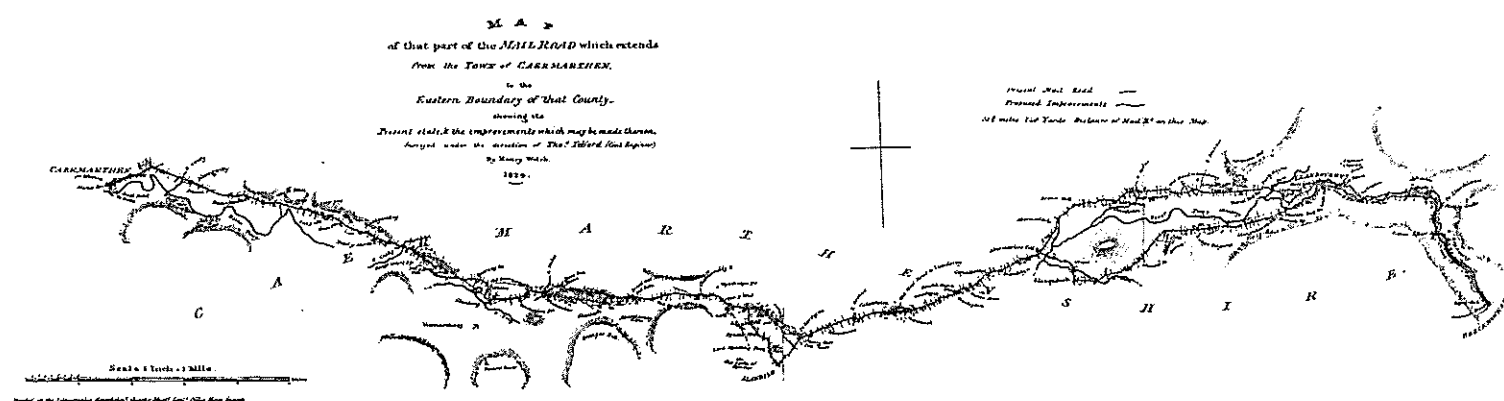


ARCHAEOLEG CAMBRIA ARCHAEOLOGY

CWM-IFOR - MAENORDEILO

AN ARCHAEOLOGICAL ASSESSMENT, JULY 1999



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CWM-IFOR - MAENORDEILO PIPELINE

AN ARCHAEOLOGICAL ASSESSMENT, JULY 1999

Project Record No. 38344

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Copy of 'The continuation of ye Road from London to St Davids by John Ogilby, Esq., his Majesty's Cosmographer', n.d., late 17th century (held with Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire).

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Copy of National Library of Wales, Parish of Llandilo-Fawr, Tithe Map and Apportionment, 1838.

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APPENDIX 3

Copy of project specification

1.0 INTRODUCTION

1.1 Development proposals and brief

Archaeoleg CAMBRIA Archaeology were invited, by RSK Environment Limited, on behalf of Transco, to tender for an archaeological assessment of a proposed gas pipeline route between Cwm-Ifor and Maenordeilo, Carmarthenshire, on 5 July 1999. *Archaeoleg CAMBRIA Archaeology* accordingly submitted a specification and quotation on 12 July 1999. The tender was successful tender and *Archaeoleg CAMBRIA Archaeology* were awarded the contract on 14 July 1999.

1.2 Project objectives

- 1.2.1 to assess the character, extent, significance and vulnerability of the archaeological resource within the project area, namely a 100m wide corridor along the midline of the proposed pipeline route
- 1.2.2 to identify new archaeological sites, features and deposits within the project area, and to assess their character, significance and vulnerability
- 1.2.3 to identify sites, features and deposits that require further archaeological investigation to fully assess their character, extent, significance and vulnerability
- 1.2.4 the preparation of a report fully representative of the information recovered during 1.2.1 - 1.2.3, which places the archaeological resource of the project area within its local, regional and national contexts.
- 1.2.5 The preparation of a project archive

1.3 Project methodology

- 1.3.1 a search of the County Sites and Monuments Record and the National Monuments Record for information of known sites within and around the project area
- 1.3.2 a search of cartographic sources held in national and county records offices and other repositories for archaeological information
- 1.3.3 a search of primary historic documents held in national and county records offices and other repositories
- 1.3.4 a search of secondary, published sources
- 1.3.5 the examination of relevant aerial photographic coverage
- 1.3.6 a field visit to review the current state of archaeological sites, features and deposits identified during the searches, to identify archaeological new sites, features and deposits or areas that may contain them, to undertake rapid recording of archaeological sites, features and deposits by photography, site notes and sketch plans, and to assess their vulnerability.

1.4 Categorisation of archaeological sites and features

All sites and features identified within this report have been allocated a category. The allocation of a site to a category defines the archaeological importance of that site. The categories are listed below.

Category A - Sites of national importance

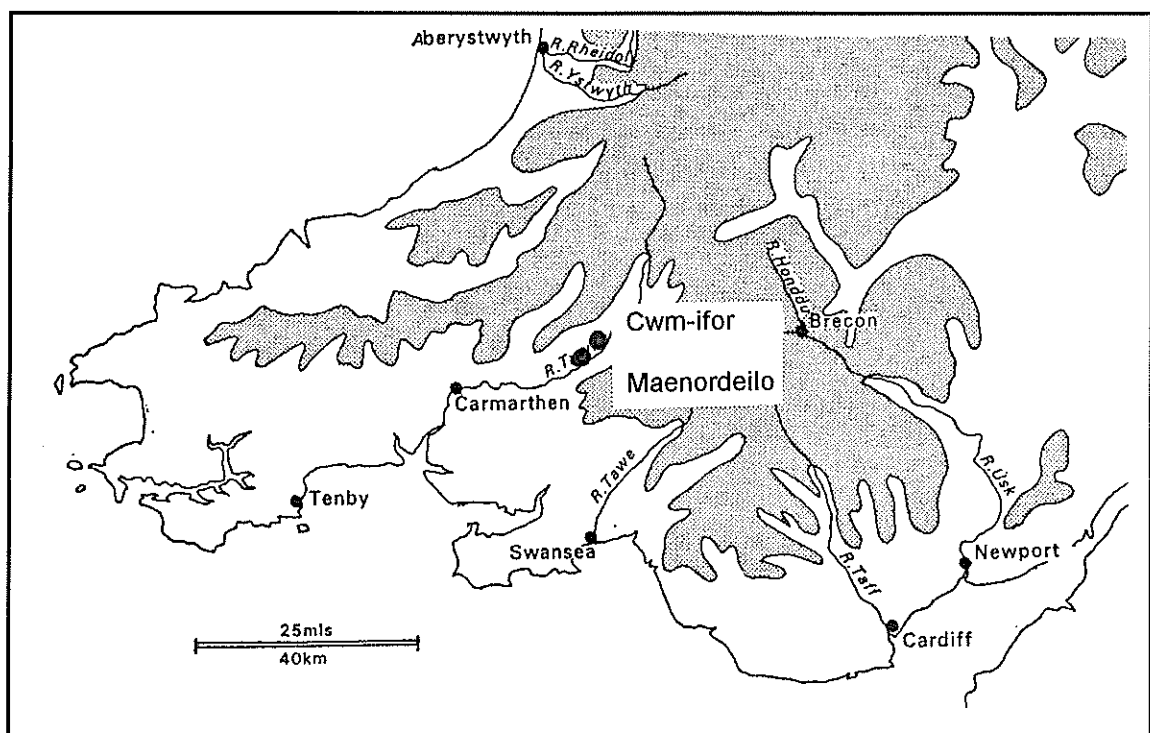
Category B - Sites of regional or county importance

