Penrhyn Terrace, Bwlchtocyn. Water Mains Renewal Sceme: Ground Investigation Programme

Archaeological Watching Brief

GAT Project No. 2147
Report No. 884
November 2010

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust
Craig Beuno, Ffordd y Garth, Bangor, Gwynedd, LL57 2RT

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Prepared for

Dwr Cymru

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By

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LLANENGAN, PENRHYN TERR, BWLCHTOCYN WATER MAINS RENEWAL SCHEME: GROUND INVESTIGATION PROGRAMME - ARCHAEOLOGICAL WATCHING BRIEF

LLANENGAN, PENRHYN TERR, BWLCHTOCYN WATER MAINS RENEWAL SCHEME: GROUND INVESTIGATION PROGRAMME - ARCHAEOLOGICAL WATCHING BRIEF

Summary

Gwynedd Archaeological Trust (GAT) was commissioned by Dŵr Cymru to complete an archaeological watching brief during ground investigation (GI) works associated with the proposed water mains renewal scheme between Llanengan, Penrhyn Terrace and Bwlchtocyn in Gwynedd. The GI programme included the excavation of a series of test holes along the route to identify the existing mains and to examine the local geology in advanced of the proposed renewal route.

A total of 18 trial holes were monitored as part of the watching brief; no archaeological activity was identified within the confines of any example: the existing main, established in 1959, was identified in Test Holes 03 to 05, 11, 13c and 18b and shallow bedrock was identified in Test Holes 01, 04, 07, 08 and 12.

1.0 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was commissioned by *Dŵr Cymru* to complete an archaeological watching brief during ground investigation (GI) works in advance of a water mains renewal programme between Llanengan, Penrhyn Terrace and Bwlchtocyn, Gwynedd (between NGR **SH30682628** and **SH31402564**). The GI works were located along and parallel to a network of local roads (total length investigated: *c.*1.20km), as indicated on client drawings **NP0900236/Drawing 101 (Iss. A)** & **NP0900236/Drawing 102 (Iss. A)**.

A mitigation brief was not prepared for this work by **Gwynedd Archaeological Planning Services** (GAPS) but GAPS recommended an archaeological watching brief of the test holes (*pers. comm.* Jenny Emmett).

Reference was also made to the guidelines specified in Standard and Guidance for Archaeological Watching Brief (Institute for Archaeologists, 1994, rev. 2001).

2.0 BACKGROUND

According to information held within the regional Historic Environment Record (Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor LL57 2RT), known archaeological receptors in the local area include a prehistoric flint working floor at NGR SH31272598 (identified in the Historic Environment Record as PRN **4,007**). This receptor is within the general location of Test Holes **TH14** to **TH16** (see figure 01).

3.0 Methodology

3.1 Ground Investigation Works

- All attended test holes were excavated using a 1.5 tonne 360° crawler excavator with a toothed ditching bucket (0.25m wide). Test hole length varied between 1.00m and 4.50m; width between 0.40m and 0.60m. Test hole depth was dependant on the identification of the water main and/or bedrock. All GI works were completed by *Daniels* on behalf of *Dŵr Cymru*

3.2 Archaeological Watching Brief

- A photographic record was maintained throughout, using a digital SLR camera set to maximum resolution.

- Notations were made of all subsurface deposits on individual watching brief record sheets.

- All archive is held by GAT under an appropriate project number (**G2147**).

4.0 RESULTS

The location of the test holes (TH) monitored by GAT can be found in Figures 01 and 02. All test holes are described separately.

TH01
Size: 1.40m x 0.45m x 0.65m Orientation NE-SW

Description (Plates 05 – 06)
The test hole was excavated on a car passing area on a narrow road leading to Bwlchtocyn. Tarmac road surface with depth of 0.08m, below which was a stone road foundation material with a maximum depth of 0.32m. Below which was a natural orange yellow medium course sand, which was excavated to a depth of 0.25m and abandoned.

No archaeological activity was identified within the confines of the test hole.

