1680

CEFN CRUEAN ISAF, BRITHDIR, GWYNEDD

ASESIAD ARCHAEOLEGOL / ARCHAEOLOGICAL ASSESSMENT

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

CEFN CRUEAN ISAF, BRITHDIR, GWYNEDD

ASESIAD ARCHAEOLEGOL / ARCHAEOLOGICAL ASSESSMENT

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Figure 05: Reproduction of Second Edition 6-inch to 1-mile County Series Ordnance Survey map sheet XXX.IV, published in 1889, with approximate location of proposed hydropower scheme route highlighted in red.

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Figure 09: Location plan detailing known archaeological assets, with proposed hydropower scheme route highlighted in red, assessment buffer in dashed red and gazetteer assets highlighted in purple. Scale 1:15,000@A4. Base map taken from Ordnance Survey 1:10 000 Series © Crown copyright. All rights reserved. License number AL100020895

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CRYNHODEB ANHECHNEGOL

Comisiynwyd Ymddiriedolaeth Archaeolegol Gwynedd gan Green Blades Engineering Ltd. i gynnal asesiad archeolegol o ddesg yng Nghefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd cyn cynllun ynni hydro arfaethedig. Mae'r cynllun wedi'i leoli o fewn tirwedd amaethyddol ac anheddu ehangach sy'n ysgogi gweithgarwch cynhanesyddol, Rhufeinig ac ôl-ganoloesol, ac er bod y planhigfeydd coetir diweddar a'r planhigfeydd dilynol mae torri coed yn cuddio llawer o'r dirwedd yn y llwybr arfaethedig, mae potensial o hyd ar gyfer gweithgarwch amaethyddol ôl-ganoloesol, gweithgarwch sy'n gysylltiedig â thorri mawn, a gweithgarwch sy'n gysylltiedig â Ffordd Rufeinig, i oroesi. Ar sail hyn, argymhellir cynnal briff gwylio yn ystod gwaith cynllun.

NON-TECHNICAL SUMMARY

Gwynedd Archaeological Trust was commissioned by Green Blades Engineering Ltd. to undertake an archaeological desk-based assessment at Cefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd in advance of a proposed hydropower scheme. The scheme is located within a wider agricultural and settlement multiperiod landscape that incudes prehistoric, Roman and post-medieval activity, and whilst the recent woodland plantations and subsequent tree felling obscure much of the landscape within the proposed route, there is still potential for post-medieval agricultural activity, activity associated with peat cutting, and activity associated with a Roman Road, to survive. Based on this, it is recommended that a watching brief is maintained during scheme works.

1 INTRODUCTION

Gwynedd Archaeological Trust Contracts Section (GAT) has been commissioned by Green Blades Engineering Ltd. to undertake an archaeological desk-based assessment at Cefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd (NGR SH78401928; postcode LL40 2SA; Figure 01), as part of a proposed hydropower scheme. The scheme has a total length of 1.1km and includes an intake at NGR SH79431855 and an outfall/powerhouse/transformer at NGR SH79201959 (Figure 02), with access from an existing local trackway. The proposed scheme is located within managed forestry in Snowdonia in an area of known upstanding and historic archaeological assets related to historic farming of the medieval and later periods, as well as the route of the Caer Gai to Brithdir Roman Road (PRN 17628; SH79071960) at the northern end of the scheme near Pont Helygog (PRN 4138; NGR SH7910119626) and a pair of Bronze Age ring cairns (PRN 12899 & 12900; NGR SH80111854) to the south. The planning application reference for this scheme is NP5/54/459A.

The assessment was undertaken in January 2023 and completed in accordance with the following guidance:

- Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 2 (The Welsh Archaeological Trusts, 2022);
- Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015);
- Management of Archaeological Projects (English Heritage, 1991);
- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015);
- Standard and Guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists, 2020);
- Standard and Guidance for The Collection, Documentation, Conservation and Research of Archaeological Materials (Chartered Institute for Archaeologists, 2020); and
- Standard and Guidance for The Creation, Compilation, Transfer and Deposition of Archaeological Archives (Chartered Institute for Archaeologists, 2020).

The archaeological assessment was monitored by the Gwynedd Archaeological Planning Service and undertaken in accordance with a Written Scheme of Investigation (Appendix I). In line with the Gwynedd 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 under the guidance set out in *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (The Welsh Archaeological Trusts, 2022). The HER was informed of the project start date, location, grid reference and estimated timescale; the project was assigned HER Enquiry Number GATHER1772 and Event Primary Reference Number 46522. A bilingual event summary has been prepared for submission to the HER in accordance with their guidance.

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.

2 METHODOLOGY

2.1 Introduction

This assessment compromised a desk-based study and field survey and the following:

- a detailed breakdown of the known archaeology in the vicinity of the site;
- an assessment of previous land use compiled from an analysis of historical maps, aerial photographs and other archive materials;
- a listing of the heritage-related planning constraints that may affect the site; and
- a ranking of the potential for archaeology of each of the archaeological periods to be found within the site.

2.2 Desktop Study

The desk-based assessment encompassed a 500m buffer zone (250m either side of the route) and was undertaken using the following resources:

1. The regional Historic Environment Register ((HER) Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Garth, Bangor, Gwynedd LL57 2RT) was examined for information concerning the assessment area as detailed in Figure 01. Examination of the core HER data was undertaken, including the 6-inch to 1-mile County Series Ordnance Survey maps (Merionethshire Sheet XXX.IV) and secondary sources, including the following reports:
    - Hopewell, D. 1996. Brithdir: Archaeological Watching Brief. Gwynedd Archaeological Trust Report 197;
    - Cooke, R. 2018. Proposed Hydro-Electric Schemes, Bryn Coed Ifor, Rhydymain, Dolgellau, Meirionnydd: Archaeological Assessment. Aeon Archaeology Report 0180; and
    - Ryan Young, C. 2020. Afon Celynog Uchaf Hydro Scheme Briff Gwylio Archaeoloegol/Archaeological Watching Brief. Gwynedd Archaeological Trust Report 1544.
2. The National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, Plas Crug, Aberystwyth SY23 1NJ) and the online catalogue of the National Library of Wales (Penglais Rd, Aberystwyth SY23 3BU) were examined checked for any sites additional to the HER;
3. Aerial photographs from the National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) were examined for potential features. This will include 1946 RAF and later vertical aerial photographs;
4. Archive data, including primary and secondary sources, historic maps and estate maps were examined at the regional archives. Archive data will included historic mapping such as the 1842 Dolgelley (sic) Parish Tithe map and schedule; and

- Light Detection and Ranging (LiDAR) data was examined from the Lle Geo-Portal at http://lle.gov.wales/home for information on potential surface features using 1m digital terrain modelling for are SH71.

2.3 Field Survey

A field survey was undertaken on 12/01/2023 and incorporated the proposed hydropower scheme area as defined in Figure 02. Known assets were mapped and located in advance and the aim of the field survey was to visit and record these features and to identify any additional features; information was recorded on GAT pro-formas and a photographic record maintained. Photographic images were taken in RAW format using a digital SLR set to maximum resolution (Nikon D3100; resolution: 4,608 × 3,072 [14.2 effective megapixels]) and archived in TIFF format; a total of fifteen images were taken (G2761_001 to G2761_015; cf. Appendix II).

2.4 Data Management Plan

Archiving was completed based on the following task list:

- Pro-formas: all cross referenced and scanned for digital archiving; and
- Photographic Metadata: cross-referenced with all pro-formas and completed in Microsoft Excel.

This data was then used as the basis for the physical and digital dataset archives; information from these were then used to compile the project report. The physical archive is stored in a designated project folder and the location confirmed in the Trust project database; the digital dataset is 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. The following dissemination and archiving of the report and digital dataset has been applied:

- A digital report has been provided to the client and Gwynedd Archaeological Planning Service (GAPS) (draft report then final report);
- A digital report has been provided to the regional HER, along with a digital dataset comprising an Event Primary Reference Number (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 2); and
- A digital report and digital archive dataset have been prepared for submission to the RCAHMW (final report only), in accordance with the RCAHMW Guidelines for Digital Archives Version 1. The dataset has been prepared in the format required by RCAHMW and includes:
    - 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).

2.5 Gazetteer of Assets

A gazetteer has been compiled for any existing and newly identified assets, based on information sourced from the desk-based assessment and field survey.

The gazetteer has been prepared in the following format:

Asset Number	
Site name	
PRN number	
Grid reference	
Period	
Site type	
Designation	
Assessment category	
Description	
Impact	
Recommendation	

The following categories have been used to define the assessment category of the archaeological asset:

Category A - Sites of National Importance.

> Scheduled Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both. Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected in situ.

Category B - Sites of regional or county importance.

> Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation in situ is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened. Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category. For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation.

The impact of the proposed works on any asset has been identified using the following impact criteria:

None:

There is no construction impact on this asset.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the asset, e.g. part of a trackway or field bank.

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of an asset affecting its overall integrity. Assets falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of an asset or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the asset is unknown, but thought to be in the vicinity of the proposed works.

3 RESULTS

3.1 Desk based assessment

3.1.1 Location and geological summary

The bedrock geology consists of Unnamed Igneous Intrusion, Ordovician - Microgabbro. Igneous bedrock formed between 485.4 and 443.8 million years ago during the Ordovician period. The Superficial deposits are Till, Devensian - Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period (Source: British Geological Survey). Soils consist of slowly permeable, seasonally wet acidic loamy and clayey soils (Source: Soilscapes).

The proposed scheme lies within Nant Helygog in the parish of Dolgellau Community and unitary authority of Gwynedd. Nant Helygog is characterised by mature trees, twentieth century plantations and twenty-first century felling. The wider landscape comprises acid grassland within which there are large areas of underlying peat and is primarily used for hill sheep farming with some cattle farming on the lower slopes.

3.1.2 Statutory and Non-Statutory Designations

Statutory designated assets include Scheduled Monuments, Listed Buildings, Historic Landscape Character Areas (HLCAs) and Historic Parks and Gardens. There is one statutory designated assets within the 500m buffer zone: Grade II Listed Building 16043, which is Pont Helygog, a small 18th century rubble stone bridge located at the northern end of the scheme at NGR SH79101962, c.100m northwest of the proposed outfall/powerhouse/transformer (cf. Figure 09). Outside of the assessment buffer is Nant Helygog Bronze Age ring cairn (Scheduled Monument ME247; NGR SH801611857; cf. Figure 09), located 725m east of the scheme intake.