Category C - Sites of district or local importance

Category D - Minor or damaged sites

Category E - Sites needing further investigation

Fig. 1: The project area - location map



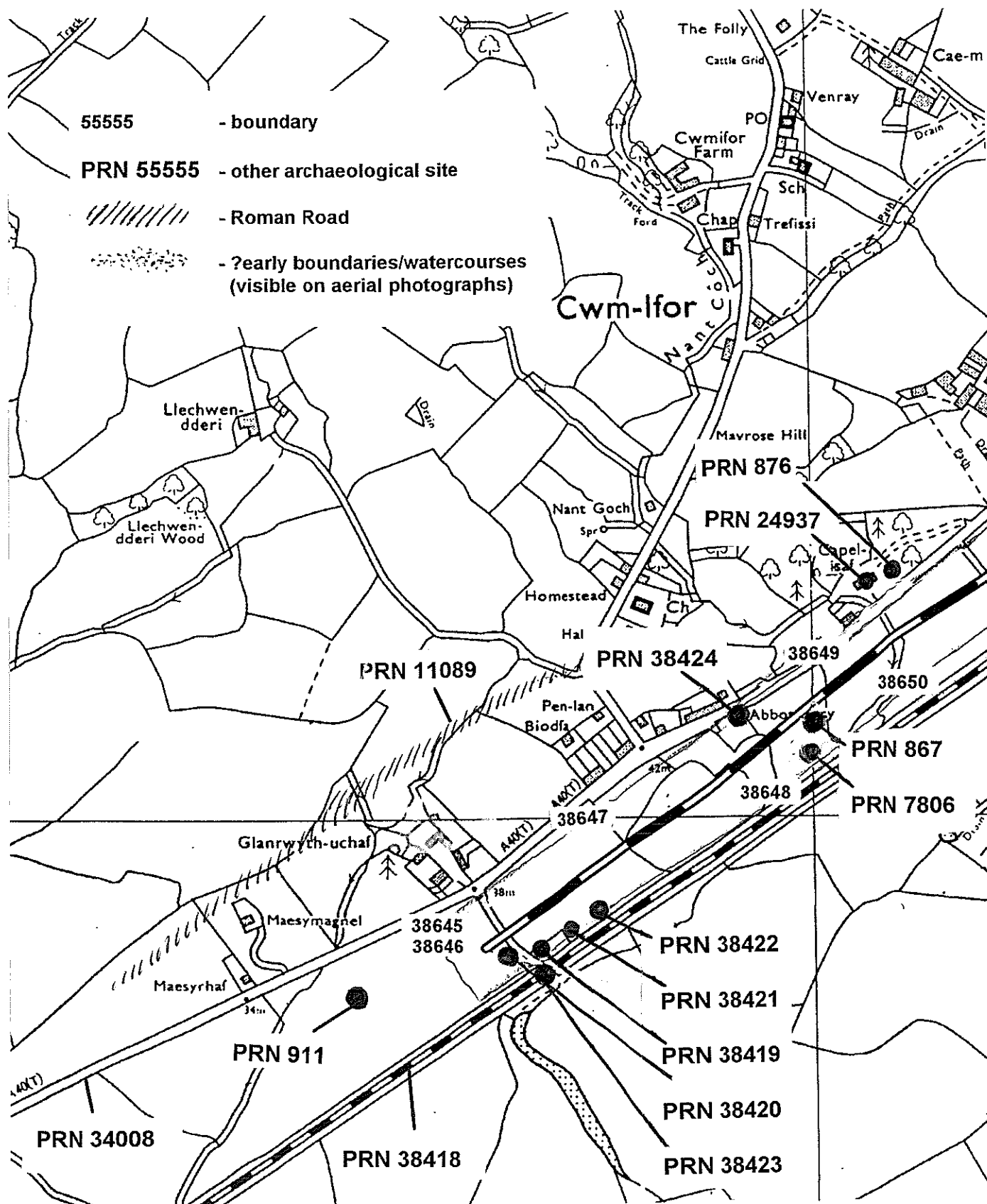


Fig. 2a: The project area - the archaeological resource

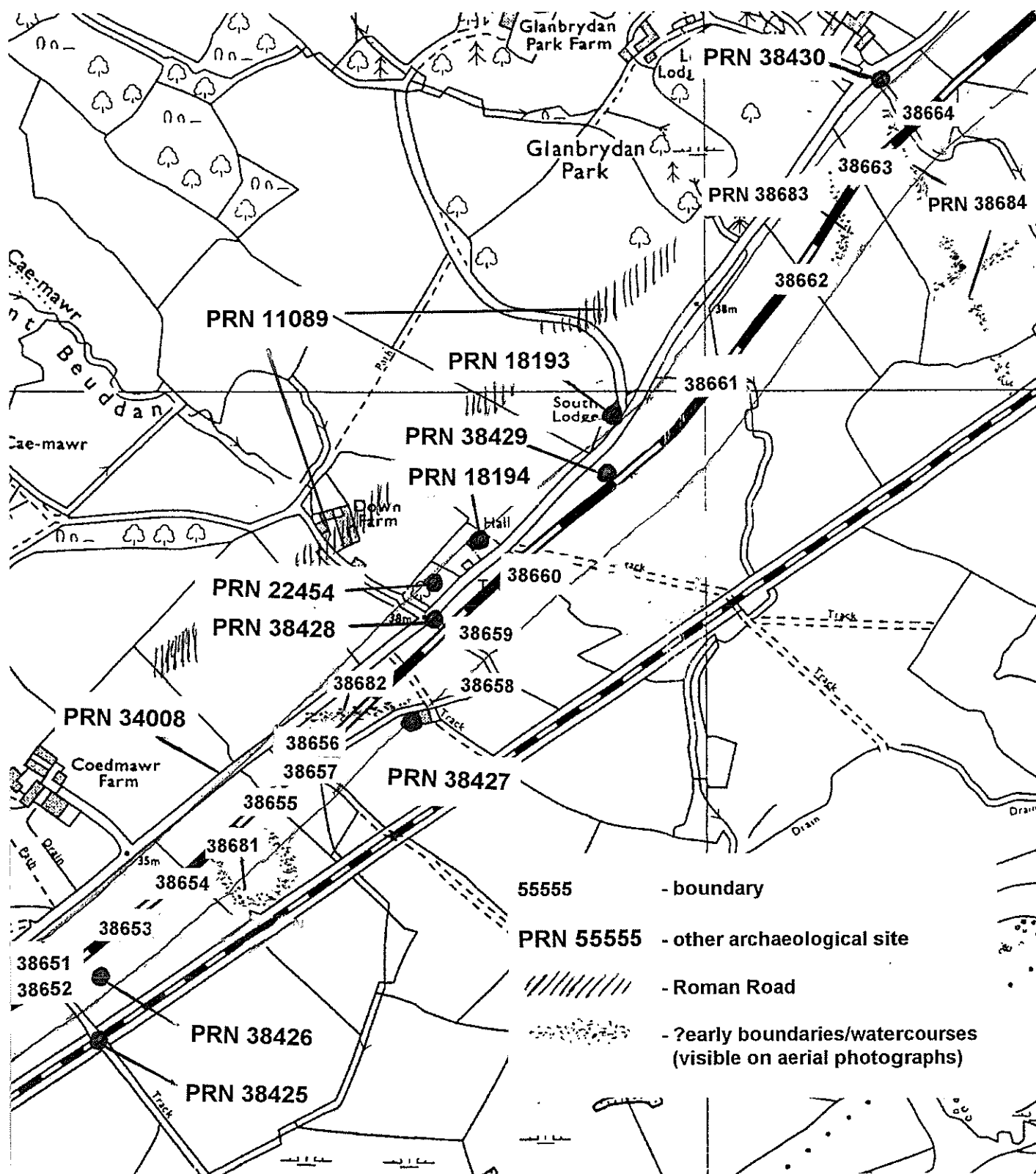


Fig. 2b: The project area - the archaeological resource

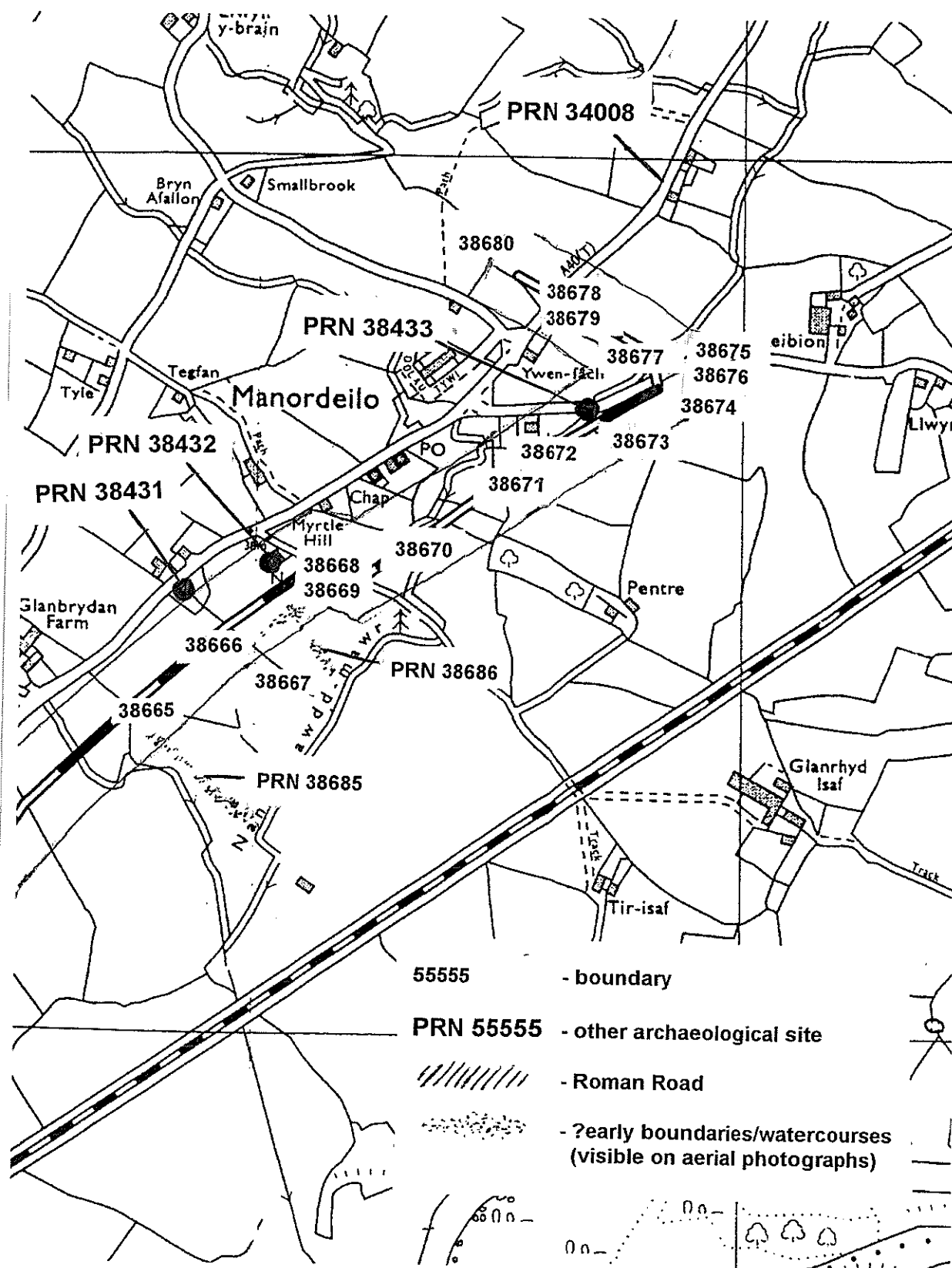


Fig. 2c: The project area - the archaeological resource

2.0 RESULTS OF ASSESSMENT

2.1 Summary of the archaeological resource

This section contains brief descriptions of archaeological/historic sites, features, buildings and deposits within the project area, namely a 100m wide corridor along the midline of the proposed pipeline route, and relevant sites and features immediately beyond. They are listed by their type and individual Primary Record Number (or PRN) as allocated in the Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire.

Refer to Fig. 2 for PRNs and field numbers given for the purpose of this project. Categories are as defined in Section 1.4.

See Section 3.3 for a gazetteer and detailed descriptions of sites.

2.1.1 Sites within the proposed route corridor

PRN 867 - NGR SN 6598 2509 - CAE GWILYM FINDSPOT
findspot; Bronze Age; Category B

PRN 876 - NGR SN 6608 2527 - CAPEL ISAF CHAPEL
documented chapel; medieval; gone; Category E

PRN 7806 - NGR SN 660 251 - CAE GWILYM
unknown; Category E

PRN 18193 - NGR SN 6689 2590 - GLANBRYDAN SOUTH LODGE
dwelling; post-medieval; condition good; Category B

PRN 18194 - NGR SN 6671 2581 - ST PAULS SUNDAY SCHOOL
dwelling; post-medieval; condition good; Category D

PRN 22454 - NGR SN 6667 2575 - LAMB INN
documented building; post-medieval; gone; Category E

PRN 34008 - NGR SN 62 NE - TURNPIKE ROAD
earthwork; post-medieval; good condition; Category C

PRN 38418 - NGR SN 62 NE - RAILWAY
earthwork/structure; post-medieval; good condition; Category C

PRN 38419 - NGR SN 6570 2480 - STATION HOUSE
dwelling; post-medieval; condition good; Category D

PRN 38420 - NGR SN 6563 2480 - BUILDING
structure; post-medieval; condition fair-good; Category D

PRN 38421 - NGR SN 6570 2483 - SITE OF RAILWAY STATION I
documented structure; post-medieval; gone; Category E

PRN 38422 - NGR SN 6575 2486 - RAILWAY STATION II
structure; post-medieval; condition fair-good; Category C

PRN 38423 - NGR SN 6570 2475 - LEVEL CROSSING
