

SPEN Ffridd Uchaf, Rhyd Ddu, Gwynedd.

March 2017 V 2.0





Archaeological Assessment Project Code: A0107.2 Report no. 0120



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Archaeological Assessment

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Client: Scottish Power Energy Networks

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1.0 NON-TECHNICAL SUMMARY

Aeon Archaeology was commissioned by Scottish Power Energy Networks Ltd (SPEN) to carry out an archaeological assessment and field visit of land that is affected by proposals to recover overhead power lines and poles and to install a new underground supply, located to the south of Rhyd Ddu, Gwynedd and within the Snowdonia National Park Authority (SNPA).

The archaeological assessment identified fourteen archaeological sites within the 75.0m wide assessment corridor extending away from the A4085 road, all of which were post-medieval in date with the exception of two probable peat-drying platforms and former trackway which could be medieval in origin.

The proposed scheme will directly impact upon four archaeological features, a mound, a field boundary wall, a linear earthwork, and a cairn recorded on the Gwynedd HER. One additional site, a bridge, is also likely to be impacted upon. All of these features, with the exception of the mound and cairn, are of post-medieval date and as such are considered to be of *negligible* importance. The photographs and descriptions provided within this report are considered commensurate with a basic archaeological record level and as such no further recommendations are made for assessment or mitigatory measures for these features.

The identity of the mound is not known with certainty. It is suspected to be upcast material from roadworks that has grassed over and as such is of post-medieval date and negligible importance. Moreover, the cairn recorded on the Gwynedd HER appears to be a natural glacial deposit and also therefore of negligible importance. The precautionary principle however dictates that as there is uncertainty to their origin then a watching brief should be maintained during the breaching of both features.

The assessment has highlighted the increased potential for the location of preserved palaeoenvironmental remains within the suspected underlying peat deposits along the route of the scheme. As such it has been recommended that an archaeological watching brief be maintained during trenching in this area.

2.0 INTRODUCTION, AIMS AND PROJECT DESIGN

Aeon Archaeology was commissioned by Scottish Power Energy Networks Ltd (SPEN) to carry out an archaeological assessment and field visit of land that is affected by proposals to recover overhead power lines and poles and to install a new underground supply, located to the south of Rhyd Ddu, Gwynedd and within the Snowdonia National Park Authority (SNPA). The proposed scheme will include the trenching of a new underground cable from approximately 120.0m south of Rhyd Ddu (NGR SH 57035 52607) southward through fields to the west of the A4085 road. The new cable will then be trenched eastward beneath the road and the Welsh Highland Railway to run to the property of Ffridd Uchaf, before returning southward through fields to immediately north of Pont Cae Gors (NGR SH 57547 50898) (figure 1 and 2). The proposed scheme will consist of a 300mm wide by 1.0m deep trench for a new 2 inch diameter cable carrying up to 50 amps.

A mitigation brief was not prepared for this work by the SNPA Archaeologist or The Gwynedd Archaeological Planning Service (GAPS), but an archaeological assessment of the new cable route was requested by the SNPA Archaeologist as part of the enabling works associated with the scheme.

This archaeological assessment is for the proposed development area, which includes the new cable route and a 75.0m wide assessment corridor extending away from the A4085 road.

As part of the archaeological assessment an 800.0m search area centred on the proposed route was utilised for a search of the Gwynedd Historic Environment Record (HER). This provided a background historical narrative of the area and included source material from the Gwynedd Archives and Record Office, Caernarfon. Information on Scheduled Ancient Monuments and Listed Buildings was obtained from Cadw.

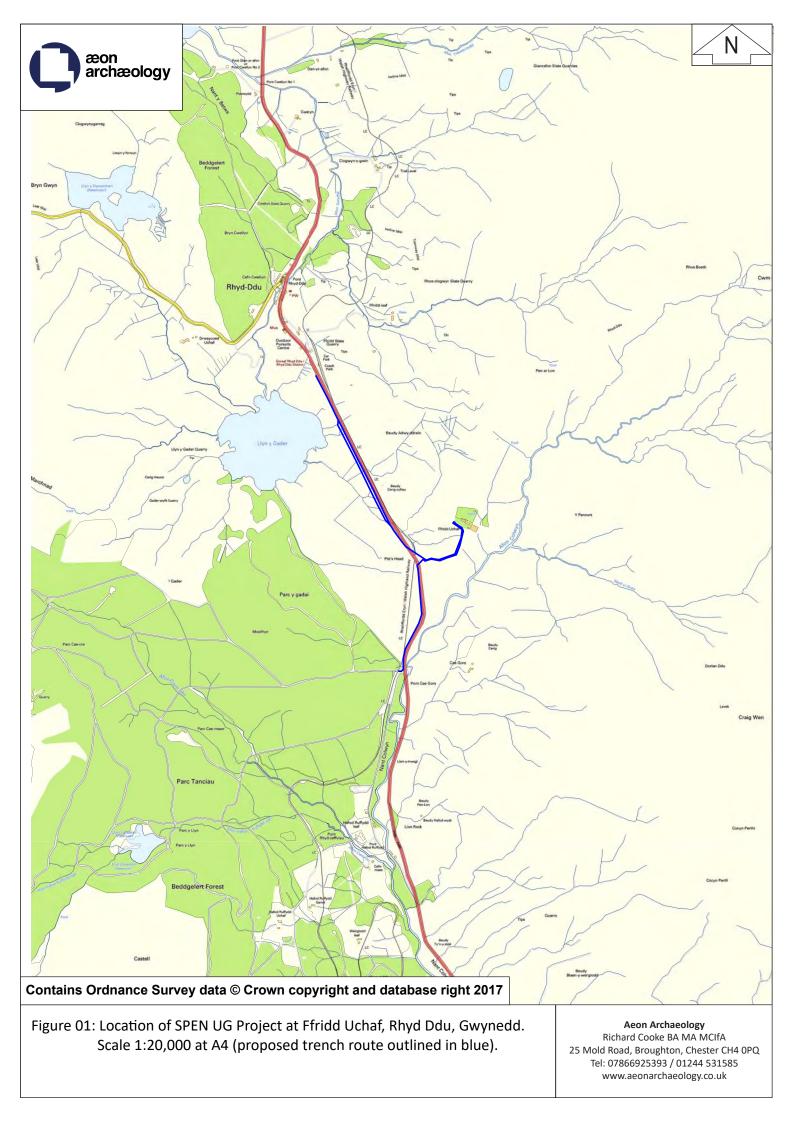
The following report conforms to the guidelines specified in *Standard and Guidance for Archaeological Desk-based Assessment* (Chartered Institute for Archaeologists, 2014).

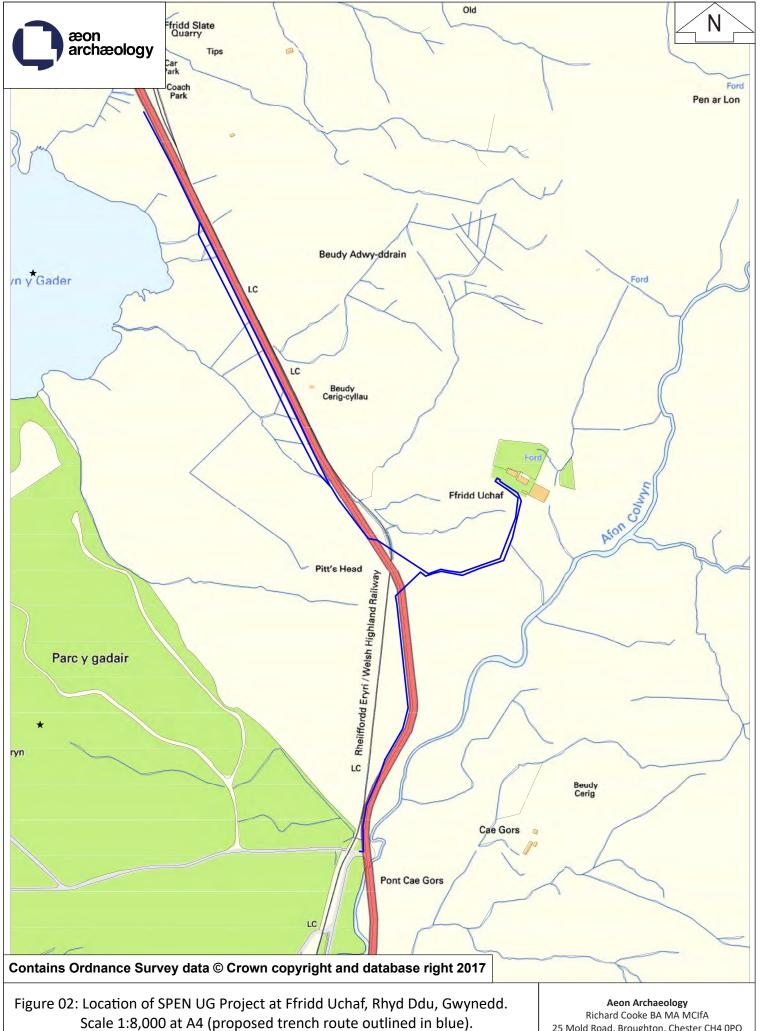
The archaeological assessment considered the following:

- (i) The history of the site;
- (ii) The significance of any remains in their context both regionally and nationally;
- (iii) The potential impact of the proposed development on known sites of archaeological importance including their setting.

The archaeological assessment was undertaken in four stages:

- (i) Archival research
- (ii) Field visit/site walkover of all accessible areas
- (iii) Written report
- (iv) Project archive





Scale 1:8,000 at A4 (proposed trench route outlined in blue).

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Plate 01: Proposed cable route at Ffridd Uchaf, Rhyd Ddu, from the north.



