
Morfa Bychan Waste Water Treatment Works



Archaeological Assessment

GAT Project No. 1856

Report No. 563

January 2004

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Prepared for Capita Symonds

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MORFA BYCHAN, GWYNEDD

ARCHAEOLOGICAL ASSESSMENT (G1856)

SUMMARY

An archaeological assessment has been undertaken in advance of the construction of treatment works at Morfa Bychan, Gwynedd. Though several sites of interest lie within the wider vicinity of the proposals, no archaeological site has been identified within the proposed site of the works, and there will be no impact on the proposed archaeological resource.

1 INTRODUCTION

Gwynedd Archaeological Trust has been asked by Symonds Group to undertake an archaeological assessment in advance of the construction of a proposed treatment works at Morfa Bychan, Gwynedd (SH538374). The area effected is shown on Capita Symonds Drawing No. XX (XX).

2 SPECIFICATION AND PROJECT DESIGN

The basic requirement was for a desk-top survey and field search of the proposed area, in order to assess the impact of the proposals on the archaeological features within the area concerned. The importance and condition of known archaeological remains were to be assessed, and areas of archaeological potential and new sites to be identified. Measures to mitigate the effects of the construction work on the archaeological resource were to be suggested.

Gwynedd Archaeological Trust's proposals for filling these requirements were as follows:

- Desktop study
- Field walkover
- Report

3 METHODS AND TECHNIQUES

3.1 Desk top study

This comprised the consultation of maps, documents, computer records, written records and reference works, which form part of the Sites and Monuments Record (SMR), located at GAT, Bangor. The archives held by the Meirionnydd Record Office, Dolgellau were also consulted. Information about listed buildings was consulted by means of the CARN (Core Archaeological Index), which is the online index of the Royal Commission on Ancient and Historic Monuments, Wales.

3.2 Field Search

The field search was undertaken on 13 January 2005, when the site was visited and examined.

3.3 Report

The available information was synthesised to give a summary of the archaeological and historic background and of the assessment and recommendations, as set out below. The separate features, their evaluation and recommendations are listed separately, and a summary of the overall assessment of the area is given at the end.

The criteria used for assessing the value of features was based upon those used by the Secretary of State for Wales when considering sites for protection as scheduled ancient monuments, as set out in the Welsh Office circular 60/96. The definitions of categories used for impact, field evaluation and mitigation are set out below.

3.3.1 Categories of importance

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

Category A - Sites of National Importance.

Scheduled Ancient 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. By the end of the assessment there should usually be no sites remaining in this category. In this case several areas of unknown potential have been allocated to this category. These require environmental sampling which should be carried out during the pipeline works.

3.3.2 Definition of Impact

The impact of the development on each site was estimated. The impact is defined as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

None:

There is no construction impact on this particular site.

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 feature, *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 a site affecting its overall integrity. Sites 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 a feature or its partial removal which would effectively destroy the remainder of the site.

Unknown:

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

3.3.3 Definition of field evaluation techniques

Field evaluation is necessary to fully understand and assess most class E sites and to allow the evaluation of areas of land where there are no visible features but for which there is potential for sites to exist. Two principal techniques can be used for carrying out the evaluation: geophysical survey and trial trenching.

Geophysical survey most often involves the use of a magnetometer, which allows detection of some underground features, depending on their composition and the nature of the subsoil.

Trial trenching allows a representative sample of the development area to be investigated at depth. Trenches of appropriate size can also be excavated to evaluate category E sites. Trenching is typically carried out with trenches of between 20 to 30m length and 2m width. The topsoil is removed by machine and the resulting surface is cleaned by hand, recording features. Depending on the stratigraphy encountered the machine may be used to remove stratigraphy to deeper levels.

3.3.4 Definition of Mitigatory Recommendations

None:

No impact and therefore no requirement for mitigation measures.

Avoidance

Where possible, features that may be affected should be avoided. Sometimes this could mean a change in layout, design or route. More usually it refers to the need for care during construction to avoid accidental damage to a feature. This may be achieved by marking features or areas, for example with warning tape, before work starts, or in sensitive cases carrying out a watching brief.

Detailed recording:

Detailed recording requires a photographic record, surveying and the production of a measured drawing prior to the commencement of the works on site.

Archaeological excavation may also be required depending upon the particular feature and the extent and effect of the impact.