structure; post-medieval; condition good; Category D

PRN 38424 - NGR SN 6590 2513 - ABBOTSBURY
dwelling; post-medieval; condition good; Category D

PRN 38425 - NGR SN 6630 2522 - LEVEL CROSSING AND BRIDGE
structure; post-medieval; condition good; Category D

PRN 38426 - NGR SN 6630 2530 - WELL
structure; post-medieval; condition poor; Category D

PRN 38427 - NGR SN 6670 2565 - BARNS
structures; post-medieval; condition good; Category D

PRN 38428 - NGR SN 6675 2578 - NANT BEUDDAN CULVERT
structure; post-medieval; condition good; Category D

PRN 38429 - NGR SN 6690 2590 - HENDY LLWYD
documented farmstead; post-medieval; gone; Category E

PRN 38430 - NGR SN 6675 2578 - NANT BRYDAN CULVERT
structure; post-medieval; condition good; Category D

PRN 38431 - NGR SN 6532 2650 - LLANNON VILLAS
dwellings; post-medieval; condition good; Category D

PRN 38432 - NGR SN 6545 2655 - NODDFA
dwelling; post-medieval; condition good; Category D

PRN 38433 - NGR SN 6682 2673 - NANT CLAWDD-MAWR CULVERT
structure; post-medieval; condition good; Category D

2.1.2 Relevant sites immediately beyond the proposed route corridor

PRN 01 - NGR SN 6595 2524 - CAPEL ISAF FINDSPOT
findspot; Bronze Age; Category A

PRN 911 - NGR SN 6546 2480 - BANC-Y-WAUN MOUND
earthwork; natural? Bronze Age?; good condition; Category A/E

PRN 11089 - NGR SN 62 NE - ROMAN ROAD
cropmark; Roman; fair condition; Category A

PRN 24937 - NGR SN 6603 2526 - CAPEL ISA(F) HOUSE
dwelling; post-medieval; condition good; Category B, Grade II listed

2.1.3 Field boundaries

The proposed route pipeline crosses a total of 35 field boundaries, PRNs 38645 - 38680, of a variety of different forms. Many are accompanied by drainage ditches, and five natural (but modified) streams cross the project area.

It is apparent that most of the field boundaries within the project area and its environs had been established by the early 19th century. Their nature - mainly straight, low hedgebanks, probably without rubble cores - suggests that they are, in the main, post-medieval creations or

modifications. This, may not be the case, however, and both further research, and physical analysis, need to be undertaken.

In addition, aerial photography shows some positive, linear features (PRNs 38681-38686) which may represent former boundaries/watercourses but are at present impossible to date.

See Section 3.3.2 for descriptions of field boundaries/watercourses past and present.