3.0 METHODS AND TECHNIQUES

3.1 Archival research

The archaeological assessment involved the study of the following records:

- The regional Historic Environment Record (Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, LL57 2RT) was examined for information concerning the study area. This included an examination of the core HER, and secondary information held within the record which included unpublished reports, the 1:2500 County Series Ordnance Survey maps, and the National Archaeological Record index cards and aerial photography.
- The National Monuments Record (NMR RCAHMW, National Monuments Record of Wales, Plas Crug, Aberystwyth, SY23 1NJ) was checked for sites additional to the HER.
- Information about Listed Buildings and Scheduled Ancient Monuments from Cadw were examined in the regional HER. The Register of Outstanding and Special Historic Landscapes and the Register of Parks and Gardens was checked, and also the location of World Heritage Sites.
- Secondary sources were examined, including the Inventories of the Royal Commission on Ancient and Historical Monuments for Wales, and works held within the regional libraries.
- Results from previous archaeological work within the area was also reviewed.

3.2 Site walkover

The site walkover was carried out on 10th March 2017 by Richard Cooke BA MA MCIfA, archaeological contractor and consultant at Aeon Archaeology. The weather conditions were ideal for the field search being both bright and clear. All archaeological sites and view points were photographed using a digital SLR (Canon 600D) set to maximum resolution.

3.3 Assessment report

All features identified from the archival research and site walkover were assessed and allocated to categories of international, national, regional/county, local and none/unknown importance as listed in section 6.0. These are intended to place the archaeological feature within a geographical context of importance and thus help inform the most suitable level of mitigatory response. The criteria used for allocating features to categories of importance are based on existing statutory designations and, for non-designated assets, the Secretary of State's non-statutory criteria for Scheduling Ancient Monuments; these are set out in Planning Policy Wales, Welsh Office Circular 60/96, and the Historic Environment Act (Wales) 2015.

3.4 Project archive

A full archive including plans, photographs and written material was prepared. All plans, photographs and written descriptions were labelled and cross-referenced using Aeon Archaeology pro-formas. A draft copy of the report was sent to the client and upon written approval from them paper and digital copies of the report will be sent to the regional HER (x1) (Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, LL57 2RT), the

Snowdonia National Park Authority (SNPA) Archaeologist (x3), and the Royal Commission on the Ancient and Historic Monuments in Wales (RCAHMW) (x1). Copies of all notes, plans, and photographs from the assessment are stored at Aeon Archaeology under the project code **A0107.2** with the originals being lodged in a suitable repository to be agreed with the archaeological curator.

Any artefacts arising from future phases of fieldwork will be lodged with the Gwynedd Museum and Art Gallery, Bangor, Gwynedd.

4.0 ARCHAEOLOGICAL AND TOPOGRAPHICAL BACKGROUND

4.1 Topographic Description

Rhyd Ddu (Welsh for Black Ford) is a small village in Snowdonia, North Wales which is a starting point for walks up Snowdon (via the Rhyd Ddu Path), Moel Hebog, Yr Aran and the Nantlle Ridge. It lies on the A4085 between Beddgelert and Caernarfon, at its junction with the B4418 to Nantlle and Penygroes. Rhyd Ddu railway station is one of the stops of the Welsh Highland Railway between Caernarfon and Porthmadog.

The removal of the existing line and poles is to be undertaken by hand with no vehicular access required, and as such this part of the scheme has not been included within the assessment. The undergrounding phase of works will require the excavation of a trench by mechanical excavator from approximately 120.0m south of Rhyd Ddu (NGR SH 57035 52607) southward and to the immediate west of the A4085 road to a large rock known as 'Pitt's Head' which is claimed to resemble William Pitt the Younger. The cable will then be trenched eastward beneath the road and Welsh Highland Railway, to run northwest through fields to the property of Ffridd Uchaf. The underground cable will then return by the same route to then run southward through fields to the immediate west of the A4085 to immediately north of Pont Cae Gors (NGR SH 57547 50898).

The site lies within the parish of Beddgelert Community, within the unitary authority of Gwynedd. A low-lying area forming a hollow in which is situated Llyn y Gadair, the area is mostly given over to rough pasture, the farmland dominated by acid grassland within which there are cushions of gorse enclosed by field boundaries usually consisting of dry-stone walls reinforced by wooden post and wire fencing. The land is primarily given over to hill sheep farming, although some cattle farming also takes place within the localised landscape, generally on the lower slopes.

The bedrock geology is of the Cwm Eigiau Formation, a sedimentary sandstone bedrock that formed approximately 455 to 457 million years ago in the Ordovician Period within an environment previously dominated by shallow seas. The superficial deposit is of bands of peat that formed up to 3 million years ago in the Quaternary Period within an environment previously dominated by organic accumulations (British Geological Survey).

4.2 Statutory and non-statutory designations

4.2.1 Non-designated monument points from the Gwynedd Historic Environment Record (figure 3)

The Gwynedd Historic Environment Record (HER) maintains a register of non-designated archaeological sites represented as single point data or as polygons. These are identified through their Primary Reference Number (PRN). These include sites which are of archaeological/historical interest, artefact find spots, documentary evidence, and locations of past events such as archaeological projects.

There are 17 non-designated monuments within 800.0m of the proposed scheme (see appendix I) and the following lie within the 75.0m wide assessment corridor located to the south of the cable route:

(i) Approximately 30.0m northeast of the unknown date *Cairn*, *East of Llyn y Gader* (PRN: 1574);

(ii) Approximately 45.0m northeast of the post-medieval *Earthwork Features*, *Pitt's Head*, *SE Llyn y Gader* (PRN: 4269).

4.2.2 Scheduled Ancient Monuments

Scheduled monuments are those considered to be monuments of national importance. The Ancient Monuments and Archaeological Areas Act 1979 supports a formal system of Scheduled Monument Consent (SMC) for any work to a designated monument. Any works within a Scheduled area will require SMC; this includes non-invasive techniques such as geophysics or field-walking.

There are no Scheduled Ancient Monuments within 800.0m of the proposed cable route.

4.2.3 National Monuments Record (figure 4)

The Royal Commission on the Ancient and Historic Monuments in Wales (RCAHMW) maintains the National Monuments Record (NMR) for Wales. This is a register of non-designated archaeological sites represented as single point data or as polygons. These are identified through their National Primary Reference Number (NPRN) and include sites which are of archaeological/historical interest, artefact find spots, documentary evidence, and locations of past events such as archaeological projects that are not statutorily protected.

There are 9 non-designated monument points within 800.0m of the proposed scheme (see appendix I) but none lie within the 75.0m wide assessment corridor located to the south of the cable route.

4.2.4 Listed Buildings (figure 5)

The Secretary of State for Culture, Media and Sport holds a List of Buildings of Special Architectural or Historic Interest, considered to be of national importance. Compiled under the Planning (Listed Buildings and Conservation Areas) Act 1990, the List includes structures from boundary walls and telephone boxes to cathedrals. Listing gives statutory protection and restrictions apply. Consent may be required for works to, or that affect the setting of, a Listed Building and the Local Planning Authority conservation officer should be consulted if in doubt.

There are 7 Listed Building within 800.0m of the proposed scheme (see appendix I) but none lie within the 75.0m wide assessment corridor located to the south of the cable route.

The following Listed Buildings lie within 500.0m of the proposed cable route:

(i) Approximately 439.0m south of the grade II Listed Building of Pen-y-Gongl (ref. 21278).

4.2.5 Historic Landscape Character Areas (HLCAs)

Cadw, National Resource Wales (formerly the Countryside Council for Wales), and the International Council of Monuments and Sites (ICOMOS UK) compiled the two volume Register of Landscapes of Historic Interest in Wales. This includes 58 landscapes of outstanding or special historic interest, which are considered to be the best examples of different types of historic landscapes in Wales. The Register provides information to decision makers and landscape managers, to help ensure that the historic character of the landscape is sustained, and that where change is contemplated, it is well-informed.

Historic Landscape Characterisation takes a closer look at the historic landscape by showing the processes that have shaped the landscape over centuries of human activity, contributing to its present character. Detailed characterisation studies have been compiled by the four Welsh Archaeological Trusts for all 58 areas on the Register. They are used by local government and developers to help assess the impact of development proposals on the historic landscape.

The proposed development is not included within the Register of Historic Landscapes of Historic Interest in Wales but was included within the Caernarfon-Nantlle Historic Landscape Characterisation process by the Gwynedd Archaeological Trust, as such the proposed scheme is included within the following Historic Landscape Character Areas (HLCAs):

- (i) The *Llyn y Gadair* Historic Landscape Character area (HLCA: 32);
- (ii) The Gwyrfai Valley Slopes Historic Landscape Character area (HLCA: 43).

4.2.6 Historic Parks and Gardens

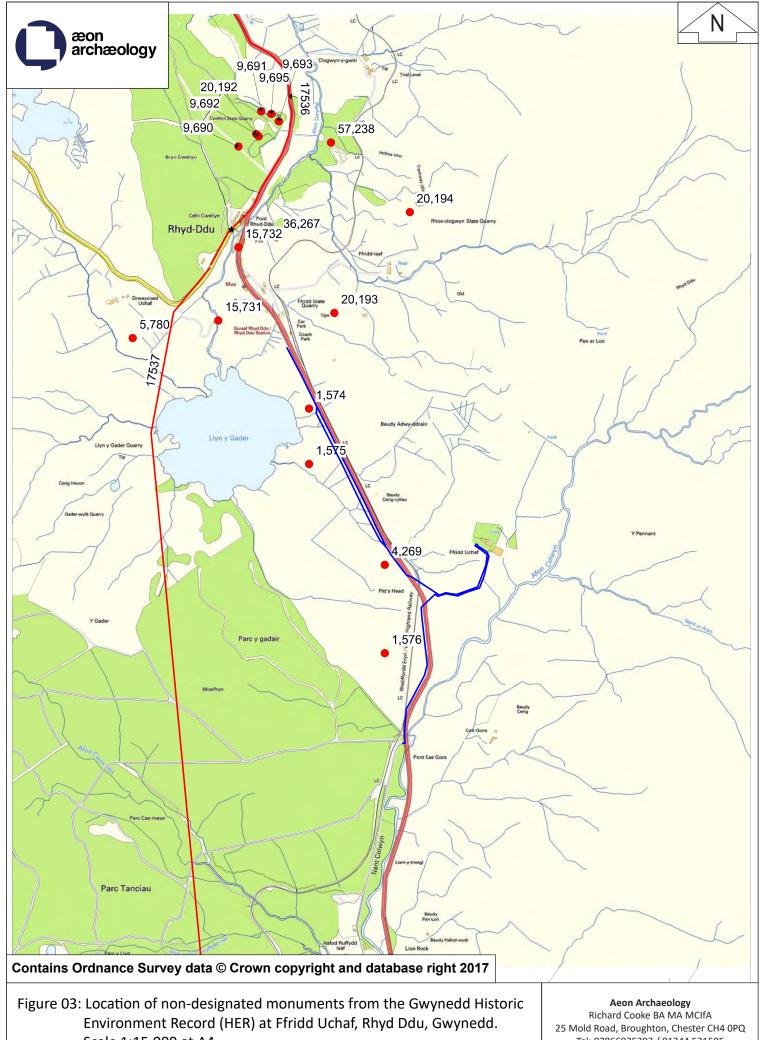
Cadw holds a Register of Historic Parks and Gardens of Special Historic Interest. These Registered landscapes are graded I, II* or II, and include private gardens, public parks and other green spaces. They are valued for their design, diversity and historical importance. Inclusion on the Register brings no additional statutory controls, but there is a presumption in favour of conservation of the designated site. Local authorities are required to consult Cadw on applications affecting sites Registered as grade I or II* and the Garden History Society on sites of all grades.

