Afon Adda Flood Alleviation Scheme
Bangor

Archaeological Watching Brief

GAT Project No. 1876

Report No. 595

July 2005

Ymddiriedolaeth Archaeolegol Gwynedd
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Prepared for The Environment Agency

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Afon Adda Flood Alleviation Scheme. Bangor (G1876)

ARCHAEOLOGICAL WATCHING BRIEF

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Archaeological Watching Brief (G1876)

SUMMARY

An archaeological watching brief has been undertaken in advance of the proposed Afon Adda Flood Alleviation Scheme, Bangor. No archaeological sites have been identified within the proposed site of the works, but because of the possibility of undiscovered prehistoric remains, a watching brief is recommended during any further soil stripping.

1 INTRODUCTION

Gwynedd Archaeological Trust has been asked by the Environment Agency to undertake an archaeological watching brief in advance of the construction of a proposed flood alleviation scheme at two areas within Bangor: Bryn Llwyd Farm and Hendrewen Farm (centred SH575709). The areas effected are shown in Figure 1.

2 SPECIFICATION AND PROJECT DESIGN

The basic requirement was for a desktop survey and watching brief 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
- Watching brief
- 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 Gwynedd Regional Historic Environment Record (HER), located at GAT, Bangor. Further information was gathered 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 Watching Brief

The watching brief took place on the 5th of July 2005 and between the 15th and 19th of July 2005. The aims of the watching brief were to monitor the excavation of nineteen geological test pits.

An 8-tonne backhoe excavator with a 0.60m wide toothed bucket was used throughout the watching brief.

The work was undertaken by *Soil Mechanics Ltd* and involved the excavation of nineteen test pits to establish the composition of the underlying soil and geology. Each test pit was excavated to bedrock level.

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 lengths 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. Marking features or areas may achieve this, 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 Topography and Geology

The study area is located in Bangor, Gwynedd, on the southern side of the narrow valley of the Afon Adda (centred on SH575709). The study area is divided into two development areas:

Area A comprises two enclosed fields one to the east of Bryn Llwyd Farm (Test Pits 101 to 110; see Figure 2) and a second field to the southeast of Carreg Hwfa Farm (Test Pit 111; Figure 2).

Area B comprises an enclosed field to the northwest of Hendrewen Farm (Test Pits 121 to 124 and 126 to 129; Figure 3) and the grounds of a private dwelling to the west of the Hendrewen Farm field (Test Pit 125; Figure 3).

Area A

The enclosed field within Bryn Llwyd Farm was heavily overgrown with bracken and other invasive flora making a visual inspection of the area impossible. Generally, however, the field was located on a gradual south to north slope. The ground had good drainage and a shallow stream ran through the centre of the field (albeit without much water as the weather was hot and dry).

The enclosed field of Carreg Hwfa sloped very gradually from the north to the south. The ground had good drainage and was used for pasture. The test pit was located close to a small woodland away from any watercourses or obvious landmarks. The rest of the field did not appear to have any obvious scarps, undulations or ditches suggestive of human activity.

Area B

The enclosed field of Hendrewen Farm was set on a very steep south to north slope, with the test pits located in the northwestern corner of the field, at the base of the slope. The majority of the test pits were located to the east of a shallow stream and sinkhole. The latter appeared to be twentieth century in origin.

The test pit located in the garden of a private residence was situated on the side of a relatively steep west to east slope opposite the field belonging to Hendrewen Farm. The residence was built in 1990 with a narrow trackway added recently for driving vehicles to the property. To the south of the test pit was a large bund, partly overgrown, that was created during the construction of the house. Overall, this area had recently been altered and partially re-landscaped.

In terms of solid geology, the local area is part of the Minffordd formation, dating from the Cambrian period and comprising a combination of sandstone, conglomorate and thin tuff with intrusions of acid tuff and tuffite. However, the geology may be covered by a variety of superficial fluvio-glacial drift deposits. (British Geological Survey, Bangor: England and Wales Sheet 106, 1:50000).

The soil typology is described as typical brown earths. (Soils of Wales, Soil Map Series Sheet 2, 1:250000)

4.2 Archaeological and historical background

4.2.1 Prehistory/Roman

Though the surrounding lowland area is relatively rich in prehistoric sites of mid to late Bronze Age date (especially near Llandygai village), the immediate locale on the valley side contains no evidence for settlement within the Prehistoric or Roman periods. The nearest evidence for prehistoric archaeology are two findspots listed on the RCAHMW database: a palstave from Deansfield, 0.5km to the northwest and another palstave in Maesgeirchen, 0.5km to the northeast. However, this better drained land may have been farmed and settled in the prehistoric and Roman periods. Post-medieval clearance and agriculture may have masked evidence of this.