The scheme is located within a wider agricultural and settlement multiperiod landscape that incudes prehistoric, Roman and post-medieval activity. There are 16 non-statutory designated assets within the buffer zone based on information recorded within the regional Historic Environment Record (designated as PRNs) and the Royal Commission on the Ancient and Historical Monuments of Wales National Monuments Record (designated as NPRNs) (cf. Figure 09). These include:

1. NPRN 24185; NGR SH79101962; Pont Helygog: a small 18th century rubble stone bridge; both revetments comprise large blocks.
2. NPRN 28838 Ty Newydd Isaf, NGR SH79311948: a ruined farm building, comprising massive rubble in clay, one wall retains door and 2 first floor windows. Interpreted as a farmhouse and adjacent pigsty.
3. PRN 58103 / NPRN 41746; NGR SH79401905; Ty Newydd Isaf: ruined field barn. Local rubble. Massive blocks packed with smaller chips on outer skin. Smaller rubble on limey clay mortar on inside. Sited across the slope.
4. NPRN 527134; NGR SH79501840; Nant Helygog -Sheep Fold II: marked as a sheepfold on the 1890 OS map and evidently used for sheep washing, Single-cell irregular shaped sheep fold adjacent to a stream, of drystone walls and measuring 13m NNE-SSW x 5.8m. An entrance 2m wide is on W side. There was probably an opening to the S, facing the stream, but this is not clear.
5. NPRN 527135; Nant Helygog, Track I, NGR SH79521839: sunken track marked on 1819 Ordnance Survey drawing of 'Arran Mowddy', 2.5m wide and 0.5m deep, now grass-covered. It follows a stream, Nant Helygog, for 600m NW-SE, branching off another track
6. NPRN 527154; NGR SH79361837; Nant Helygog, Stone Pile; Post-Medieval

7. NPRN 527155; NGR SH79381852; Nant Helygog, Peat Stand I: a low mound, 5m N-S x 2.3m E-W, defined by a raised kerb of stones and boulders. It is 0.2m high with turf in the centre. Probably the remains of a peat stand.
8. NPRN 527156; NGR SH79301838; Nant Helygog, Peat Stand II
9. NPRN 527157; NGR SH79281839; Nant Helygog, Peat Stand III
10. NPRN 527158; NGR SH79281839; Nant Helygog, Peat Stand IV
11. PRN 15962; NGR SH79331851; Peat Stack Base (Possible), Nant Helygog, Brithdir and Llanfachreth: a roughly constructed oval structure just uphill of a narrow wandering hollow way, presumably a packhorse track. The oval structure was not measured but is about 8m x 2m, function unclear. Possibly a peat-stack stand.
12. PRN 17628; NGR SH79071960; Part of Roman Road, Caer Gai – Brithdir: grassy, overgrown lane that zig-zags to a river crossing.
13. PRN 4138; NGR SH79111962; Pont Helygog Bridge, Brithdir: a small stone bridge, possibly 18th century, built of graded rubble and revetted now carrying a cart track only.
14. PRN 58100; NGR SH7950719119; Farmstead southeast of Pont Helygog: site identified using early Ordnance Survey Maps.
15. PRN 58101; NGR SH79291948; Farmhouse and Enclosures, Tynewydd Isaf (Brithgwm): site identified using early Ordnance Survey Maps.
16. PRN 58102 / NPRN 41745; NGR SH79311951; Field Barn, east of Tynewydd Isaf (Brithgwm): site identified using early Ordnance Survey Maps.

3.2 Historical and Archaeological Background

3.2.1 Prehistoric & Roman

There are a limited number of prehistoric sites in the locality, with none identified along the scheme route or in the assessment buffer. The known sites include the Nant Helygog Bronze Age ring cairn (Scheduled Monument ME247; NGR SH801611857; cf. Figure 09), located 725m east of the scheme intake. Roman activity is characterised by part of the Roman Road between Caer Gai and Brithdir (Primary Reference Number (PRN) 3849; cf. Figure 09), with part of the route (designated PRN 17628; cf. Figure 09), located across the northern end of the scheme (centred on NGR SH79071960), with the route now present as a 5m wide modernised lane.

3.2.2 Medieval & Post-Medieval

Evidence of medieval and post-medieval settlement was in the form of building platforms and stone long huts, including those at Cae'r Tyddyn (NPRN 527122, 527123, 527137, 527138 and 527153) c.700m south of the scheme at NGR SH7915117530 and Cae Tyddyn Bach (NPRN 527105 to 527107), c.1.3km south of the scheme at NGR SH7913217002. These buildings are located in lower-lying areas and include hafotai of lowland farms as well as permanent farmsteads. The Dinas Mawddwy – Brithdir Uplands Initiative report prepared by the Royal Commission on the Ancient and Historical Monuments of Wales states that peat was the main domestic fuel in Merioneth and was used into the twentieth century (RCAHMW 2013), with evidence of peat cutting concentrated in several areas, including to south of the proposed scheme (NPRN 527154 to NPRN 527158; cf. Figure 09). These cuttings are described in the report as constituting "one of the densest concentrations of such unusual features so far identified in Wales" (ibid.) and peat-drying stands are still visible, comprising sub-rectangular outlines of stones or rubble-stone platforms, often on sloping ground.

Eighteenth-century ironstone mine workings (NPRN 527282) are located at Tyllau Mwn, c.5km northeast of the scheme at NGR SH8443120544, whilst a small mid-nineteenth century gold mine (NPRN 527400) is located c.6km to the southeast of the site at NGR SH836361390. The report stated that there has been little impact on the upland landscape in the twentieth century (*ibid.*), with Bwlch Oerddrws anti-invasion defences were constructed in the 1940s in the form of large stone anti-tank blocks (NPRN 270350 & 270351) located at NGR SH7955917244, c.1m south of the scheme, alongside the A470 road.

In relation to the scheme route and historic mapping, the 1842 Dolgelley (sic) Parish Tithe Map shows a different field pattern than later mapping; the 6-inch County Series Ordnance

Survey maps shows the proposed hydropower scheme area as an area of irregular shaped fields either side of Afon Helygog, whilst the tithe map shows two larger irregular shaped fields either side of the river (Figure 03). The proposed scheme route is located in what would have been a large field east of the river that is designated in the tithe apportionment as field number 19, named as Cefnereuanissa and Brithgwyn, occupied by Ellis Griffith and owned by Richard Richards Esq. M.P. Brithgwm (aka. Tynewydd Isaf) farm is visible as a rectangular block within the plot, whilst Ty-newydd-uchaf farm is visible on the opposite side of the river.

The first to third edition Ordnance Survey 6-inch Merionethshire County Series Ordnance Survey maps (Sheet XXXIV.SW; published 1888, 1901 and 1939 respectively; cf. Figures 04 to 06), shows the proposed hydropower scheme area as an area of irregular shaped fields either side of the river. The respective farm buildings visible on the tithe map are still present but the local field systems have been realigned into smaller parcels.

3.2.3 Previous Historical & Archaeological Work

- Aeon Archaeology report AA_0180: In 2018, Aeon Archaeology carried out an archaeological assessment for an earlier hydro-electric scheme at Bryn Coed Ifor (NGR SH80242019), located 298m to the north-east of the site at Cefn Cruen Isaf. The assessment did not identify any sites, other than the Roman Road between Caer Gai and Brithdir, to be considered above local importance within a 50 metre corridor of the site for proposed development and concluded that the potential for buried archaeological remains in the area is low.
- Gwynedd Archaeological Trust report GAT_197: In 1996, a watching brief was carried out by Gwynedd Archaeological Trust ahead of a new water main being installed from Garth Isaf to Brithdir (NGR SH76901884). Possible Roman features were uncovered (associated with the nearby fortlet) along with re-deposited sherds of late first/early second century AD south Gaulish Samian ware pottery. Despite this it was ascertained that the modern road and sewer system had cut through and disturbed any archaeology that predated the modern road and underground utilities.
- Gwynedd Archaeological Trust report GAT_579: In 2005 Gwynedd Archaeological Trust synthesised the data from 4 archaeological trusts in Wales to create maps of prehistoric funerary and ritual sites across North Wales. The results show that the area for the proposed hydroelectric scheme is also the site for prehistoric ritual activity, primarily the building of round barrows and standing stones.
- Gwynedd Archaeological Trust report GAT_1544: In 2020 Gwynedd Archaeological Trust carried out another watching brief during the laying of a pipeline over a suspected Roman Road at Afon Celynog Uchaf (NGR SH79912026). No evidence for a Roman Road or any archaeology pre-dating the modern farm track was found during this assessment.
- Royal Commission on the Ancient and Historical Monuments of Wales report *The Uplands Initiative: Dinas Mawddwy – Brithdir An Archaeological Survey.* In 2012, the Royal Commission on the Ancient and Historical Monuments of Wales undertook a*n* archaeological survey of the Dinas Mawddwy – Brithdir area as part of an Uplands Initiative project. The survey covered 31km^2 of enclosed moorland in the Snowdonia National Park, in which 555 archaeological sites were recorded, of which 20 had previously been recorded on the National Monuments Record. The survey included the Brithdir area and the survey boundaries incorporated the southern end of the proposed scheme route, where it continued outside of the woodland zone.

3.2.4 Artefact potential

The presence of artefacts dating from the prehistoric is thought to be **low to moderate** due to the general proximity of two Bronze Age ring cairns (PRN 12899 & 12900, whilst Roman is thought to be low to moderate due to the route of the proximity of the Caer Gai to Brithdir Roman Road Brithdir Roman Road (PRN 17628; SH79071960) a. Roman Post-medieval artefact activity is thought likely to be **moderate**, due to the proximity of presence of farmsteads and managed farmland in the area.

3.2.5 Aerial Photographs and LiDAR

3.2.5.1 Aerial Photographs

A total of nineteen aerial photographs were sourced from the Welsh Government, covering a fifty-nine year period between 1941 and 2000, as follows:

- 1941 4122 RAF Med 3044 070
- 1946 4631 RAF106GUK1468 2240 (Figure 07)
- 1946 4631 RAF106GUK1468 2241
- 1946 4631 RAF106GUK1468 6240
- 1946 4631 RAF106GUK1468 6241
- 1962 6th June 6208 RAF58_5156 F21 0167
- 1962 6th June 6208 RAF58_5156 F22 0167
- 1962 6th June 6208 RAF58_5156 F22 0168
- 1964 South 6426 543_2889 F66 0126
- 1964 South 6426 543_2889 F66 0128
- 1969 6957 RAF58_9682 0055
- 1971 4th June 7182 OS 71_286 162
- 1971 7102 Fairey7178 2 257
- 1971 7158 OS 71_031 189
- 1971 7158 OS 71_031 190
- 1972 7277 OS 72_418 282
- 1986 Oct.Nov. 8696 JAS57_86 0116
- 1990 9001 ADAS 452 049
- 2000 Getmapping

The RAF aerial photographs from 1940s clearly show that the forestry was not as extensive as the present day although smaller wooded areas can be seen on the banks of the Afon Helygog and around Brithgwm (aka. Tynewydd Isaf) farm. The 1960s aerial photographs show a similar pattern of woodland along the river, surrounded by parcels of agricultural land, although plantations can be seen to the east; this is repeated in the 1970s images, although

what appears to be plantation rows can be seen east the river and to the south of Brithgwm (aka. Tynewydd Isaf) farm, suggesting the plantation programme is in its infancy. By 1986, the plantation is clearly established either side of the river, encompassing an area matching the current woodland boundaries.