Basic Recording:

A photographic record and full description, and limited measured survey where applicable.

Watching brief:

Requiring observation of particular identified features or areas during works in their vicinity. This may be supplemented by detailed or basic recording of exposed layers or structures.

It can be further defined as comprehensive (present during all ground disturbance), intensive (present during sensitive ground disturbance, intermittent (viewing the trenches after machining) or partial (as when seems appropriate).

4 ARCHAEOLOGICAL RESULTS

4.1 Topographic description (see fig 1)

The site is on low-lying ground, now separated from the sea by the promenade, 20th century housing and the Cambrian Railway. However, it forms part of the long coastal plateau that divides the sea from the Rhinog mountains, running from Traeth Bach to the Mawddach estuary. The plateau varies considerably in width, but is at its widest towards the northern end between Llanenddwyn and Llandanwg. Wind blown sand is characteristic of much of the coastal plain, and some areas, such as Llandanwg to the north, suffer from constant sand inundation. The coastal plain provides a convenient transport corridor and contains both the Cambrian Coast Railway Line and the A496 road. At the location of the proposed site the plateau suddenly widens from 200m to some 400m, then narrows again as it approaches the Maddach estuary to the south. Much of the later development of Barmouth lies on this coastal strip, though the original nucleus of the town developed on firmer rock close to the north edge of the estuary. The site location lies at the foot of a steep rise of some 30m, on top of which is Plas Mynach.

The site lies within a designated *Landscape of Outstanding Historic Interest* (HLW Gw 14, Mawddach), described as ‘A river estuary and surrounding coastal slopes situated to the west of Cader Idris in south Gwynedd, containing extensive relict evidence of diverse land use and activity from prehistoric and later periods. The area includes groups of Bronze Age funerary and ritual monuments; prehistoric trackways and the Ffordd ddu; Iron Age hillforts, settlements and field systems; llys Bradwen; medieval settlements and field systems; Parliamentary enclosures; Barmouth town; 19th century slate quarries and goldmines’ (*Register of landscapes of outstanding historic interest in Wales*, 1998, 123). The site of the proposed works falls into a sub-character area (No. 1: Barmouth, Thompson 2004).

4.2 Archaeological and historical background

4.2.1 Prehistory

Though the surrounding upland area is relatively rich in prehistoric sites, the immediate locale on the coastal plateau contains no evidence for settlement within the Prehistoric for Roman periods.

4.2.3. Early Medieval

There are two early Christian inscribed stones in the church of Llanaber. One was recorded as being found on the beach 20 foot below high water mark between Barmouth and Llanaber. It bears an inscription which has been transcribed as ‘AETERNI ET AETERNE’, translated as (*The stone of*) *Aeternus and Aeterna*. The other was found at Ceilwart Isa, and bears an inscription transcribed as ‘CAELEXTI MONEDORIGI’, translated as (*The stone of*) *Caelextis Monedorigi* (Nash Williams 1950, *Early Christian Monuments of Wales*, No’s 271-2). Both have been dated to the late 5th or early 6th century AD. Though their presence denotes activity within the area during that period, the nature of that activity is not easy to ascertain from archaeological sources.

4.2.4 Medieval and sub-medieval

Barmouth lies within the parish of Llanaber. The parish church lies on the coastal plateau to the north of the town. It is an interesting example of Early English medieval architecture constructed in the first half of the 13th century. It is possible that Llywelyn ap Iorwerth was, in part, responsible for its construction (Davidson 2001, 340). A number of medieval houses survive within the parish, of which Ty Gwyn, Barmouth, is the most unusual. Apparently built for Gruffudd Fychan in the mid 15th century, it is celebrated in a poem by Tudur Penllyn. The principal accommodation was on the first floor, with a small basement below (Smith 2001, 444).

4.2.5 Early-Modern/Modern

(Note: this section is taken directly from the characterisation study of the Mawddach estuary, Thompson 2004; see also Lloyd 1974 for an introduction to maritime Barmouth. I am grateful to David Thompson for allowing me to reproduce his work here).