4.2.2. Early Medieval to sub-medieval

The development of Bangor was concentrated mainly in the valley bottom and began in the sixth century with the founding of a church and monastic settlement *c.*1.6km to the northwest of the study area. In the twelfth century, Bangor became a territorial diocese with the establishment of a cathedral church. The urban development of Bangor followed slowly and the first map of Bangor, the 1610 John Speed Map, shows the cathedral within an oval enclosure, with the Afon Adda to the west and the high street to the northeast. A market cross was situated on the junction of the High Street and Glanrafon. The High Street terminated *c.*1.5km north of the study area.

4.2.3 Early-Modern/Modern

There were minimal developments within Bangor during the seventeenth and eighteenth centuries. The urban development of Bangor began in earnest during the nineteenth century and incorporated the maritime quarter at Hirael, next to the coast, follwed by the development of the Dean Street area that bridged the gap between the original medieval town and Hirael. The building of the railway station in the middle of the century brought the High Street further south, whilst the development of the southwestern end of Bangor and the northern side of the valley (the location of the University) began in the early twentieth century. The John Wood Map of 1834 shows two of the farms within the study area: Bryn Llwyd and Carreg Hwfa, as well as the trackway leading from the valley bottom to Bryn Llwyd farm, which is still extant (see Figure 4). The current field boundaries surrounding the farms of Bryn Llwyd, Carreg Hwfa and Hendrewen match those from the 1st Edition Ordnance Survey Map (1889; Figure 5), suggesting there was no major developments within this area bar the establishment of the farms and the enclosure of the fields during the post-medieval period.

The sites from this period listed on the RCAHMW database and in the Sites and Monuments Record are limited to a number of nineteenth and early twentieth century buildings and chapels, located mainly in the valley bottom. There was a quarry site listed on the 1st Edition Ordnance Survey Map, 1889, close to the location of Test Pit 125, but it is no longer in use.

4.3 Results of the Archaeological Watching Brief

Identified deposits and features were recorded photographically and by notes and sketches. The archive is held by GAT under the project number **(G1876)**.

Each test pit will be described separately. For their individual locations see Figures 2 and 3.

<u>Test Pit 101</u>
Size: 1.20m x 0.60m x 1.70m (l x w x d)

Description
The topsoil was extant to a depth of 0.30m and comprised a dark-grey brown humic topsoil; a yellow-brown glacial silt, 0.80m deep, followed this. Bedrock was identified at 1.10m.
Interpretation
The test pit was archaeologically sterile

Test Pit 102
Size: 1.20m x 0.60m x 2.00m (l x w x d)
Description
The topsoil was extant to a depth of 0.30m and comprised grey humic topsoil; this was followed by gravel-rich glacial silt, 1.70m deep. Bedrock was identified at 2.00m.
Interpretation
The test pit was archaeologically sterile

Test Pit 103
Size: 1.20m x 0.60m x 4.00m (l x w x d)
Description
The topsoil was extant to a depth of 0.30m and comprised grey humic topsoil, followed by yellow-brown glacial silt, 0.50m deep; this was followed by gravel-rich glacial silt, 3.20m deep. Bedrock was identified at 4.00m.
Interpretation
The test pit was archaeologically sterile

Test Pit 104
Size: 1.20m x 0.60m x 0.60m (l x w x d)
Description
The topsoil was extant to a depth of 0.25m and comprised a grey-brown silty topsoil; this was followed by orange-brown glacial silt, 0.35m deep. Bedrock was identified at 0.60m.
Interpretation
The test pit was archaeologically sterile

Test Pit 105
Size: 1.20m x 0.60m x 1.30m (l x w x d)
Description
The topsoil was extant to a depth of 0.30m and comprised a mid-brown silty topsoil; a grey-brown silty subsoil, 0.20m deep, followed this; this was followed by grey-brown glacial clay, 1.30m deep. Bedrock was identified at 1.30m.
Interpretation
The test pit was archaeologically sterile

Test Pit 106
Size: 1.20m x 0.60m x 0.50m (l x w x d)
Description
The topsoil was extant to a depth of 0.20m and comprised mid-brown silty topsoil; this was followed by stone-rich grey-brown silty subsoil, 0.30m deep. Bedrock was identified at 0.50m.
Interpretation
The test pit was archaeologically sterile

Test Pit 107

Size: 1.20m x 0.60m x 1.30m (l x w x d)
Description
The topsoil was extant to a depth of 0.50m and comprised mid-brown silty topsoil; a glacial silt deposit, 0.80m deep, followed this. Bedrock was identified at x 1.30m.
Interpretation
The test pit was archaeologically sterile except for several sherds of modern glazed pottery indicative of farming activity.