2.2 Conclusions and recommendations

2.2.1 Conclusions

The route corridor contains a small number of archaeological sites, features and structures. The route crosses, from east to west, the general area of a possible enclosure associated with the supposed chapel site at Capel Isaf (PRN 876), with the slight possibility that burials may be present. The midline crosses the site of a post-medieval farmstead marked on 19th century maps, 'Hendy Llwyd' (PRN 38429). Stray find-spots of bronze age artefacts lie close to the route (PRNs 01 and 867) but these are not necessarily evidence of sustained occupation.

The corridor contains a number of historic buildings, some of them Grade II listed, which are still inhabited and will naturally be avoided, and several bridges which are still in use carrying the A40 (eg. PRN 38428 and 38430) and an unclassified road (PRN 38433); the A40 was itself a turnpike road (PRN 34008) and an earlier route. The corridor also contains an operational railway line (PRN 38418) with associated features and structures (PRNs 38419 - 38423, PRN 38325).

Of more importance are the potential deposits contained within the project area, which occupies the interface between the alluvial floodplain of the River Tywi and the higher ground to the north-west. The route crosses five streams - the Nant Coch, the Nant Beuddan, the unnamed stream to the north-east, the Nant Brydan and the Nant Clawdd Mawr - which appear to be largely natural and it may be that their courses feature undisturbed silt deposits where they enter the floodplain. It is of course possible that undisturbed, waterlogged deposits may survive anywhere along the route through the floodplain, which may furnish surviving palaeoenvironmental evidence for early occupation and flora. The route cuts through a total of 35 field boundaries of differing nature (PRNs 38645 - 38680), many of which are accompanied by watercourses, and six possible former (early?) boundaries or watercourses (PRNs 38681 - 38686) have been identified from aerial photographs.

The midline is also occupied by, or lies close to 6 mature standard trees, mainly oak (and 2 telegraph poles), but further information regarding Tree Preservation Orders, etc., lies beyond the scope of this study. See Section 3.3.3 for the location of these trees.

The area is included within the Cadw/ICOMOS register of Landscapes of Outstanding Historic Interest in Wales, Area 7 'Dyffryn Tywi', Ref. no. HLW (D) 5.

2.2.2 Recommendations

It is recommended that the east end of the route line is altered to run south of the present midline to fully avoid crossing any possible enclosure associated with Capel Isaf (PRN 876). It is similarly suggested that the route should avoid the centre of the former farmstead 'Hendy Llwyd' (PRN 38429), while mature standard trees (and telegraph poles) should also be avoided.

The importance of the potential palaeoenvironmental deposits must be stressed. A research design needs to be formulated for their treatment, but strategic core sampling during or after the initial topsoil strip may be the best option. It is also suggested that funding for palaeoenvironmental sample analysis is set aside.

Field boundaries are an integral part of the total historic landscape and have, in the present study, been subject only to superficial investigation. It is therefore recommended that the sections of all boundaries cut by the pipeline route are recorded; this can, for the sake of convenience, also undertaken during the initial turf-strip. It is also suggested that the turf-strip in the area of 'Hendy Llwyd' (PRN 38429) is accompanied by a watching brief.

The degree to which the five streams that cross the area - the Nant Coch, the Nant Beuddan, the unnamed stream to the north-east, the Nant Brydan and the Nant Clawdd Mawr - have been modified, is unknown. It is suggested that a watching brief be undertaken on the excavation of the trench through all five, and also through the six possible former (early?) boundaries or watercourses (PRNs 38681 - 38686). Palaeoenvironmental sampling at this stage, and analysis, is also recommended.

It is not known what effect the pipeline will have on drainage across the valley.

Table 1: The archaeological resource: recommended response

site	nature of threat	archaeological response
potential palaeoenvironmental deposits	selective removal	core sample strategy and analysis
Hendy Llwyd farmstead site (PRN 38429; NGR SN 6690 2590)	on route midline	divert route c.20 metres to south
Capel Isaf chapel site (PRN 38687; NGR SN 660 252)	associated enclosure possibly on route line	divert route c.30 metres to south
9 mature standard trees	on route midline	divert route c.10 metres to one side
field boundaries	cut by route midline	watching brief during turf-strip to record all cut sections of field boundaries
five streams and six former streams/watercourses	cut by route midline	watching brief during trench excavation; sample strategy and analysis

2.3 Acknowledgements

This report was researched and written by Neil Ludlow of *Archaeoleg CAMBRIA Archaeology*. Acknowledgements to: colleagues at *Archaeoleg CAMBRIA Archaeology*, staff of Carmarthen Museum, Carmarthenshire Record Office, the National Library of Wales and the National Monuments Record for their assistance.

2.4 Archive deposition

The archive, indexed according to the National Monuments Record (NMR) material categories, will be deposited with the Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire, curated by *Archaeoleg Cambria Archaeology*, Shire Hall, 8 Carmarthen Street, Llandeilo, Carmarthenshire. It contains the following:-

A.1. Copy of the final report

A.4. Disk copy of report

B.4. Field notebooks

D.1. Catalogue of site photographs

D.2. Colour slides

D.3. Mono prints and negs

G.1. Source documentation

I.4. Final report - manuscript

I.4. Final report - typescript

I.4. Final report - disk

I.4. Proofs

I.4. Paste-ups

L.1. Project research design/specification

L.4. General admin.

M.1. Non-archaeological correspondence

There is no material for classes C, E, F, H, J, K and N.

2.5 List of sources consulted

Databases

Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire, curated by *Archaeoleg Cambria Archaeology*, Shire Hall, 8 Carmarthen Street, Llandeilo, Carmarthenshire.

Manuscript maps

Carmarthenshire Record Office, Cawdor Maps 67, *Sketch of proposed diversion of road from Llangadock to Carmarthen*, n.d. (early 19th century).

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3.0 THE ARCHAEOLOGICAL RESOURCE

3.1 Site location and topography

The project area lies on the northern side of the Tywi Valley between Llandeilo and Llandovery between, and parallel to, the A40 and the Heart of Wales railway line, within NGR SN 62. It occupies the interface between the northern Carmarthenshire plateau, here comprising Ordovician shales of the Ashgill Series (British Geological Survey, 1994), and the alluvial floodplain of the River Tywi. The alluvium overlies Ordovician shales of the Llandeilo Series (*ibid.*). Most of the pipeline route crosses the alluvium but at the south-west and north-east ends, and in the centre, the route crosses higher ground (see Fig. 3).

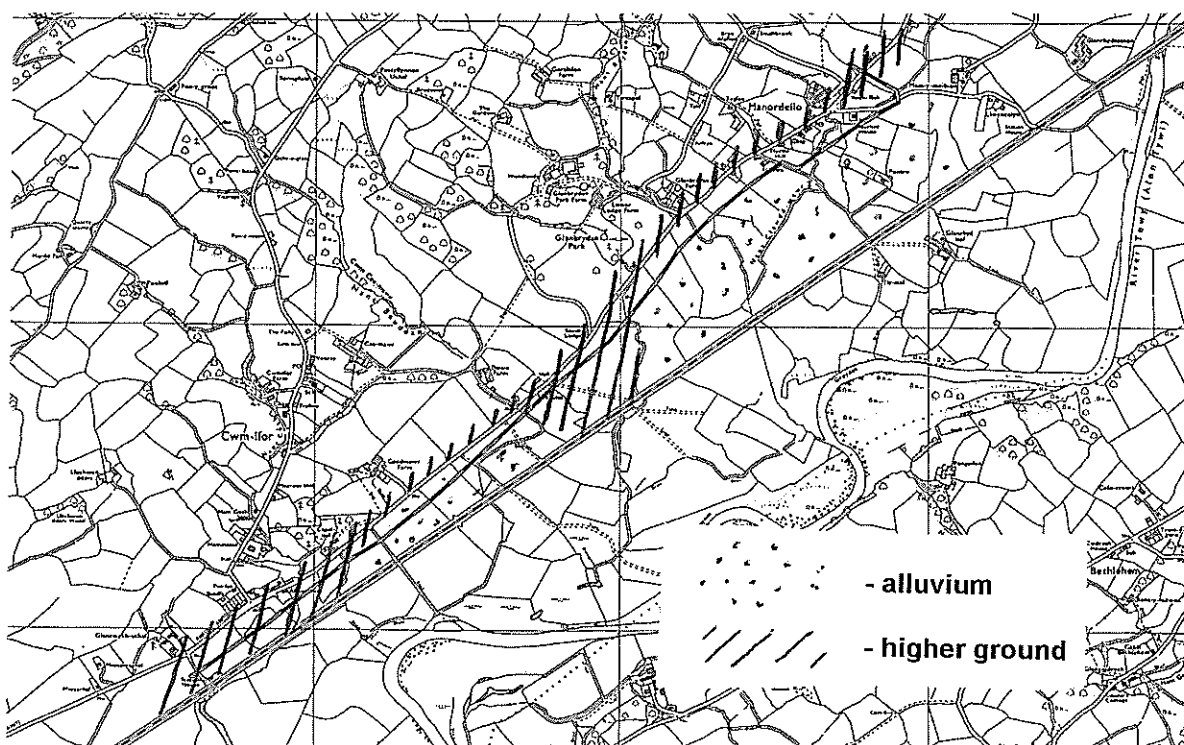
The area lies at an average altitude of 35 metres OD. It is crossed by five natural streams - from south-west to north-east the Nant Coch, the Nant Beuddan, an unnamed stream, the Nant Brydan and the Nant Clawdd Mawr - which all flow south-east into the Tywi. Soils are typical brown earths (541j Denbigh) on the higher ground, the floodplain comprising alluvium being typical brown (561b Teme) alluvial soil (Soil Survey of England and Wales, 1980),