There are no historic parks and gardens within the 75.0m wide assessment corridor or within 800.0m of the proposed development area.

4.2.7 Events

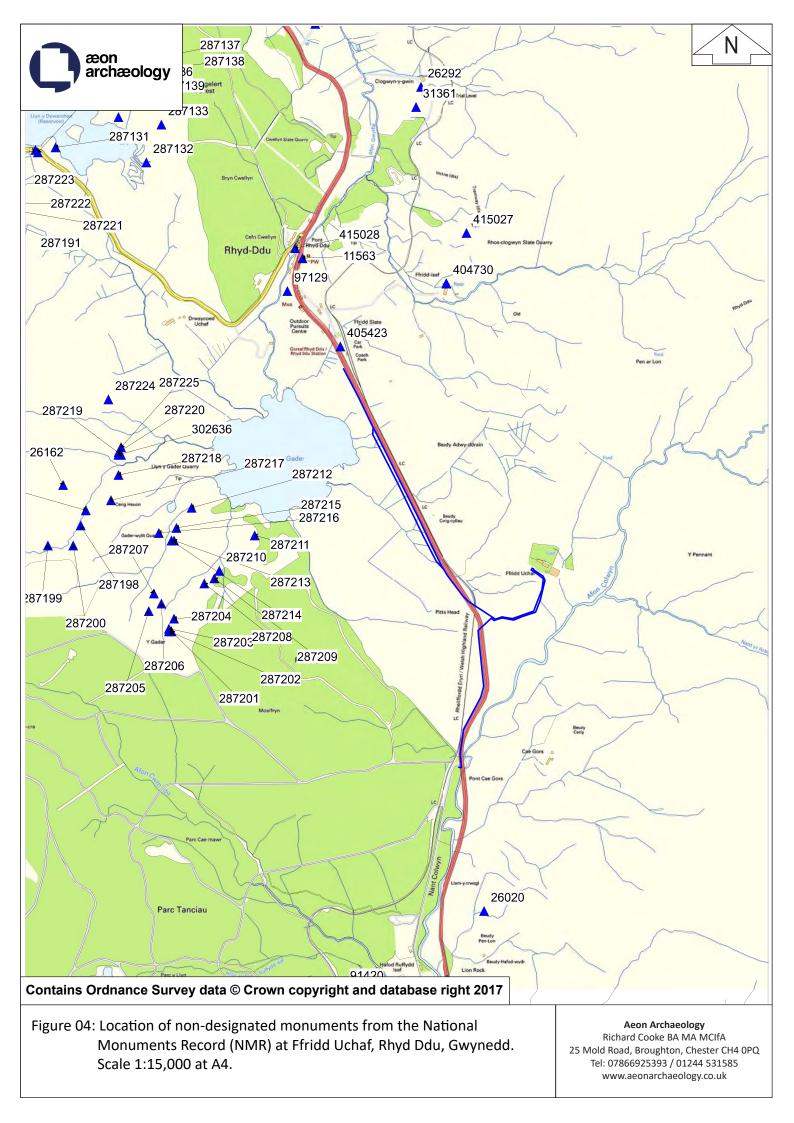
The location of the proposed cable route was included within an upland survey carried out by Oxford Archaeology North in 2006. The upland survey did not examine the enclosed land and was an extensive survey so is unlikely to have identified discreet features.

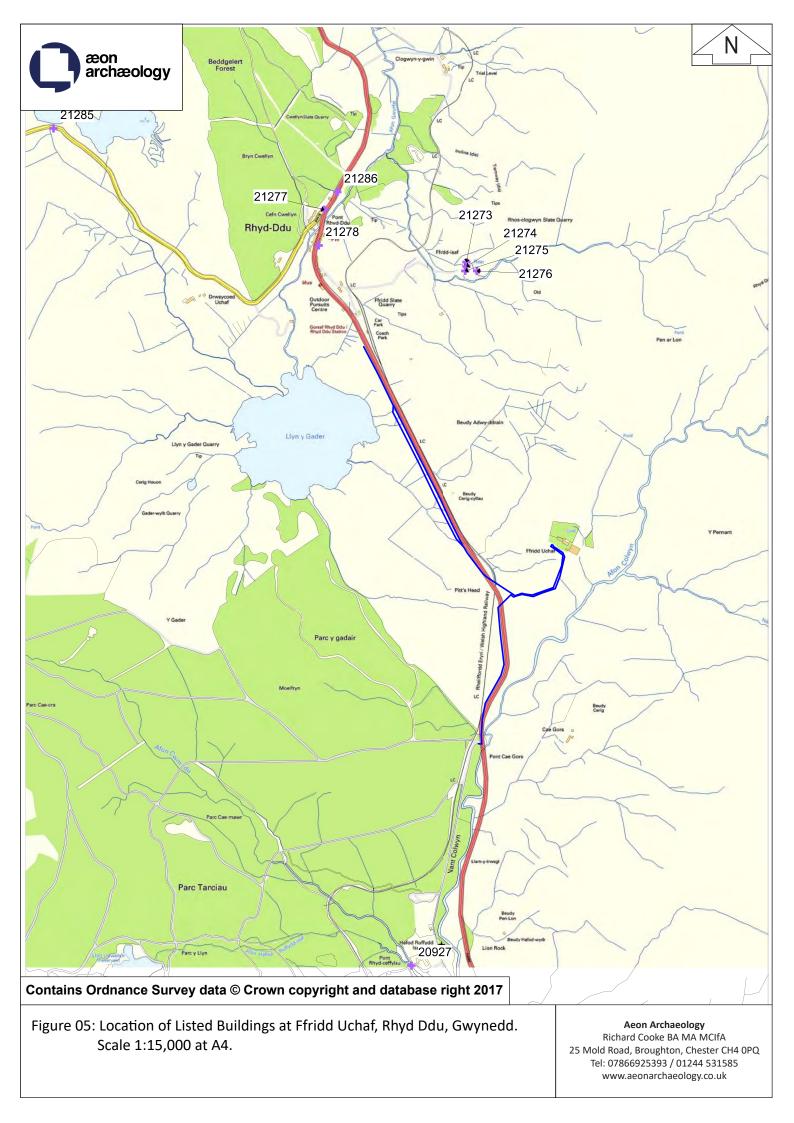
A watching brief undertaken by GAT in 1988 which monitored a replacement water pipeline located approximately 46.0m west of the proposed scheme identified a series of earthworks (PRN: 4269) which were interpreted as post-medieval field boundaries, however one circular feature was observed but left unrecorded. This information was sourced from the Gwynedd HER however the relevant GAT report was not available.



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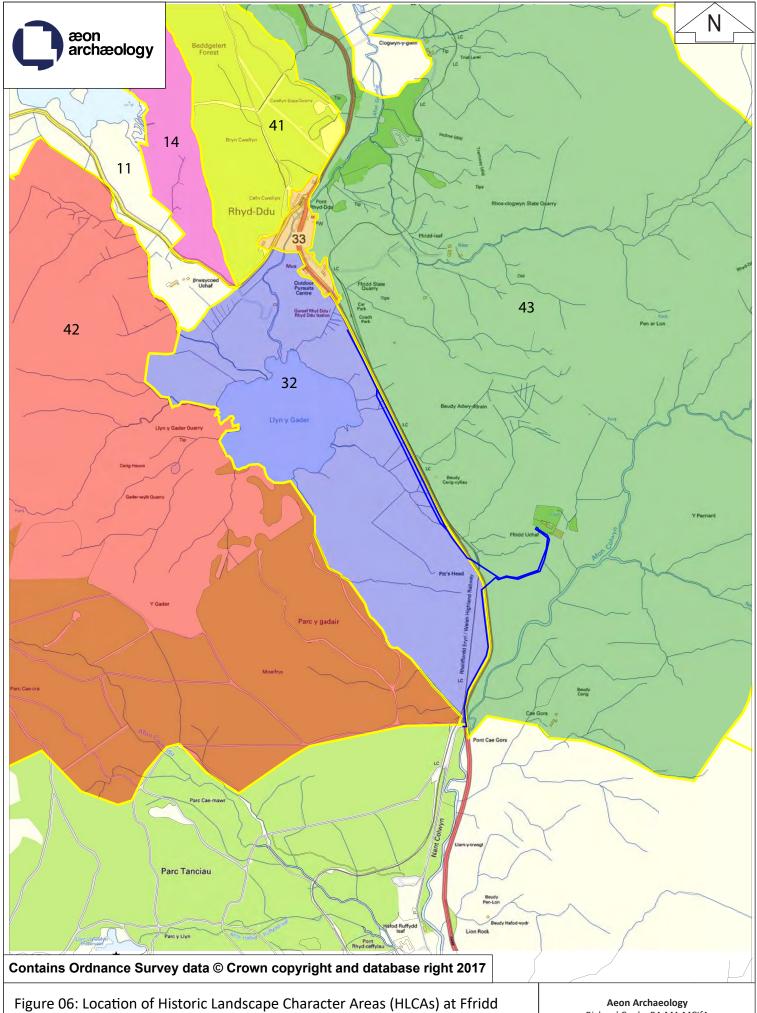


Figure 06: Location of Historic Landscape Character Areas (HLCAs) at Ffrido Uchaf, Rhyd Ddu, Gwynedd. Scale 1:15,000 at A4.

