Garndolbenmaen Water Mains Renewal Scheme North Wales

Archaeological Watching Brief

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Garndolbenmaen Water Mains Renewal Scheme, North Wales

Archaeological Watching Brief

Project No. G2263

Report No. 1056

Prepared for: Dŵr Cymru

June 2012

Written by: Laura Wilson Parry

Illustration by: Laura Wilson Parry

Cyhoeddwyd gan Ymddiriedolaeth Achaeolegol Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

GARNDOLBENMAEN WATER MAINS RENEWAL SCHEME

PROJECT DESIGN FOR ARCHAEOLOGICAL WATCHING BRIEF (G2263)

Prepared for *Dŵr Cymru*, June 2012

Contents

GARNDOLBENMAEN WATER MAINS RENEWAL SCHEME

PROJECT DESIGN FOR ARCHAEOLOGICAL WATCHING BRIEF (G2263)

Prepared for *Dŵr Cymru*, June 2012

Summary

An archaeological watching brief has been conducted during the groundworks for a water mains renewal scheme at Garndolbenmaen, Gwynedd. The pipeline route was located within an area of fairly known archaeological potential. There is evidence of Prehistoric, Roman and Medieval archaeological activity within the local area, thus requiring an intensive level of watching brief. One field boundary was breached and recorded and it was apparent that a significant proportion of the route was disturbed by the construction of the existing road with evidence of the previous Tarmacdadam road found beneath it. The possible remains of a boundary wall for the original route of the road was identified within the remaining undisturbed areas of the scheme.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by *Dŵr Cymru* to provide a cost and project design for carrying out an archaeological watching brief during the groundworks for a water mains renewal scheme at Garndolbenmaen, Gwynedd (centred on NGR **SH50134326**).

The scheme started NGR **SH50074350** as illustrated in Dŵr *Cymru* drawing **109 (Rev C)**, where was connected to the existing main and terminated *c.*475.0m to the southeast on the southern side of the A4857(T) at NGR **SH5032431**. The route incorporated road, verge and a field at the southern end, where the local road joins the A487(T). The route passes alongside Ty Newydd Farm.

The groundworks included:

Open cut trenching

This was completed along the entire scheme length, verge, in a field at the southern end and across the A487 road.

1.1 Mitigation/Standards

A mitigation brief was not prepared for this work by **Gwynedd Archaeological Planning Services** (GAPS), but GAPS recommended a programme of intensive archaeological watching brief of the route during groundworks.

Reference was also made to the guidelines specified in Standard and Guidance for Archaeological Watching Brief (Institute for Archaeologists, 1994, rev. 2001 and 2008).

2 ARCHAEOLOGICAL BACKGROUND

With regards to the current scheme there is considerable evidence of prehistoric, Roman and Medieval archaeology within the local area and grade II listed buildings which the scheme runs past. According to information held within the regional Historic Environment Record (Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Garth, Bangor, Gwynedd LL57 2RT), archaeological activity within the immediate area includes:

- the site of a Roman period hut circle settlement is located *c.*140.0m to the west of the start of the scheme (PRN 145; NGR SH49944345);
- a prehistoric hut platform is located *c.*180.0m to the northeast of the start of the scheme (PRN 188; NGR SH50234360)
- a Roman period hut circle is also located 340.0m to the east of the start of the scheme (PRN 172; NGR SH50414351), along with a medieval platform house to the immediate northeast of the hut circle (PRN 184; NGR SH50424353)
- a Scheduled Ancient Monument: Cn280/Prehistoric Hut Circle is located *c.*540.0m to the north of the start of the scheme, along with another hut circle *c.*370.0m to the north of the start of the scheme (PRN 150; NGR SH49994387).
- at the end of the scheme, a Scheduled Ancient Monument: Cn063/Dolbenmaen Castle Mound, is located *c*.340.0m to the southeast.
- Ty-Newydd Farmhouse grade II (listed building no. 21563).

No identified archaeological sites are currently located within the WMR scheme route.

GAT completed an watching brief/archaeological record during road improvements to the A487(T), between NGR SH49204330 and NGR SH49704320 in 2010-2011 (Cooke, R. 2011: GAT Report **989**). The road improvements were located *c.*500.0m to the southwest of the water mains renewal. The road improvements were mainly along the existing alignment, but incorporated a corridor approximately 20.0m wide outside of the existing A487 (T). The main scheme impact was limited to field boundary walls, a copse of conifers, a barn, and a stone clearance cairn. No new archaeological sites were identified during the course of the watching brief. The preceding archaeological assessment (Cooke, R. 2009: GAT report **824**) examined a wider catchement area and summarised:

> Much of the area within and around the proposed scheme comprises the featureless flood plain of the Afon Dwyfor. There are consequently no known medieval or earlier settlements or ritual sites closer than 280.0m to the road, however the wealth of prehistoric, Roman and medieval sites spread across the landscape within 2.0km of the proposed scheme significantly increases the chances of unknown archaeological material within the area (Cooke, R. 2009: GAT report **824**: 16).

3 METHODOLOGY: ARCHAEOLOGICAL WATCHING BRIEF

The **watching brief** consisted of the following:

- Observation of non-archaeological excavation works.
- A drawn, written and photographic record of any archaeological structures and deposits that was revealed.
- Preparation of full archive report.

The watching brief monitored:

- The open cut portion of the route and any intrusive groundworks associated with these works.
-

The watching brief was undertaken in a manner that allowed for the immediate cessation of the main contractor groundworks for the recording of archaeological evidence. This involved close liaison between the archaeologist and the site contractor (*Mulcair)*.

- If significant archaeological deposits were identified they were manually cleaned, excavated and recorded to determine extent, function, date and relationship to adjacent features.
- A photographic record was maintained throughout, using a digital SLR camera set to maximum resolution.
- Any subsurface remains were recorded photographically, with detailed notations and a measured survey.
- The archive is held by GAT under an appropriate project number (**G2263**).

The watching brief was completed between the 16th of May and 18th of June 2012. The watching brief monitored excavation by a tracked mechanical excavator using a narrow toothless ditching bucket, changing to tooth bucket or pecker when hard bedrock was encountered. Spoil was shifted on site using two small dumpers.