3.2.5.2 LiDAR

The Light Detection and Ranging (LiDAR) digital terrain modelling (DTM) 1m DTM composite dataset for SH7918 (cf. Figure 08) covers the northern part of the proposed scheme and shows the field boundaries visible on the Ordnance Survey historic mapping and the aerial photographs that are now partially covered by woodland. No cultivation markings or other markings indicative of agricultural activity are clearly, with the woodland plantation activity seeming more prominent. Geological activity can be seen with a large area of outcrop close to the surface to the west and northwest of the survey area, with faint evidence of palaeochannels to the west of the Afon Helygog. A possible mound is visible along the scheme route at NGR SH79391920 towards the mid-point of the scheme (cf. Figure 08), north of demarcation point PEG_350 (Figure 02); this mound is not visible on aerial photography or highlighted on historic mapping and it cannot be determined whether this a topographic feature or activity that pre-dates the modern farming landscape.

3.3 Field Survey

The field survey was undertaken on 12/01/2023 and incorporated the proposed hydropower scheme area as defined in Figure 02; a total of fifteen images were taken (G2761_001 to G2761_015; cf. Appendix II; Plates 01 to 15). The entire length of the scheme was walked in damp but reasonable conditions, however heavy tree cover resulted in limited accessibility in inspecting the wider area (Plate 12). The area was covered in a mix of recently felled forestry (Plate 03), new planting and more mature trees. Little can be observed under the woodland cover, although the inlet area at the southern end of the scheme is visible but it is very difficult to spot the sites within the woodland cover and waterlogged ground. The area of the former Brithgwm farm (aka. Tynewydd Isaf) has been heavily modernised with a potential storage area suggested for this location being surrounded by a modern bank and contains a hut and poly tunnel (Plate 13). The banks showed evidence of recent construction and contained modern rubble, although they had grassed over by the time of the survey. However older field and paddock boundaries were present in the wider area. The former farmstead at Brithgwm (PRN 58100; NGR SH7950719119) has been extensively modernised and re-roofed, and the surrounding area landscaped. No evidence of the former barn (PRN 58103 / NPRN 41746; NGR SH79401905; Ty Newydd Isaf), identified on historic mapping, was seen. The proposed power house site (NGR SH79201960) was located east of but close by to Brithgwm on undulating ground that slopes away to the east of the path close to a small watercourse, and no archaeological evidence was noted at this location. The storage area near Ty Newydd Uchaf was located close to the site access off Roman Road, and was found to be an area of previously tree-felled ground, now surfaced with rough slate chippings, and a suggestion of fairly recent levelling activity. When inspected a single storage unit was present on the site (Plate 01).

The landscape consists of an upland south-north slope, with evidence of the former presence of scattered farmsteads. There is some survival of the former 19th century field pattern associated with these (Plates 4, 5, 10 and 11), as evidenced by dry stone walls but no evidence was seen of any earlier boundaries. It was observed that 20th century deforestation has obscured above ground visibility and any possible visible remains of earlier activity. No additional assets were noted that had not previously been identified on the Ordnance Survey historic mapping, or the regional Historic Environment Record and the Royal Commission on the Ancient and Historical Monuments of Wales National Monuments Record. The route of the hydro-scheme runs along a forest track heading south, and apart from drainage channels, related to the forestry, no other features were noted.

3.4 Gazetteer of Assets

3.4.1 Introduction

All recommendations are based on the current understanding of the scheme proposals and their impact on known or suspected assets and may have to be revised if information about the scheme impacts change. In the event of alterations to the scheme, the recommendations might have to be revisited. A ‘C’ after the grid reference indicates the central point of a larger feature, and ‘A’ after the reference indicates the central point of a wider group of features.

3.4.2 Assessment Category

As stated in para. 2.4, the sites recorded in the archaeological assessment have been divided into five categories (A to E), based on national (Category A), regional (Category B) or district/local importance (Category C), or whether they are minor sites (Category D) or sites needing further investigation (Category E).

3.4.3 Gazetteer

Asset Number	1
Site name	Field Barn, S of Tynewydd Isaf (Brithgwm)
PRN/NPRN number	PRN 58103 / NPRN 41746
Grid reference	SH79401905
Period	Post-Medieval
Site type	Building
Statutory Designation	n/a
Assessment category	E
Description	Site identified using early Ordnance Survey Maps during the Glastir Private Woodland Management Polygonisation scheme in 2014. Whilst the associated farmhouse (PRN 58100) is occupied and modernised, no evidence of the barn was identified during the field survey, so current condition or survival could not be determined.
Impact	Unknown
Recommendation	Archaeological Watching Brief during proximity groundworks for the hydropower scheme.

Asset Number	2
Site name	Farmhouse and Enclosures, Tynewydd Isaf (Brithgwm):
PRN number	58101
Grid reference	SH79291948
Period	Post-Medieval
Site type	Post Medieval Farmhouse
Statutory Designation	n/a
Assessment category	C
Description	Post-medieval farmstead and associated drystone field boundary walls that enclose irregular shaped plots. The farmstead location is outside of the scheme route but the walls continue across the scheme.
Impact	Possible
Recommendation	Watching Brief to record groundworks in proximity to the enclosure walls.

Asset Number	3
Site name	Enclosure walls associated with farmstead PRN 58100
PRN number	n/a
Grid reference	SH79401905
Period	Post-Medieval
Site type	Boundary
Statutory Designation	N/A
Assessment category	C
Description	Post-medieval farmstead drystone field boundary walls that enclose irregular shaped plots within Nant Helygog. The farmstead location is outside of the scheme route but the walls continue across the scheme.
Impact	Possible
Recommendation	Watching Brief to record groundworks in proximity to the enclosure walls.

Asset Number	4
Site name	Part of Caer Gai to Brithdir Roman Road
PRN number	17628
Grid reference	SH79071960;
Period	Roman
Site type	Boundary
Statutory Designation	N/A
Assessment category	B
Description	Part of the route of the route of the Caer Gai to Brithdir Roman Road (PRN 3849) that, according to Gwynedd Archaeological Trust report 668 (Hopewell, 2007) forms part of the latter portion of the route from Lletty-wyn to the forlet, designated by PRNs 17627 to 17634. Report 668 describes this portion of the route as being represented by a range of post-medieval tracks and roads, with PRN 17628 identified as a 5m wide modernised lane. The general line and width of the tracks suggest a Roman origin but the report also states that “few, if any features are visible to prove this” (*ibid.*: 21). The watching brief undertaken by GAT in 2020 along the portion of the route designated PRN 17631, c.1.1km to the northeast (Report GAT_1544; Ryan Young, 2020) monitored groundworks for a pipe trench on a separate hydropower scheme. At that location, no evidence for a Roman Road was identified and the excavation of the pipe trench revealed a densely packed stone cobble layer 0.88m in depth that formed for the current farm trackway; the report suggested it was possible that the Roman Road was destroyed when the stone cobble was laid to create the farm track or the road is on a different alignment than originally suspected (*ibid.*: 09).
Impact	Possible
Recommendation	Watching Brief during groundworks.

Asset Number	5
Site name	Possible Mound
PRN number	unassigned
Grid reference	SH79071960;
Period	Unknown
Site type	Unknown
Statutory Designation	N/A
Assessment category	E
Description	A possible mound is visible along the scheme route at NGR SH79391920 towards the mid-point of the scheme (cf. Figure 08), north of scheme demarcation point PEG_350 (Figure 02); this mound is not visible on aerial photography or highlighted on historic mapping and it cannot be determined whether this a topographic feature or activity that pre-dates the modern farming landscape. Not visible at ground level during walkover survey.
Impact	Possible
Recommendation	Watching Brief during groundworks.

4 CONCLUSION AND RECOMMENDATIONS

Gwynedd Archaeological Trust Contracts Section was commissioned by Green Blades Engineering Ltd. to undertake an archaeological desk-based assessment at Cefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd as part of a proposed hydropower scheme. The scheme has a total length of 1.1km and is located within managed forestry and upland used for livestock grazing.

The assessment identified one statutory designated asset within a 500m buffer zone: a Grade II Listed 18th century rubble stone bridge located near but outside the northern end of the scheme, whilst a Scheduled Monument Bronze Age ring cairn was located 725m east of the scheme intake. There were 16 non-statutory designated assets within the buffer zone based on information recorded within the regional Historic Environment Record and the Royal Commission on the Ancient and Historical Monuments of Wales National Monuments Record, reflecting a wider agricultural and settlement multiperiod landscape that incudes prehistoric, Roman and post-medieval activity. The key assets included the route of the Caer Gai to Brithdir Roman Road extant near the northern end of the scheme as a grassy, overgrown lane close to the river crossing, whilst post-medieval peat-drying stands were located close to the southern end, reflecting the reliance of peat as a traditional fuel source. Twentieth century woodland plantations and twenty-first century felling activity dominated the northern end of the scheme, whilst farmsteads and their associated enclosures were present within the buffer, with drystone walling crossing the hydropower route. The field survey completed for the assessment concluded that the woodland plantations and felled areas obscured any possible earlier activity, whilst a post-medieval barn recorded by the regional Historic Environment Record as being close to the scheme could not be readily identified on the ground. No additional assets were identified during the field survey and it did not appear that the known assets would be directly impacted by the scheme.

It is recommended that a watching brief is maintained during groundworks for the hydropower scheme, across the scheme as a whole, due to the possibility of identifying activity associated with the Caer Gai to Brithdir Roman Road, former agricultural activity associated with the local farmsteads and the proximity of peat cutting activity and peat-drying stands. Particular attention will be paid to the works near the location of the field barn (Asset 1), where the drystone walls (Assets 2 and 3) cross the route, the route of the Caer Gai to Brithdir Roman Road (Asset 4) where it is crossed by the Roman Road and a mound visible on LIDAR.

5 SOURCES CONSULTED

1. Chartered Institute for Archaeologists, 2020, Standard and guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists, 2020);
2. Chartered Institute for Archaeologists, 2020, Standard and guidance for the collection, documentation, conservation and research of archaeological materials
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, Standard and guidance for the archaeological investigation and recording of standing buildings or structures
5. Cooke R. 2018. Proposed Hydro-Electric Schemes,Bryn Coed Ifor, Rhydymain,Dolgellau, Meirionnydd. Aeon Archaeology report AA_0180;
6. English Heritage, 1991, Management of Archaeological Projects (MAP2)
7. Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 2 (The Welsh Archaeological Trusts, 2022);
8. Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015);
9. Hayman R and Horton W, 2013 *The Uplands Initiative: Dinas Mawddwy – Brithdir An Archaeological Survey.* Royal Commission on the Ancient and Historical Monuments of Wales report.
10. Historic England, 2015, Management of Research Projects in the Historic Environment (MoRPHE)
11. Hopewell, D. 1996. Brithdir Archaeological Watching Brief. Gwynedd Archaeological Trust report GAT_197;
12. Royal Commission on Ancient and Historic Monuments of Wales, 2015, Guidelines for digital archives
13. Ryan Young C 2020. Afon Celynog Uchaf Hydro Scheme Briff Gwylio Archaeoloegol/Archaeological Watching Brief. Gwynedd Archaeological Trust report GAT_1544

14. Smith G and Steele N 2005. Pan-Wales Prehistoric Funerary and Ritual Sites Survey: Trial data synthesis. Gwynedd Archaeological Trust report GAT_579;