The alluvium is extremely fertile and the Tywi floodplain was described in the Land Utilisation Survey of Britain, of 1946, as 'the best quality dairying land in the county' (Cadw/ICOMOS, 1998, 27). It is Grade 3 land throughout (Ministry of Agriculture, Fisheries and Food, 1990). The area is still subject to a low-intensity pastoral regime, although intermittently ploughed, and all fields are at present under pasture; in the past it was also subject to arable regimes.

The project area lies entirely within the parish of Llandeilo Fawr Rural, the boundary of which had been fixed by the late medieval period at least.

The area is included within the Cadw/ICOMOS register of Landscapes of Outstanding Historic Interest in Wales, Area 7 'Dyffryn Tywi', Ref. no. HLW (D) 5.

Fig. 3: The pipeline route showing alluvium and higher ground



3.2 Landscape history and development

The environs of the project area and the surrounding region have been subject to human settlement from prehistory onwards. Much of the potential archaeology of the Tywi Valley as a whole is dictated by the human desire to both establish, and exploit, lines of communication (Cadw/ICOMOS, 1998, 27). The Tywi Valley has, from the Roman period onwards, formed part of the one of the two great thoroughfares through South Wales - the Gloucester-Haverfordwest route, known as 'The High Road' in the early 19th century and now represented by the A40.

The River Tywi is particularly active and subject to constant and radical course change across its valley floor, cutting and re-cutting its way through the alluvium and leaving behind a complex of meanders and ox-bow lakes. Evidence from maps, documents and aerial photography suggests that the course has changed greatly even since the post-medieval period. There is a negative side to this complexity, namely the erosional effect of the river's course changes. Even though the route corridor occupies the very edge of the floodplain itself, with areas of higher ground, we cannot be certain that much of the archaeology within the bulk of the project area itself has not been lost. Therefore, the recorded archaeology may not represent an accurate indication of the level of past occupation and the present study has been able to add few new sites; in addition, the agricultural landscape of the project area itself - the pattern of its fields, hedges, boundaries and drainage - may be a relatively recent creation.

The ever-changing course of the Tywi has also always presented problems to permanent settlement and in particular to communications. The valley was the natural choice for an east-west routeway through South-west Wales and the various means by which the problems of fording, bridging and inundation were overcome is a key area for future study. It has been noted that the river's high activity 'has affected both linear and cross-valley roads, fords and bridges, and gives depth and complexity to the surviving pattern of Roman and medieval routes, and to early modern tumpike, road and rail lines' (*ibid.*). In fact, during the medieval and early post-medieval periods, a route away from the valley floor was chosen for the main arterial roadway. The main present routes are the A40, which largely follows the higher ground, and a functioning railway line on the floodplain.

The post-medieval period is important within the Tywi Valley in other respects. Its significance as an overall historic landscape is greatly enhanced by its being a setting for a unique group of planned parks and gardens (Cadw/ICOMOS, 1998, 26), two of which (albeit on a small scale) lie alongside the project area.

For detailed descriptions of sites and field boundaries see Section 3.3 below.

3.2.1 The prehistoric period (8500 BC - c.50 AD)

The prehistoric environment and settlement patterns of the Tywi Valley are among 'the least known' (Cadw/ICOMOS, 1998, 28). However, the route corridor occupies the interface between the Tywi floodplain and the higher ground to the north-west, which would have been an important area of activity for early human communities in the region. It would have provided easy access to the resources of the river and its associated wetlands, whilst providing a dry occupation site. *Ad hoc* archaeological work has suggested that there are glacially deposited raised areas of ground on the valley floor, with potential prehistoric settlement and land-use information (*ibid.*). Peat deposits have been noted between the alluvium and the underlying geology elsewhere within the Tywi Valley, for example at Abergwili and Pensarn, near Carmarthen (Page, 1994, 4,9), where they were thought either to perhaps represent 'islands' in the floodplain, or a drying of the floodplain. Either way, such deposits, as well as representing an important source of palaeoenvironmental data, may also feature physical archaeological information for the earlier prehistoric period, in particular evidence for trackways etc. across the floodplain.

Whilst it appears that most of the watercourses, channels, field ditches and drains within the project area are of relatively recent creation, the courses of the five streams that cross the area - the Nant Coch, the Nant Beuddan, the unnamed stream to the north-east, the Nant Brydan and the Nant Clawdd Mawr - appear to be largely natural and it may be that their courses feature undisturbed silt deposits where they enter the floodplain. It is of course possible that undisturbed, waterlogged deposits may survive anywhere along the route through the floodplain, which may furnish surviving palaeoenvironmental evidence for more diversified, earlier agricultural regimes (Cadw/ICOMOS, 1998, 28).

The Roman Road runs along the edge of the interface between the floodplain and the rising ground just north of both the A40 and the route corridor (PRN 11809; see below). It is probable that it perpetuates a much earlier route, ie. representing the natural path for human traffic; it is also probable that pre-Roman land surfaces are sealed, and therefore survive, beneath the road, possibly including physical evidence for an earlier trackway.

Stray finds of bronze age artefacts have been made both north (PRN 01) and south (PRN 867) of the A40. The former was an important gold hoard, now in the National Museum and Gallery of Wales, including three bracelets, while the latter was a stone axe found in a field, Cae Gwilym, which is crossed by the proposed route. It must be stressed that these were stray finds and that no accompanying site of human activity has yet been recognised; however, their occurrence alone demonstrates a bronze age presence, even if transient, in the immediate vicinity of the route, and the land is certain to have been farmed, with early attempts at drainage.

A prominent mound, lying just beyond the south-eastern end of the proposed route (PRN 911) has been interpreted as a bronze age round barrow or burial mound (RCAHM, 1917, 84 *et al.*). It has recently been suggested that it may be a natural feature (Sites and Monuments Record for Carmarthenshire, Cardiganshire and Pembrokeshire).

Field monuments from the Iron Age (700 BC - 40 AD) are chiefly associated with higher altitudes and are typified by the hillforts and smaller defended enclosures that are such a feature of Wales, and occasionally by surviving field systems. Evidence for activity from this period within the project area is lacking, and within the Tywi Valley as a whole there is no evidence for occupation, or utilisation, of the lower valley sides and floor to complement the pattern of hillforts that line it either side (Cadw/ICOMOS, 1998, 28).

3.2.2 The Roman period (c.50 AD - c.400 AD)

The Roman period offers early physical evidence for the incorporation of the Tywi Valley within the Gloucester-West Wales arterial routeway later known as 'The High Road' and now the A40.

It has been argued that the Roman conquest of South-west Wales was a relatively low-key affair and that the indigenous iron age tribe, the *Demetae*, were peaceful, since there is little evidence of early military action against them. However, the fort at Llandovery (*Alabum*) had possibly been established by the AD 50s (James, 1991, 54) and there is good evidence that a relatively aggressive campaign was waged in the AD 70s, possibly accompanied by an advance down the Tywi Valley to Carmarthen (*Moridunum*). At any rate, a road between the two was established, like most other Roman roads, for military purposes, and includes a section running just beyond the western half of the project area north of the A40 (PRN 11089), in particular through Glanbrydan Park, Down Farm and Coed-mawr Farm.