Barmouth was a small and inaccessible fishing settlement until it started to develop in the 18th century. The sea was the basis of the town's economy and shipbuilding started in the 1750s. By 1770, the town was well-established as a small port in coastal trades, based largely on the Meirionnydd woollen industry. The harbour was deepened and a new quay built in 1802, and the opening of the railway in 1867 resulted in further growth as the town began to cater for the new tourist trade. The town has a distinctive Victorian architectural character. Growth of the town was encouraged by two principal developments. One was the expansion of trade – there were a hundred ships registered in the port in 1795. This prompted an Act of Parliament for the repair and enlargement of the harbour, in 1797. The port's continental trade never recovered after the war with France, but a coastal trade remained busy with imports including coal, American and Baltic timber, limestone, corn and grocery, and with the export of woollen cloth, timber, manganese, copper and lead ore, slates, butter and cheese. In spite of growing difficulties of access to the harbour, a coastal trade continued until the arrival of the railway in 1867 hastened its decline. In its heyday, this trade was supported by ship-building and repair.

The other agent of the town's growth was the rise of holiday-making. By 1800 there were already two inns in the town – the *Cors y Gedol* (with a large boarding house adjoining) and the *Lion*. By 1833 it had risen 'to an eminent rank among the watering places on this part of the coast' and 'numerous respectable lodging houses' had been built (Lewis, 1833). Through the efforts of the land-lord of the Cors y Gedol, there was also a bath house, a billiard room, and regular assemblies in the hotel during the season; there were three chapels and the *Church of Saint David*, built in 1830.

The arrival of the railway marked an even more dramatic shift in the fortunes of the town and stimulated a major campaign of building: the Cors y Gedol hotel was rebuilt in 1870, and many other boarding houses and domestic terraces can be dated to the following decades (Porkington Terrace, c1870, for example). Several chapels followed (*Caersalem*, of 1866 just pre-dates the railway), and *The Church of Saint John* was built specifically to provide for the town's population of English-speaking visitors in 1889. By 1902, 'with but few exceptions, all the houses in the town are let to visitors (Heywood). This rapid growth fostered urban institutions and amenities, with a public water supply from 1873 (from a reservoir at Llyn Bodlyn). Commercial establishments – shops and banks – also signify its urbanity: the North and South Wales Bank arrived in 1870, and *Morris and Co* was built in 1882.

This growth had a distinct spatial character. Some of the earliest buildings to survive are on the flatter ground between shore-line and hillside: 'A street is formed by a few mariners and fishermen's houses, built on the strand' (Rev J Evans), but at the end of the eighteenth century, it was building on the steep slopes which imparted a distinctive character to the place: 'The houses placed on the steep sides one above another in such a manner as to give the upper an opportunity of seeing down the chimney of their adjacent neighbours.' (Thomas Pennant, 1779). 'Principally built upon a high rock, rows of houses standing upon the shelves one above another, like part of the City of Edinburgh, and said to resemble the town of Gibraltar' (Rev. J. Evans, *A Tour Through Part of North Wales* in 1798). 'The most remarkable part of the place is a cluster of houses built many years back, occupying the sides of a little gully in the mountain, and rising one above the other to the very summit, looking like a lava of houses, as if they had been vomited out of the rock'. (Fenton). This essentially eighteenth century character still survives in what is now known as 'Old Barmouth', and it was in this area that the Guild of Saint George established itself in 12 or 13 cottages given by Mrs Talbot in 1874.

Early nineteenth century development consolidated the sense of a single long street, but later, the town also expanded seawards to the north-west: during the 1870s, a triangle of land to the south-west of the railway line was laid out according to a more formal plan (1-12 Marine Parade is dated 1878): perhaps this formality was in part due to the activities of the Local Board, the first one of which was elected in 1872.

Until the coming of the railway, urban building during the nineteenth century remained within the broad confines of a Georgian tradition, at times more or less polite in its aspirations, but deriving an overall harmony from the common use of local materials. It is variety in the handling of the local stone (characteristically worked in very large blocks) which begins to describe nuances in that tradition. This coherence was challenged in the rapid growth of the town following the arrival of the railway, which introduced quite different building types and traditions. In the first place, the units of development were often bigger, with longer terraces, the largest of which was 1-12 Marine Terrace of 1878 – probably the town's most ambitiously scaled project which was originally a symmetrical composition. Later nineteenth century buildings were also taller, of 3, 4 and even 5 storeys. They often employed a new masonry style (sneaked stonework), and introduced other architectural elements. Two of these are the dormer gable and the bay window, the latter especially associated with sea-side boarding houses. There was also a greater stylistic eclecticism, with a wider vocabulary of detail (classical, renaissance and gothic). Bellevue buildings and Hendre villas are good examples of this.