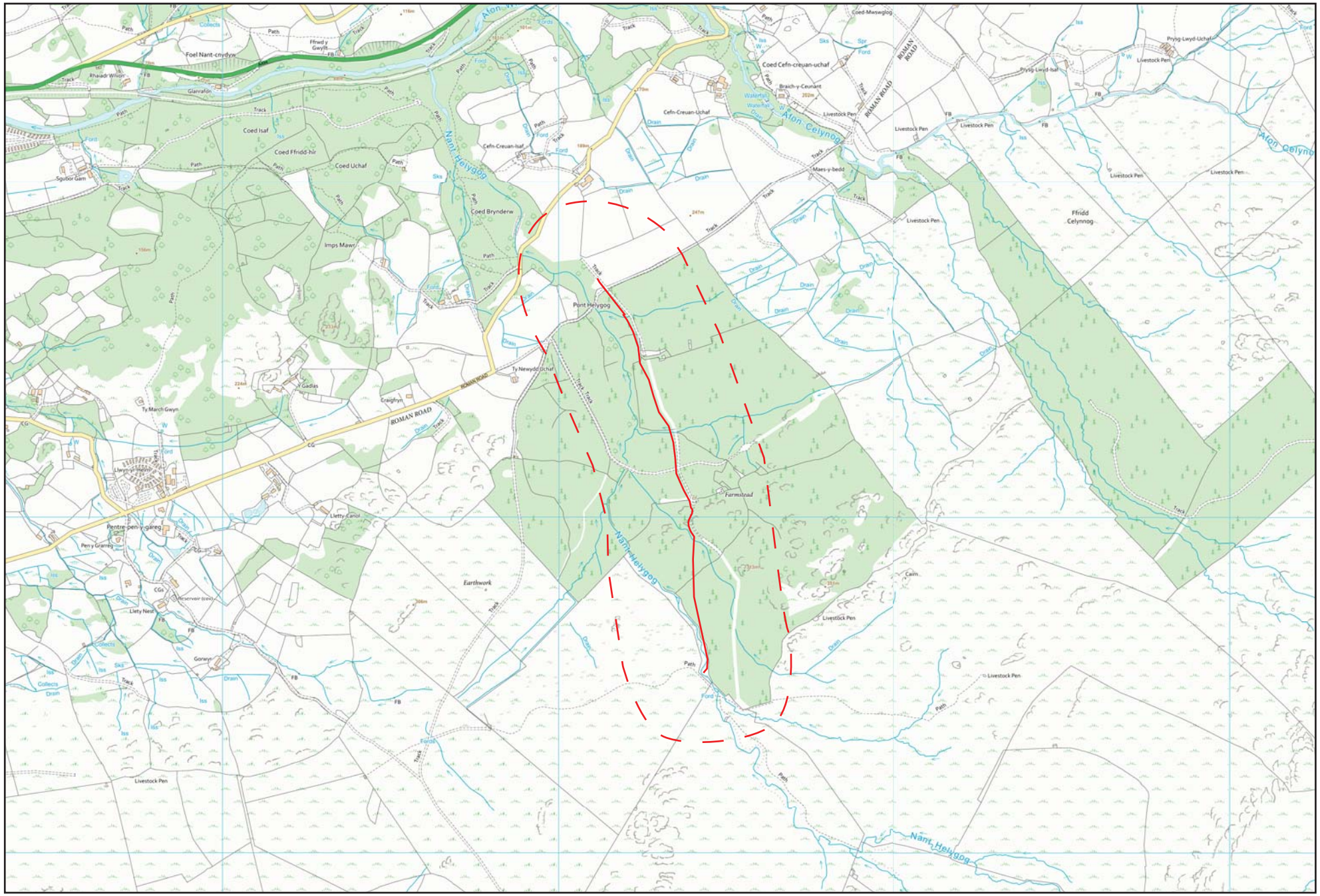
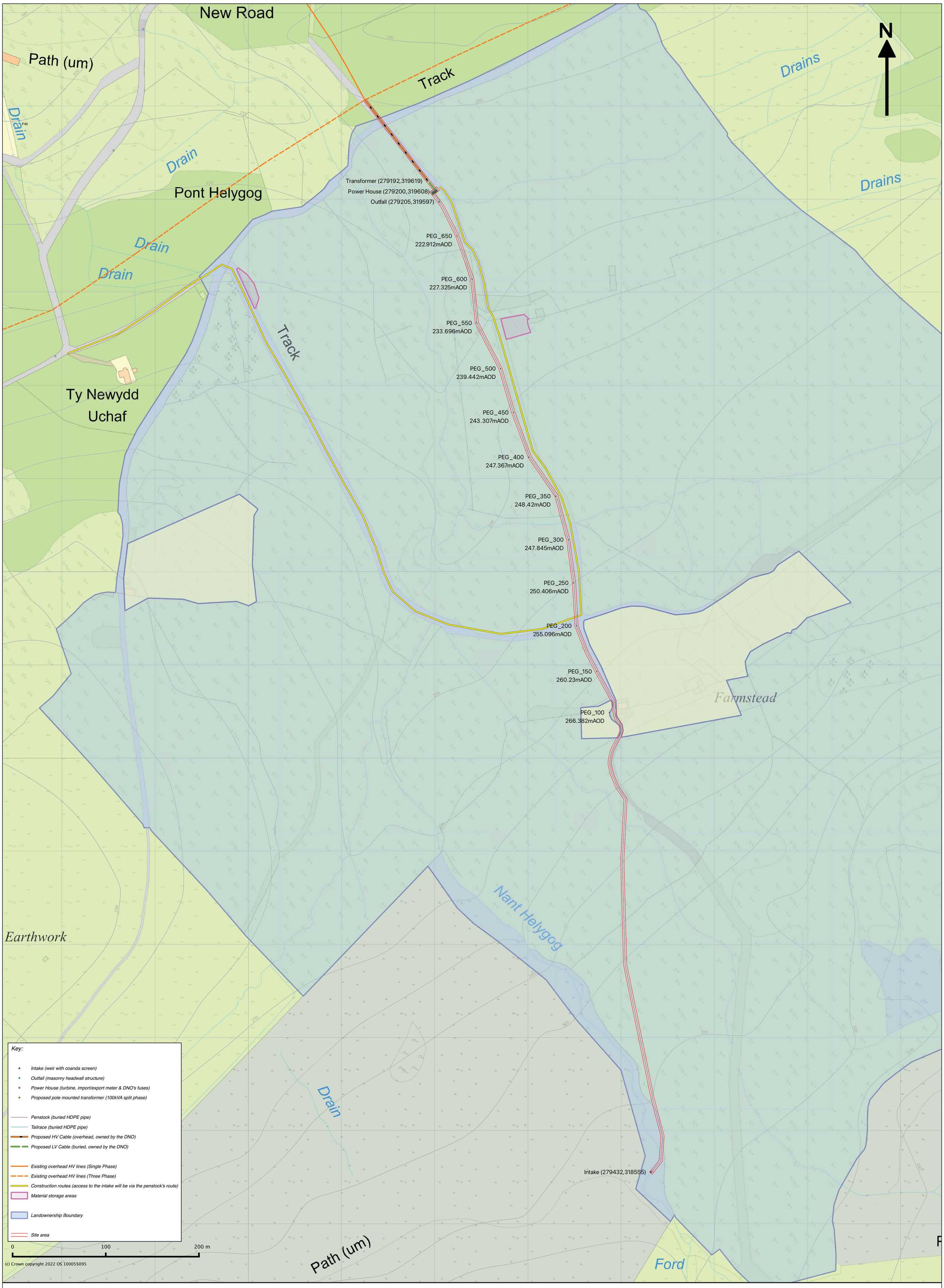


Figure 01: Location plan with proposed hydropower scheme route highlighted in red and assessment buffer in dashed red. Scale 1:15,000@A4. Base map taken from Ordnance Survey 1:10 000 Series © Crown copyright. All rights reserved. License number AL100020895



Client: Mark Sealy
Installation Address: Brithgwm Ganol, Brithdir, Dolgellau, LL40 2SA
Drawing Title: Site layout for hydropower scheme
Drawn By: LMB
Date: 5th August 2022
Scale @ A1: 1:1,750
Dwg No: 220730LB01
Version: 2 (Penstock's alignment changed at Peg 100)

Greenearth Hydro

The Cottage, Rhiw, Pwllheli, LL53 8AE
www.greenearthhydro.co.uk

Figure 03: Reproduction of 1842 Dolgelley (sic) Parish Tithe map, with approximate location of proposed hydropower scheme route highlighted in red.

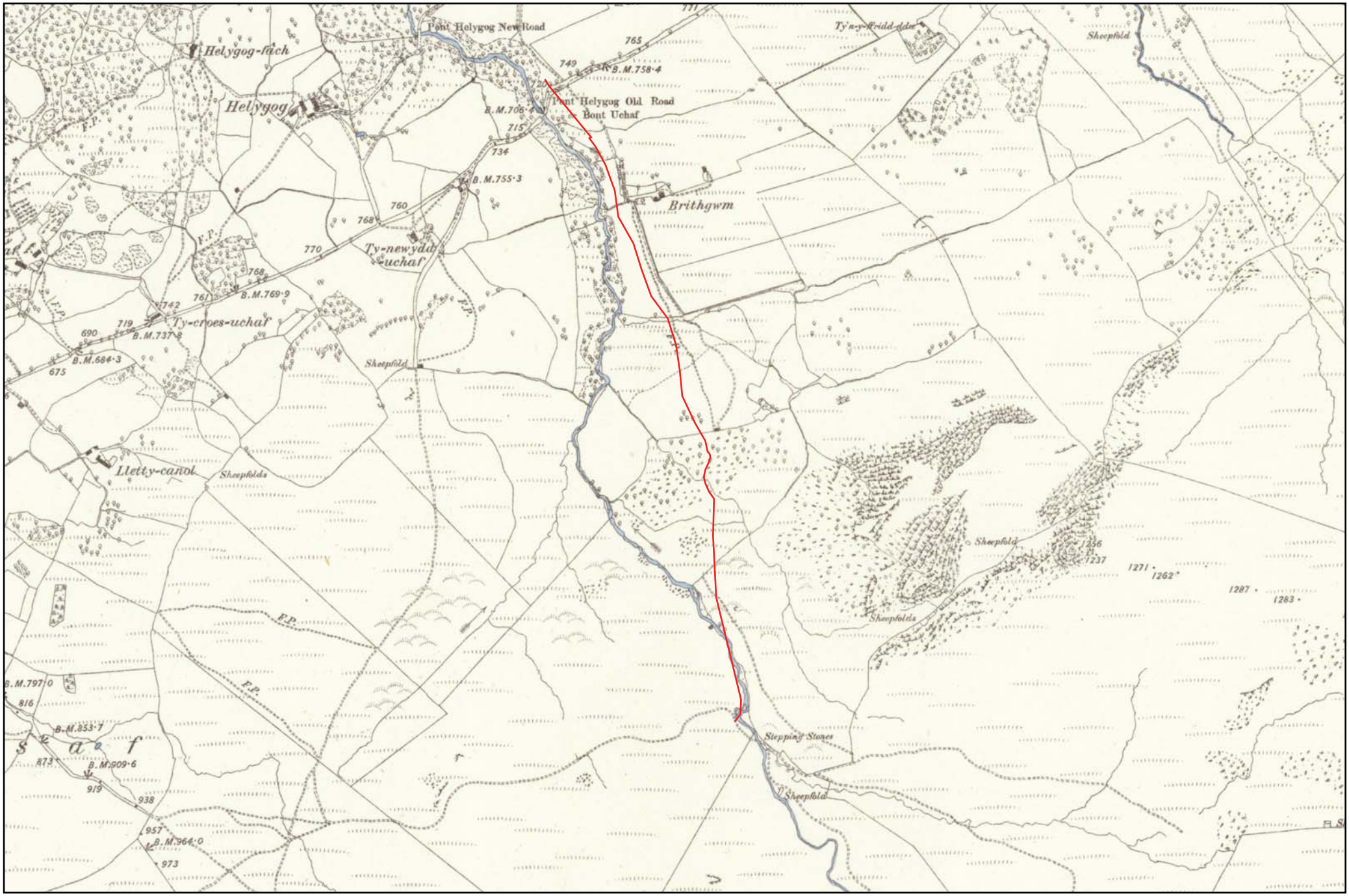


Figure 04: Reproduction of First Edition 6-inch to 1-mile County Series Ordnance Survey map sheet XXX.IV, published in 1889, with approximate location of proposed hydropower scheme route highlighted in re