The bulk of the route was heavily disturbed by the previous build up for the existing road. The route of the pipe trench ran between the road and the field boundary not diverting from the verge apart from when it crossed (pipe bursting) the A487 at the south and the small part of a field at the north of the route. Trial holes were dug to locate the existing water main pipe and these were also monitored by an archaeologist. The trial holes were dug at each side of the A487 where pipe bursting was to take place to through the existing water main under the road.

The majority of the route was on the verge of the road and the route ran as an open cut trench from the south east from the A487 heading roughly north west with a dog leg at the north end to the water connection point. The length of the open cut pipe trench observed by the archaeologist was approximately 450m long (plate 01).

The trenching involved the initial removal of the turf and most of the topsoil. This occurred as they went along and they only striped the length of pipe that was going

to be laid that day. The excavator then went back and excavated the pipe trench. The length that was excavated per session varied from 10m to 70m. The trench started at the southern end of the route and carried on up slope towards the north west. The sections of trench recorded were labelled alphabetically starting with A1 at the most southern recorded section and finishing with L at the most northerly section. The lengths of the sections were recorded and they were marked on a map (see figure 01 for locations).

At each opening of a section of trench a photographic record was maintained using a digital SLR camera (Nikon D40) set to maximum resolution and basic recording notes were taken. Soil descriptions and measurements were recorded as well as any other noticeable changes or possible features.

The photographic and written archive is held by GAT under project number (**G2263**)

4 TOPOGRAPHY

The groundworks area was situated on a moderate north west-south east slope which levelled out at the south end at the road junction with the A487. There was a lot of mixed and built up ground surface from the building and improvement of the A487 and the local road to Garndolbenmean on which this pipe route followed. The Afon Dwyfor is located to the south of the pipe route. There are a number of areas of rock outcrops which could be seen, some of which house Roman and Prehistoric homesteads and hut circles. There was a noticeable amount of hillwash with the trench at the point where the gradient of the land increased.

The A487 (T) and the land to the south of the road is located on the flat flood plain of the Afon Dwyfor, with the current road standing at a consistent 95.0m above sea level throughout the study area. The land to the immediate south of the road is flat pasture land, incorporating enclosed sheep and cattle grazing. The sides of the road are overgrown with brambles, interspaced occasionally with young trees, gorse bushes, and long grass. To the north of the road the topography gently undulates and slopes uphill away from the flood plain.

The floodplain cuts through an area of primarily Ordovician rocks, and are ‘contiguous with the complex syncline of Snowdonia which extends north-eastwards in the upland areas above Penmaenmawr and Conwy, and westwards to form the greater part of the Llyn peninsula’ (Bassett & Davies, 1977). The study area also lies close to areas of contemporaneous igneous rocks to the east and a small band of intrusive igneous rocks to the west.

5 RESULTS OF THE WATCHING BRIEF

Trial hole 01 was excavated on the southern side of the A487 on the verge opposite the A4857 T junction. A trial hole had already been dug and backfilled due to failure to locate the pipe. The hole was approximately 2m deep and approximately 2.5m square. There were mixed deposits on the south east and south west sides of the trial hole due to the previous attempt to locate the pipe. The area was heavily disturbed due to the ground being made up from when the road was built and also due to the recent road improvement along this stretch of the A487. The topsoil was clay silt mid grey brown with very occasional small stones and numerous roots and measured 0.15m. There was no ploughsoil as below the topsoil was a build up of mixed deposits consisting of light orange grey silts and merges into a hardcore of various sizes of grey blue angular slate and schist from small to large in a grey gritty silt matrix and areas of small to large sub-rounded cobbles and broken boulders. The pipe was located 2m down within the hardcore layer (plate 02).

Trial hole 02 was excavated on the grassy area by the T junction on the north side of the A487 on the opposite side of the road to the Telephone Exchange. The topsoil was friable dark grey brown sand silt with the ploughsoil being a mix of dark orange brown sand silt with hardcore like crushed angular blue stones. Below this was a silt deposit consisting of a mixed mid brown orange clay sit with yellow patches. A 0.03m thick layer of Tarmacadam with a base of hardcore sat below the silt layer. Under the Tarmacadam and hardcore were large flat purple slate slabs, this was measured at 0.90m below the surface. They were thought to be caps stones to a culvert and ran in a NNW-SSE direction, heading towards and inspection chamber by the existing road. It was decided that the new pipe would not interfere with the culvert but run atop of it (plate 03).

The topsoil for the whole scheme was generally a variation of grey brown silt and the depth ranged from 0.15m at sections H and K to 0.50m at sections E and 0.40m at section B and C (see appendix I for full soil descriptions). The ploughsoil however varied in both matrix and depth. The ploughsoil had a general depth of roughly 0.20m at sections A1, B, E, F, G, H, K and L with the deepest section; section A being 0.70m deep, this became more shallow at the N end at 0.20m deep. The ploughsoil at sections C, D and I were between 0.40m to 0.55m in depth. Sections A1, B, E, F, G, H, K and L all had ploughsoil of a variation of orange brown silt clay with occasional to frequent sub-angular and sub-rounded cobbles and pebbles. Within section A, C, D and H the ploughsoil was a disturbed mixed context with areas of redeposited natural and poorly sorted stones with a grey brown silt matrix (plate 4 and 12). Colluvium (hillwash) was present in sections E and I, in both sections it had collected at the base of low-grade slopes (plate 5). Where natural was seen within the section along the scheme it was generally a variation of grey yellow clay silt with the exception of sections F and G where bedrock was encountered (plate 6). Sections I and J also had infrequent large boulders within the natural. The natural in section C was blue grey sand silt and in section K was a brown yellow clay sand.

The only feature that occurred was in section C, within its ploughsoil was a collection of sub-angular and sub-rounded boulders which may have been an old buried boundary, a photographic record and sketch drawing with detailed notes were taken, (plate 07). To the north of this 1.00m below the surface was a layer of Tarmacadam and above this looked to be modern built up ground including large boulders, broken red brick and other debris as well as mixed redeposited natural (plate 08). A 0.10m thick layer of Tarmacadam was also seen in southern half of section E 0.50m below the surface, it also had a crushed slate sub-base immediately below it (plate 09).