TH02

Not observed

TH03
Size: 2.4m x 0.5m x 0.7m Orientation NE-SW

Description
The test hole contained a mid-orange brown topsoil atop a mid-brown to orange silt-clay subsoil; the glacial natural was a light orange yellow stone-rich boulder clay. The water main was located within the test hole at 0.70m below ground level.

No archaeological activity was identified within the confines of the test hole.

TH04a/b
Size: TH04a 2.40m x 2.30 (L-shaped) 0.45m x 0.20m Orientation NE-SW + NW-SE
TH04b 1.30m x 0.45m x 0.60m NW-SE

Description (Plates 07 – 08)
The initial test hole did not locate the water main but did expose the bedrock, extant at 0.27m below surface level. Stratigraphy comprised a thin layer of topsoil (0.15m deep) above a shale-rich subsoil (0.12m deep). A second test hole (TH04b) was excavated 10.0m to the SE: the water main was identified at 0.60m below surface level.

No archaeological activity was identified within the confines of the test hole.

TH05
Size: 1.30m x 0.45m x 0.70m Orientation NE-SW

Description (Plates 09 – 10)
The test hole contained a very thin band of topsoil (0.05m deep), above a moderate shale-rich subsoil; the glacial natural was an orange yellow silt-sand drift deposit. The water main was located within the test hole at 0.70m below ground level.

No archaeological activity was identified within the confines of the test hole.

TH06

Not observed

TH07
Size: 1.00m x 0.45m x 0.25m Orientation NW-SE

Description

This test hole was excavated to check the geology across the highest area accessed by the road. The test hole contained a thin band of topsoil with a maximum depth of 0.15m, followed by a shale-rich subsoil with a depth of 0.08m. The bedrock was identified at 0.25m below ground level.

No archaeological activity was identified within the confines of the test hole.

TH08
Size: 0.95m x 0.45m x 0.24m Orientation E-W

Description
The test hole was located along a grass verge and contained a thin band of topsoil (0.06m deep) atop a mid brown sand-silt subsoil (0.18m deep), below which was the natural bedrock. The test hole was positioned to investigate the local geology in advance of the proposed route.

No archaeological activity was identified within the confines of the test hole.

TH09

Not observed

TH10

Not observed

TH11
Size: 1.00m x 0.60m x 0.70m Orientation ENE-WSW

Description (Plates 11 – 12)
The test hole was excavated on the direct line of the previous (1959) water main, the trench did not disturb any virgin ground surface and only disturbed soils were observed. The water main was observed at a depth of 0.70m, with the test hole being very close to Pen y Bwlch cottage. The trench was excavated into the tarmac road surface, which was underlain by roadstone, with a joint depth of 0.23m. The only other material observed was the backfill of the previous water main.

No archaeological activity was identified within the confines of the trench.

TH12
Size: 0.50m x 0.23m x 0.75m Orientation E-W

Description (Plates 01 – 02)
The test hole included the modern tarmac road surface (0.10m deep), followed by a sub-base of loose stone (0.10m deep). Bedrock was identified beneath the sub-base layer at 0.20m below ground level.

No archaeological activity was identified within the confines of the trench.

TH12b
Size: L-shaped 4.40m x 0.40m x 0.50m Orientation N-S
2.50m x 0.40m x 0.80m E-W

Description
The original trench (N-S) was excavated to bedrock, through natural deposits; the water main was not located in this area, although a BT service trench was observed at the southern end of the trench. An E-W extension with a length of 2.50m was excavated and revealed a junction water pipe. The original main was thought to be in one of the local gardens and was not located during the GI programme.

No archaeological activity was identified within the confines of the trench.

TH12/13
Size: 6.40m x 0.40m x 0.95m Orientation NE-SW

Description
This test hole was located across a grass verge and was positioned to locate the existing water main; the test hole spanned the width of the grass verge from the roadside kerb to a tarmac footpath and consisted entirely of modern building waste, brick, plastic, pottery and slate. The water main was not located.

No archaeological activity was identified within the confines of the trench.