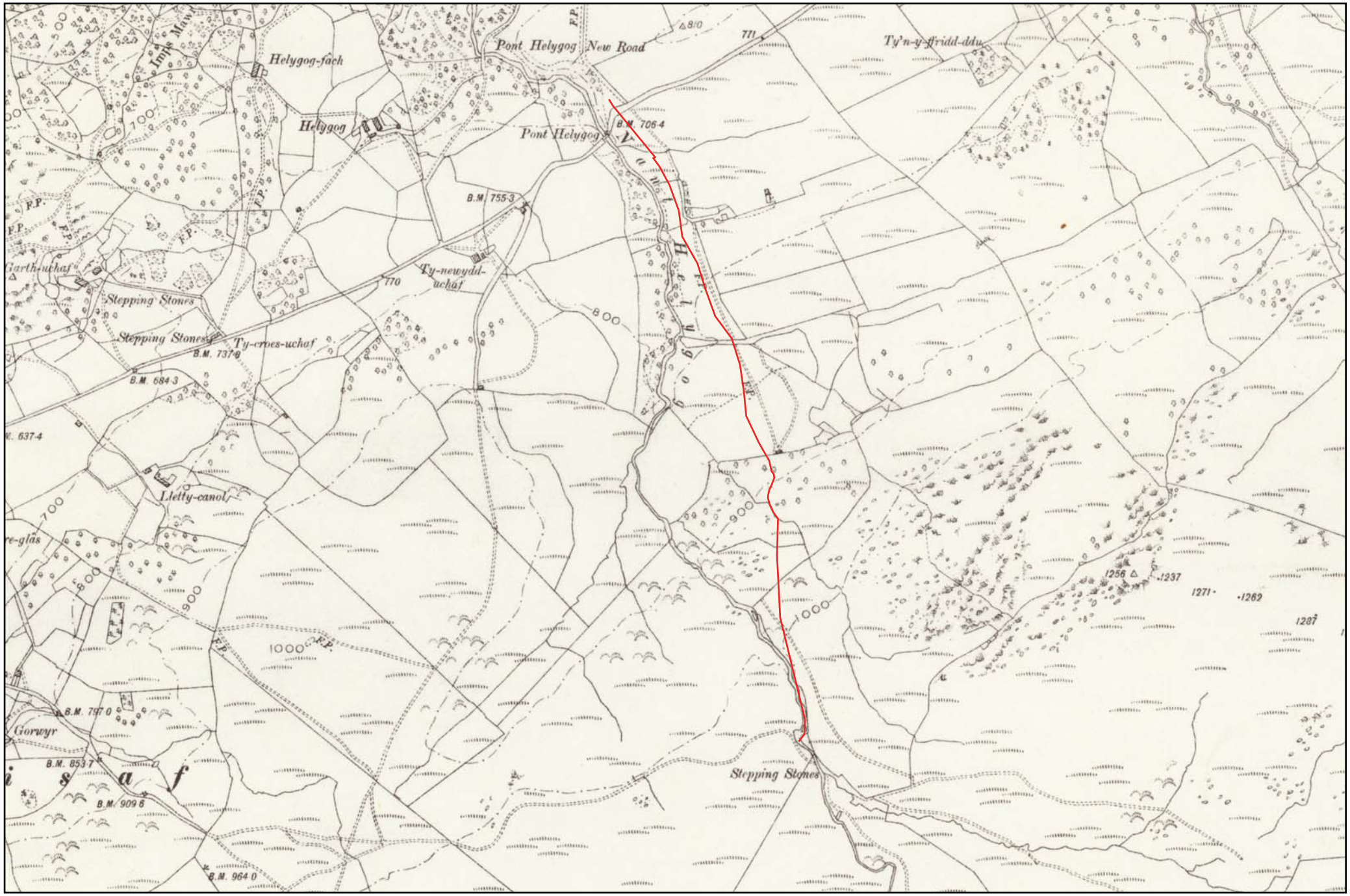


Figure 05: Reproduction of Second Edition 6-inch to 1-mile County Series Ordnance Survey map sheet XXX.IV, published in 1889, with approximate location of proposed hydropower scheme route highlighted in red.

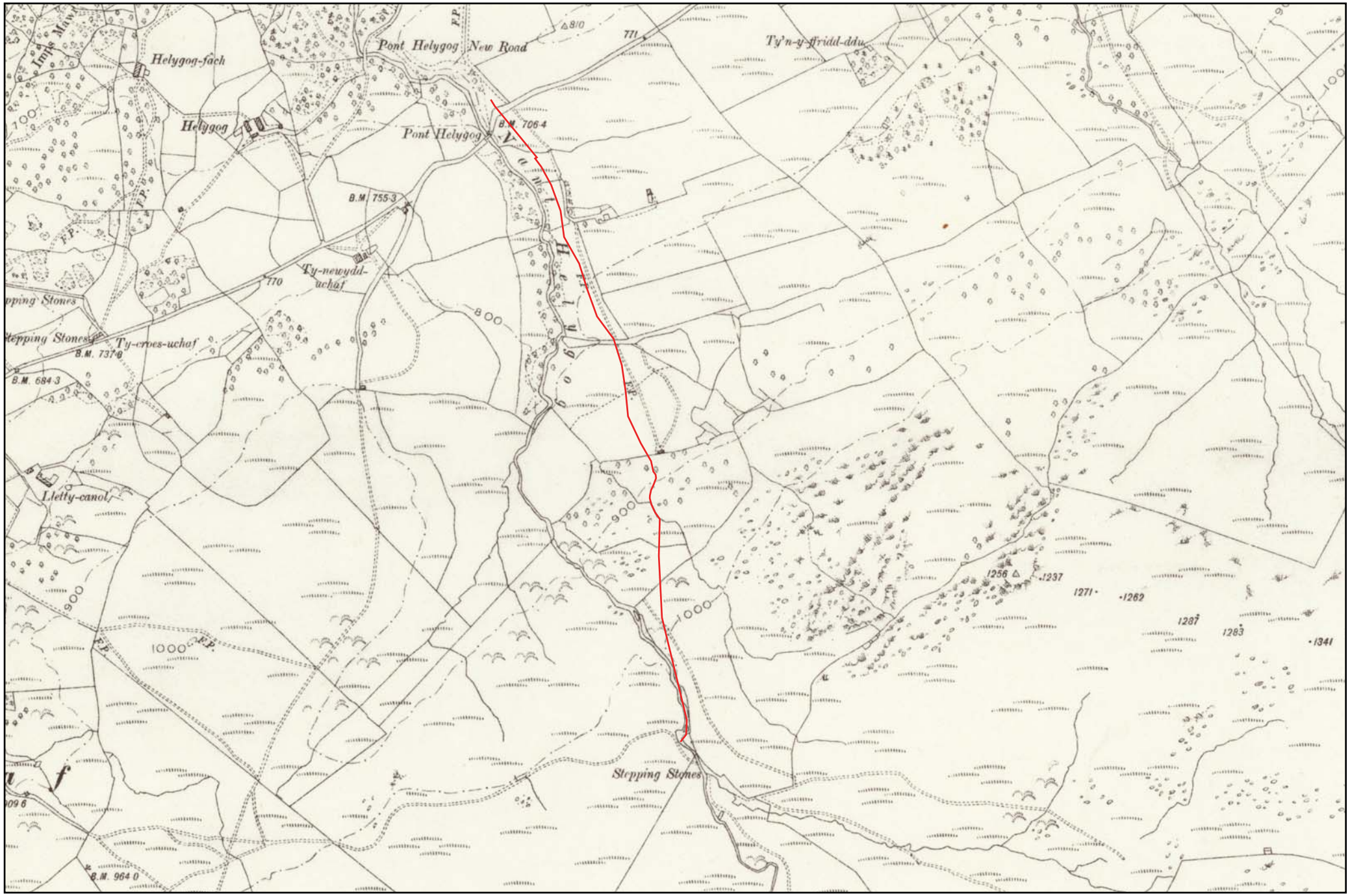


Figure 06: Reproduction of Third Edition 6-inch to 1-mile County Series Ordnance Survey map sheet XXX.IV, published in 1939, with approximate location of proposed hydropower scheme route highlighted in red.

Figure 07: Reproduction of 1946 aerial photograph 1946 4631 RAF106GUK1468 Frame 2240.
Scheme route outlined in red. Not to Scale.

Figure 08: Reproduction of Lle Geo-Portal Light Detection and Ranging (LiDAR) digital terrain modelling (DTM) 1m DTM composite dataset for SH7918. Scheme route outlined in red (note: LiDAR only covers northern portion of scheme). Not to Scale.