Only one boundary was breached within this scheme and it was at the most northern and final section (section L) just by where the new pipe was connected to the existing main. This boundary was of earth and stone construction with mature trees growing atop/within it. It measures 2.70m wide and 0.60m high and ran roughly NE-SW. The stones were large sub-rounded cobbles and small boulders within a firm dark orange brown clay silt (plate 10 and 11).

The pipe trench ran next to the field boundary wall of grade II listed building Ty-Newydd Farm.

6 INTERPRETATION AND CONCLUSIONS

The archaeological watching brief carried out during the groundworks for a water mains renewal scheme at Garndolbenmaen, Gwynedd (centred on NGR **SH50134326**) did not disturb any unknown identifiable archaeological deposits. One field boundary was breached and recorded as well as soil descriptions along the pipe route. Much of the pipe route was on the verge and cut through built up material from the construction of the existing road. The groundworks were located in relative proximity to Prehistoric, Roman and Medieval sites, the closest being the site of a Roman period hut circle settlement is located *c.*140.0m to the west of the start of the scheme (PRN 145; NGR SH49944345); and a prehistoric hut platform is located *c.*180.0m to the northeast of the start of the scheme (PRN 188; NGR SH50234360). However no positive evidence that these sites extended into this area was found.

The pipe trench ran next to the field boundary wall of grade II listed building Ty-Newydd Farm but again there was no evidence in relation to the building found during excavations. Map regression shows that the farm buildings used to expand to where the pipe trench was placed, however no evidence for the buildings was seen within the trench, this is likely due to the works on the road which encroached on the buildings during some road improvements to straighten the road that occurred sometime between 1915 and 1946 (see figures 05 and 02)

1st (1889) (figure 03), 2nd (1900) (figure 04) and 3rd (1915) (figure 05) edition Ordnance Survey Maps shows Telephone Exchange Road (the road along which the pipe trench runs along side) as quite a wandering road with a number of bends, however aerial photographs (AP) of the area show a more improved and straightened road with evidence of the old road route indicated by the some of the remaining field boundaries which still follow the old road line. There was evidence of this seen in section C with the collection of stones, this maybe the original road boundary to the original road or track which has been truncated due to the building of subsequent road and improvements. Both the 1973 AP and the 1946 AP (figure 02) show the improved road, so at some point since 1915 two things occurred to this road. Firstly the road as was resurfaced with Tarmacdam still following the old route, this could be seen in sections C and E, and trial hole 02. Then secondly the road was raised at its southern end as suggested by the depth of the old road below the existing road (1.00m below the surface in section C and in trial hole 02). The road was likely raised due to flooding in the area. To the south of the A487 are flood plains, the A487 has also been raised significantly to avoid flooding as seen in trial hole 01, where the made up ground measured approximately 2.00m deep, it is known that the Dolbenmaen bypass was built in 1973 as shown on the 1973 OS aerial photograph where work can be seen on the road. It can be assumed from the Ap's and OS maps that Telephone exchange road was straightened, raised and improved between 1915 and 1946, however the AP's and OS maps can not show when the original road and route were resurfaced with Tarmacadam, although this method of road surfacing was not widely used until the early 20th century. The road improvements most likely occurred during the 1930's and not during either of the World Wars (WWI 1914-1918 and WWII 1939-1945) when people and materials were occupied with the war effort. During the 1930's there was a serge of road building and improvements across the UK.

The pre-existing Tarmacadam road was between 1.00m and 0.50m below the current road which explains the disturbed material encountered throughout the scheme, due to the close proximity to the existing road a lot of the deposits encountered may be areas of made up ground for the current road (plate 12).

This lack of Roman and Prehistoric archaeological evidence may be attributed to several factors. Firstly, the overall scheme was actually quite short with only 450m of the open cut trench observed by an archaeologist, the trench width and instability of the trench edge limited the view of the archaeologist into the trench and therefore any ephemeral features may have gone unnoticed. Secondly the areas of undisturbed deposits under investigation were relatively small due to the areas of made up ground. Previous road improvements have altered the landscape and may have affected or destroyed potential archaeology.

Based on the results of this watching brief we may conclude that due to the narrow trench width instability and short area of investigation as well as the already disturbed deposits within the trial holes, the potential for identifying surface features in the wider area was limited. We may infer that there is still considerable potential for the survival of archaeology within the wider area, however little was identified within the confines of these works.

7 SOURCES CONSULTED

Bassett T.M. & Davies B.L. 1977, Atlas of Caernarvonshire

Gwynedd Archaeological Trust report 824, A487 (T) Ty Cerrig, Garndolbenmaen road improvements cultural heritage assessment

Gwynedd Archaeological Trust report 917, January 2011. Conservation Area Appraisal: Dolbenmaen

Gwynedd Archaeological Trust report 989, October 2011. The A487 (T) Ty Cerrig, Garndolbenmaen improvements Archaeological Record and Watching Brief

Institute for Archaeologists, 1994, rev. 2001 and 2008 Standard and Guidance for Archaeological Watching Brief

Historic Environments Record, Gwynedd Archaeological Trust, Craig Beuno, Ffordd y Garth, Bangor, Gwynedd, LL57 2RT.

Ordnance Survey 10k Map of 1977, SH44SE and SH54SW

First edition 25 inch Map 1889 Caernarfon Series sheets II, IIII, V and XIII

Second edition 25 inch Map 1900 Caernarfon Series sheets I, II, XIII and XIIII

Third edition 25 inch Map 1915 Caernarfon Series sheets I, IIII, V, XIII

Aerial Photographs

Welsh Assembly Government RAF 106 G UK 1469 Frame 4268 Enlarged 4th May 1946

Welsh Assembly Government Ordnance Survey 73/020 Frame 207 Enlarged 21st March 1973

Appendix I

Section descriptions: lengths, depths and soil description.