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5.0 THE HISTORICAL CONTEXT

The following sections describe the known archaeological record within the general area of the proposed development. Sites are identified by their Primary Reference Number (PRN) which is the number by which they are identified in the Gwynedd Historic Environment Record (HER), or by their Scheduled Ancient Monument reference, Listed Building reference and/or there National Primary Reference Number (NPRN) if applicable. The intention of this section is to provide a historic and archaeological context to the site. This aids in establishing the relative importance of an archaeological feature within its landscape, as well as assessing the potential for unknown buried archaeological remains on the proposed development site.

The beginning and end of certain periods is a contentious issue. In the Gwynedd Historic Environment Record (HER) the following dates are used. This is a standard convention across all of the Welsh HERs.

Table 1. Historic periods

Tuble 1. Historic periods		
Palaeolithic (prehistoric)	500,000 BC – 10,001 BC	
Mesolithic (prehistoric)	10,000 BC – 4,001 BC	
Neolithic (prehistoric)	4,000 BC – 2,351 BC	
Bronze Age (prehistoric)	2,350 BC – 801 BC	
Iron Age (prehistoric)	800 BC – 47 AD	
Romano-British	48 AD – 409 AD	
Post-Roman (Early Medieval)	410 AD – 1065 AD	
Medieval	1066 AD – 1539 AD	
Post-Medieval	1540 AD – 1900 AD	
Modern	1901 AD – 2050 AD	

5.1 Prehistoric and Roman Period

The prehistoric and Roman periods are poorly represented within the localised landscape and there is only one confirmed site for each period within 800.0m of the proposed scheme.

Located approximately 610.0m west of the cable route and on the western slope of Llyn Gader a prehistoric urn findspot (PRN: 5780) is recorded on the Gwynedd HER as having been found in the 19th Century, although no further information is provided.

Several mounds are recorded on the Gwynedd HER as possible prehistoric cairns (PRNs: 1574, 1575, 1576) located between 30.0m and 90.0m west of the cable route, although later site visits undertaken by GAT suggest that these are post-medieval peat-drying platforms rather than prehistoric burial mounds.

A watching brief undertaken by GAT in 1988 which monitored a replacement water pipeline located approximately 46.0m west of the proposed scheme identified a series of earthworks (PRN: 4269) which were interpreted as post-medieval field boundaries, however one circular feature was observed but left unrecorded. The identity of this feature is unknown but could be prehistoric in origin.

There is only one known Roman site within 800.0m of the cable route and this is the postulated route of the Segontium to Tomen y Mur Roman Road (PRN: 17537) located approximately 680.0m to the west.

The proximity of Llyn y Gader to the west of the cable route would have made the surrounding landscape ideal for the location of prehistoric burnt mounds, although none are known to exist within the localised environment. Furthermore, the presence of peat along the route of the scheme increases the potential for the preservation of organic and palaeoenvironmental remains.

5.2 Early Medieval, Medieval and Post-Medieval Periods

The early medieval and medieval periods are poorly represented within this part of northwest Wales and there are no known sites within 800.0m of the proposed cable route. Sites from the early medieval era are particularly rare in north Wales, although they must have existed, and it is likely that sites were reused and built upon thus accounting for the lack of surviving physical remains.

The fields to the west of the cable route are relatively marshy suggesting that there are underlying peat deposits, which are also recorded by the British Geological Survey. It is probable that the land had been utilised for the extraction of peat for burning as fuel since medieval times and areas of probable peat-drying platforms (PRNs: 1574, 1575, 1576) can be seen between 30.0m and 90.0m west of the cable route, although these are recorded on the Gwynedd HER as possible prehistoric burial mounds or cairns.

The proposed cable route is first depicted on the Beddgelert tithe map of 1840 (figure 7) which depicts the site as undeveloped and featureless land to the immediate west of the A4085 road. The property of Ffridd Uchaf had not been constructed by this point in time and neither had the Welsh Highland Railway. The proposed route is labelled as plots 7 and 8. The Beddgelert tithe apportionment lists the following information for the field plots:

Plot	Landowner	Tenant	Plot Name	A/R/P
7	Ellen Griffiths	David	Ffridd Isaf	-/-/-
		Roberts		
8	Thomas Peers	Margaret	Ffridd Uchaf	-/-/-
	Williams Esq	Williams		

The tithe map does not depict individual field boundaries but rather shows areas belonging to a particular landowner or tenant. The plot names listed in the apportionment relate to the geography of the landscape and its usage as the lower (*isaf*) and upper (*uchaf*) ffridd. These names do not suggest the presence of any particular archaeological remains but the use of *isaf* and *uchaf* often denote medieval origins.

The site is depicted in detail on the first edition 6" county series Ordnance Survey map of 1888 (figure 8). The proposed cable route is shown much as it exists today with all of the current field boundaries depicted as well as 'Pitt's Head', a glacial erratic boulder that is said to resemble the face of William Pitt the Younger, and the property of Ffridd Uchaf. The Welsh Highland Railway is not depicted as it had not been constructed by this point in time.

The site is also shown on detail on the second edition 6" county series Ordnance Survey map of 1900 although this map could not be reproduced due to online copyright and an absence in the local archives. This map depicts the area as it is shown on the first edition map (figure 8) and no additional sites or features were observed.

5.3 LIDAR Data

Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground. Up to 100,000 measurements per

second are made of the ground, allowing highly detailed surface and terrain models to be generated at different spatial resolutions.

As part of the archaeological assessment the LIDAR data for the proposed cable route was checked in order to identify any archaeological features that may be hidden beneath vegetation growth or too subtle to identify during the site visit. A series of earthen mounds of various sizes were located towards the southern part of the scheme and are recorded in the site gazetteer as feature 14 (see section 7.0).

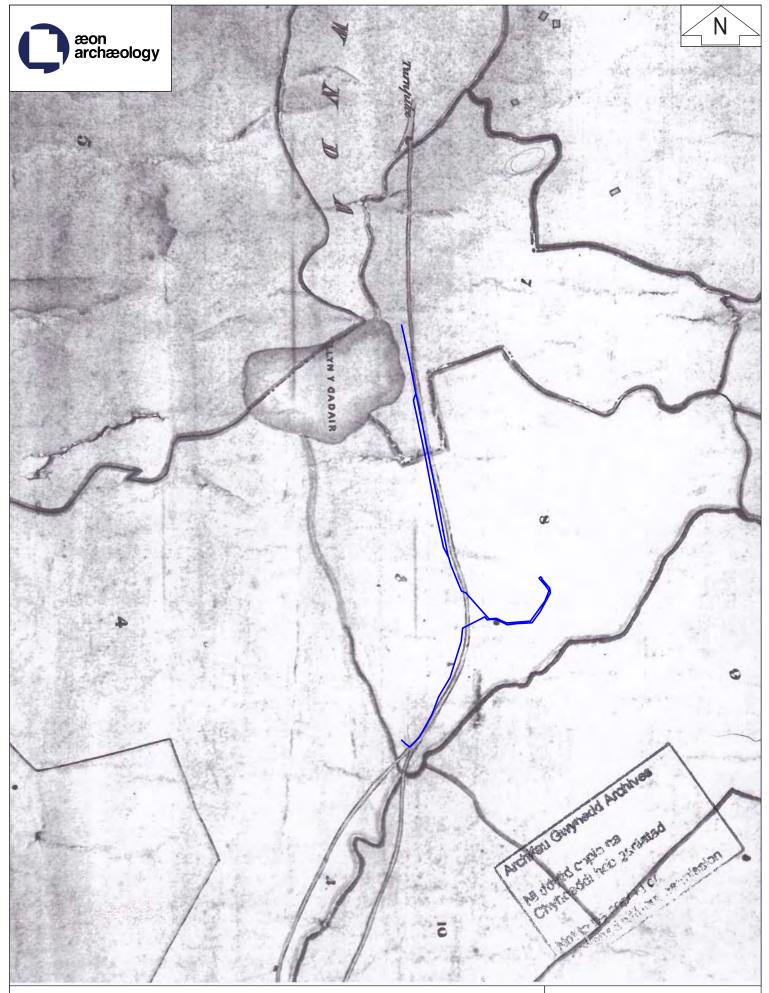


Figure 07: Location of the proposed scheme at Ffridd Uchaf, Rhyd Ddu, Gwynedd on the 1840 tithe map of Beddgelert.