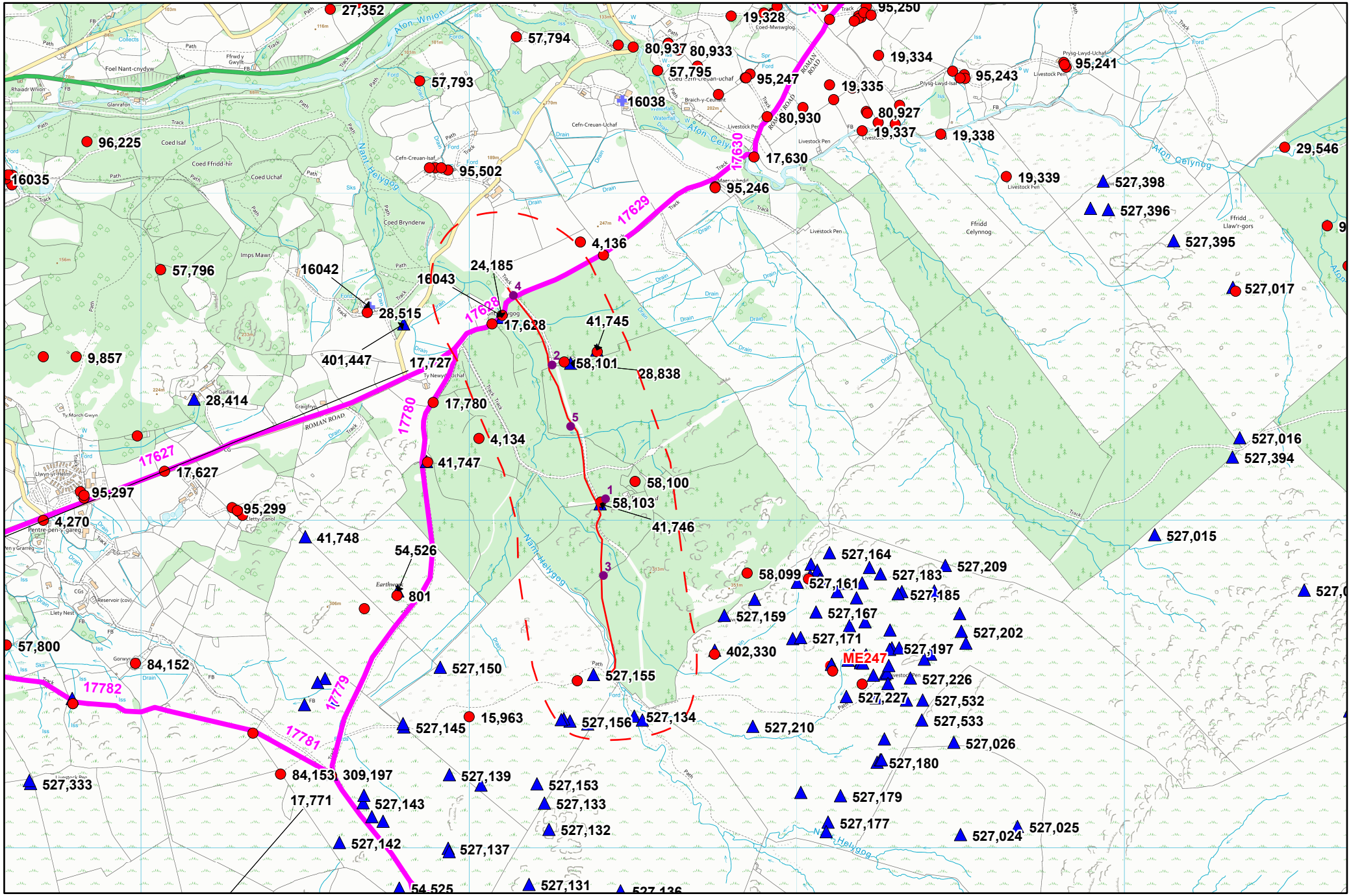


Figure 09: Location plan detailing known archaeological assets, with proposed hydropower scheme route highlighted in red and assessment buffer in dashed red and gazetteer assets highlighted in purple. Scale 1:15,000@A4.

Base map taken from Ordnance Survey 1:10 000 Series © Crown copyright. All rights reserved. License number AL100020895

Plate 1: General view from the north-northwest of a track from the site entrance; scale not used (archive reference: G2761_01).

Plate 2: General view from the northwest of track from site entrance; scale not used (archive reference: G2761_02).

Plate 3: View from the south along Nant Helygog from the south; scale 1m (archive reference: G2761_03).

Plate 4: View from the east along nineteenth century boundary wall; scale 1m (archive reference: G2761_04).

Plate 5: View from the west showing field pattern with drystone walls in Cwm Nant Helygog; scale 1m (archive reference: G2761_05).

Plate 6: General landscape view from the south; scale not used (archive reference: G2761_06).

Plate 7: View from the north-northwest along Nant Helygog ; scale 1m (archive reference: G2761_07).

Plate 8: View from the north-northwest along the track from the entrance of the proposed route; scale 1m (archive reference: G2761_08).

Plate 9: View from the north-northwest of Brithgwm, now modernised; scale 1m (archive reference: G2761_09).

Plate 10: View from the south of nineteenth century drystone wall at the southern end of the scheme; scale 1m (archive reference: G2761_10).

Plate 11: View from the west of the intake at southern end of the scheme; scale not used (archive reference: G2761_11).

Plate 12: General view from the south of the woodland track; scale 1m (archive reference: G2761_12).

Plate 13: View from the west of proposed storage area; scale 1m (archive reference: G2761_13).

Plate 14: View form the west-southwest showing remnant of surviving drystone wall forming part of a paddock at Brithgwm; scale 1m (archive reference: G2761_14).

Plate 15: View from the north of pipeline route form the track, showing Brithgwm in the distance; scale 1m (archive reference: G2761_15).

APPENDIX I

Gwynedd Archaeological Trust Written Scheme of Investigation

CEFN CRUEAN ISAF, BRITHDIR, GWYNEDD (G2761)

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL ASSESSMENT

Prepared for

Green Blades Engineering Ltd.

December 2022

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

CEFN CRUEAN ISAF, BRITHDIR, GWYNEDD (G2761)

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL ASSESSMENT

Prepared for Green Blades Engineering Ltd., December 2022

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1 INTRODUCTION

Gwynedd Archaeological Trust Contracts Section (GAT) has been asked by Green Blades Engineering Ltd. to prepare a scope for an archaeological desk-based assessment at Cefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd (NGR SH78401928; postcode LL40 2SA; Figure 01), as part of a proposed hydropower scheme. The scheme has a total length of 1.1km and includes an intake at NGR SH79431855 and an outfall/powerhouse/transformer at NGR SH79201959 (Figure 02), with access from an existing local trackway. The scheme is located within managed forestry in Snowdonia in an area of known upstanding and historic archaeological assets related to historic farming of the medieval and later periods, as well as the route of the Caer Gai - Brithdir Roman road (PRN 17628; SH79071960) at the northern end of the scheme near Pont Helygog (PRN 4138; NGR SH7910119626) and a pair of Bronze Age ring cairns (PRN 12899 & 12900; NGR SH80111854). The planning application reference for this scheme is NP5/54/459A.

The assessment will be undertaken in January 2023 and will be completed in accordance with the following guidance:

- Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 2 (The Welsh Archaeological Trusts, 2022);
- Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015);
- Management of Archaeological Projects (English Heritage, 1991);
- Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide (Historic England, 2015);
- Standard and Guidance for an Archaeological Assessment; (Chartered Institute for Archaeologists, 2020);
- Standard and guidance for the collection, documentation, conservation and research of archaeological materials (Chartered Institute for Archaeologists, 2020); and
- Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (Chartered Institute for Archaeologists, 2020).

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

1.1 Aims and Objectives

The desk-based assessment will aim to identify all assets (currently known and that may be identified from further research) that may be affected by the scheme, as well as identifying the potential for presently unknown sub-surface assets. The assessment will also identify assets that should be avoided by the scheme and include a basic record of assets such as field walls.

The objectives are to include:

- a detailed breakdown of the known archaeology in the vicinity of the site;
- an assessment of previous land use compiled from an analysis of historical maps, aerial photographs and other archive materials;
- a listing of the heritage-related planning constraints that may affect the site;
- a ranking of the potential for archaeology of each of the archaeological periods to be found within the site; and
- provide recommendations, if necessary, for future intrusive survey and construction excavation activities on site (requirements that would need to be in place during these or similar activities).

This will be delivered in the form of a desk-based study, a walkover survey and a heritage asset gazetteer.

1.1 Monitoring Arrangements

The archaeological assessment will be monitored by the Gwynedd archaeological Planning Service (GAPS); the content of this scope and all subsequent reporting must be approved by GAPS prior to final issue.

1.2 Historic Environment Record

In line with the Gwynedd Historic 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, 2022). The HER will be informed of the project start date, location including grid reference, estimated timescale for the work, and further relevant information associated with the project.

The HER enquiry number for this project is GATHER1772 and the Event Primary Reference Number is 46522. The HER will be responsible for supplying Primary Reference Numbers for any new assets identified and recorded.

Prior to submission of data to the HER on completion of the project, a bilingual event summary document will be prepared in *Microsoft Word* based on the format defined in section 4.2 of *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (Version 2).

2 METHODOLOGY

2.1 Introduction

The desk-based assessment will encompass a 500m buffer zone from which any known and suspected assets will be identified using the following resources:

1. The regional Historic Environment Register ((HER) Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Garth, Bangor, Gwynedd LL57 2RT) will be examined for information concerning the assessment area as detailed in Figure 01. Examination of the core HER will be undertaken, including the 25-mile to 1-mile County Series Ordnance Survey maps (Merionethshire Sheet XXX.IV) and secondary sources, including the following reports:
    - Hopewell, D. 1996. Brithdir: Archaeological Watching Brief. Gwynedd Archaeological Trust Report 197;
    - Cooke, R. 2018. Proposed Hydro-Electric Schemes, Bryn Coed Ifor, Rhydymain, Dolgellau, Meirionnydd: Archaeological Assessment. Aeon Archaeology Report 0180; and
    - Ryan Young, C. 2020. Afon Celynog Uchaf Hydro Scheme Briff Gwylio Archaeoloegol/Archaeological Watching Brief. Gwynedd Archaeological Trust Report 1544.
2. The National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, Plas Crug, Aberystwyth SY23 1NJ) and the online catalogue of the National Library of Wales (Penglais Rd, Aberystwyth SY23 3BU) will be examined checked for any sites additional to the HER;
3. Aerial photographs from the National Monuments Record of Wales (Royal Commission on the Ancient and Historical Monuments of Wales, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be examined for potential features. This will include 1946 RAF and later vertical aerial photographs;
4. Archive data, including primary and secondary sources, historic maps and estate maps will be examined at the regional archives, if open and accessible. Archive data will include historic mapping such as the 1842 Dolgelley (sic) Parish Tithe map and schedule; and
5. Light Detection and Ranging (LiDAR) data will be examined from the Lle Geo-Portal at http://lle.gov.wales/home for information on potential surface features using 1m digital terrain modelling for are SH71.

2.2 Walkover Survey

A walkover survey will be undertaken along the proposed scheme route outlined in Figure 02. The aim will be to visit known assets and add any new information not previously recorded. The assets will be mapped and located in advance as part of the desk-based assessment, using a combination of historic and GIS based data; this information will then be used to prepare a list of known assets; these lists will include the Primary Reference Number (PRN), Site Name, Site Type and National Grid Reference co-ordinate for each asset. Whilst the archaeological features identified in previous work are recorded on the Historic Environment Record, their spatial extents may not have been mapped in detail and the walkover survey will aim to enhance this record. The walkover survey will also include a basic record of visible/upstanding assets encountered, such as field walls. The walkover survey and basic record will be completed using a GAT pro-forma (Appendix I) and will include a description, measurements (if practical) and a photographic record. The photographs will be taken in RAW format using a digital SLR set to maximum resolution (Nikon D3000; resolution: 3,872 × 2,592 [10.2 effective megapixels]) and a photographic metadata table will be completed using a GAT pro-forma (Appendix II) and a copy included in the report. Photographic images will be archived in TIFF format; the archive numbering system will start from G2761_001. A handheld GPS unit will be used during the walkover survey

2.3 Gazetteer of Features

A gazetteer will be compiled for any existing and newly identified sites, based on information sourced from the desk-based assessment and walkover survey; the gazetteer will be prepared in the following format and include:

Feature Number	
Site name	
PRN number	
Grid reference	
Designation	
Period	
Site type	
Assessment category	
Description	
Impact	
Recommendation	

The following categories will be used to define the assessment category of each archaeological asset:

Category A - Sites of National Importance.