Test Pit 108
Size: 1.20m x 0.60m x 3.40m (l x w x d)

Description
The topsoil was extant to a depth of 0.40m and comprised mid-brown silty topsoil; this was followed by yellow-grey glacial silt, 0.50m deep; this was followed by glacial clay 2.50m deep. Bedrock was identified at 3.40m.
Interpretation
The test pit was archaeologically sterile except for several sherds of modern glazed pottery indicative of farming activity.

Test Pit 109
Size: 1.20m x 0.60m x 1.80m (l x w x d)
Description
The topsoil was extant to a depth of 0.30m and comprised bioturbated mid-brown silty topsoil; this was followed by stone-rich glacial silt, 0.40m deep; this was followed by glacial clay 1.10m deep. Bedrock was identified at 3.40m.
Interpretation
The test pit was archaeologically sterile except for several sherds of modern glazed pottery indicative of farming activity.

Test Pit 110
Size: 1.20m x 0.60m x 2.20m (l x w x d)
Description
The topsoil was extant to a depth of 0.50m and comprised mid-brown silty topsoil; this was followed by stone-rich glacial silt, 0.40m deep; this was followed by glacial clay 1.70m deep. Cutting the glacial clay was a linear ditch with a U-shaped profile filled with small sub-angular stones and dark humic matter. Bedrock was identified at 2.20m.
Interpretation
The linear feature was identified as a drainage ditch. A fragment of roofing slate was recovered from the fill, suggesting that the feature was post-medieval in date, associated with the farm. Whilst the field did not appear to suffer from poor drainage, the ditch was located at the base of a shallow north to south slope, running in an east to west direction, suggesting it was located to accommodate the water running down the slope.

Test Pit 111
Size: 1.20m x 0.60m x 3.50m (l x w x d)
Description
The topsoil was extant to a depth of 0.25m and comprised mid-brown silty topsoil; this was followed by glacial clay, 3.15m deep; this was followed by glacial clay 1.10m deep. Bedrock was identified at 3.40m.
Interpretation
The test pit was archaeologically sterile. This was the only test pit within the Carreg Hwfa farmland. The field appeared to have been used for little more than pasture and was generally flat in profile, with no obvious scarps, ditches or boundaries.

Test Pit 121
Size: 1.20m x 0.60m x 2.00m (l x w x d)
Description
The test pit was located at the base of a steep south to north slope, close to a narrow, culverted stream and sinkhole. The ground had generally good drainage. There was no visual evidence for unusual scarps, ditches or anything else suggestive of archaeology. It was assumed, however, that the pit would contain extensive colluvial deposits that could mask any potential features. The topsoil was extant to a depth of 0.30m, followed by a 0.50m thick deposit of colluvium; below this was a series of glacial sands extant for the remaining 2.40m. Bedrock was identified at 3.00m.
Interpretation
The test pit was archaeologically sterile save for two fragments of modern glass in the topsoil.

Test Pit 122
Size: 1.20m x 0.60m x 3.00m (l x w x d)
Description
This test pit was located *c.*10.0m west of Test Pit 121 in an area with good drainage. The area was heavily overgrown with weeds making a preliminary inspection difficult. The topsoil was extant to a

depth of 0.50m and contained fragments of shale and sub-rounded stone. Below the topsoil was a 0.30m thick deposit of yellow-grey topsoil that appeared to contain iron panning, indicative of waterlogging. Below this deposit was a 2.00m thick deposit of glacial silts. The bedrock was identified immediately below this at a mean depth of 2.80m.
Interpretation
The test pit was archaeologically sterile save for several sherds of modern glazed pottery.

Test Pit 123
Size: 1.20m x 0.60m x 3.70m (l x w x d)
Description
This test pit was located *c.*10.0m to the southwest of Test Pit 121 and *c.*5.0m to the southeast of Test Pit 122. The topsoil was shallow, only 0.20m in depth, with inclusions of shale fragments. The subsoil below this was similar to that in Test Pit 122, in containing evidence of iron panning and waterlogging. The subsoil was extant to a depth of 0.30m. Below the subsoil was a 3.20m thick deposit of glacial silts. The bedrock was identified at a depth of 3.70m
Interpretation
The test pit was archaeologically sterile save for several sherds of modern glazed pottery.

Test Pit 124
Size: 1.20m x 0.60m x 2.00m (l x w x d)
Description
The topsoil in this test pit was similar to that identified in Test Pit 123. Below the topsoil was a 0.45m thick deposit of orange-brown subsoil with frequent inclusions of shale fragments. Below the subsoil was a 0.75m thick deposit of fragmented bedrock mixed with a silty-loam. Bedrock was identified at a depth of 2.45m
Interpretation
The test pit was archaeologically sterile save for a sherd of nineteenth century glazed pottery.