Barmouth developed much more sporadically after c1880. There is a series of later nineteenth and early twentieth century detached houses on the higher slopes, but its largest expansion to the north-west is with mid twentieth century public housing, quite detached from the historic part of the town. What remains, therefore, is a well-preserved resort, in which the successive chapters of its history until its prime c1880 can still be clearly traced.

Immediately above the proposed SSTW lies Plas Mynach, a house designed by John Douglas, a Chester architect, for William Jones in 1883, though later bought by Mrs Dyson Perrins, who also paid for part of the construction of the church of St John the Divine in the town (Hubbard 1991).

4.3 Impact and mitigation

No sites of archaeological interest were noted within the proposed Treatment Works site. Sand is visible through the turf, and it almost certainly lies on part of the coastal plateau which has been inundated by sand from at least medieval times. No development is shown in the area on the Tithe map nor on the later Ordnance Survey maps. The nearest sites are the Cambrian Railway, that lies to the west, and Plas Mynach that lies above and to the north. The development will not have any impact upon either of the sites. The potential for the discovery of new sites upon the coastal plateau is low. The impact upon the historic landscape will be negligible. A pumping station already exists on the site, lying at the northern end of the widened plateau. Though visible from the housing and football field to the south, the Cambrian Railway hides the site from the west, and the rising ground hides it from the north. It will be visible from the houses lying on the higher ground to the east, though this will be against the backdrop of the Cambrian Railway earthworks.

There is slight potential for the recovery of environmental information from the site, which may give an improved understanding of the periods of sand incursions.

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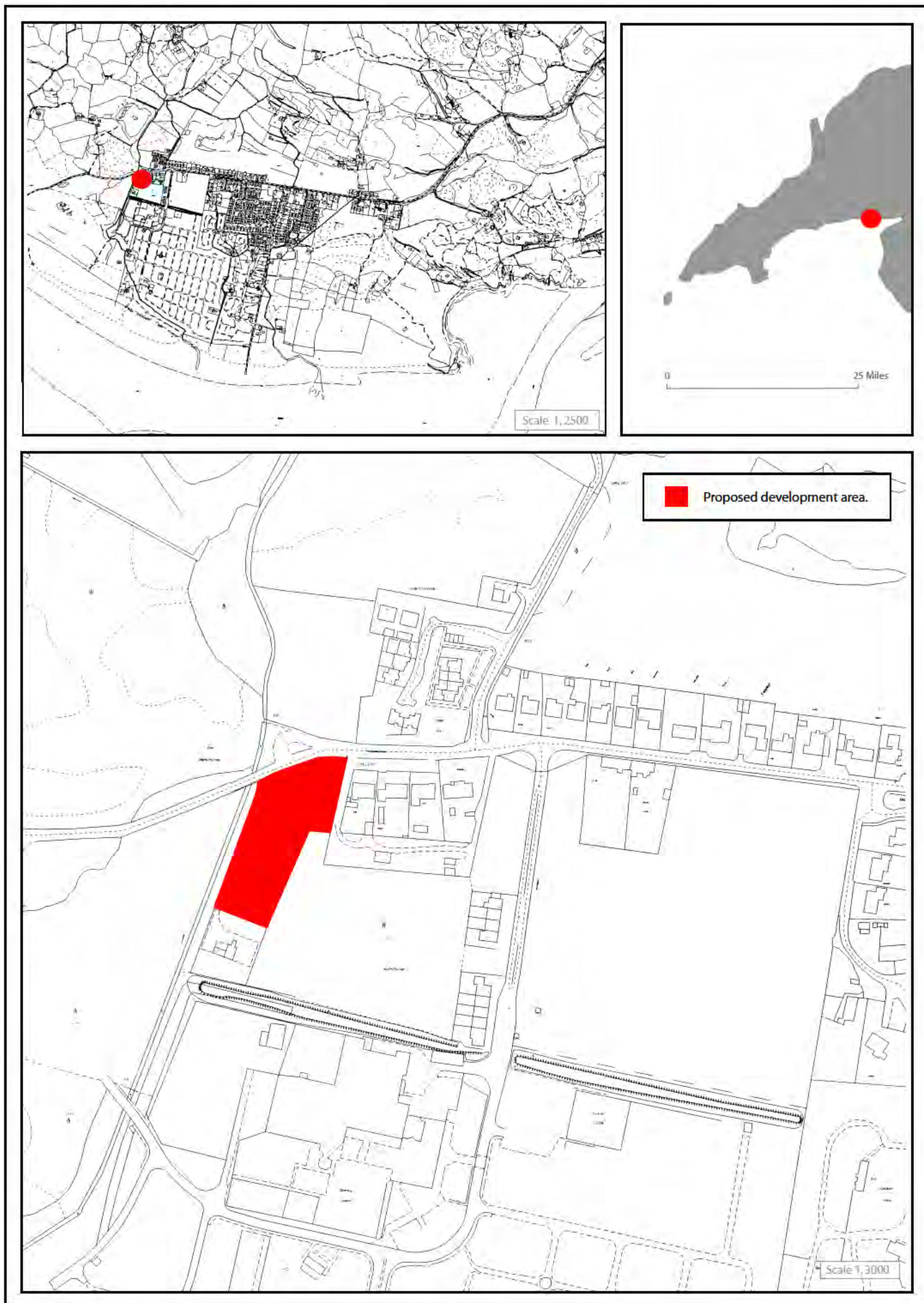
Tithe Map for Llanaber, 1840