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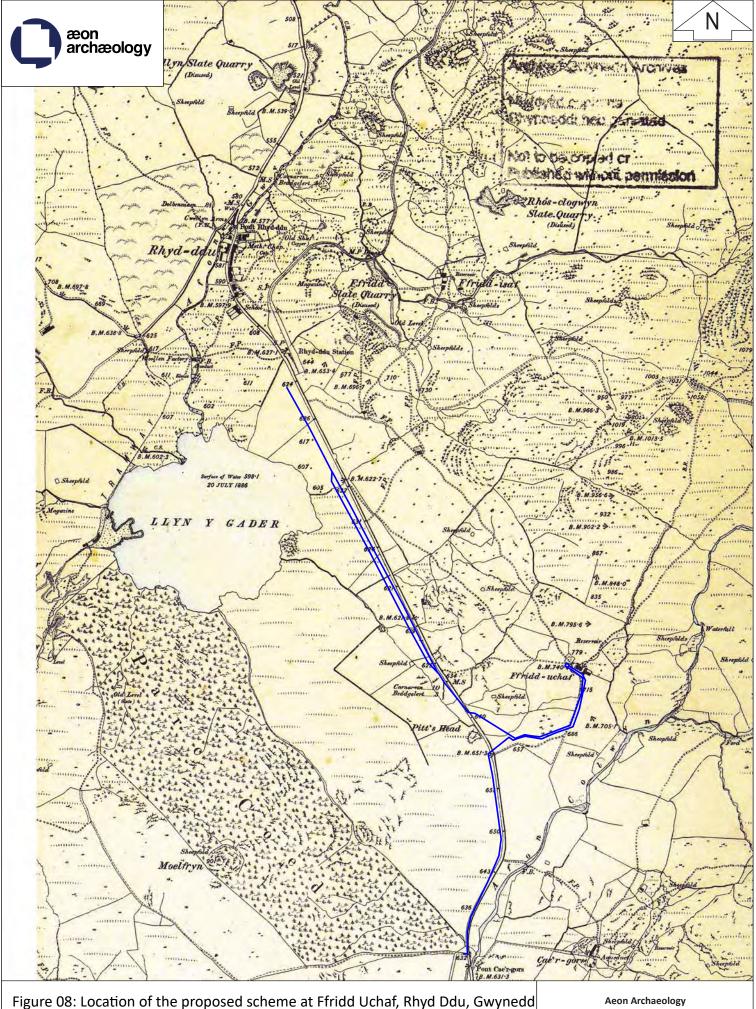


Figure 08: Location of the proposed scheme at Ffridd Uchaf, Rhyd Ddu, Gwynedd on the First Edition Ordnance Survey 6" 1888 map.

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6.0 ASSESSMENT OF HISTORICAL ASSETS

6.1 Definitions

Definitions of importance, impact, and significance of effect as used in the gazetteer (section 6.2) are listed below.

1. Definition of Categories of importance

The following categories were used to define the importance of the archaeological resource.

Significance	Description
International	Archaeological sites or monuments of international importance, including
(Very High)	World Heritage Sites.
	Structures and buildings inscribed as of universal importance as World
	Heritage Sites.
	Other buildings or structures of recognised international importance.
National	Ancient monuments scheduled under the Ancient Monuments and
(High)	Archaeological Areas Act 1979, or archaeological sites and remains of
	comparable quality, assessed with reference to the Secretary of State's
	non-statutory criteria.
	Listed Buildings.
	Undesignated structures of national importance.
Regional/	Conservation Areas
County	Archaeological sites and remains which, while not of national importance,
(Medium)	score well against most of the Secretary of State's criteria.
Local	Archaeological sites that score less well against the Secretary of State's
(Low)	criteria.
	Historic buildings on a 'local list'.
Negligible/None	Areas in which investigative techniques have produced no or only
	minimal evidence for archaeological remains, or where previous large-
	scale disturbance or removal of deposits can be demonstrated.
Unknown	Archaeological sites whose importance cannot be determined with the
	information currently at hand. This can include sites where the extent of
	buried remains is unknown.

2. Definition of Impact

The direct impact of the proposed development on each site was estimated. The impact is defined as follows:

Magnitude	Direct Impacts	Indirect Impacts
High Adverse	Complete removal of an	Radical transformation of the setting of
	archaeological site.	an archaeological monument. A
	Complete destruction of a	fundamental change in the setting of a
	designated building or structure.	building.
Medium Adverse	Removal of a major part of an	Partial transformation of the setting of an
	archaeological site and loss of	archaeological site (e.g. the introduction
	research potential.	of significant noise or vibration levels to
		an archaeological monument leading to
	Extensive alteration (but not	changes to amenity use, accessibility or
	demolition) of a historic building or	appreciation of an archaeological site).
	feature, resulting in an appreciable	Partial adverse transformation of the
	adverse change.	setting of a designated building.
Low Adverse	Removal of an archaeological site	Minor change to the setting of an
	where a minor part of its total area	archaeological monument or historic
	is removed but the site retains a	building.
	significant future research potential.	
	Change to a historic building or	
	feature resulting in a small change in the resource and its historical	
Negligible/	context and setting. No impact from changes in use,	No perceptible change in the setting of a
Neutral	amenity or access.	building or feature.
redual	No change in the ability to	building of feature.
	understand and appreciate the	
	resource and its historical context	
	and setting.	
Low Beneficial	Land use change resulting in	Decrease in visual or noise intrusion on
	improved conditions for the	the setting of a building, archaeological
	protection of archaeological	site or monument.
	remains or understanding/	Improvement of the wider landscape
	appreciation of a historic building	setting of a building, archaeological site
	or place	or monument.
Medium	Land use change resulting in	Significant reduction or removal of
Beneficial	improved conditions for the	visual or noise intrusion on the setting of
	protection of archaeological	a building, archaeological site or
	remains, or understanding/	monument; and
	appreciation of a historic building	Improvement of the wider landscape
	or place, including through	setting of a building, archaeological site
	interpretation measures (heritage	or monument
	trails, etc).	Improvement of the cultural heritage
	Removal of harmful alterations to	amenity, access or use of a building,
	better reveal the significance of a	archaeological site or monument.
	building or structure, with no loss of significant fabric.	
High	Arrest of physical damage or decay	Exceptional enhancement of a building
Beneficial	to a building or structure;	or archaeological site, its cultural
Delicticial	to a building of structure,	I
		heritage amenity and access or use

3. The significance of effect

The significance of effect is derived from the importance of the resource and the magnitude of the impact upon it.

Very large - A serious impact on a site of international or national importance with little or no scope for mitigation. These effects represent key factors in the decision making process.

Large - Lesser impacts on sites of national importance and serious impacts on sites of regional importance, with some scope for mitigation. These factors should be seen as being very important considerations in the decision making process.

Moderate - Moderate or minor impacts on sites of regional importance and minor to major impacts on sites of local or minor importance. A range of mitigatory measures should be available.

Slight - Negligible impacts on sites of regional, local or minor importance and minor and moderate impacts on minor or damaged sites. A range of basic mitigatory measures should be available.

Neutral - No perceptible effect or change to sites of all categories.

The significance of effect will be determined using the table below, a basic matrix combining archaeological value and magnitude of impact.

Determination of Significance of Effect

	International	Neutral	Moderate or Large	Large or	Very Large
		redutai	Woderate of Earge	Very Large	very Large
	National	Neutral	Moderate or Slight	Moderate or Large	Large or Very Large
Value	Regional	Neutral	Slight	Moderate	Moderate or Large
logical	Local	Neutral	Neutral or Slight	Slight	Moderate or Slight
Archaeological Value	Negligible	Neutral	Neutral or Slight	Neutral or Slight	Slight
1	•	None	Low	Medium	High
		Magnitude of impact			

7.0 SITE GAZETTEER – PHYSICAL IMPACTS

The field walkover discovered 14 sites of archaeological and historic interest within the 75.0m wide assessment corridor, as listed below.

In accordance with Paragraph 128 of the National Planning Policy Framework, Welsh Office Circular 60/96, Planning Policy Wales, and the Historic Environment Act (Wales) 2015 each heritage asset has been assigned a level of importance ranked from International through to National, Regional/County, Local, and None. If it is not possible to assess the importance of the site from the visible remains, then it is ranked Unknown with the suspected importance level placed in brackets if possible. Identified sites were also assigned a level of impact ranked from High through to Medium, and Low. Levels of impact can be considered as both adverse or beneficial, and can be direct (physically impacting upon a site) or indirect (indirectly physically impacting upon a site). The significance of effect is determined from the importance level of the resource and the magnitude of the impact upon it. Where it is expected that a site will be impacted upon by the proposed works then mitigation/assessment recommendations are provided. All archaeological/historical sites identified are depicted on figure 09 and the location and orientation of photographs are shown on figure 10.

1. Field boundary wall	PRN: 63212
Figure: 09 and 10	Plate: 2
NGR: SH 57152 52395	Period: Post-medieval

A field boundary wall measuring 1.3m in height by 0.5m in width runs from northeast to southwest connecting the A4085 road with Llyn y Gader. The wall is of dry-stone, single-skin construction utilising medium sized angular stone cobbles. The boundary is first depicted on the first edition 6" Ordnance Survey map of 1888 and is likely to be of post-medieval origin.

The cable route trench will utilise an existing gate in the field boundary and as such there will not be any impact upon this feature.

Category of importance: Negligible

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None

Recommendations for further mitigatory measures: None



Plate 02: Field boundary wall (feature 01), from the north. Scale 1.0m.



2. Probable Peat-Drying Platform	PRN: 63213
Figure: 09 and 10	Plate: 3
NGR: SH 57131 52339	Period: medieval/ post-medieval

A mound measuring approximately 4.0-5.0m in diameter by 0.5m in height is located at this point. The mound forms a high point among otherwise low-lying marshy ground and appears to have a stony core beneath the turf line. Considering the presence of underlying peat deposits and nearby evidence of peat cutting it seems probable that this feature is a peat-drying platform of medieval or post-medieval origin. The feature is not depicted on the tithe map of 1840 or first edition 6" Ordnance Survey map of 1888.

The mound lies approximately 38.0m southwest of the proposed cable route and as such will not be impacted upon by the scheme.

Category of importance: Local

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None

Recommendations for further mitigatory measures: None



Plate 03: Mound - probable peat-drying platform (feature 02), from the west. Scale 1.0m.



3. Field boundary wall	PRN: 63214
Figure: 09 and 10	Plate: 4
NGR: SH 57232 52210	Period: Post-medieval

A field boundary wall measuring 0.8m (max) in height by 0.5m in width runs from northeast to southwest connecting the A4085 road with Llyn y Gader. The wall is of dry-stone, single-skin construction utilising medium sized angular stone cobbles and has been reinforced with wooden post and wire fence. The boundary is first depicted on the first edition 6" Ordnance Survey map of 1888 and is likely to be of post-medieval origin.