Test Pit 125
Size: 1.20m x 0.60m x 2.30m (l x w x d)
Description
This test pit was located to the west of the Hendrewen field in the grounds of a private house. The house was not extant on any maps but the owner said it had been constructed in 1990. To the immediate south of the test pit was a pronounced bund that was deposited when the house was built. The test pit was located halfway up a relatively steep southeast to northwest facing slope. The test pit contained extensive deposits of brick fragments, mortar and slate, extant to a maximum depth of 0.50m, which had been tipped from the north. The material was twentieth century in origin, as suggested by the inclusion of frogged brick. There was also a large slab of grano-concrete in the northeastern corner of the test pit. The bucket of the backhoe could not remove the concrete as it continued past the limits of the pit. This suggested that the demolition deposit continued for some distance down the slope. Below the demolition layers was a deposit of mid-brown loam, *c.*0.8m thick at its deepest point, which was followed by a 1.30m thick deposit of glacial silts. The bedrock was identified at 2.30m.
Interpretation
It was not possible within the parameters of the test pit to determine whether the demolition material was associated directly with the building of the house, but it was apparent that the material was deposited to reduce the angle of the slope slightly (it was assumed, also, that the mid-brown loam below the demolition material was the original topsoil level). It was not thought that the material was from an earlier structure on the property, however, as there was no documentary evidence to support this.

Test Pit 126
Size: 1.20m x 0.60m x 2.00m (l x w x d)
Description
The topsoil was extant to a depth of 0.25m and contained a corroded 2.54cm wide iron water pipe that would originally have fed from the stream. Mixed into the topsoil were fragments of brick and slate as well as sherds of modern glazed pottery. Below the topsoil were a series of glacial silts. The bedrock was identified at a depth of 2.20m.
Interpretation

The test pit was archaeologically sterile save for twentieth century building material and a water pipe associated with the farm.

Test Pit 127
Test Pit 127 was not excavated.

Test Pit 128
Size: 1.20m x 0.60m x 2.00m (l x w x d)
Description
The test pit was located within an area of poor drainage, *c.*10-12 metres east of the stream. The topsoil was extant to a depth of 0.25m, below was a series of glacial silts, included in which were possible carboniferous remains.
Interpretation
The test pit was archaeologically sterile save for a sherd of white glazed modern pottery and a lump of coal.

4.4 Impact and mitigation

No sites of archaeological interest were noted within the test pits at either of the selected areas. The test pits were small compared to the normal recommended areas from archaeological sample excavations. They can only therefore be used as a general guide to archaeological activity in the area. This type of location could be expected to have been attractive to early settlement and agriculture. In addition, locations close to these, as in both cases here, were often used as cooking areas in the second millennium BC, with the resultant "burnt mounds" of stone frequently found in such circumstances. It is therefore recommended that a general watching brief be carried out during any soil stripping or part of any development.

4.5 Conclusion

The only archaeology present on site was a post-medieval field drain of probable 19th century construction, associated with the Carreg Hwfa farmstead and a series of demolition deposits associated with the construction of a late twentieth-century private dwelling.

5 REFERENCES AND OTHER SOURCES CONSTULTED

Bibliography

1.1 Unpublished references

1.1.1 *Sources in the Gwynedd Regional Historic Environment Record*

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Soils of Wales, Soil Map Series Sheet 2, 1:250000
GAT Report no. 544, 2004 110-114 High Street, Bangor (G1837).
Ordnance Survey Map 25". County Series. Caernarvonshire LXI.2 (Scale 1,5000)
Ordnance Survey Map 25". County Series. Caernarvonshire LXI.6 (Scale 1,5000)