TH13a, b & c
Size: 1.00m x 0.23m x 0.75m Orientation E-W

Description (Plates 03 – 04)
Test hole TH13 was positioned to identify the existing main (not identified).

The test hole was excavated to a maximum depth of 0.75m: the test hole contained evidence for road re-surfacing with the original sub-base (large fragmented stones) sealed by two tarmac layers. The test hole was then relocated on the modern grass verge, in which no mains were identified. The main were located in test hole TH13c, to the immediate south of 13b.

No archaeological activity was identified within the confines of the trench.

TH13/14
Size: 1.10m x 0.40 x 1.20m Orientation NE-SW

Description
This was an extra test hole in the road surface to try and locate the existing water main between TH13 and TH14 (the main was not identified).

The test hole included a tarmac road surface (0.08m deep) atop a sub-base of sub-angular stone within an orange-brown sand-silt (0.20m deep). Beneath the sub-base was a levelling layer containing demolition material including brick, redundant pipe, slate and pottery (0.65m deep). The natural was identified at the base of the test hole as glacial drift.

No archaeological activity was identified within the confines of the trench.

TH14
Size: 1.05m x 0.45m x 0.80m Orientation N-S

Description (Plates 13 – 14)
The test hole was positioned to identify the location of the existing main (the main was identified). A BT cable had been laid over the water main in this trench with a NE-SW orientation.

The test hole contained a tarmac road surface overlying a stone-rich road foundation with a joint depth of 0.22m. The backfill associated with the existing water main trench consisted of a mid orange-brown sand-silt with frequent pebble and cobble sized stone. Total depth to the water main was 0.80m.

The test hole was located within an area of known prehistoric archaeology (a prehistoric flint working floor at NGR SH31272598 (identified in the Historic Environment Record as PRN **4,007**)); no archaeological activity associated with this site was identified within the confines of the trench.

TH15
Size: 1.60m x 0.40m x 0.86m Orientation NE-SW

Description
The test hole was excavated along the road surface to identify the location of the existing main (the main was not identified).

The test hole contained a tarmac road surface (0.08m deep) atop an orange-brown sand-silt deposit, which included cobblestone, mixed with 19th century pottery, brick, slate and heavily corroded iron

gate clasps etc. and reached a total depth of 0.65m. The underlying natural was excavated to a depth of 0.15m, which was a light orange, grey-brown silt-sand with occasional sub-angular stone.
The test hole was located within an area of known prehistoric archaeology (a prehistoric flint working floor at NGR SH31272598 (identified in the Historic Environment Record as PRN **4,007**)); no archaeological activity associated with this site was identified within the confines of the trench.

TH16
Size: 1.20m x 0.40m x 0.50m Orientation N-S

Description
The test hole was excavated along the road surface to identify the location of the existing main (the main was not identified).

The test hole contained a tarmac road surface with a depth of 0.08m, followed by a very thin layer of road foundation of 0.05m depth which comprised of a mid grey-brown sand-silt with very frequent sub-angular stone. Below the road layers was a mid orange, grey-brown natural silt-sand with a moderate amount of sub-angular stone, this material was excavated to a depth of 0.38m (not base of layer).

The test hole was located within an area of known prehistoric archaeology (a prehistoric flint working floor at NGR SH31272598 (identified in the Historic Environment Record as PRN **4,007**)); no archaeological activity associated with this site was identified within the confines of the trench.

TH17
Size: 1.10m x 0.40m x 0.96m Orientation NE-SW

Description
The test hole was excavated to inspect the local geology/assess the proposed route and was positioned within a grass verge to the southeast of Bwlchtocyn on a staggered crossroads.

The topsoil comprised a mid grey-brown sand-silt with a moderate amount of sub-angular stone (0.16m in depth). The subsoil was also a mid grey-brown sand-silt, although slightly lighter than the topsoil and contained a little more sub-angular stone with a maximum depth of 0.20m. Beneath this deposit was a natural light orange-brown silt-sand with occasional stone (0.18m deep); identified as an interface between the subsoil and the glacial drift. The glacial drift was identified at the base of the test hole and comprised a mid orange-brown silt-sand with occasional sub-angular stone.