Scheduled Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both. Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.

Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened. Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category. For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation.

The impact of the proposed works on any asset will be identified using the following impact criteria, defined either as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

None:

There is no construction impact on this asset.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the asset, *e.g.* part of a trackway or field bank.

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of an asset affecting its overall integrity. Assets falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of an asset or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the asset is unknown, but thought to be in the vicinity of the proposed works.

2.4 Working Project Archive and Data Management Plan

As stated in *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (Chartered Institute for Archaeologists, 2020), para. 3.3.1, "Project specifications, research designs or similar documents should include a project- specific Selection Strategy and a Data Management Plan. The Chartered Institute for Archaeologists states that "(I)t 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" (https://www.archaeologists.net/selection-toolkit). The working project archive in this instance will comprise digital data including photographic data, documentation and written data, as well as paper records, including project pro-formas. The Data Management Plan will be stored on a project specific form in the GAT project database (format: *Microsoft* Access) and the Selection Strategy will be based on a GAT pro-forma (format *Microsoft Word*) that will be appended to the final report.

This working project archive data will be processed as follows:

1. Pro-formas: all cross referenced and scanned for digital archiving;

2. Photographic Metadata: cross-referenced with all pro-formas and completed in *Microsoft Excel*;

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 Data Management Plan; the digital dataset will be stored on a dedicated Trust server, with the location confirmed in the Data Management Plan via a specific hyperlink. External datasets for the HER and RCAHMW are as defined in the dissemination strategy below.

The project report will include the following:

1. Front cover;
2. Inner cover;
3. Figures and Plates List;
4. Non-technical summary (Welsh/English);
5. Introduction;
6. Methodology;
    i. Archaeological assessment;
    ii. Walkover survey;
7. Results;
    a. Desk-based assessment;
    b. Walkover survey;
    c. Gazetteer of assets;
8. Conclusions
9. Acknowledgements;
10. Bibliography;
    a. Primary sources;
    b. Secondary sources;
11. Figures; inc.:
    - location plan;
    - historic mapping;
    - location plan with identified features.
12. Plates; inc.
    - Illustrative examples from the walkover survey
13. Appendix I (approved specification);
14. Appendix II (Photographic metadata - walkover survey);
15. Appendix III (List of Statutory and non-statutory assets within a 500m buffer zone);
16. Appendix IV (Selection Strategy)

    Back cover.

Illustrations will include plans of the location of the study area and archaeological sites. Historical maps, when appropriate and if copyright permissions allow, will be included.

The following dissemination and archiving of the report and digital dataset will be applied:

- A digital report 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 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 2); 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).

2.5 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 confirmed in the assessment report and 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.

The selection strategy pro-forma is included as Appendix III.

3 PERSONNEL

The project will be managed by John Roberts, Principal Archaeologist GAT Contracts Section with attendances on-site undertaken by a GAT Project Archaeologist(s). The Project Archaeologist will be responsible for following:

- Client liaison;
- GAPS liaison, with regular updates;
- Completing all on site pro-formas and the fieldwork archive itemised above, including the digital project register;
- 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; and
- For submitting a draft final report for project manager review and approval, to then be submitted as per the arrangements defined above.

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4 HEALTH AND SAFETY

A project specific risk assessment will be prepared ahead of the walkover survey, identifying any expected risks and suitable control measures. Copies of the site-specific risk assessment will be supplied to the client prior to the start of the walkover survey.

5 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.

6 INSURANCE

6.1 Public/Products Liability

Limit of Indemnity- £5,000,000 any one occurrence and in the aggregate in respect of Product Liability

INSURER Ecclesiastical Insurance Office Plc.

POLICY TYPE Public/Products Liability

POLICY NUMBER UN/000375

EXPIRY DATE 21st June 2023

6.2 Employers Liability

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

INSURER Ecclesiastical Insurance Office Plc.

POLICY TYPE Employers Liability

POLICY NUMBER 24765101 CHC / UN/000375

EXPIRY DATE 21st June 2023

6.3 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 22/07/2023

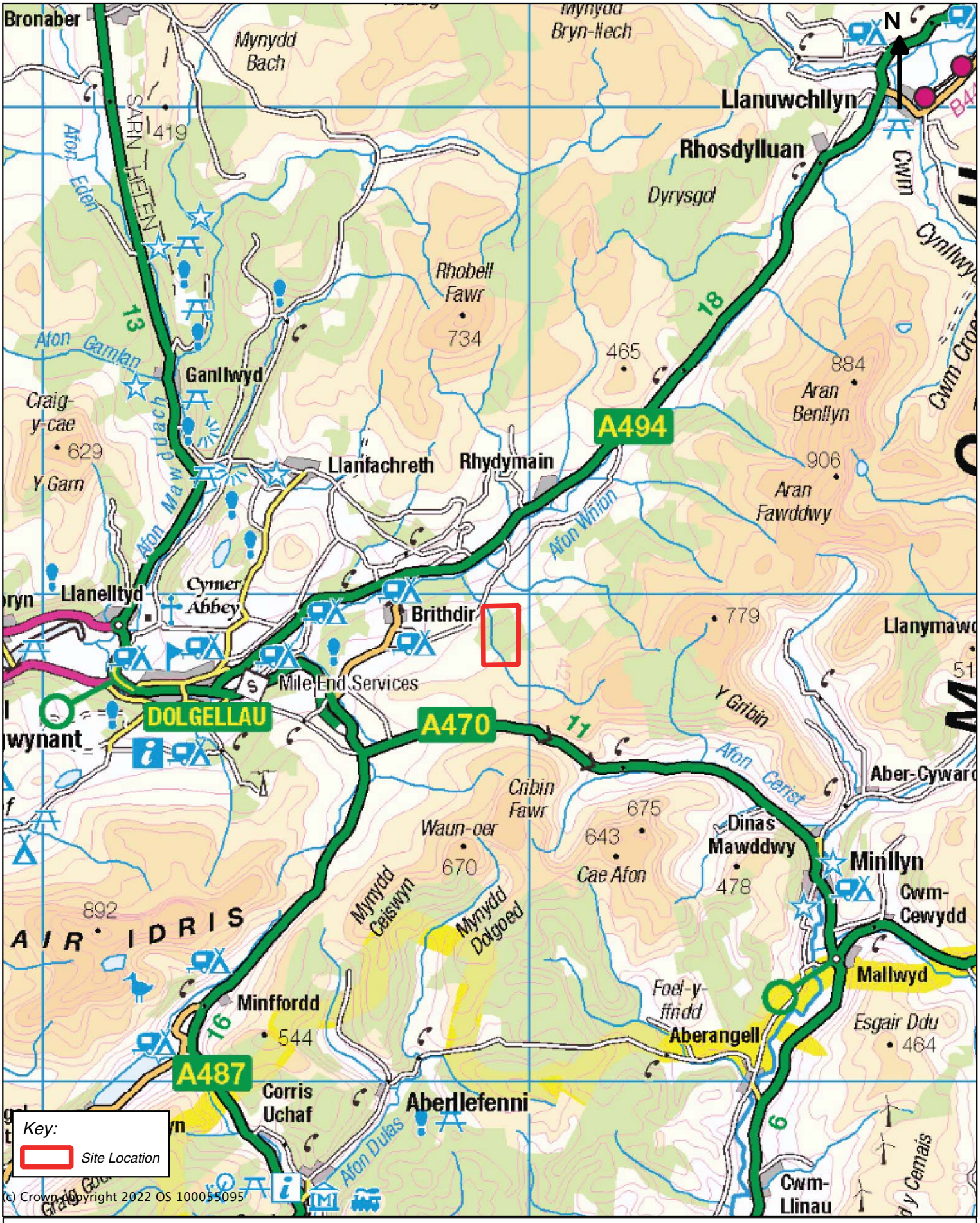
7 SOURCES CONSULTED

1. Chartered Institute for Archaeologists, 2020, Standard and guidance for archaeological assessment (Chartered Institute for Archaeologists, 2020);
2. Chartered Institute for Archaeologists, 2020, Standard and guidance for the collection, documentation, conservation and research of archaeological materials;
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, Standard and guidance for the archaeological investigation and recording of standing buildings or structures;
5. Cooke, R. 2018. Proposed Hydro-Electric Schemes, Bryn Coed Ifor, Rhydymain, Dolgellau, Meirionnydd: Archaeological Assessment. Aeon Archaeology Report 0180;
6. English Heritage, 1991, Management of Archaeological Projects (MAP2)
7. Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs) Version 2 (The Welsh Archaeological Trusts, 2022);
8. Guidelines for digital archives (Royal Commission on Ancient and Historic Monuments of Wales, 2015);
9. Historic England, 2015, Management of Research Projects in the Historic Environment (MoRPHE);
10. Hopewell, D. 1996. Brithdir: Archaeological Watching Brief. Gwynedd Archaeological Trust Report 197;
11. Royal Commission on Ancient and Historic Monuments of Wales, 2015, Guidelines for digital archives; and

6. Ryan Young, C. 2020. Afon Celynog Uchaf Hydro Scheme Briff Gwylio Archaeoloegol/Archaeological Watching Brief. Gwynedd Archaeological Trust Report 1544.

FIGURE 01

Site location plan for hydropower scheme. Source: Greenearth Hydro Limited Drawing No: 220801LB02; Scale 1:100,000@A4.