Section	Length (approx.)	Width	Depth (max.)	Depth below surface	Description
A1	15m	0.50m	0.50m	0	Topsoil-Mid red brown clay silt topsoil
				0.25m	Ploughsoil-Mid orange brown silt clay.
				0.50m	No natural seen.
A	70m	0.45m	1.10m	0	Topsoil-Friable mid brown sand silt with frequent medium to large sub-rounded cobbles (likely from the field boundary running parallel with the trench) and occasional sub-rounded pebbles.
				0.20m	Ploughsoil-Very deep and possibly built up material for the road and path. Mid grey brown with some orange flecks and small patches of silt clay with occasional sub-rounded small cobble and pebbles. Shallower at N end 0.20m-0.40m
				0.90m	Natural-Only visible at the n end of this section. Firm mid grey yellow silt clay with some small and medium stones.
B	25m	0.45m	1.30m	0	Topsoil-Friable mid grey brown sand silt with frequent small and medium sub-rounded boulders and frequent roots.
				0.40m	Ploughsoil-Mid orange brown silt clay with very occasional small sub-angular and sub-rounded pebbles.
				0.60m	Interface-Diffuse with the ploughsoil. Mid-light grey clay silt with rare small and medium stones. Interface between ploughsoil and the natural.
				0.90m	Natural-Firm yellow grey silt clay with frequent sub-angular pebbles.
C	55m	0.70m	1.20m	0	Topsoil-Friable mid-grey brown sand silt A collection of sub-angular and sub-rounded boulders within the ploughsoil. Possible truncated field boundary or part of mixed material to build up the ground surface for the existing road.
				0.40m	Ploughsoil-Mid grey brown silt clay with occasional medium sub-rounded stones. Mixed and disturbed with redeposited mottled yellow clay natural
				0.80m	Natural-Light blue grey silt clay.
				1.00m	Tarmacadam-Layer below the ploughsoil at the N end of the trench.
D	50m	0.60m	1.10m	0	Topsoil-Friable loose dark grey brown sand silt with frequent sub-rounded and sub-angular cobbles.
				0.30m	Ploughsoil-Mixed deposit of yellow brown mottled orange brown clay silt and clay with occasional sub-rounded and sub-angular small cobbles and pebbles.
				0.80m	Natural-Light yellow grey clay silt merged with brown orange hillwash at the n end of this section.
E	30m		1.10m	0	Topsoil-Fairly loose sand silt with frequent mixed sub-rounded and sub-angular local stones.

				0.50m	Tarmacadam-0.10m thick layer in the S half of the section. Former road surface with some crushed slate sub-base immediately below.
				0.60m	Ploughsoil-Mid brown orange clay silt with some sand.
				0.80m	Natural-Light yellow grey silt sand. Fairly stony with hillwash to the S.
F	20m	0.80m	1.00m	0	Topsoil-Mid to dark orange brown clay silt with occasional small angular stones.
				0.30m	Ploughsoil-Mid orange brown clay silt with occasional and fairly frequent medium angular stones.
				0.55m	Natural-Mid to light brown orange slightly clay silt. Stone encountered at the N end of this section of trench appeared to be bedrock.
G	10m	0.80m	1.00m	0	Topsoil-Mid to dark orange brown clay silt with occasional small angular stones.
				0.30m	Ploughsoil-Mid orange brown clay silt with occasional and fairly frequent medium angular stones.
				0.55m	Natural-Bedrock outcrop of compact light beige grey coloured sedimentary rock.
H	20m	0.75m-1.30m	0.90m-1.05m	0	Topsoil-Fairly loose friable sand silt grey brown with frequent small sub-rounded cobbles
				0.15m	Ploughsoil-Friable to firm mid orange brown clay silt with frequent sub-rounded and sub-angular medium stones
				0.35m	Natural-Firm grey brown yellow silt clay with gravel infrequent large boulders.
I	50m	0.60m	0.80-1.00m	0	Topsoil-Friable dark orange brown clay silt with frequent small sub-angular cobbles, very rooty.
				0.20m	Hillwash- Deep in places. Grey yellow clay sand and some gravel with some large boulders.
				0.20m and up to 0.75m	Natural-Friable grey yellow silt clay with some gravel, frequent angular and sub-angular small stones.
J	50m	0.60m	1.00m		Topsoil-Loose sand silt with frequent small-medium sub-angular and sub-rounded stones. Ploughsoil-Very gravelly with some medium-large sub-rounded stones and frequent sub-angular stones and gravel. Natural-No obvious natural was seen within this trench. Large boulders occurred occasionally within the trench.
K	35m	1.15m	1.10m	0	Topsoil-Friable dark orange brown loam clay silt with frequent angular and sub-angular medium and small cobbles.
				0.15m	Ploughsoil-Loose friable mid orange grey brown clay silt with some medium and small stones. Loose due to roots.
				0.40m	Natural-Friable brown yellow clay sand with frequent sub-angular cobbles and pebbles. Large boulder at the S end of this section of the trench within the natural.
L	20m	0.60m	1.05m	0	Topsoil- Firm to friable mid orange clay silt with occasional medium sub-angular stones.
				0.20m	Ploughsoil-Friable mid brown orange clay silt with occasional medium sub-angular stones.
				0.38m	Natural-Compact to loose grey yellow clay silt to clay in places with frequent sub-angular pebbles and

occasional sub-angular cobbles.