No archaeological activity was identified within the confines of the test hole.

TH18a & b
Size: 18a - 2.1m x 0.5m x 0.5m Orientation WNW-ESE
18b - 2.9m x 0.5m x 0.8m Orientation WNW-ESE

Description
The original test hole was excavated to locate the existing water main. The test hole did not identify the water main but the main was identified in a second test hole (Test Hole 18b).

Test Hole 18a was excavated to a depth of 0.5m; Test Hole 18b located the main at a depth of 0.8m: the topsoil was a mid orange-brown clay-silt; the subsoil was a mid-brown orange silt-clay. A glacial drift deposit was identified at the base of the test hole; the deposit comprised a light yellow-orange stone-rich clay.

No archaeological activity was identified within the confines of the test hole.

TH19
Size: 1.7m x 0.5m Orientation WNW ESE

Description
The test hole was excavated to inspect the local geology/assess the proposed route and was located within the southwest corner of an irregular shaped field.

The topsoil was a mid orange-brown clay-silt atop a mid-brown orange silt-clay subsoil. A glacial drift deposit was identified at the base of the test hole; the deposit comprised a light yellow-orange stone-rich clay.

No archaeological activity was identified within the confines of the test hole.

5.0 CONCLUSIONS

A total of 18 trial holes were monitored as part of the archaeological watching brief. No archaeological activity was identified within any example: the test holes located along the road network were limited to modern road construction; the test holes within the fields contained topsoil and subsoil atop glacial drift (the subsoil was interpreted as degraded ploughsoil). Moreover, no archaeological activity associated with the prehistoric flint working floor (PRN **4,007**) was identified within the location of Test Holes 14 to 16.

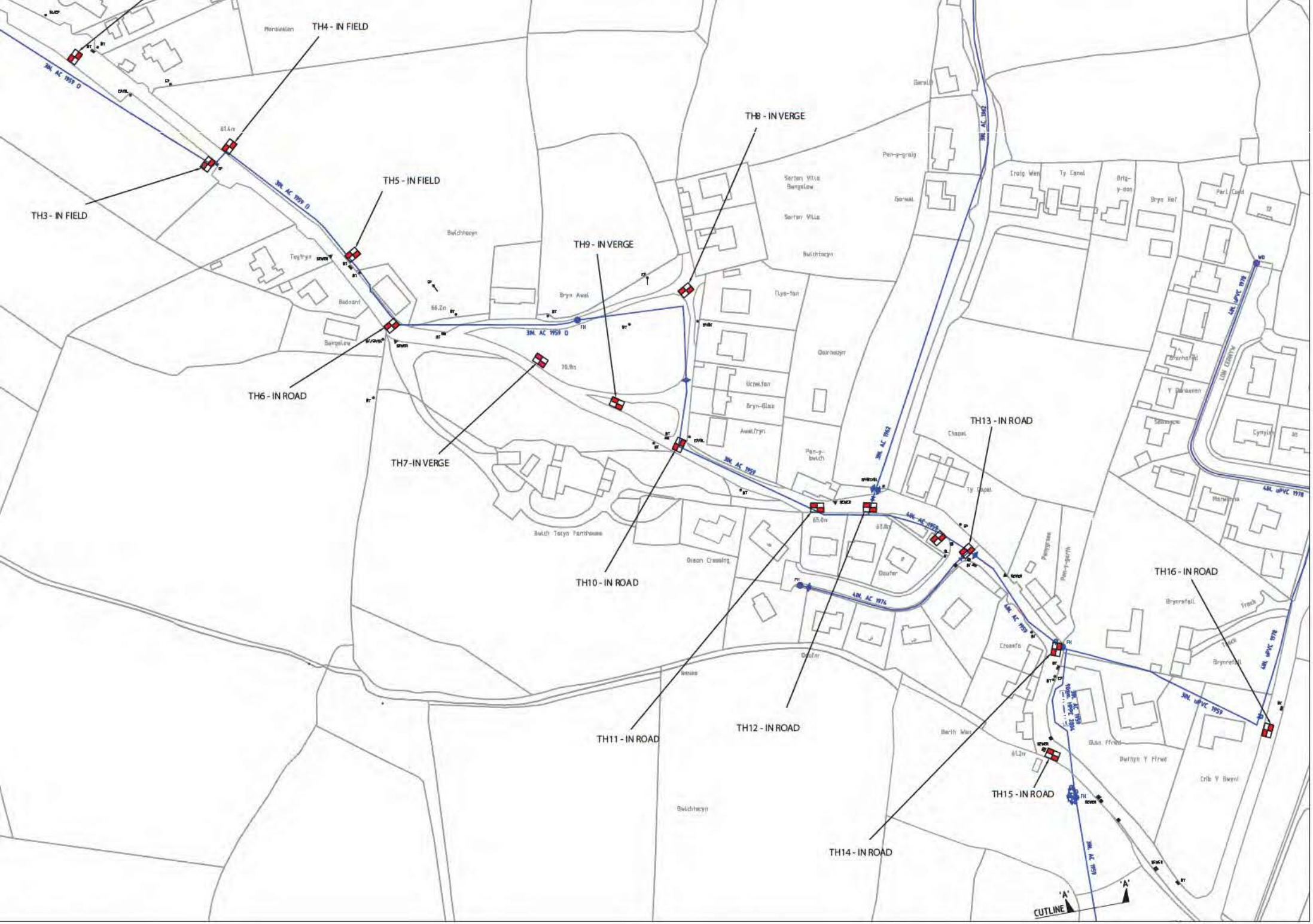
The existing main, established in 1959, was identified in Test Holes 03 to 05, 11, 13c and 18b and all examples contained evidence for the disturbance associated with the excavation of the water main trench. Shallow bedrock was identified in Test Holes 01, 04, 07, 08 and 12, at the western and central portion of the scheme as far as Bwlchtocyn.