Figure List

Plate List

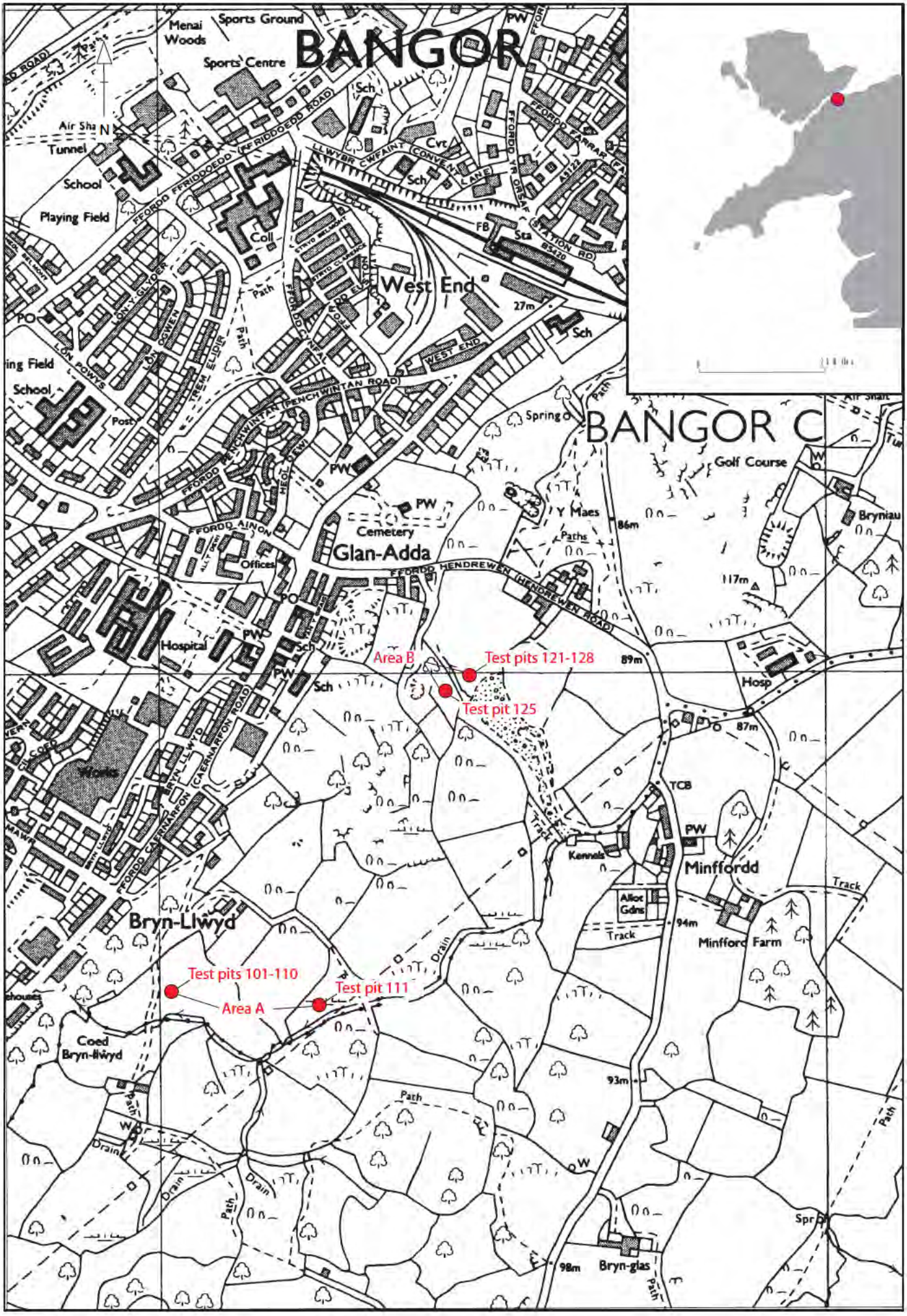

Figure 1. Location of study area. (1, 5000)