The cable route trench will utilise an existing gate in the field boundary and as such there will not be any impact upon this feature.

Category of importance: Negligible

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None

Recommendations for further mitigatory measures: None



Plate 04: Field boundary wall (feature 03), from the north. Scale 1.0m.



4. Mound	PRN: 63215
Figure: 09 and 10	Plate: 5
NGR: SH 57288 52107	Period: Unknown (post-medieval)

A mound measuring approximately 3.0m in length by 1.5m in width by 0.8m in height and orientated northeast to southwest is located at this point. The mound has a flat top and steep sides and does not appear to have a stony sub-structure beneath the turf line. Considering the size and form of the mound it appears likely that it is merely an upcast deposit, possibly from roadworks, that has grown over with turf. This identification is however not certain.

The feature is not depicted on the tithe map of 1840 or first edition 6" Ordnance Survey map of 1888.

The cable route trench will require the whole or partial removal of the feature and as the identity and thus importance level of the mound is unknown, it is recommended that a watching brief be maintained during the removal of this feature.

Category of importance: Unknown (negligible)

Level of impact: High adverse direct physical

Significance of effect: Unknown (Slight Adverse)

Recommendations for further assessment: None

Recommendations for further mitigatory measures: Watching brief during removal.



Plate 05: Mound (feature 04), from the south. Scale 1.0m.



5. Bridge	PRN: 63216
Figure: 09 and 10	Plate: 6 and 7
NGR: SH 57454 51761	Period: Post-medieval

A rough stone bridge measuring approximately 3.0m in length by 2.5m in width by 0.3m in height is located at this point and spans a small stream/area of marshy ground running west to Llyn y Gader. The bridge is of dry-stone construction utilising dry-bonded medium sized angular cobbles and appears to have been constructed to permit access of farm machinery across the marshy ground. The feature is not depicted on the tithe map of 1840 or first edition 6" Ordnance Survey map of 1888 but was likely to have been too ephemeral a feature to depict. The bridge is almost certainly of post-medieval date.

The bridge appears to lie within the proposed cable route and if it is to be breached then it is recommended that a basic record be taken prior to the commencement of works. However, the description and photographs produced as part of this report are commensurate with a basic record level and as such no further mitigatory response is proposed.

Category of importance: Negligible

Level of impact: Unknown (High adverse direct physical)

Significance of effect: Unknown (Slight Adverse)

Recommendations for further assessment: None

Recommendations for further mitigatory measures: Basic record prior to being breached – completed as part of this assessment report.



Plate 06: Bridge (feature 05), from the north. Scale 1.0m.





Plate 07: Bridge (feature 05), from the east. Scale 1.0m.



6. Field boundary wall	PRN: 63217	
Figure: 09 and 10	Plate: 8	
NGR: SH 57472 51735	Period: Post-medieval	

A field boundary wall measuring 0.7m (max) in height by 0.5m in width runs from northeast to southwest connecting the A4085 road with Llyn y Gader. The wall is of dry-stone, single-skin construction utilising medium sized angular stone cobbles. The boundary is first depicted on the first edition 6" Ordnance Survey map of 1888 and is likely to be of post-medieval origin.

The field boundary wall will require breaching by the proposed cable trench and as such it is recommended that a basic record be taken prior to the commencement of works. However, the description and photographs produced as part of this report are commensurate with a basic record level and as such no further mitigatory response is proposed.

Category of importance: Negligible

Level of impact: Low adverse direct physical

Significance of effect: Slight adverse

Recommendations for further assessment: None

Recommendations for further mitigatory measures: Basic record prior to being breached – completed as part of this assessment report.



Plate 08: Field boundary wall (feature 06), from the north. Scale 1.0m.



7. Former Trackway	PRN: 63218		
Figure: 09 and 10	Plate: 9		
NGR: SH 57511 51615	Period: Unknown (medieval / Post-medieval)		

A former trackway measuring approximately 112.0m in length by 3.0m in width by 0.5m in height runs from southeast to northwest across the fields. The trackway is lined along its south-western limit by a series of medium sized angular cobbles laid on end, possibly having functioned as a kerb or wall, or perhaps merely the chance arrangement of stones moved out of the way to create the track. The feature appears to be depicted as a field boundary on the first edition 6" Ordnance Survey map of 1888 and it is possible that it fulfilled a dual purpose as trackway and boundary. The origin of the feature is unknown but it may have functioned as a trackway for the transport of peat cuttings from the marshy ground closer to Llyn y Gader, and is possibly of medieval date.

The trackway will not be impacted upon by the proposed cable route and as such no further assessment or mitigatory measures are proposed.

Category of importance: Unknown (local)

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None



Plate 09: Former trackway (feature 07), from the southeast. Scale 1.0m.



8. Linear Earthwork	PRN: 4269		
Figure: 09 and 10	Plate: 10		
NGR: SH 57571 51591	Period: Post-medieval		

A linear earthwork measuring approximately 30.0m in length by 1.5m in width by 0.3m in height runs from east to west across the field and was observed during a watching brief carried out by GAT in 1988. The earthwork appears to be shown on the first edition 6" Ordnance Survey map of 1888 and it likely represents a post-medieval field boundary.

The earthwork will require breaching by the proposed cable route and as such it is recommended that a basic record be taken prior to the commencement of works. However, the description and photographs produced as part of this report are commensurate with a basic record level and as such no further mitigatory response is proposed.

Category of importance: Negligible

Level of impact: low adverse direct physical

Significance of effect: Slight adverse

Recommendations for further assessment: None

Recommendations for further mitigatory measures: Basic record prior to being breached – completed as part of this assessment report.



Plate 10: Linear earthwork (feature 08), from the east. Scale 1.0m.



9. Clawdd Field Wall	PRN: 63219	
Figure: 09 and 10	Plate: 11	
NGR: SH 57580 51547	Period: Post-medieval	

A linear clawdd wall measuring approximately 30.0m in length by 1.2m in width by 1.0m in height runs from southeast to northwest across the field. The clawdd wall is shown on the first edition 6" Ordnance Survey map of 1888 and is almost certainly of post-medieval date.

The clawdd wall will not be impacted upon by the proposed cable route and as such no further assessment or mitigatory measures are proposed.

Category of importance: Local

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None



Plate 11: Clawdd field wall (feature 09), from the southeast. Scale 1.0m.



10. Pitt's Head	PRN: 63220		
Figure: 09 and 10	Plate: 12		
NGR: SH 57599 51504	Period: Post-medieval associations		

A large sub-angular glacial erratic boulder is located at this point. Although the stone is of natural origin it is known locally as 'Pitt's Head' due to its apparent resemblance to the face of William Pitt the Younger (British Prime Minister between 1783-1801, and 1804-1806). The boulder is first labelled as Pitt's Head on the first edition 6" Ordnance Survey map of 1888 but the cultural association is likely to be contemporary with the serving Prime Minister. The stone holds cultural value and as such should be avoided by the proposed scheme.

Category of importance: Local / Regional

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None



Plate 12: Pitt's Head (feature 10), from the north.



11. Cairn, East of Llyn y Gader	PRN: 1574
Figure: 09 and 10	Plate: N.A.
NGR: SH 57200 52220	Period: Unknown

A mound recorded as a possible prehistoric cairn by GAT in 1986 and truncated on its eastern limit by the road is located at this point. Subsequent visits by GAT in 2002 raised scepticism over the identity of the feature and upon inspection by Aeon Archaeology the mound has been interpreted as almost certainly natural in origin. However, the mound will be trenched through by the proposed cable route and as such a watching brief should be maintained at this location to be absolutely certain that it is not archaeological.

Category of importance: Unknown (Negligible)

Level of impact: Medium adverse direct physical

Significance of effect: Unknown (Slight adverse)

Recommendations for further assessment: None

Recommendations for further mitigatory measures: Watching brief during breach of feature.

12. Peat Drying Platform	PRN: 63221		
Figure: 09 and 10	Plate: 13		
NGR: SH 57633 51311	Period: medieval/post-medieval		

A mound measuring approximately 4.0-5.0m in diameter by 0.5m in height is located at this point. The mound forms a high point among otherwise low-lying marshy ground and appears to have a stony core beneath the turf line. Considering the presence of underlying peat deposits and nearby evidence of peat cutting it seems probable that this feature is a peat-drying platform of medieval or post-medieval origin. The feature is not depicted on the tithe map of 1840 or first edition 6" Ordnance Survey map of 1888.

The mound lies approximately 30.0m west of the proposed cable route and as such will not be impacted upon by the scheme.

Category of importance: Local

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None



Plate 13: Peat drying platform (feature 12), from the southeast. Scale 1.0m.



13. Field boundary wall	PRN: 63222		
Figure: 09 and 10	Plate: 14		
NGR: SH 57613 51069	Period: Post-medieval		

A field boundary wall measuring 1.0m in height by 0.5m in width runs from north to south marking the western limit of the A4085 road. The wall is of dry-stone, single-skin construction utilising medium sized angular stone cobbles. The boundary is first depicted on the first edition 6" Ordnance Survey map of 1888 and is likely to be of post-medieval origin.

The cable route trench will utilise an existing gate in the field boundary and as such there will not be any impact upon this feature.

Category of importance: Negligible

Level of impact: None

Significance of effect: Neutral

Recommendations for further assessment: None



Plate 14: Field boundary wall (feature 13), from the west. Scale 1.0m.



14. Mounds	PRN: 65528		
Figure: 09 and 10	Plate: N.A.		
NGR: SH 57609 51149	Period: Unknown (post-medieval)		

At least eight earthen mounds varying in size from 67.0m in length to 5.0m in length are located along the eastern side of the cut for the Welsh Highland Railway. The mounds do not appear to have any stone structure or internal core and their location would suggest that they are areas of upcast material as a result of the railway cutting. The largest mound does however appear too large to be merely upcast and may be natural in origin or the result of medieval/post-medieval peat cutting on lower ground thus creating an apparent raised mound. These features have been mapped using Lidar data and plotted on figure 09.