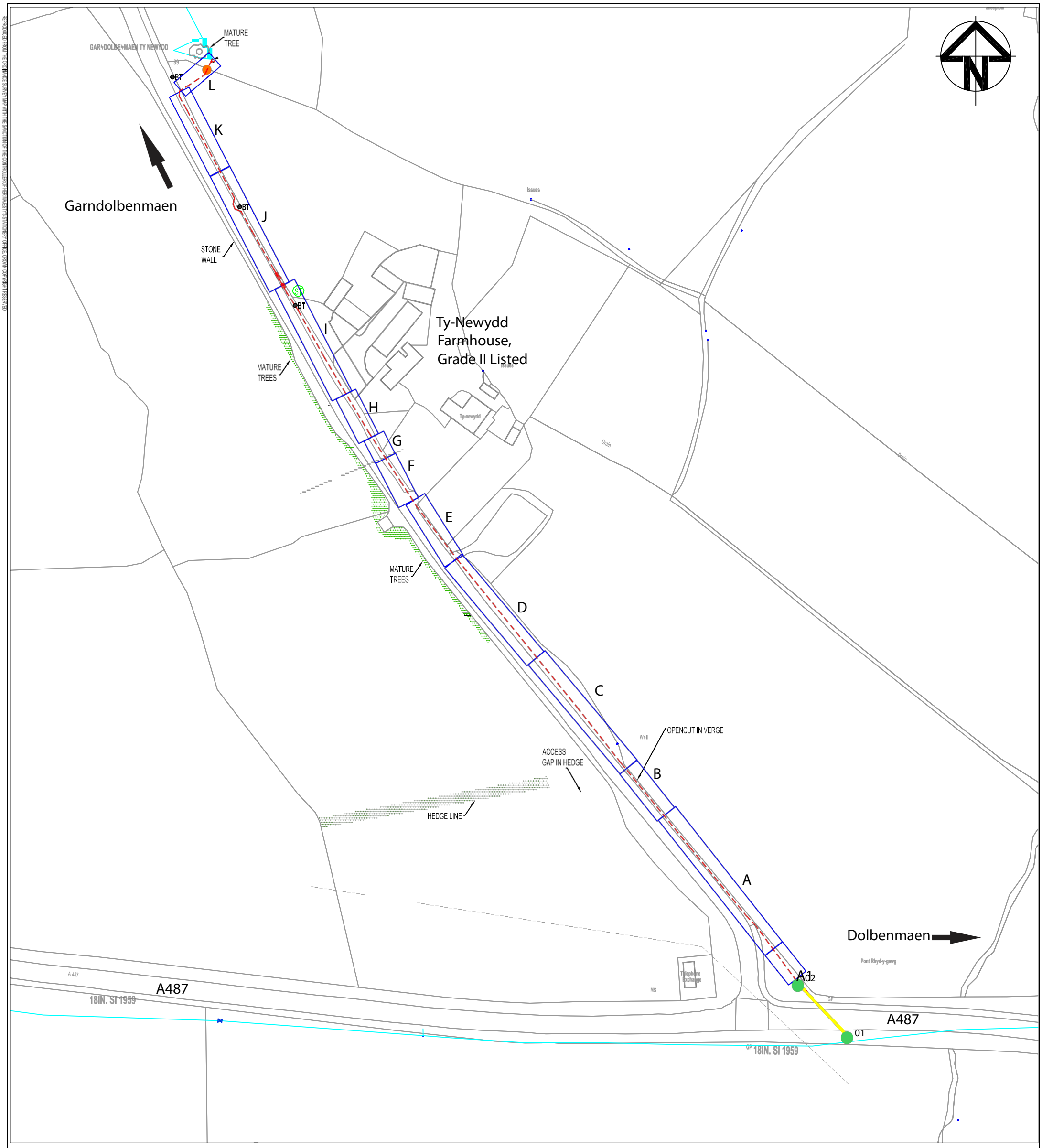


Figure 01: Route of open cut pipe trench showing sections, trial holes and breached boundary recorded.

Scale 1:1000 Grid Ref 250130, 343262

Scheme. AMP 5 YEAR 3, MIPC
NORTH WEST AREA 3
GARNDOLBENMAEN
WATER MAIN RENEWAL

Original drawing by:

Drawing Title. PROPOSED SCHEME LAYOUT

Scale. AS SHOWN | Designer. J HOUSTON
Checked. M KENNEDY | Approved. H LEWIS | Date. JAN 12
Drawing Number. 109 | Rev. C

Edited by Gwynedd Archaeological Trust with permission from Dŵr Cymru.

Drawing Status. CONSTRUCTION

Rev.	Date.	Drawn.	Description.	Checked.	Approved.	Date.
A	NOV 11	JDH	PRELIMINARY ISSUE	MFR	GHL	NOV 11
B	NOV 11	JDH	TENDER ISSUE	MFR	GHL	JAN 12
C	NOV 11	JDH	CONSTRUCTION ISSUE	GHL	MAR 12	

CAPITAL DELIVERY TEAM
ONE TALBOT GATEWAY
BAGLAN ENERGY PARK
SEAWAY PARADE
BAGLAN
PORT TALBOT
SA12 7BR
TEL +44 (0) 1639 816800
FAX +44 (0) 1639 816944

Dŵr Cymru
Welsh Water

LOCATION PLAN POST CODE- LL51 9RD

Key:
- Existing water main
- Abandoned water main
- Water main to be abandoned
- Proposed water main - Opencut
- Proposed water main - Directional Drill
- Proposed water main - Slipline
- Existing Communication Pipe
- Proposed Communication Pipe
- Contractors Access
- Trial Hole Position
- SSSI, Scheduled Ancient Monument
- Conservation Land
- Great Orme Mines Restriction
- Archaeological Restrictions
- Badger Sets
- Mine Shafts

DRAWING TO BE READ IN CONJUNCTION WITH:

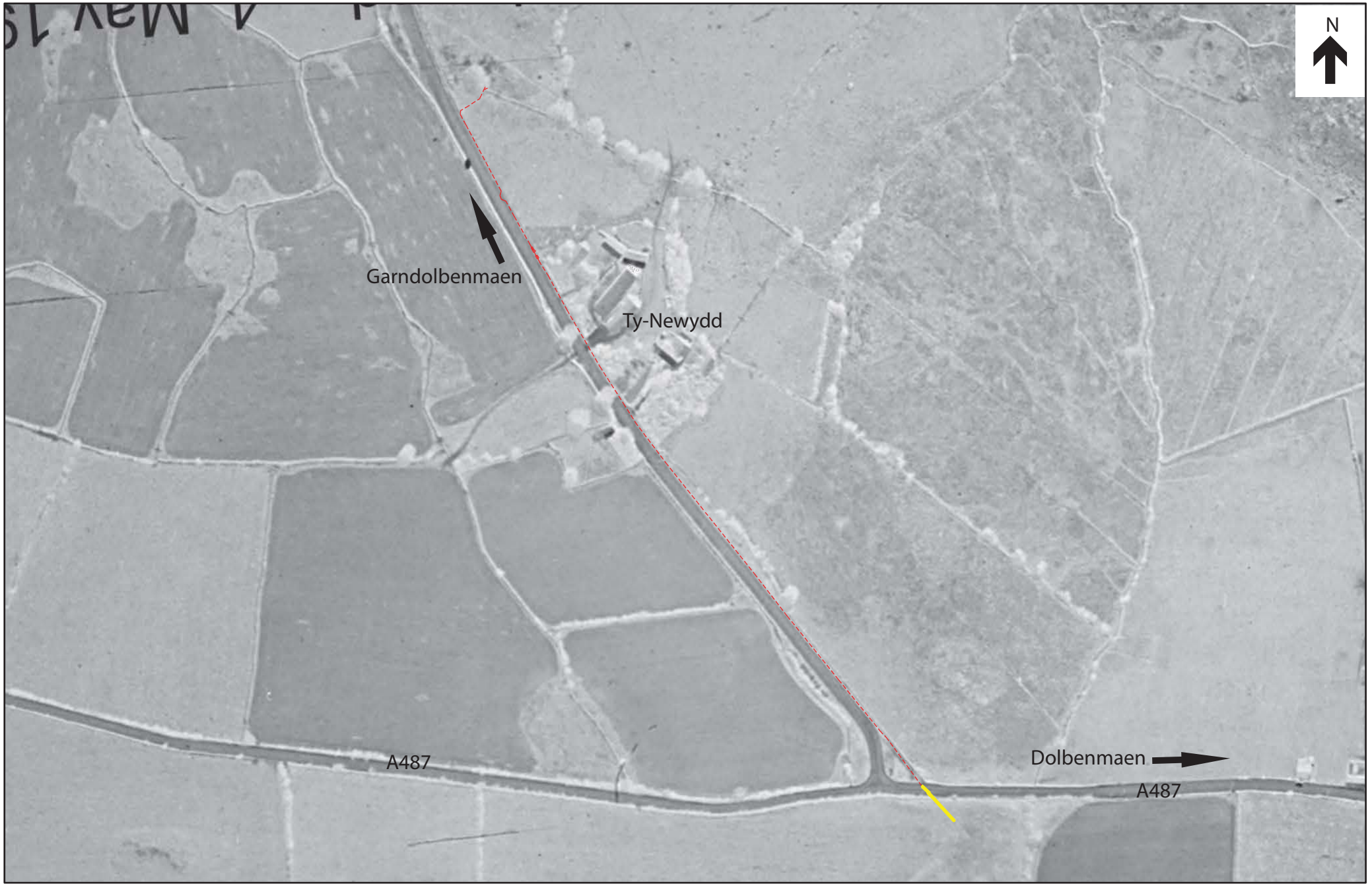
A1

ALL MEASUREMENTS ARE APPROXIMATE.

NOTES:
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DCWW SPECIFICATIONS:
   a. THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY REVISION 6 (CESW 6)
2. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. REPRODUCED FROM THE ORDNANCE SURVEY'S MAPS WITH THE PERMISSION OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE. CROWN COPYRIGHT.
5. THE EXACT LOCATION OF ALL EXISTING APPARATUS IS TO BE DETERMINED ON SITE.
6. LOCATION OF CONNECTIONS TO BE DETERMINED ON SITE.
7. THE POSITIONING OF MAINS TO BE IN ACCORDANCE WITH THE NATIONAL JOINT UTILITIES GROUP GUIDELINES (NJUG 67)
8. A POST PROVE IS TO BE AT THE LOWEST POINT
9. ALL WORK PROPOSED IS TO BE CARRIED OUT IN ACCORDANCE WITH DCWW'S CODE OF PRACTICE FOR PIPELAYING.
10. THIS DRAWING NEEDS TO BE READ IN CONJUNCTION WITH THE UTILITY INFORMATION PROVIDED SEPARATELY BY THE INDIVIDUAL UNDERTAKERS

Pipe trench, open cut.
Works through road A487, no watching brief.
Trial Holes.
Breached boundary.
Located and recorded sections of trench.

VER 1.1, Oct 2011



Welsh Assembly Government RAF 106 G UK 1469 Frame 4268 Enlarged 4th May 1946

Scale 1:2500

Figure 02: Aerial photograph taken in 1946 showing improvement to the road where road has been straightened with bends removed.