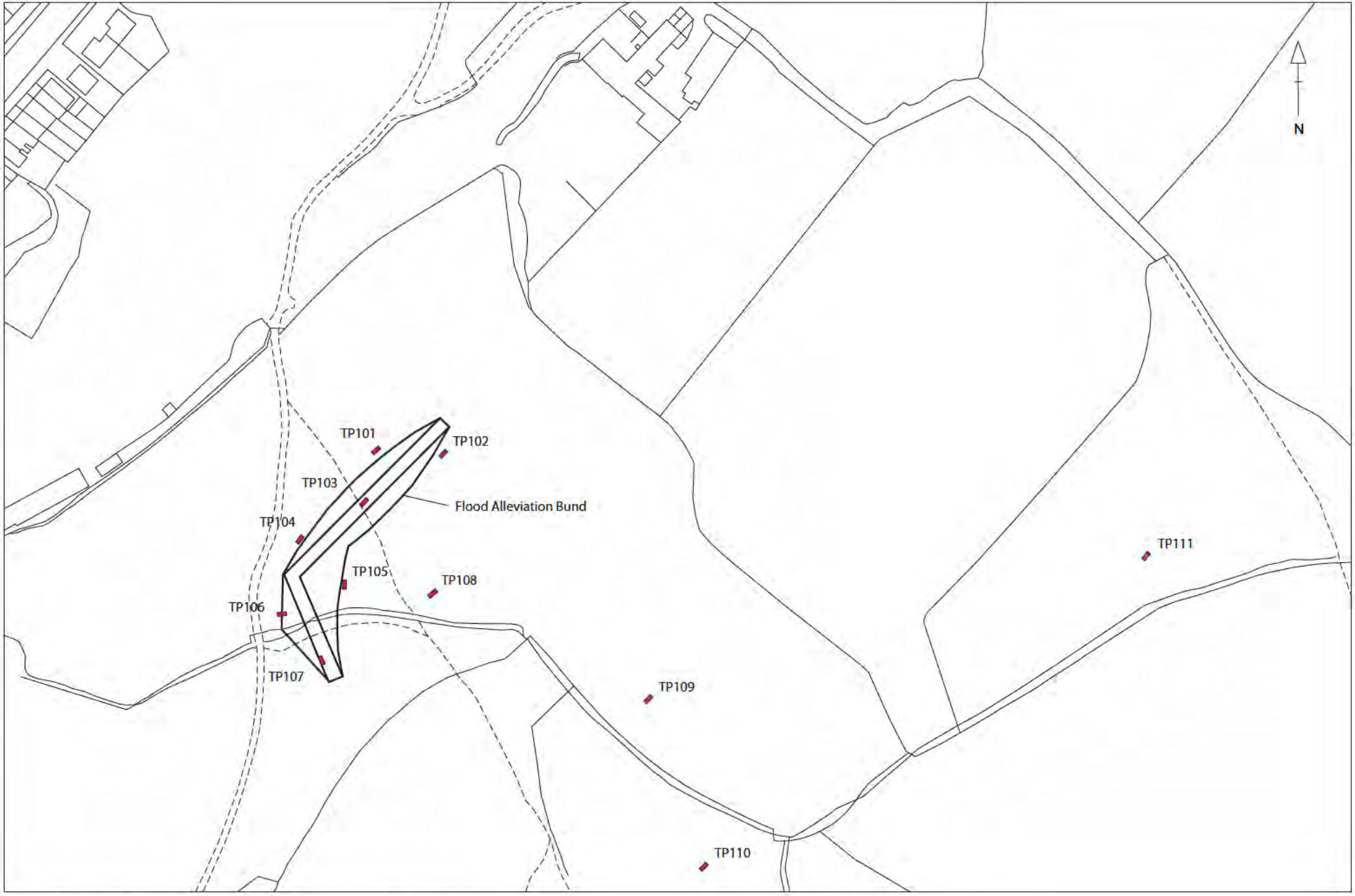

Figure 2. Area A: Test pits 101-111 and flood alleviation bund. (1,1500)