Figures List

Figure 1 – Site Location Maps

Figure 2 - 1840 Tithe Map

Figure 3 – 1:2500 Ordnance Survey Map



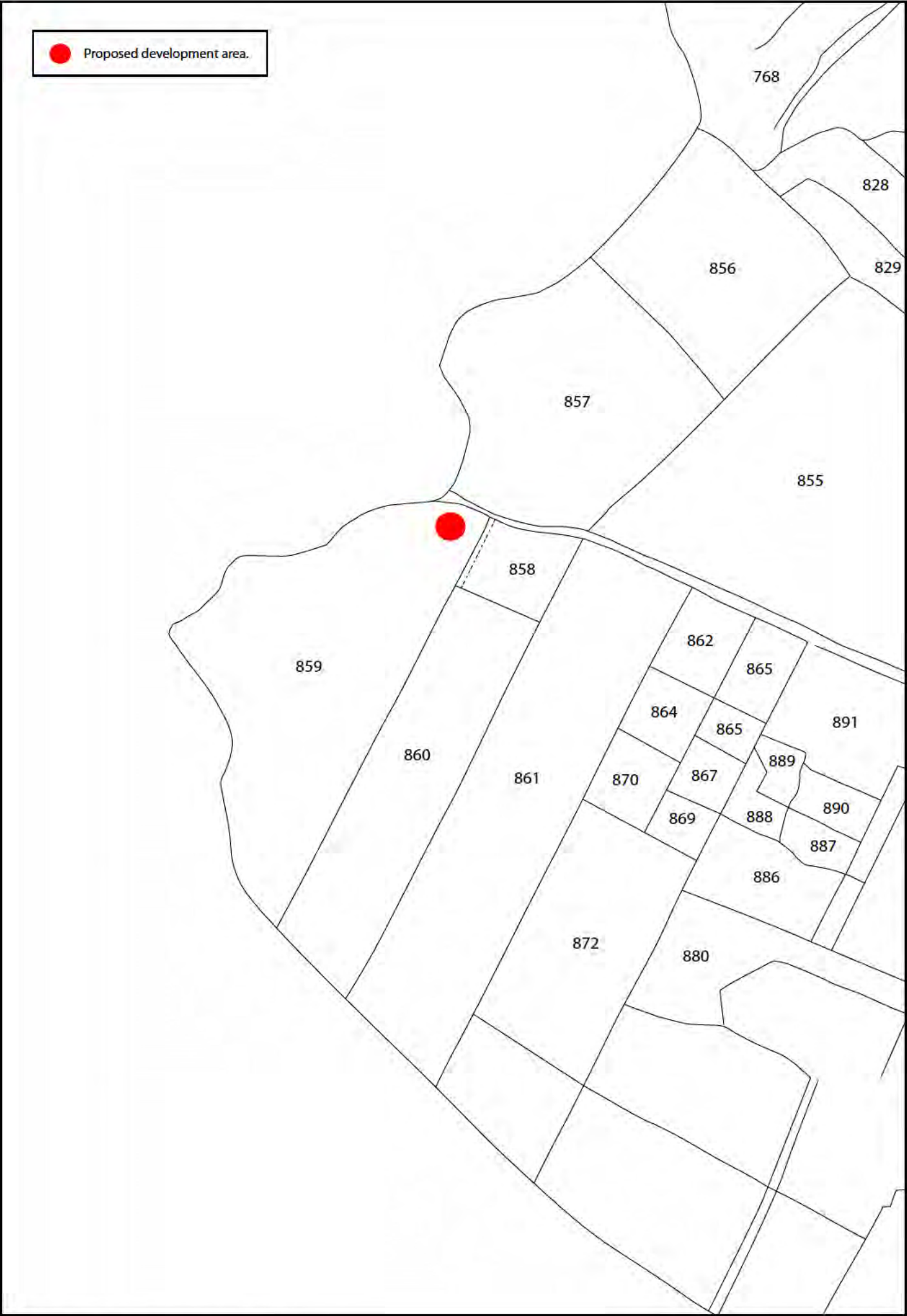