The cable route trench lies at least 10.0m east of the nearest mound and as such will not physically impact upon any of the mounds. As the full identity of the mounds is unknown it is however recommended that a watching brief be maintained in this area to avoid any accidental damage to the features.

Category of importance: Unknown (negligible)

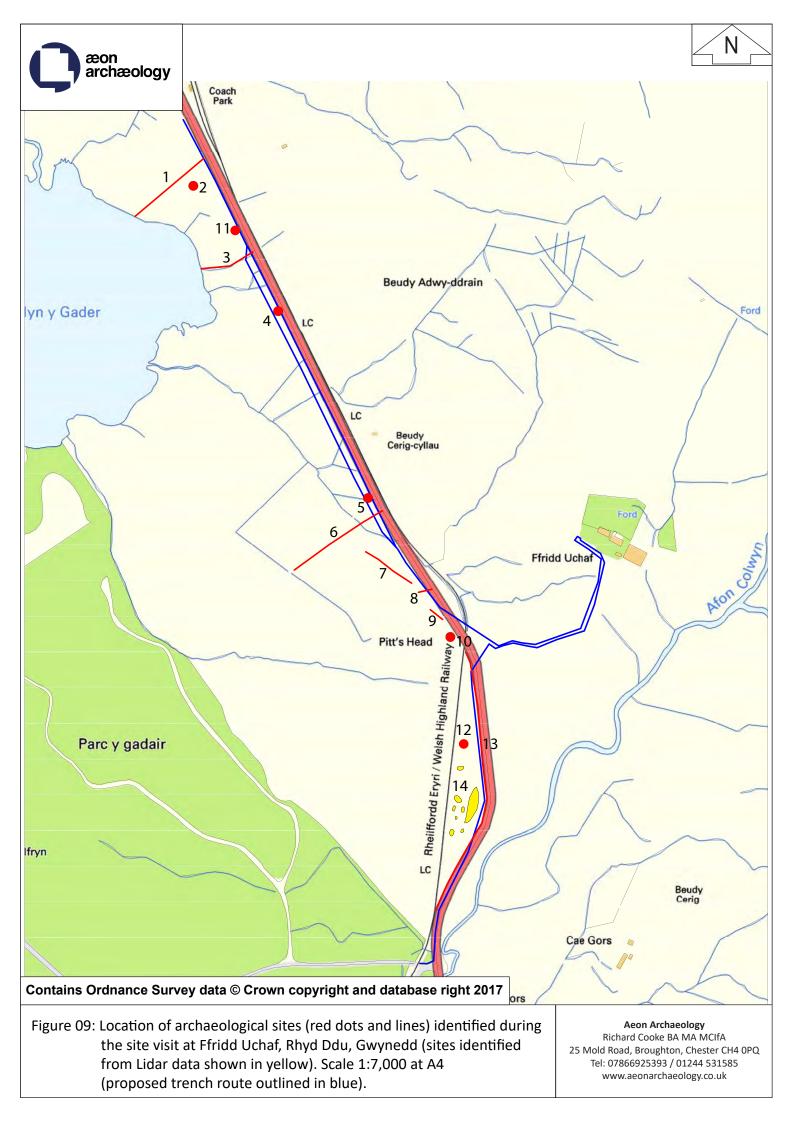
Level of impact: None

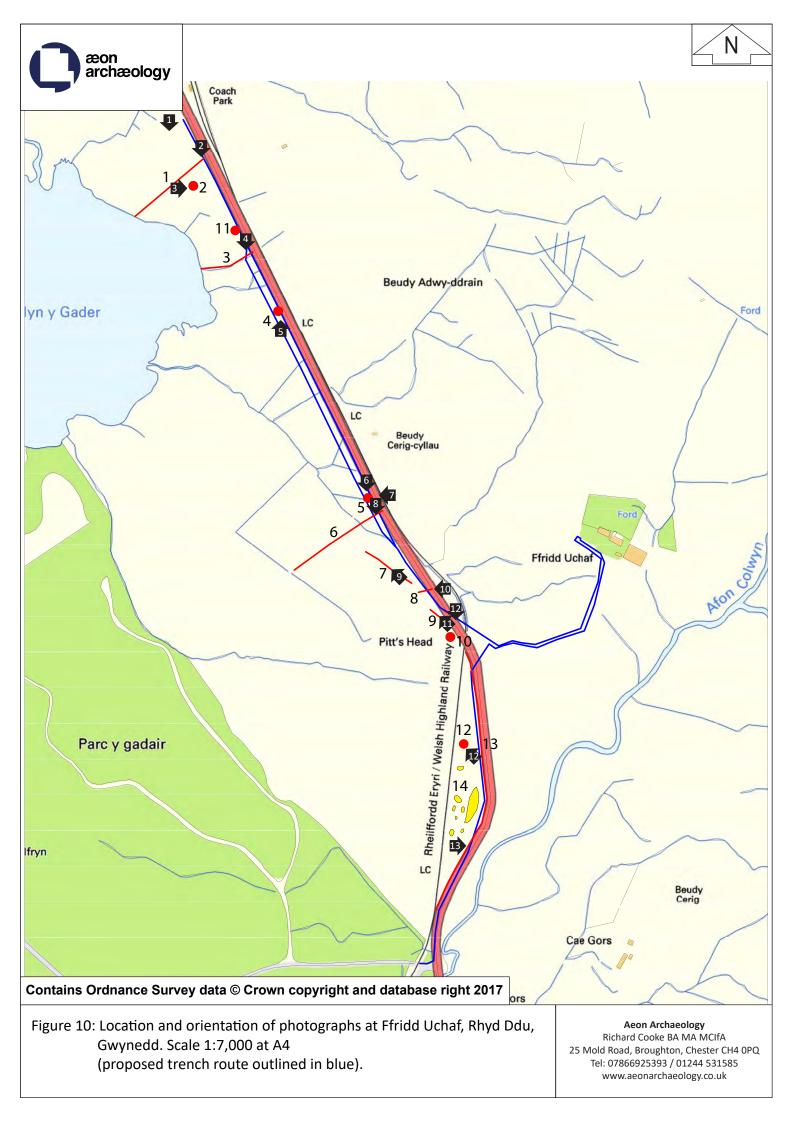
Significance of effect: Neutral

Recommendations for further assessment: None

Recommendations for further mitigatory measures: Watching brief in proximity to these features.

	Table 2: Summary of archaeological features. GREEN = no action required; RED= Action required					
Nu mb er	Name	Importance	Impact	Significance of effect	Further Assessme nt	Mitigation Recommendations
PHY	SICAL DIRECT AND INDIRECT	CT IMPACTS				
1	Field boundary wall	Negligible	None	Neutral	None	None
2	Probable peat-drying platform	Local	None	Neutral	None	None
3	Field boundary wall	Negligible	None	Neutral	None	None
4	Mound	Unknown (negligible)	High adverse direct physical	Unknown (Slight Adverse)	None	Watching brief during removal
5	Bridge	Negligible	Unknown (High adverse direct physical)	Unknown (Slight Adverse)	None	Basic record - complete
6	Field boundary wall	Negligible	Low adverse direct physical	Slight Adverse	None	Basic record – complete
7	Former Trackway	Unknown (local)	None	Neutral	None	None
8	Linear Earthwork	Negligible	Low adverse direct physical	Slight Adverse	None	Basic record – complete
9	Clawdd Wall	Local	None	Neutral	None	None
10	Pitt's Head	Local / Regional	None	Neutral	None	None
11	Cairn, East of Llyn y Gader	Unknown (Negligible)	Medium adverse direct physical	Slight Adverse	None	Watching brief during breach
12	Peat drying platform	Local	None	Neutral	None	None
13	Field boundary wall	Negligible	None	Neutral	None	None
14	Mounds	Unknown (Negligible)	None	Neutral	None	Watching brief in proximity





8.0 IMPACT AND RECOMMENDATIONS

8.1 Direct physical impact

Construction phase

The proposed development scheme is expected to have a *low adverse direct physical* impact upon two sites of archaeological importance (features 6 and 8) during the construction phase. Both of these features are post-medieval in date and are considered to be of *negligible* importance thus resulting in a *slight adverse* significance of effect.

The proposed scheme is expected to have a *medium adverse direct physical* impact upon one site of archaeological importance (feature 4 – Mound) which is of *unknown* importance but is suspected to be of *negligible* importance thus resulting in an *unknown* (*slight adverse*) significance of effect.

The proposed scheme is also expected to have a *high adverse direct physical* impact upon one site of archaeological importance (feature 11 – Cairn, East of Llyn y Gader) which is of *unknown* importance but is suspected to be of *negligible* importance thus resulting in an *unknown* (*slight adverse*) significance of effect.

There is an *unknown* impact upon one site of archaeological importance (feature 5 – Bridge) as it is not clear whether the trench will run to the side of it or require the feature to be breached. The feature is however of *negligible* importance and as such if it is to be physically impacted upon the significance of effect is expected to be *slight adverse*.

Completion phase

The proposed development scheme is not expected to have any direct physical impact upon any known sites of archaeological and historical significance upon completion.

8.2 Indirect physical and non-physical (visual) impact

Construction phase

The proposed development scheme is not expected to have any indirect physical or non-physical impacts upon any known sites of archaeological and historical significance during the construction phase.

Completion phase

The proposed development scheme is not expected to have any indirect physical or non-physical impacts upon any known sites of archaeological and historical significance upon completion.

8.3 Site Specific Recommendations

The proposed scheme will directly impact upon four archaeological features, a mound (feature 4), field boundary wall (feature 6), a linear earthwork (feature 8), and the Cairn, East of Llyn y Gader (feature 11). One additional site (feature 5 - Bridge) is also likely to be impacted upon. All of these features, with the exception of features 4 and 11, are of post-medieval date and as such are considered to be of *negligible* importance. The photographs and descriptions provided within this report should be considered commensurate with a basic archaeological

record level and as such no further recommendations are made for assessment or mitigatory measures for these features.