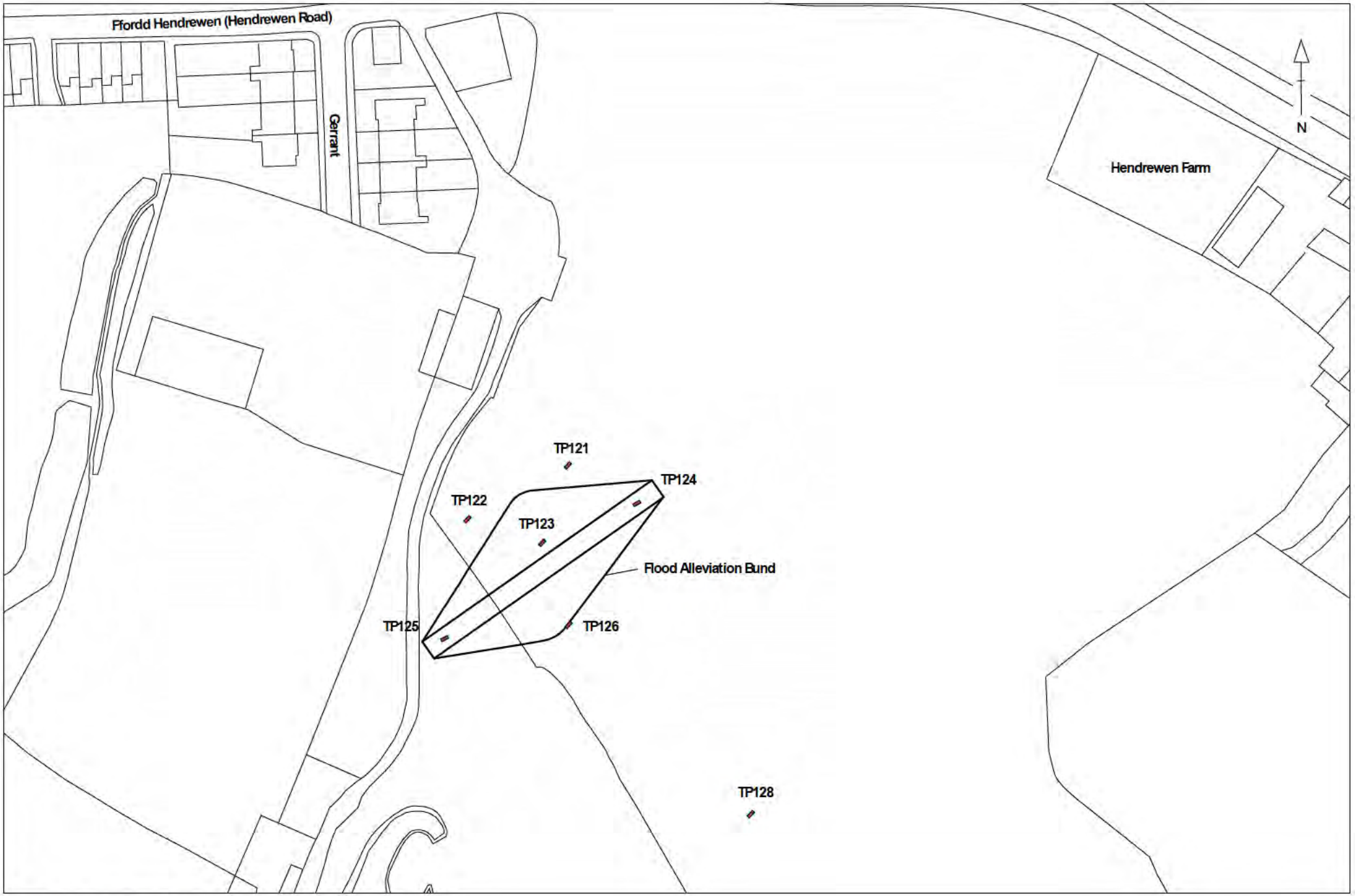

Figure 3. Area B: Test pits 121-128 and □ood alleviation bund. (1,1000)