Figure 2. Tithe Map of Ynyscynhaearn 1840

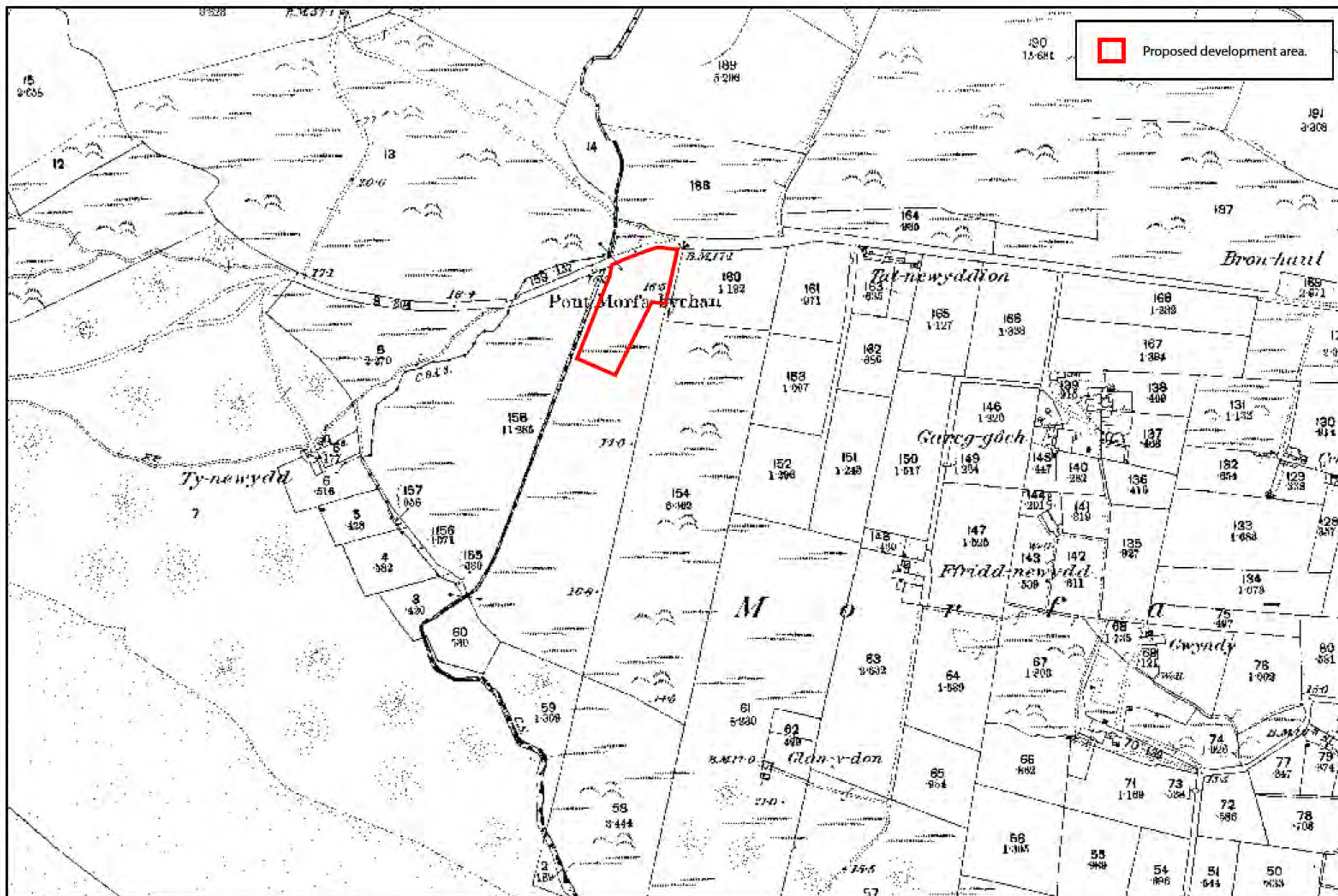


Figure 3. Ordnance Survey 25", County Series. Caernarvon XX.3. 1889. (Scale 1,4000).