The identity of features 4 and 11 (mound and Cairn, East of Llyn y Gader) is not known with certainty. The former is suspected to be upcast material from roadworks that has grassed over and as such is of post-medieval date, and the latter is suspected to be natural in origin and thus of negligible importance. However the precautionary principle dictates that as there is uncertainty to their origin then a watching brief should be maintained during the breaching of these features.

8.4 General recommendations

The archaeological assessment identified only one site of local/regional importance within the 75.0m wide assessment corridor. This was a glacial erratic boulder known as 'Pitt's Head' which although of natural origin retains cultural significance within the localised landscape. All other features identified were of negligible or local importance.

There are no registered World Heritage Sites, Archaeological Areas, Scheduled Ancient Monuments, Registered Parks and Gardens, Listed Buildings, or Registered Historic Landscapes wholly or partly within the Assessment Site. Therefore, this assessment confirms that the Site does not contain any designated heritage assets for which there would be a presumption in favour of preservation in situ and against development.

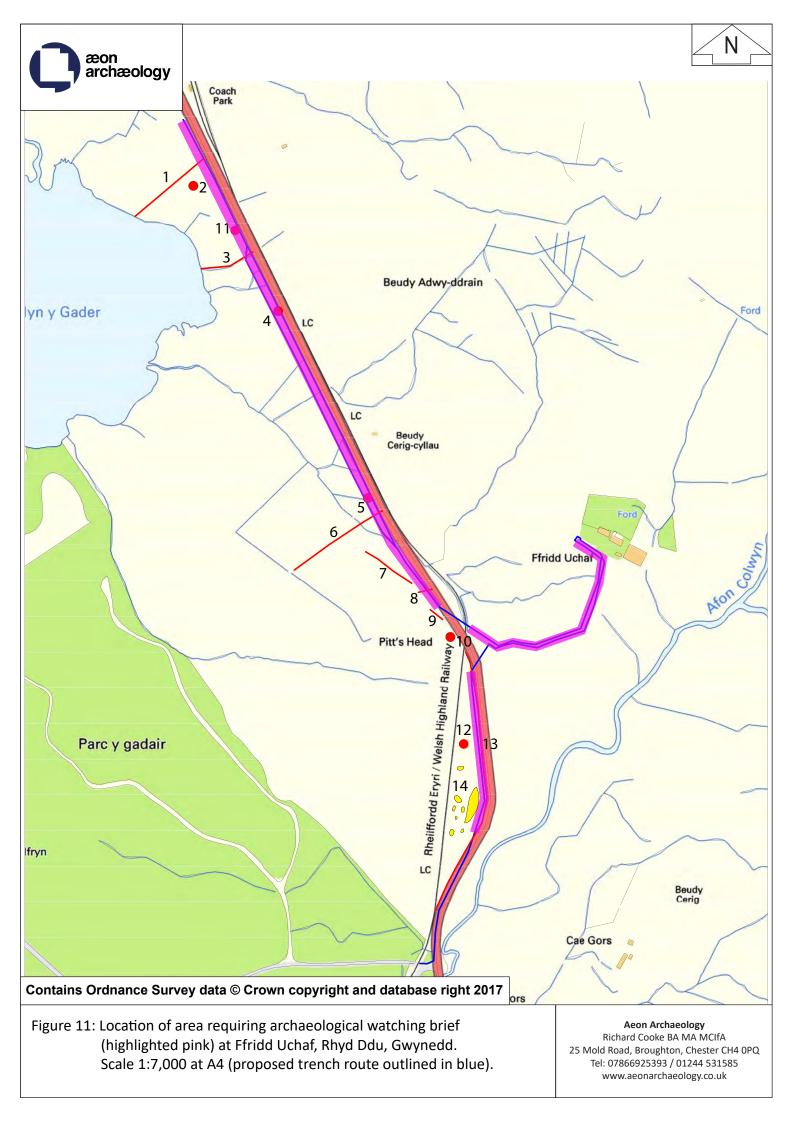
The archaeological potential for preserved buried occupation remains of the Prehistoric, Roman, Early medieval, medieval, and post-medieval periods is considered to be low, as the landscape would have been waterlogged/marshy and thus not conducive to habitation. However, the floodplain of Llyn y Gader would have been a rich hunting and fishing ground, especially in the prehistoric and Roman periods and there is an increased potential for preserved palaeo-environmental remains within the underlying peat deposits, particularly focused along the western side of the A4085. Moreover, the area would have been suitable for the location of prehistoric burnt mounds.

The identification of two peat-drying platforms and areas of peat cutting to the immediate west of the assessment corridor suggests that medieval and/or post-medieval peat-cutting took place within the localised environment, associated features of which could be preserved within the peat deposits.

On the basis of the evidence presented in this assessment the proposed undergrounding of the electricity cable on the Site would not be contrary to any local or national policy. Furthermore, this Assessment enables an informed, sustainable and responsible approach to the proposed scheme. The information provided meets the expectations of NPPF and Historic Environment Act (Wales) 2015 in that the Client has described the significance of known archaeological assets that may be affected by the proposed scheme. It is considered that the level of detail provided is proportionate to the assets' importance and provides sufficient information to understand the potential impact of the proposal on the significance of archaeological remains and therefore, there is sufficient information on which to establish a suitable mitigatory response.

On the balance of evidence, the archaeological interest at the Site is realistically limited to a moderate potential for as yet unknown remains of the prehistoric, Roman and medieval periods. In the main this potential derives from the increased possibility for preserved organic palaeoenvironmental remains within the peat deposits along the scheme. In the absence of any data confirming the presence/absence of preserved remains or any other more recent activity which may have compromised archaeological survival, the precautionary principle requires an assumption that some archaeological remains are present at the Site.

Ultimately, therefore, and without prejudice to the findings of any future archaeological, or other investigations at the Site, it is considered that the archaeological interest at the Site could be safeguarded through the maintenance of an archaeological watching brief during the excavation of the cable trench as it runs parallel with the western side of the A4085 road.



9.0 SOURCES

OS Maps

1st edition 6 inch Ordnance Survey Map of 1888.

OS 1:10 000 Series sheet SH 55NE, SH 55SE, SH 55SW, and SH 55NW.

Sources

British Geological Survey website. www.bgs.ac.uk.

Chisholm, H. 1911. Encyclopaedia Britannica

Dodd, C. R. 1844. The Peerage, Baronetage, and Knightage of Great Britain and Ireland

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English Heritage, 2006. Management of Research Projects in the Historic Environment (MORPHE)

English Heritage, 2011. The Settings of Heritage Assets

Gwynedd Historic Environment Record (HER)

NMR Site Record Cards

The Chartered Institute for Archaeologists, 2014. Standard and Guidance for Archaeological Desk-Based Assessment

APPENDIX 1: SCHEDULED AND NON-SCHEDULED SITES WITHIN 1.0KM

Undesignated monuments within 800.0m of the proposed development area as listed on the Gwynedd HER (figure 3)

Prn	Name	Туре	Broadclass	Period
1574	Cairn, e of llyn y gader	-	-	
1575	Mounds, e of llyn y gader	-	-	
1576	Mounds, se of llyn y gader	-	-	-
				Post-
4269	Earthwork features, pitt's head, se llyn y gader	Feature	Unassigned	medieval
5780	?Urn, findspot, drws y coed	Findspot	Object	Prehistoric
9690	Bryn cwellyn sheep fold, betws garmon	Enclosure	Agriculture and subsistence	Unknown
9691	Bryn cwellyn quarry, betws garmon	Hut	Industrial	Modern
9692	Bryn cwellyn quarry, betws garmon	Wall	Agriculture and subsistence	Modern
9693	Bryn cwellyn quarry, betws garmon	Spoil heap	Industrial	Modern
9695	Bryn cwellyn quarry, betws garmon	Spoil heap	Industrial	Modern
				Multi-
15731	Llyn y gadair, landscape	Landscape	Unassigned	period
				Multi-
15732	Rhyd ddu, landscape	Landscape	Unassigned	period
				Post-
20192	Slate quarry, bryn cwellyn	Slate quarry	Industrial	medieval
				Post-
20193	Ffridd slate quarry, betws garmon	Slate quarry	Industrial	medieval
				Post-
20194	Slate quarry, rhos clogwyn	Slate quarry	Industrial	medieval
				Post-
36267	Rock cannon, rhyd ddu, beddgelert	Rock cannon	Commemorative	medieval
				Post-
57238	Enclosure, e of cwellyjn slate quarry	Enclosure	Unassigned	medieval

NMR Monument Points within 8.00m of the proposed development area (figure 4)

NPRN	Name	Broadclass	Туре	Period
	Remaliah chapel (calvinistic methodist;rhyd-ddu), rhyd ddu,	Religious, ritual and		
11563	beddgelert	funerary	Chapel	Post medieval
		Religious, ritual and		
97129	Rhydd-ddu baptist chapel	funerary	Chapel	Post medieval
287211	South of llyn y gader enclosure	Agriculture and subsistence	Enclosure	Post medieval
287212	Gader-wyllt quarry quarry building i	Industrial	Quarry building	Post medieval
404730	Ffridd-isaf	Domestic	Farmhouse	Post medieval
404887	Ffridd-isaf	Domestic	Farmhouse	Post medieval
405423	Rhyd-ddu station, welsh highland railway	Transport	Railway station	Modern
415027	Rhos clogwyn slate quarry	Industrial	Slate quarry	Post medieval
415028	Rhyd-ddu;rhyd ddu	Civil	Village	Multiperiod

Listed Buildings within 800.0m of the proposed development area (figure 5)

Number	Name	Grade
21273	Fridd-isaf	II
21274	Barn to South of Fridd-isaf	II
21275	Cowhouse to South of Fridd-isaf	II
21276	Cowhouse to South-east of Fridd-isaf	II
21277	Slate Direction Indicators	II
21278	Pen-y-Gongl	II
21286	Milestone	II