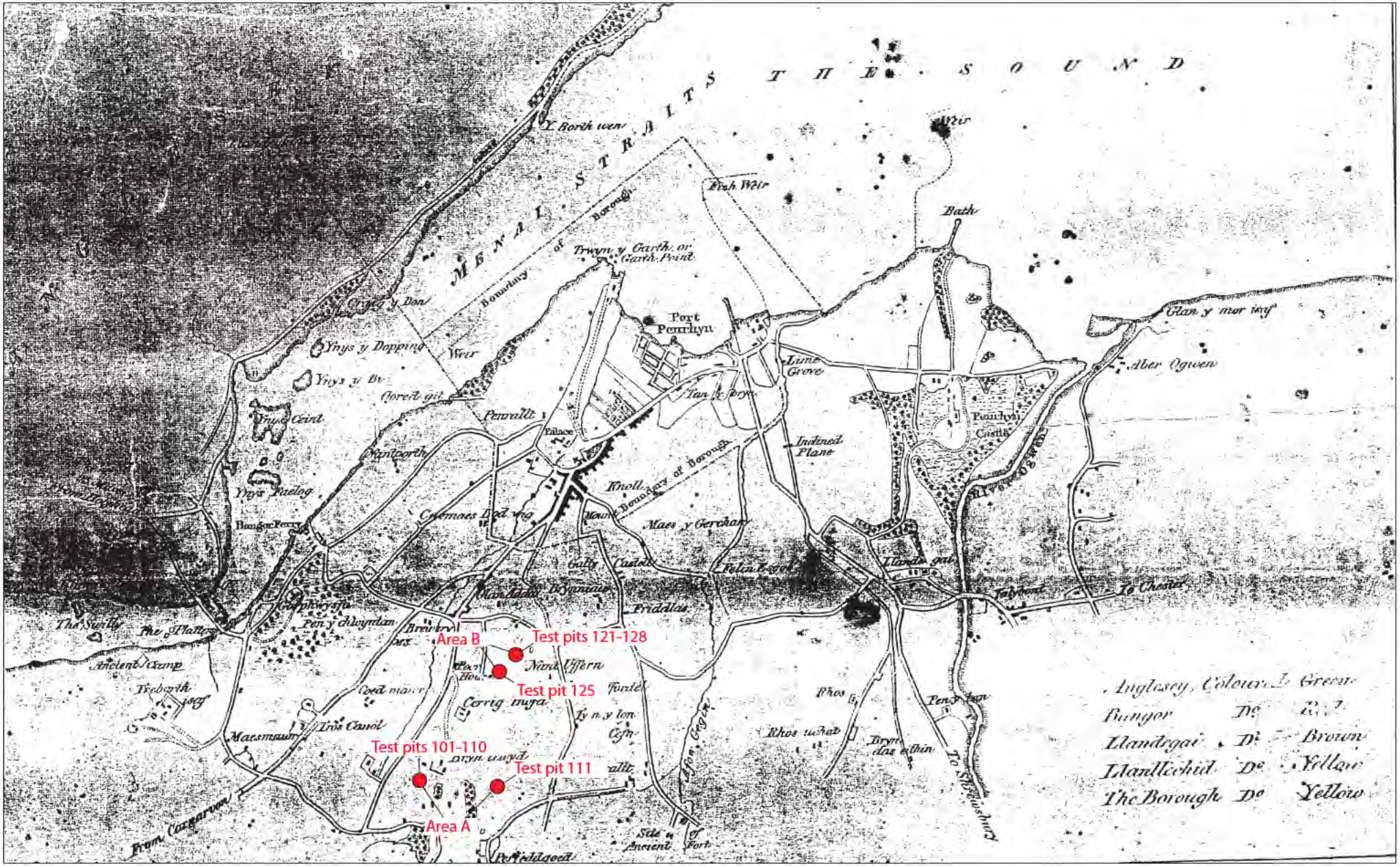

Figure 4. John Wood, 1834

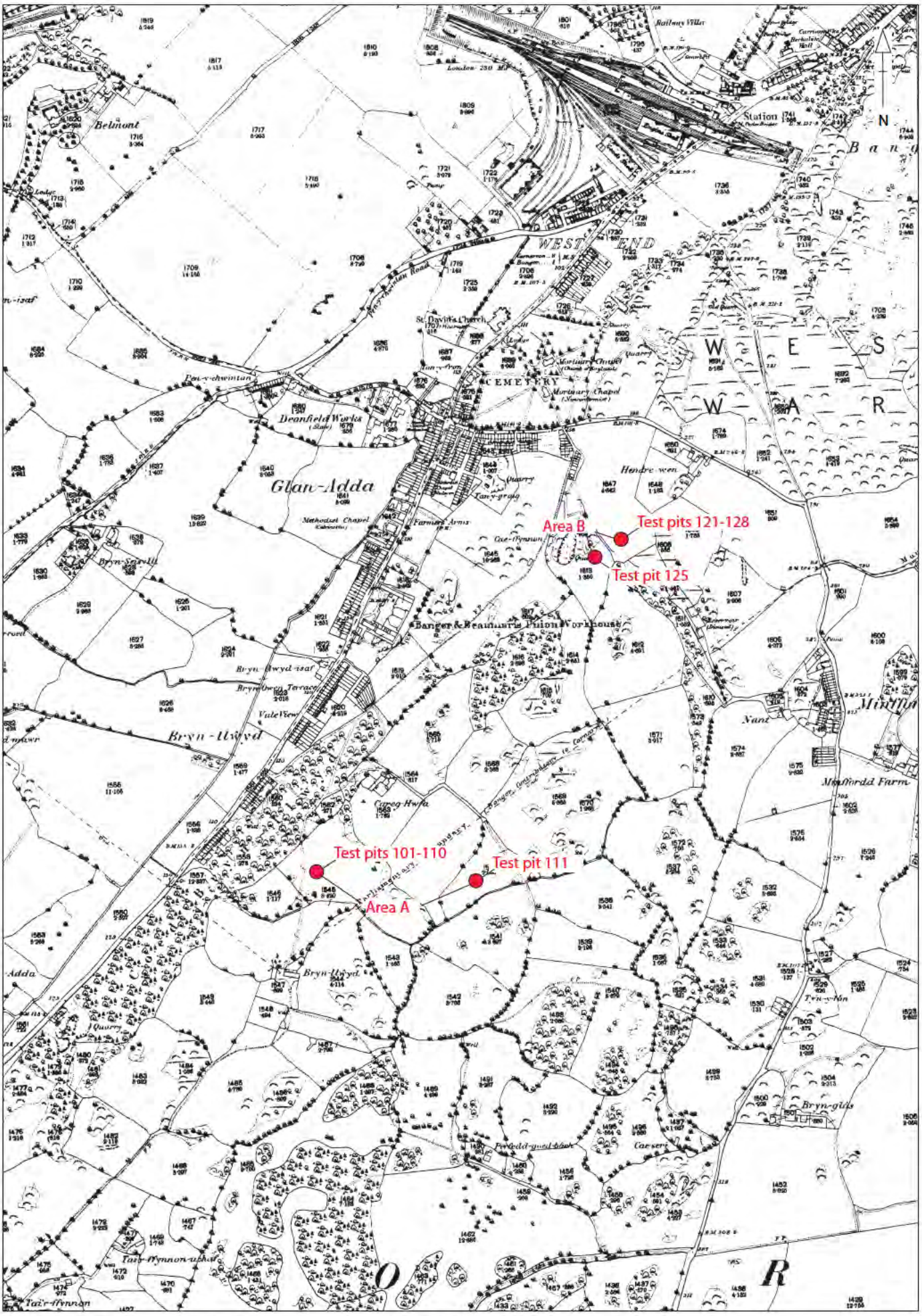

Figure 5. Ordnance Survey 25". Caernarvonshire LXI. 2 and LXI. 6. (1, 5000) 1889

Plate 1. Test Pit 101

Plate 2. Test Pit 102

Plate 3. Test Pit 103

Plate 4. Test Pit 104

Plate 5. Test Pit 105

Plate 6. Test Pit 106

Plate 7. Test Pit 107

Plate 8. Test Pit 108

Plate 9. Test Pit 109

Plate 10. Test Pit 110

Plate 11. Test Pit 111

Plate 12. Test Pit 121

Plate 13. Test Pit 122

Plate 14. Test Pit 123

Plate 15. Test Pit 124

Plate 16. Test Pit 125

Plate 17. Test Pit 126

Plate 18. Test Pit 128