There is no field evidence for other Roman land-use or occupation within the project area.

3.2.3 The medieval period (c.400 - 1500 AD)

It has been noted that 'he who would study the course of affairs in the valley of the Tywi during the three or four centuries which followed the end of Roman rule will get but scant assistance from either history or archaeology' (Lloyd, 1939, 113). The early medieval period is truly a Dark Age within the project area and its environs. In contrast, the post (Anglo-Norman) Conquest period is well represented by both history and archaeology. However, it is clear that the main themes of the post-medieval development of the project area are communications and drainage

Communications and drainage

The medieval traveller may have chosen not to follow the Roman Road through the valley. Until the 18th century, the course chosen for the main Llandeilo to Llandovery section of the 'High Road' (PRN 34007) followed the line of what is now an unclassified road along the ridge between the Tywi and the Afon Dulais, c.1.5 kilometres to the north east of the present A40 and the Roman Road line (PRN 11089), passing through Hermon and Cefn-glasfryn. The route is shown in John Ogilby's map book of the late 17th century, and William Rees, 1932, assumed the medieval route to have followed the same line (see Section 3.2.3 above).

It may be assumed that, with the breakdown of an organised system of maintenance, the Roman Road was in poor condition, prone to flooding and minus many of its crossing points. Indeed, in 1535 John Leland noted 'the River of Towy... which... oftentimes drownith in winter divers men for lack of a bridge' (James, 1991, 64) and communications within the valley itself were neglected in favour of a drier route. However, a route roughly following the present line did exist, in addition to the main road, and both are shown on Emanuel Bowen's map of 1729.

Administration and settlement

Pre-Norman administration of West Wales was based on small kingdoms or *gwledydd*, which had been established before the 8th century AD. One such *gwlad* was Ystrad Tywi (literally 'Tywi Valley'). Ystrad Tywi later became part of the kingdom of Deheubarth which occupied most of South-west Wales (Rees, n.d., 19). Within each *gwlad* were smaller units of administration or estates known as *maenora*, attested to have existed by the 9th century and which were composed of a number of 'townships' or *trefi* (Sambrook and Page, 1995a, 3). The name 'Maenordeilo' has its origins in the medieval period (Sambrook and Page, 1995b, 32) and is probably derived from the name of such an estate (although the present settlement is much later - see below, 3.2.4).

The name 'Maenordeilo' persisted as that of the 'cwmwd' - the later medieval administrative unit within which the project area lay. Cwmwdau were grouped together into 'cantrefi', literally groupings of a hundred *trefi*. Cwmwd Maenordeilo lay within *Cantref Mawr* (Richards, 1969, 149), which occupied most of what is now northern Carmarthenshire and retained native, Welsh customs and systems of tenure until the late 13th century when the area was reorganised within the new County of Carmarthen.

The 'deilo' element is a reflection of the predominant religious cult in the region, that of St Teilo, to whom the parish church of Llandeilo-fawr, within which the entire project area lies, is dedicated. A religious foundation, probably monastic, had been established before the Norman conquest and is mentioned in the pre-conquest Lichfield Gospels (Ludlow, 1998). Two chapels-of-ease are known to have been established within the environs of the project area by the post-conquest period at least but their exact locations are unknown. Capel Isaf, or Capel Bach (PRN 876), is thought to have occupied the site of the present Capel Isa house (PRN 24937) which lies immediately north of the A40, but lay south of both the Roman Road (PRN 11089) and the original course of the turnpike road (PRN 34008). This means that any associated enclosure may

have extended south into the project area. The other chapel-of-ease, Capel yr Ywen (PRN 4016), appears to have lain north of the later Glanbrydan Park (see Section 3.2.4 below).

Little physical evidence survives, within the project area itself, from either the early or later medieval periods, and it is suggested in Section 3.2.4 that the present pattern of drainage and boundaries was at least modified, if not created, during the post-medieval period. However, medieval landowners certainly knew about drainage and an anonymous biographer of King Edward II (1307-27) wrote in condemnation of the king, in c.1325, that '*he had no taste for traditional kingly pursuits... but was addicted to eccentric activities such as hedging and ditching*'.

However, some evidence that the secular settlement of the Tywi Valley may have been relatively non-intensive may lie in contemporary references to the valley sides as being wooded (Cadw/ICOMOS, 1998, 28); such references are made by both Giraldus Cambrensis, in the late 12th century, and in 13th century descriptions in the *Brut y Twysogion* ('Chronicle of the princes'). Nevertheless, the farm-name 'Pentre' immediately south of the east end of the project area, which translates as 'village' (Pentrebach in 1812), suggests some nucleation in the late-medieval or early post-medieval period. It may also tell us something about the nature of the surrounding land and drainage at this time, for the farm lies upon the alluvium in an area prone to flooding; contemporary attempts at drainage will necessarily have been successfully made.

In addition, aerial photography (mainly RAF 106/UK/1034/3166, 1945; Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire) does show some positive, linear features (PRNs 38681-38686) which may represent former boundaries and/or watercourses, underlying the present landscape and subsequently modified. These features, however are at present impossible to date.

3.2.4 The post-medieval period (1500 - 2000 AD)

The main themes of the post-medieval development of the project area are similarly communications and drainage, but for the first time we have, in addition, clear evidence for the extent of settlement.

Communications

An increasing volume of road traffic, and increasing demands for convenience, necessitated radical changes to the 'High Road' during this period.

The route shown by Ogilby in the 17th century (PRN 34007 - see Section 3.2.3 above) was adhered to as a main road and mail route until the earlier 18th century, and, as has been noted, Emanuel Bowen's 1729 map shows both Ogilby's route and a route roughly following the present line. Around the middle of the century a section of this latter route, from Llandeilo to Caledfwlch, appears to have been chosen for enhancement and is depicted on Cawdor Map 67 of the early 19th century, and Cawdor Map 106 from 1824 (Carmarthenshire Record Office). From Caledfwlch the mail road then followed the unclassified road through Cwm-Ifor to join the medieval road just west of Hermon. These routes are depicted on the two Cawdor Maps which label the Cwm Ifor turning as 'Old Mail Road'.

In January 1763 'several gentlemen... of the County... of Carmarthen' presented a petition to the House of Commons that 'the High Road... is in a ruinous Condition, narrow in some places, and incommodious to Passengers...'; the result was the establishment of the 'Main Trust', the first turnpike authority in South Wales (Lewis, 1967, 41). By 1771 the High Road had been enacted as a turnpike along its entire route (Lewis, 1971, 43). The Llandeilo-Llandovery section, with some minor differences, generally continued the line of the present A40 east of Caledfwlch (PRN 34008); it was labelled 'present mail road' on Cawdor Map 67 of the early 19th century (Carmarthenshire Record Office) and is shown in detail on the Ordnance Survey Original

Surveyors' Drawings, Sheet 189, of 1812. Richard Colt Hoare, in 1803, described the road between Llandovery and Llandeilo as 'hilly but good' (Thompson, 1983, 236).

The advantages of rail over road were recognised within the Tywi Valley at an early date; moreover, the nature of rail transport and the advanced engineering of the 19th century made it possible to break free of the higher ground and exploit the valley floor. The line from Llandeilo to Llandovery (PRN 38418), which forms the southern boundary of the project area for most of its length, was opened, as the 'Vale of Towy Line', by the Llanelli Railway and Dock Company in 1858 (Gabb, 1977, 76). In 1871 it was acquired by the London and North Western Railway (LNWR) to form part of its Central Wales and Carmarthen Junction Line running to Carmarthen (ibid.). It is still operational as the 'Heart of Wales' line.

Drainage and boundaries

It is apparent from consultation of the Ordnance Survey Original Surveyors' Drawings, Sheet 189, from 1812 and tithe map of Llandeilo Fawr parish, from 1838, that most of the field boundaries within the project area and its environs had been established by the early 19th century. Their nature - mainly straight, low hedgebanks, probably without rubble cores - suggests that they are, in the main, post-medieval creations. Furthermore, there have been only four major landscape changes since the early 19th century (see below).