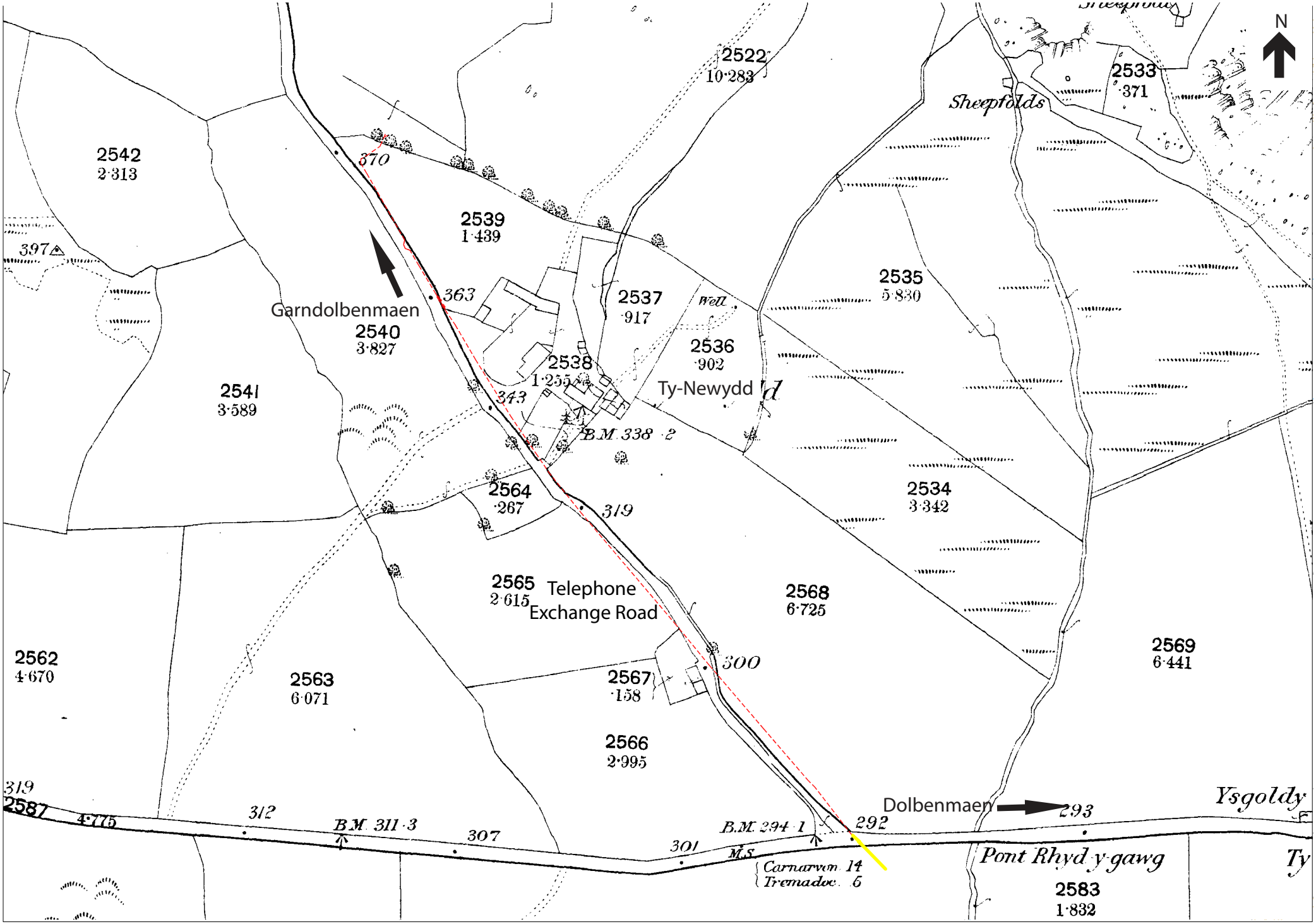


Figure 03: 1st edition Ordnance Survey Map dated 1889, showing the pipe route, Ty -Newydd and the original route for Telephone Exchange Road.

Scale 1:2500

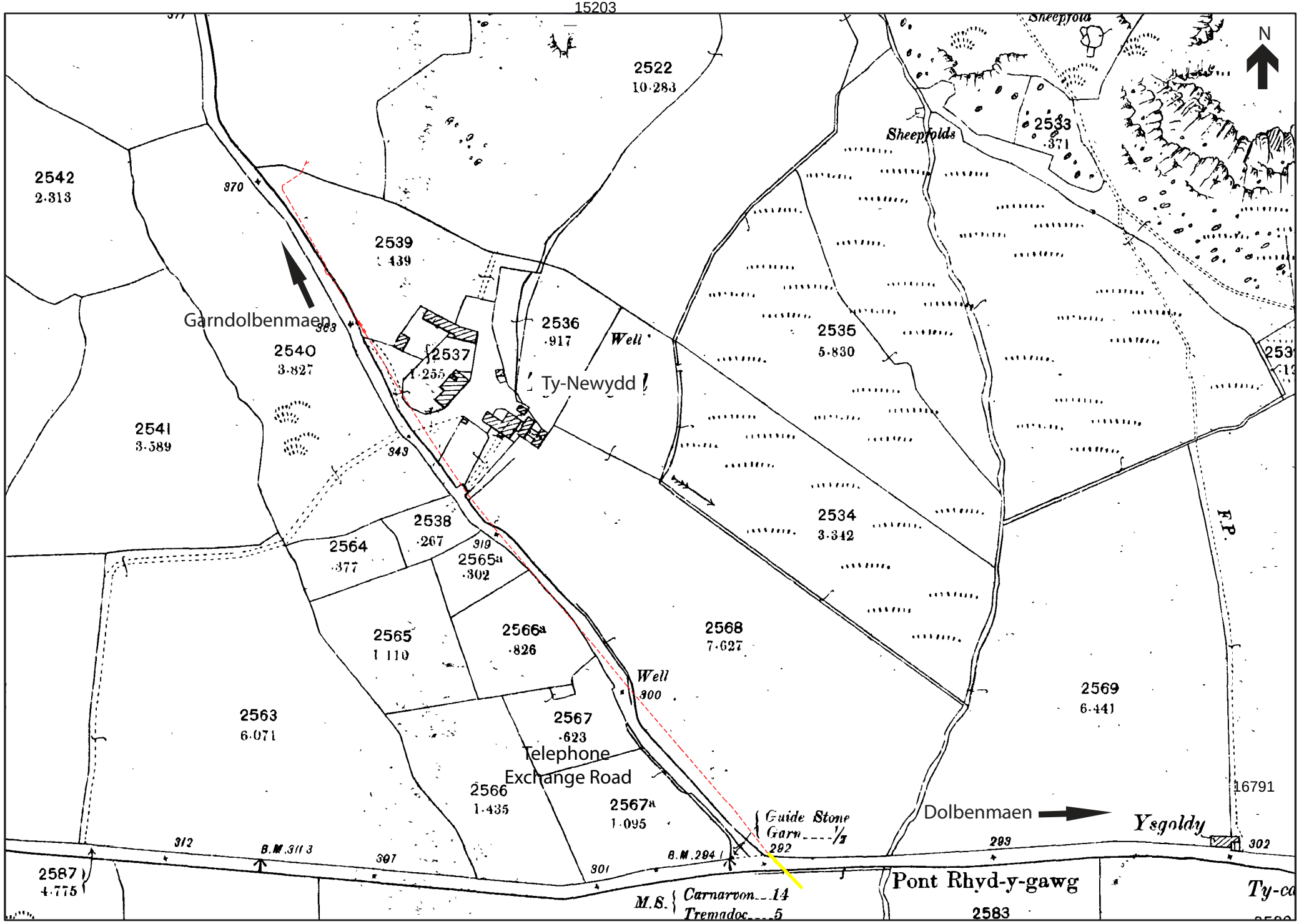


Figure 04: 2nd edition Ordnance Survey Map dated 1915, note no change to the road from the1989 and 1915 maps.