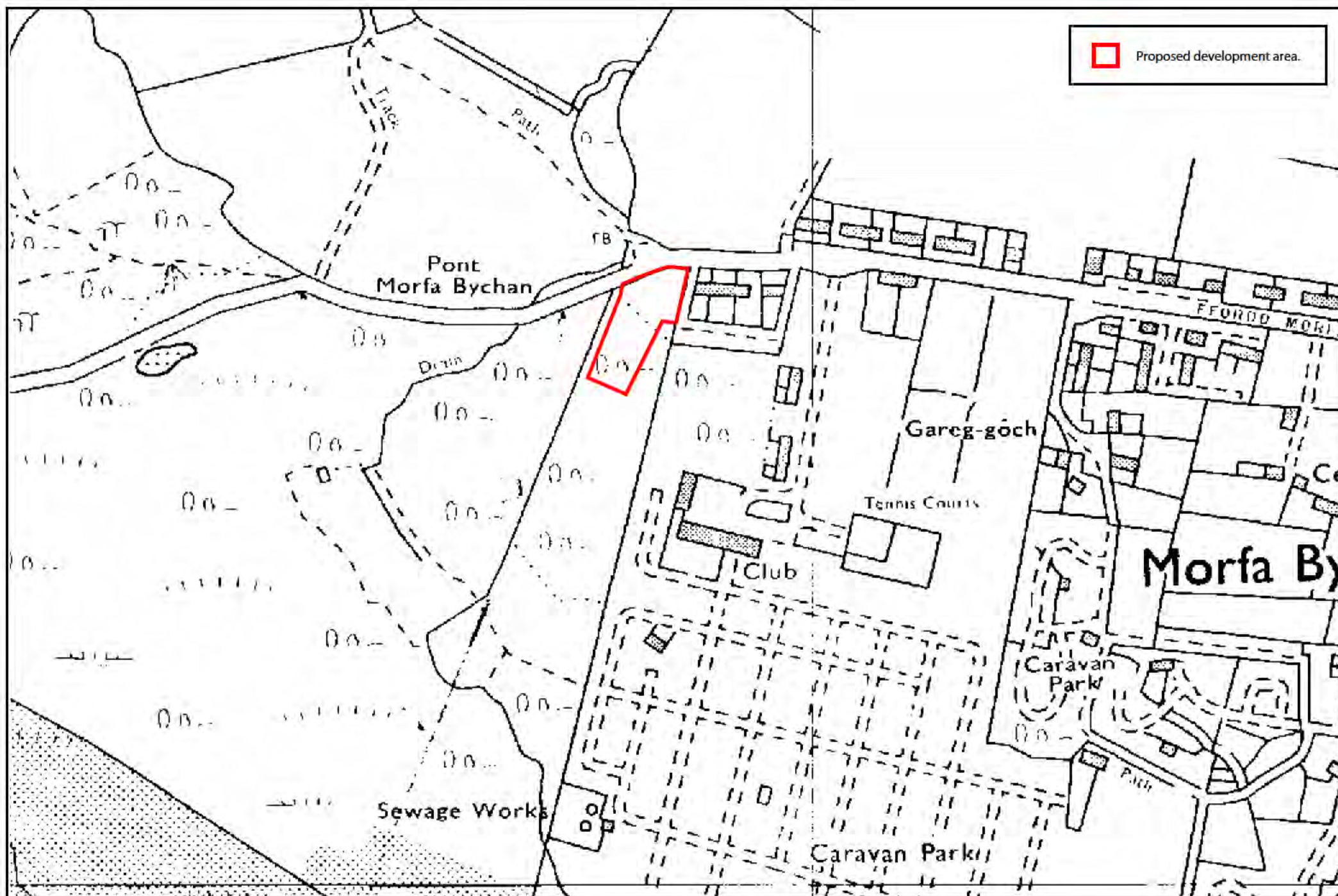


Figure 4. Ordnance Survey 25". County Series. Caernarvon. SH53NW. 1976. Scale 1,4000