Unfortunately, earlier estate maps only show sections of farms and field systems, and few show the presence of watercourses with any detail. Emanuel Bowen's map of 1729 depicts none of the streams within the project area and, like Cawdor Map 67 (Carmarthenshire Record Office) for example, from the early 19th century, only shows the Afon Dulas to the west of the area. Moreover, the name of one of the main streams, the Nant Clawdd-mawr, means 'large (or deep) ditch', suggesting post-medieval modification.

None of this, however, is known for certain at present and both further research, and physical analysis of the boundaries and streams, needs to be undertaken. And while the present bridges and culverts beneath the A40 (PRNs 38428, 38430 and 38433) all appear to be 19th-20th constructions, such structures are very difficult to date accurately.

Settlement

By the earlier 19th century settlement of the valley had reached its present level and may even have exceeded it. It was accelerated by three factors. There were the improved communications and drainage noted above, but in addition, the 18th century saw the rise of the Tywi Valley as a favoured location for gentry houses due to an increased perception of the landscape in aesthetic, picturesque terms, celebrated in contemporary art and literature. As a result, there is a widespread popular sense of the valley as a 'cherished' landscape (Cadw/ICOMOS, 1998, 26). The gentry families were in many cases descended from the Welsh *uchelwyr* (noblemen) of the 15th-17th century.

Three estates of varying status have impacted upon the project area. All now lie north of the A40 but Capel Isa (PRN 24937), which possibly represents the site (or area) of a medieval chapel (see Section 3.2.3 above), lay on the south side of the turnpike road until a kink was taken out in 1831-38; this represents one of only four major landscape changes since 1812. In general terms, however, the most important of the three has been Glanbrydan (PRN 18193), established during the later 18th century but extended, and laid out as a parkland landscape, between 1838 and 1887 when a lodge within the project area was erected (see Section 3.3 below). The third, Down Farm is really little more than a large farm.

The pattern of small farms within and around the project area had also been established by the early 19th century but there have been four major landscape changes. The first of these was the diversion of the turnpike road around Capel Isa, noted above. Secondly, a substantial farmstead, 'Hendy Llwyd' (PRN 38429), occupied the centre of the route corridor until the later 19th century

and was surrounded by a pattern of small fields which have since coalesced. A second area towards the east end of the route has also seen the amalgamation of smaller fields, while the present nucleations of Cwm-Ifor (PRN 29421) and Maenordeilo (PRN 29523) were creations of the 19th century and the latter is not even named on the Ordnance Survey Original Surveyors' Drawings, Sheet 189, of 1812. The greatest expansion of Maenordeilo has occurred, in fact, since 1964 (Ordnance Survey, 1:10000) and is still going on with new dwellings under construction near the north-east end of the pipeline route.

3.3 Gazetteer of sites

This section contains detailed descriptions of archaeological sites and features within the proposed route corridor, namely a 100 metre wide corridor about the proposed route midline, and descriptions of sites and features immediately beyond the corridor that may be relevant to the study.

Refer to Fig. 2 for PRNs (Primary Record Numbers) and field numbers allocated for the purpose of the project (see Section 3.3.3 below).

Refer to Appendix 2 for copies of selected map sources.

3.3.1 Sites within the proposed route corridor

PRN 867 - NGR SN 6598 2509 - CAE GWILYM FINDSPOT
findspot; Bronze Age; Category B

A bronze age, stone axe hammer, made from albitised dolerite, well-finished with a splayed cutting edge but damaged. It was found in 1922 'whilst trenching a field known as Cae Gwilym' (Evans, 1924, 45), immediately south of the A40, and taken to Carmarthen Museum where it is curated under accession No. 1976.2076 (Gavin Evans, Carmarthen Museum, *pers. comm.*).

PRN 876 - NGR SN 6608 2527 - CAPEL ISAF CHAPEL
documented chapel; medieval; gone; Category E

Possible site of medieval chapel immediately north of the A40. It is now represented by a house, Capel-Isa(f) - see PRN 24937 for discussion and queries. The chapel will have occupied an enclosure but its location, size, extent and boundaries are unknown; nor is it known whether it would have been used for burial. However, the chapel site is south of Roman Road PRN 11089, and also lay south of the original turnpike road (PRN 34007), a northwards kink at the Caledfwlch junction with the Cwm-ifer road having been straightened out between 1831 (Ordnance Survey 1", Old Series, of 1831) and 1838 (Llandeilo-fawr tithe map). This raises the possibility that such an enclosure, with or without inhumations, may have extended south into the project area.

PRN 7806 - NGR SN 660 251 - CAE GWILYM
unknown; Category E

Noted by the Ordnance Survey in 1968 (OS Record Card, F1, MHB, 1968), as Antiquity No. SN 62 NE (M) but with no further information beyond the name of the landowner and that the antiquity 'centred on SN 660 251'. No further information is available and the nature of the OS observation remains unknown.

PRN 18193 - NGR SN 6689 2590 - GLANBRYDAN SOUTH LODGE
dwelling; post-medieval; condition good; Category B

Building, currently a dwelling, on the north-west side of A40 but within the route corridor. The south lodge of the Glanbrydan Estate and park, which was marked on Kitchen's Map of 1754 as Llanbrydan (Jones, 187, 74). However, the park was not developed into its present form, with the present drives etc., until between 1838 (Llandeilo-fawr tithe map) and 1887 (Ordnance Survey 1:2500 First Edition) when the lodge was constructed.

Neo-Classical in form, the lodge is in snecked limestone rubble with ashlar quoins and surrounds. It is single-storeyed, and a semi-octagonal bay projects from the south wall. All openings are semicircular-headed and the pedimented over the door, set at an angle between the south wall and projecting bay, carries a device in relief. The ridge of the hipped slate roof features a pair of octagonal chimneys. Associated with the lodge are a pair of fine, original iron gates and posts leading to the drive.

The lodge is still inhabited. Surprisingly, neither it nor the gates are listed.

PRN 18194 - NGR SN 6671 2581 - ST PAULS SUNDAY SCHOOL
dwelling; post-medieval; condition good; Category D

House on the north-west side of A40, to the south-east of Down Farm but within the route corridor, marked on the Llandeilo Fawr tithe map of 1838. Marked, with its present plan, on the Ordnance Survey 1:2500 First Edition and Second Editions (1887 and 1906) where it is labelled 'Manordeilo Post Office'. On the Ordnance Survey 1:10000 of 1964 it is labelled St Pauls Sunday School, but is now called 'Hall'.

The present building is an unremarkable, late 19th century structure of two storeys, which appears not to retain any earlier fabric. Still inhabited.

PRN 22454 - NGR SN 6667 2575 - LAMB INN

documented building; post-medieval; gone; Category E

Former building on the north-west side of A40, to the south-east of Down Farm but within the route corridor. Marked on the Ordnance Survey 1:2500 First Edition and Second Editions (1887 and 1906) where it is labelled 'Lamb Inn'. Gone by 1964.

PRN 34008 - NGR SN 62 NE - TURNPIKE ROAD

earthwork; post-medieval; good condition; Category C

The line of the present A40 where it runs through the project area follows the line of the Llandeilo-Llandovery section of a turnpike road enacted by 1771 (Lewis, 1971, 43) but which itself followed the line of an existing route depicted by Emanuel Bowen on his map of 1729. This section was labelled 'present mail road' on Cawdor Map 67 of the early 19th century (Carmarthenshire Record Office) and is shown in detail on the Ordnance Survey Original Surveyors' Drawings, Sheet 189, of 1812.

Where it passed through the village of Caledfwlch the turnpike, in its original form, followed a line running 0.5 kilometres north of the present A40 (crossing the present Cwm-Ifor road where it turns east just south of Maenordeilo church). This 'kink' was straightened out to the plans of the celebrated civil engineer Thomas Telford (Carmarthenshire Record Office, Cawdor Maps 106), between 1831 (Ordnance Survey 1", Old Series, Sheet 41) and 1838 (Llandeilo-fawr tithe map); thereafter the route has followed its present line.