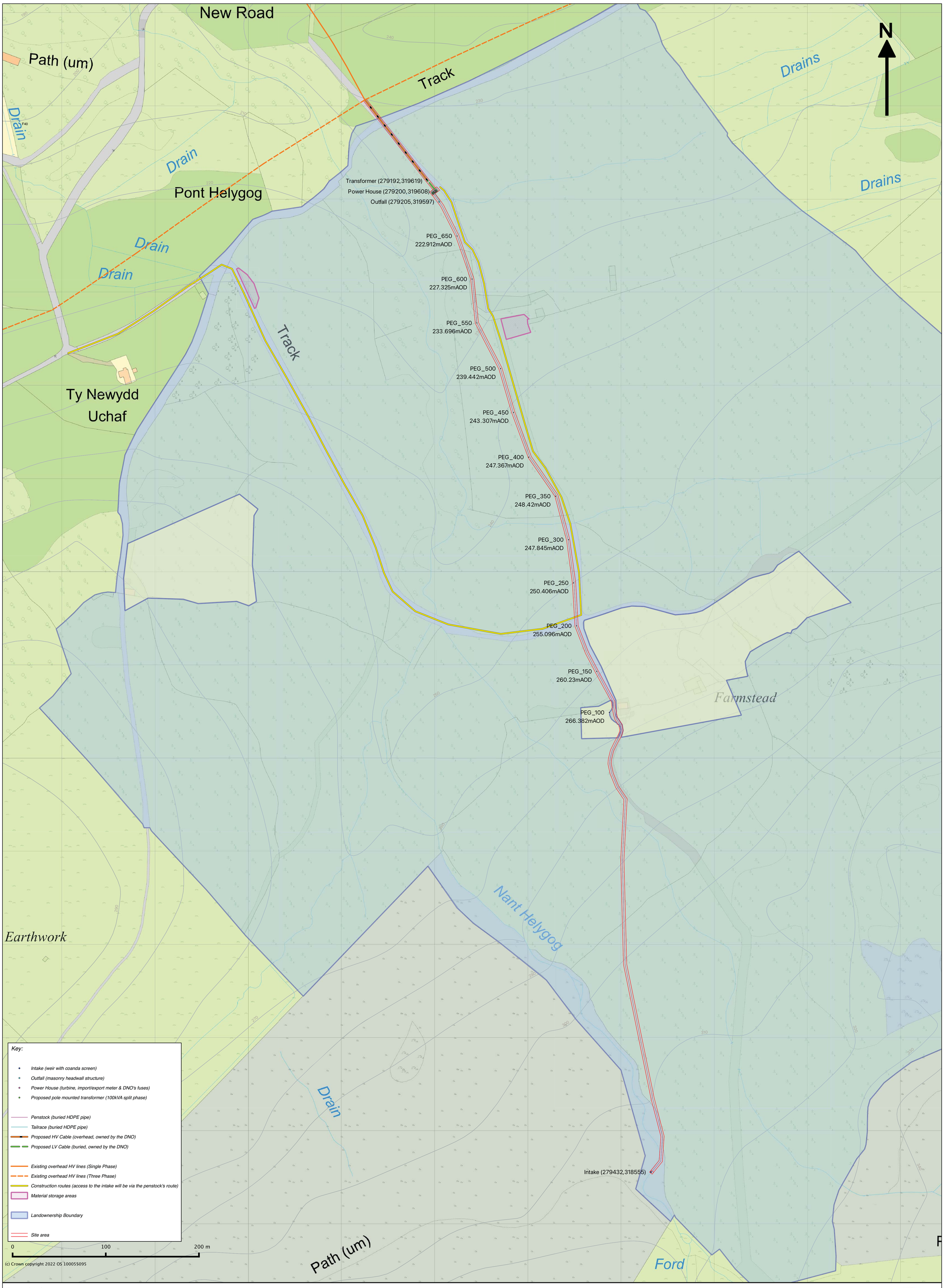
Client: Mark Sealy
Installation Address: Brithgwm Ganol, Brithdir, Dolgellau, LL40 2SA
Drawing Title: Site location plan for hydropower scheme
Drawn By: LMB
Date: 1st August 2022
Scale @ A4: 1:100,000
Dwg No: 220801LB02
Version: 1

Greenearth Hydro

Greenearth Hydro Limited
The Cottage, Rhiw, Pwllheli, LL53 8AE
www.greenearthhydro.co.uk
Tel: 01691 648 378

FIGURE 02

Site layout for hydropower scheme. Source: Greenearth Hydro Limited Drawing No: 220730LB01; Scale 1:1,750@A1.



Client: Mark Sealy
Installation Address: Brithgwm Ganol, Brithdir, Dolgellau, LL40 2SA
Drawing Title: Site layout for hydropower scheme
Drawn By: LMB
Date: 5th August 2022
Scale @ A1: 1:1,750
Dwg No: 220730LB01
Version: 2 (Penstock's alignment changed at Peg 100)

Greenearth Hydro

The Cottage, Rhiw, Pwllheli, LL53 8AE
www.greenearthhydro.co.uk

APPENDIX I

Gwynedd Archaeological Trust basic recording pro-forma

YMDDIRIEDOLAETH ARCHAEOLEGOL GWYNEDD ARCHAEOLOGICAL TRUST		
BASIC RECORDING FORM	*Project name*	*Project number*
Feature name		*Feature Number*
NGR		
Description		
Recommendations for further assessment		
Photographic record numbers		
Digital		
	Visit date	*Visit by*

APPENDIX II

Gwynedd Archaeological Trust photographic metadata pro-forma

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Digital Photographic Record Project code and name:

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.

Project Name:			Project Number:				
Photo No.	**Sub - Division**	**Description**	**Contexts**	**Scales**	**View From**	**Initials**	**Date**

APPENDIX III

Gwynedd Archaeological Trust selection strategy

G2761_Cefn_Cruean_Isaf
20/12/2022 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	20/12/2022
	RCAHMW	On completion of Project Archive
Project Assurance	Jenny Emmett, Gwynedd Archaeological Planning Service	tbc
Landowner / Developer	Green Blades Engineering Ltd.	n/a

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.

Context

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

Gwynedd Archaeological Trust Contracts Section (GAT) has been asked by Green Blades Engineering Ltd. to prepare a scope for an archaeological desk-based assessment at Cefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd (NGR SH78401928; postcode LL40 2SA; WSI Figure 01), as part of a proposed hydropower scheme. The scheme has a total length of 1.1km and includes an intake at NGR SH79431855 and an outfall/powerhouse/transformer at NGR SH79201959 (WSI Figure 02), with access from an existing local trackway. The scheme is located within a managed forestry upland landscape in Snowdonia in an area of known upstanding and

historic archaeological assets related to historic farming of the medieval and later periods, as well as the route of the Caer Gai - Brithdir Roman road (PRN 17628; SH79071960) at the northern end of the scheme near Pont Helygog (PRN 4138; NGR SH7910119626) and a pair of Bronze Age ring cairns (PRN 12899 & 12900; NGR SH80111854). The planning application reference for this scheme is NP5/54/459A. The assessment will be undertaken in January 2023.

Gwynedd Archaeological Trust. 2022. Cefn Cruean Isaf, Brithdir, Gwynedd
Written Scheme of Investigation for A Desk Based Assessment. Project (G2761).

1 – Digital Data

Stakeholders

John Roberts (GAT Principal Archaeologist)

Selection

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).

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;

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 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

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.

2 – Documents

Stakeholders

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

Selection

- 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

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 therefor either be retained to supplement GAT's research files or recycled.

APPENDIX II

Gwynedd Archaeological Trust Photographic Metadata

PHOTO RECORD NUMBER	PROJECT NAME	DESCRIPTION	VIEW FROM	SCALE(S)	REASON FOR PHOTO	CREATOR OF DIGITAL PHOTO	DATE	ORIGINATING ORGANISATION	PLATE
G2761_01	Cefn_Cruean_Isaf	General view from the noth-northwest of a track from the site entrance	NNW	not used	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	1
G2761_02	Cefn_Cruean_Isaf	General view from the northwest of track from site entrance	NW	not used	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	2
G2761_03	Cefn_Cruean_Isaf	View from the south along Nant Helygog from the south	S	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	3
G2761_04	Cefn_Cruean_Isaf	View from the east along nineteenth century boundary wall	E	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	4
G2761_05	Cefn_Cruean_Isaf	View from the west showing field pattern with drystone walls in Cwm Nant Helygog	W	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	5
G2761_06	Cefn_Cruean_Isaf	General landscape view from the south	S	not used	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	6
G2761_07	Cefn_Cruean_Isaf	View from the north-northwest along Nant Helygog	NNW	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	7

PHOTO RECORD NUMBER	PROJECT NAME	DESCRIPTION	VIEW FROM	SCALE(S)	REASON FOR PHOTO	CREATOR OF DIGITAL PHOTO	DATE	ORIGINATING ORGANISATION	PLATE
G2761_08	Cefn_Cruean_Isaf	View from the north-northwest along the track from the entrance of the proposed route	NNW	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	8
G2761_09	Cefn_Cruean_Isaf	View from the north-northwest of Brithgwm, now modernised	NNW	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	9
G2761_10	Cefn_Cruean_Isaf	View from the south of nineteenth century drystone wall at the southern end of the scheme	S	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	10
G2761_11	Cefn_Cruean_Isaf	View from the west of the intake at southern end of the scheme	W	not used	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	11
G2761_12	Cefn_Cruean_Isaf	General view from the south of the woodland track	S	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	12
G2761_13	Cefn_Cruean_Isaf	View from the west of proposed storage area	W	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	13
G2761_14	Cefn_Cruean_Isaf	View form the west-southwest showing remnant of surviving drystone wall forming part of a paddock at Brithgwm	WSW	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	14

PHOTO RECORD NUMBER	PROJECT NAME	DESCRIPTION	VIEW FROM	SCALE(S)	REASON FOR PHOTO	CREATOR OF DIGITAL PHOTO	DATE	ORIGINATING ORGANISATION	PLATE
G2761_15	Cefn_Cruean_Isaf	View from the north of pipeline route form the track, showing Brithgwm in the distance	N	1m	Photographic Survey for Archaeological Assessment	Robert Evans	12/01/2023	Gwynedd Archaeological Trust	15

APPENDIX III

Gwynedd Archaeological Trust Selection Strategy

G2761_Cefn_Cruean_Isaf
30/01/2023 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	20/12/2022
	RCAHMW	On completion of Project Archive
Project Assurance	Jenny Emmett, Gwynedd Archaeological Planning Service	tbc
Landowner / Developer	Green Blades Engineering Ltd.	n/a

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.

Context

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

Gwynedd Archaeological Trust Contracts Section has been asked by Green Blades Engineering Ltd. to prepare a scope for an archaeological desk-based assessment at Cefn Cruean Isaf, Brithdir, Dolgellau, Gwynedd (NGR SH78401928; postcode LL40 2SA; WSI Figure 01), as part of a proposed hydropower scheme. The scheme has a total length of 1.1km and includes an intake at NGR SH79431855 and an outfall/powerhouse/transformer at NGR SH79201959 (WSI Figure 02), with access from an existing local trackway. The scheme is located within a managed forestry upland landscape in Snowdonia in an area of known upstanding and historic archaeological

assets related to historic farming of the medieval and later periods, as well as the route of the Caer Gai - Brithdir Roman road (PRN 17628; SH79071960) at the northern end of the scheme near Pont Helygog (PRN 4138; NGR SH7910119626) and a pair of Bronze Age ring cairns (PRN 12899 & 12900; NGR SH80111854). The planning application reference for this scheme is NP5/54/459A. The assessment has been undertaken in January 2023.

Gwynedd Archaeological Trust. 2022. Cefn Cruean Isaf, Brithdir, Gwynedd
Written Scheme of Investigation for A Desk Based Assessment. Project (G2761).

1 – Digital Data

Stakeholders

John Roberts (GAT Principal Archaeologist)

Selection

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

Following the completion of the fieldwork, a working project archive has been 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;

All relevant site archive data has been added to a digital project register specific to this project, which has been prepared in *Microsoft Excel.*

This data has been used as the basis for the physical and digital dataset archives. Information from these has been 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. External datasets for the HER and RCAHMW are as defined in the dissemination strategy below. De-selected digital data has been confirmed in an updated digital management plan appended to the final report

De-Selected Digital Data

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 has been reviewed and deleted as necessary in line with the GAT DMP.

2 – Documents

Stakeholders

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

Selection

- A digital report has been provided to the regional Historic Environment Record; this has been submitted within six months of project completion (final report only), along with a digital dataset comprising an Event PRN summary. The report and dataset has been 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 has been 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 has been 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

The material de-selected from inclusion in the preserved archive are 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.

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