Plate 1. View looking south of proposed site. G1865/01/02

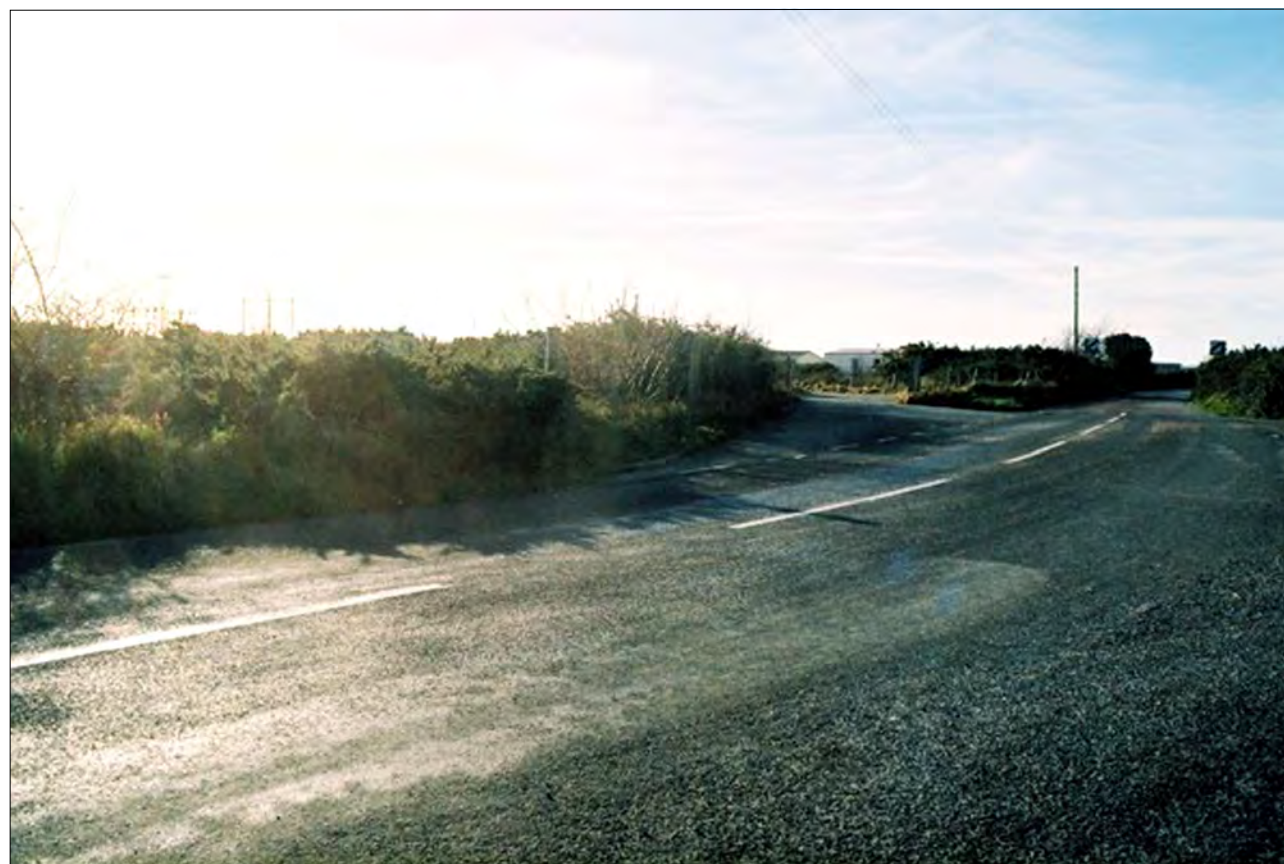


Plate 2. View looking southwest showing entrance to existing treatment works. G1865/01/05



Plate 3. Detailed view looking south of proposed site. G1865/01/05



Plate 4. View looking north east of the proposed site detailing existing monitoring well on site. G1865/01/01



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