Scale 1:2500

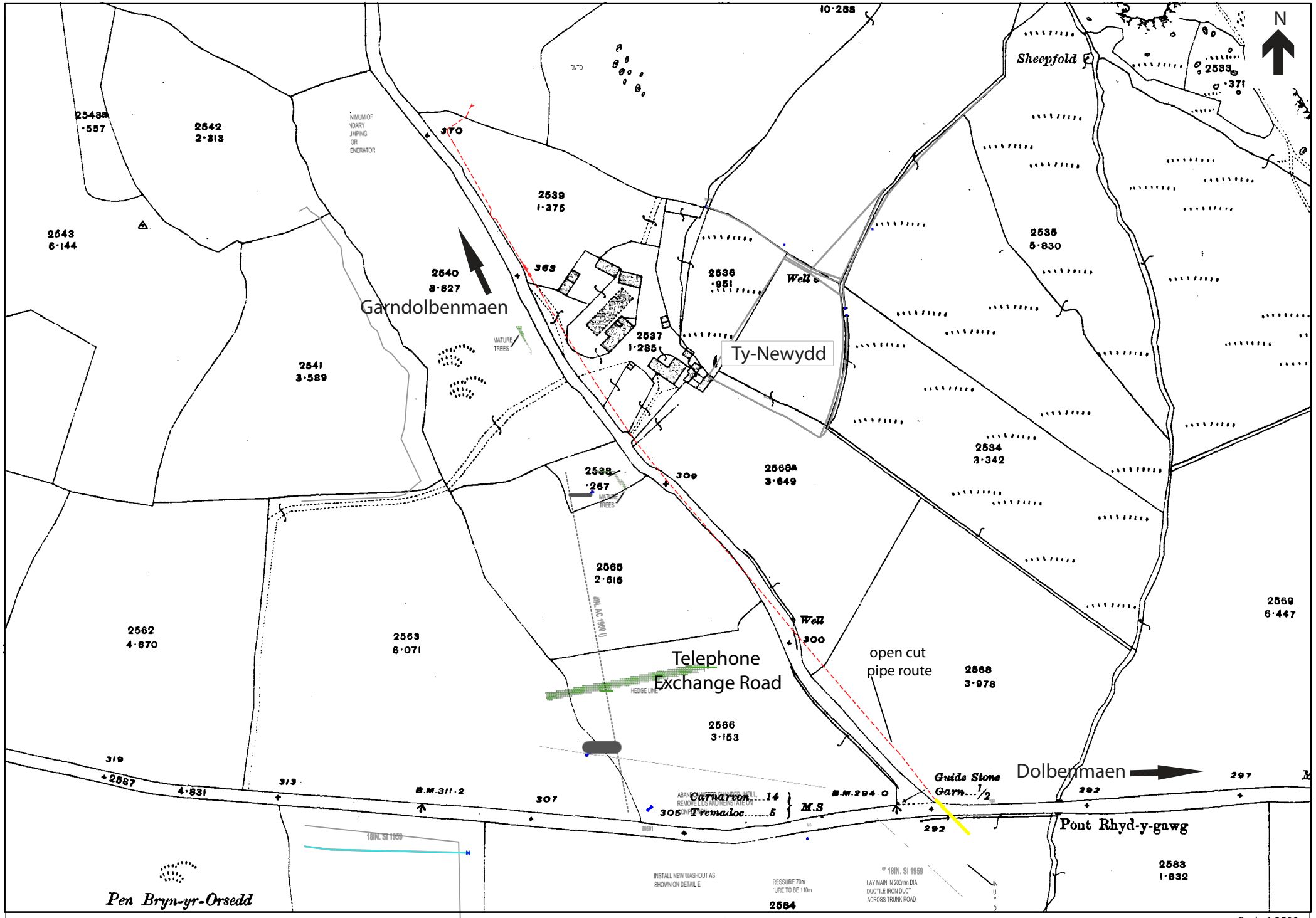


Figure 05: 3rd edition Ordnance Survey Map dated 1915, note no change to the road from the1989 and 1900 maps.

Scale 1:2500

Plate 01: Excavation of pipe trench, section C. View from the SSE.

Plate 02: Trial hole 01 on the verge of the A487, shows material for the built up ground for the exisiting A487 road. The ground drops dramatically to the S. View from the N.

Plate 03: Trial hole 02. Shows purple slate capped culvert and band of Tarnacadam with a sub-base of crushed slate above it, in section, part of the old road.. View from the SW.

Plate 04: Section C, showing disturbed, mixed and built up material. View from the W.

Plate 05: Section I. Showing grey yellow silty and stony hillwash. View from the NW

Plate 06: Section G. showing bedrock at the base of the trench. View from the SW.

Plate 07: Stones in section C, possible part of an old boundary which followed the route of the original road. The pre-existing Tarmacadam road can be seen starting tho the N of the stones. View from the W.

Plate 08: Northen end of section C, showing the pre-existing road indicated by a Tarmacadam layer with crushed slate sub-base layer. View from the W.

Plate 09: Section E with the old road surface of Tarmacadam and crushed slate sub-base layer running along section at a depth of 0.50m. View from the SW.

Plate 10: Earth and stone boundary breached, with mature trees growing within it, at the northen end of the scheme, section L. View from the SE.

Plate 11: Earth and stone boundary truncated by pipe trench, no features , buried soil or cut below the surface boundary. Section L. View from the ESE.

Plate 12: Section K, road side section showing disturbance and built up material below the existing road. View from the NE.

Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd. LL57 2RT Ffon:
01248 352535. Ffacs: 01248 370925. email:gat@heneb.co.uk