive data was added to a digital project register specific to this project, which was prepared in *Microsoft Excel*.

This data was used as the basis for the physical and digital dataset archives. Information from these was used to compile the project report. The physical archive was stored in a designated project folder and the location confirmed in the Trust project database; the digital dataset was stored on a dedicated Trust server, with the location confirmed in the Trust project database via a specific hyperlink. External datasets for the HER and RCAHMW are as defined in the dissemination strategy below. De-selected digital data was confirmed in an updated digital management plan appended to the final report

De-Selected Digital Data

The procedure for dealing with De-selected digital data and what specialist advice informed this process should be recorded in your DMP. Please copy this information here or attach your DMP as an appendix to this document.

No de-selected digital data

Amendments

None

2 – Documents

Stakeholders

Name the individual(s) responsible for the Documents Selection decisions (i.e. Archaeological Archive Manager, Project Manager, Repository Representative).

John Roberts – Principal Archaeologist, Gwynedd Archaeological Trust;
Sean Derby – Historic Environment Record, Gwynedd Archaeological Trust;
Gareth Edwards, *Head of Knowledge and Understanding, RCAHMW*

Selection

Describe your Selection Strategy for the Documents elements of the archaeological archive. To do this you must:

- 2.1 Define which documents was selected for inclusion in the archaeological archive, how this was done, and why. Do not forget to consider that specialists may have documents that should be included in the archaeological archive.
- 2.2 Identify the selection review points during the project (e.g. project planning, data gathering, analysis and reporting and archive compilation).
- 2.3 Reference all relevant standards, policies or guidelines (e.g. digital repository deposition requirements) and specialist advice sought.
- 2.4 Identify any selection decisions that differ from standard guidelines and explain why.

- A digital report was provided to the regional Historic Environment Record; this was submitted within six months of project completion (final report only), along with a digital dataset comprising an Event PRN summary. The report and dataset was submitted in accordance with the required standards set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 1.1); and
- A digital report and digital archive dataset were provided to Royal Commission on Ancient and Historic Monuments, Wales (final report only), in accordance with the *RCAHMW Guidelines for Digital Archives Version 1*. The dataset was prepared in the format required by RCAHMW and included:
 - Photographic metadata (Microsoft Access);
 - Photographic archive (TIFF format);
 - Project Information form (Excel);
 - File Information form (Excel) – Microsoft Word report text final;
 - File Information form (Excel) – Photographic metadata (general);
 - File Information form (Excel) – Adobe PDF report final; and
 - File Information form (Excel) - Photographic metadata (detail).

De-Selected Documents

Describe the procedure for dealing with De-selected material and what specialist advice has informed this procedure.

There are no de-selected documents

Amendments

None



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