6.0 BIBLIOGRAPHY and SOURCES

Dŵr Cymru drawings **NP0900236/Drawing 101 (Iss. A)** & **NP0900236/Drawing 102 (Iss. A)**

Institute for Archaeologists (IFA), 2001 By-laws, Standards and Policy Statements of the Institute for Archaeologists: Standards and Guidance – Watching Brief

Historic Environment Record, Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, Gwynedd LL57 2RT


TH3 - IN FIELD
TH4 - IN FIELD
TH5 - IN FIELD
TH6 - IN ROAD
TH7 - IN VERGE
TH8 - IN VERGE
TH9 - IN VERGE
TH10 - IN ROAD
TH11 - IN ROAD
TH12 - IN ROAD
TH13 - IN ROAD
TH14 - IN ROAD
TH15 - IN ROAD
TH16 - IN ROAD
CUTLINE
'A'
'A'

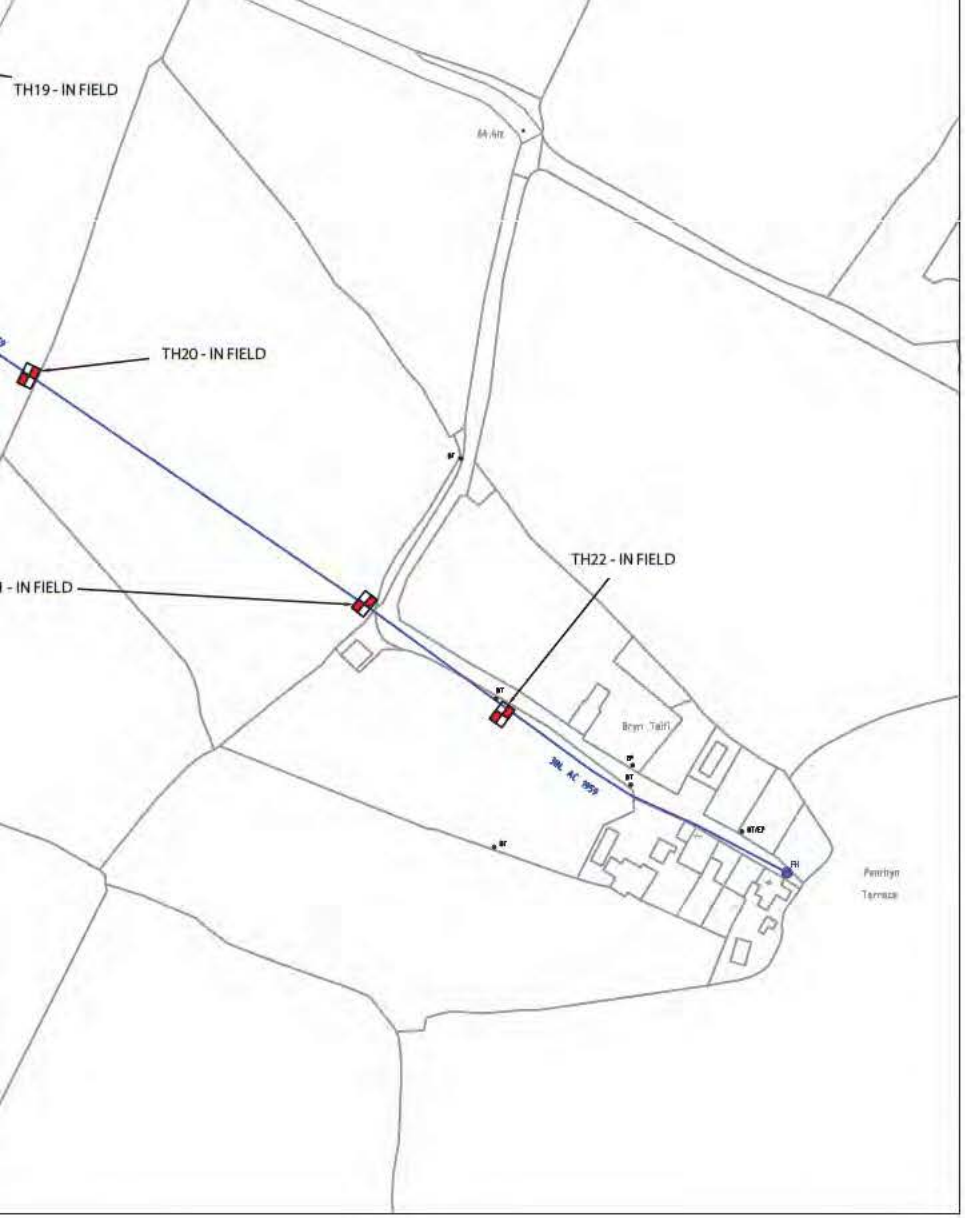

TH19 - IN FIELD
TH20 - IN FIELD
TH22 - IN FIELD
Bryn Teifi
Penrhyn
Terrace

Plate 01 - Location of TH12 in Bwlchtocyn, opposite 18thC chapel.

Plate 02 - Excavated test hole, water mains not located.

Plate 03 - Location of TH13a, on corner of entrance to housing estate.

Plate 04 - Post excavated section of TH13a.

Plate 05 - Location of TH01, on the road leading to Bwlchtocyn.

Plate 06 - Excavated section of TH01 with exposed water main.

Plate 07 - Location of TH04, within a field adjacent to the road leading to Bwlchtocyn.

Plate 08 - TH04, exposed bedrock close to surface. The water main was not found at this location.

Plate 09 - Location of TH05, on entering the village of Bwlchtocyn.

Plate 10 - Post excavated section of TH05, the water mains at the base.

Plate 011 - Location of TH11b, near the southern wall of Pen y Bwlch cottage.

Plate 12 - Excavated section of TH11b, water main located at the base of trench.

Plate 13 - Location of TH14.

Plate 14 - Excavated section of TH14, showing the water main below the BT cable.

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