PRN 38418 - NGR SN 62 NE - RAILWAY

earthwork/structure; post-medieval; good condition; Category C

The railway line which forms the southern boundary of the project area for most of its length was opened in 1858 (Gabb, 1977, 76). It was leased, as the 'Vale of Towy Line', by the Llanelly Railway and Dock Company, with a connection to Llanelli and, by 1868, to Carmarthen (*ibid.*). Meanwhile, the London and North Western Railway (LNWR) was extending its line from the Welsh border towards Llandovery (*ibid.*). This was completed in 1868 and three years later the Vale of Towy line was acquired by the LNWR to form part of its wholly-owned Central Wales and Carmarthen Junction Line running to Carmarthen (Morgan, 1984, 54). The Llandeilo-Carmarthen section was removed in the 1960s but this section is still operational as the 'Heart of Wales' line.

The line is single-track, and within the project area chiefly occupies the alluvial floodplain, lying on an embankment. However, it crosses higher ground at the south-west end of the project area where it occupies a slight cutting lined with young willows.

See associated features PRNs 38419-38423, and PRN 38425.

PRN 38419 - NGR SN 6570 2480 - STATION HOUSE

dwelling; post-medieval; condition good; Category D

Two-storeyed dwelling with half-hipped slated roof, a plain facade on the west end wall with few lights and a side chimney; rendered. North of railway line (PRN 38418). Constructed between 1887 (Ordnance Survey 1:2500, First Edition) and 1906 (Ordnance Survey 1:2500, Second Edition). Still inhabited.

PRN 38420 - NGR SN 6563 2480 - BUILDING

structure; post-medieval; condition fair-good; Category D

Small, single-storey brick building with a gabled sheet-metal roof and an end chimney, immediately west of Station House. North of railway line (PRN 38418). Constructed in the later 19th century but before 1887 (Ordnance Survey 1:2500, First Edition), possibly to serve the first railway station (see PRN 38421).

PRN 38421 - NGR SN 6570 2483 - SITE OF RAILWAY STATION I

documented structure; post-medieval; gone; Category E

Site of first 'Talley Road' railway station, immediately north of railway line (PRN 38418) and east of the later Station House (see PRNs 38419 and 38422), marked on the Ordnance Survey 1:2500, First Edition of 1887. Site now occupied by sheds associated with Station House (PRN 38419).

PRN 38422 - NGR SN 6575 2486 - RAILWAY STATION II

structure; post-medieval; condition fair-good; Category C

'Talley Road' railway station. Small, simple, square brick structure with a concrete floor and flat concrete roof, and plain concrete lintelled openings, immediately north of railway line (PRN 38418). Internally, the free-standing iron stove and timber bench seating survive. No formal platform. Constructed in the earlier 20th century, after 1906.

PRN 38423 - NGR SN 6570 2475 - LEVEL CROSSING

structure; post-medieval; condition good; Category D

Level crossing over railway line (PRN 38418), adjacent to Station House (PRN 38419) and on trackway defined by boundaries PRNs 38645 and 38646. Shown on Ordnance Survey 1:2500, First Edition of 1887 and probably from 1858. Plain, without gates or other superstructure.

PRN 38424 - NGR SN 6590 2513 - ABBOTSBURY

dwelling; post-medieval; condition good; Category D

Dwelling on south side of the A40. Two-storeyed house with a slate-gabled roof, rendered, of 'Edwardian' character. However, a building is marked in this location on the Llandeilo Fawr tithe map of 1838.

PRN 38425 - NGR SN 6630 2522 - LEVEL CROSSING AND BRIDGE

structure; post-medieval; condition good; Category D

Level crossing over railway line (PRN 38418) ramped up from trackway defined by boundaries PRNs 38651 and 38652 to north and south, with late 20th century iron gates and fence. Shown on Ordnance Survey 1:2500, First Edition of 1887 and probably from 1858. Associated with a large culvert for boundary ditch PRN 38652, lined with rubble masonry and with an iron bridge on brick piers, probably all original work from 1858.

PRN 38426 - NGR SN 6630 2530 - WELL

structure; post-medieval; condition poor; Category D

Remains of a well with a concrete and brick lining and cap, and incomplete pipework, all from the earlier 20th century but depicted on no map sources. A slight linear depression running south-east towards railway line PRN 38418 suggests that it may have been adapted from a spring.

PRN 38427 - NGR SN 6670 2565 - BARNS

structures; post-medieval; condition good; Category D

Two 20th century barns lying on the south side of the Nant Beuddan; that to the west in timber and sheet metal, that to the east in breeze-block and sheet metal. A building shown on the Ordnance Survey 1:10000 of 1964 may not be the same as these barns.

PRN 38428 - NGR SN 6675 2578 - NANT BEUDDAN CULVERT

structure; post-medieval; condition good; Category D

Culvert and bridge carrying the Nant Beuddan, where it is represented by boundary PRN 38659, beneath the A40. Rubble masonry, culvert overgrown and not visible, probably 19th century but repointed, with concrete coping, in the later 20th century.

PRN 38429 - NGR SN 6690 2590 - HENDY LLWYD

documented farmstead; post-medieval; gone; Category E

Three buildings around an enclosure (farmyard) to the north-east of the field defined by the present boundaries PRN 38659 and 38661, on the Ordnance Survey Original Surveyors' Drawings, Sheet 189 of 1812 and the Ordnance Survey 1", Old Series, of 1831 where they are labelled 'Handy Llwyd'. On the Llandeilo Fawr tithe map of 1838 they are 'Hender Llwyd' but there can be no doubt that Hendy Llwyd is the correct form of the name. The field within which they lay ie. as defined by the present boundaries PRN 38659 and 38661, is shown as subdivided into 11 smaller enclosures which clearly all belonged to Hendy Llwyd. By 1887 the buildings, and the enclosures, had gone (Ordnance Survey 1:2500, First Edition).

There is now no physical evidence for the farmstead buildings, either in the field or from aerial photographs, apart from a mature oak standard which appears to lie within the former farmyard. The present field is pasture and evidence for the west, east and southern boundaries of one of the earlier fields is visible on aerial photographs (RAF 106G/UK/1471/4376 of 1946 and RAF 106G/UK/1034/3166 of 1945; Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire).

The name 'Hendy Llwyd', which translates as 'old grey house', may be significant.

PRN 38430 - NGR SN 6675 2578 - NANT BRYDAN CULVERT

structure; post-medieval; condition good; Category D

Culvert and bridge carrying the Nant Brydan, where it is represented by boundary PRN 38664, beneath the A40. Entirely rebuilt in concrete and rubble in the later 20th century.

PRN 38431 - NGR SN 6532 2650 - LLANNON VILLAS

dwelling; post-medieval; condition good; Category D

Dwellings on south side of the A40. Two-storeyed, semi-detached house of 'Edwardian' character. A single dwelling is shown in this location in 1887 (Ordnance Survey 1:2500, First Edition); the present building appears to be marked on the 1906 Second Edition.

PRN 38432 - NGR SN 6545 2655 - NODDFA

dwelling; post-medieval; condition good; Category D

Dwelling on unclassified lane leading south from the A40 defined by boundaries PRNs 38668 and 38669. Early 20th century, two-storeyed house; no building is marked here on the Ordnance Survey 1:2500, Second Edition of 1906.

**PRN 38433 - NGR SN 6682 2673 - NANT CLAWDD-MAWR CULVERT
structure; post-medieval; condition good; Category D**

Culvert and bridge carrying the Nant Clawdd-mawr, where it runs beneath an unclassified tarmac lane south of A40 (represented by boundaries PRNs 38675 and 38676). Rubble masonry, probably 19th century, culvert overgrown and not visible.

3.3.2 Relevant sites immediately beyond the proposed route corridor

**PRN 01 - NGR SN 6595 2524 - CAPEL ISAF FINDSPOT
findspot; Bronze Age; Category A**

A hoard of gold artefacts from the bronze age, found in a sewage pipe trench near Capel Isaf, immediately north of the A40, in 1975 (Benson, 1975, 30). The hoard comprised three gold bracelets and a gold fragment. Curated at the National Museum and Galleries of Wales.

**PRN 911 - NGR SN 6546 2480 - BANC-Y-WAUN MOUND
earthwork; natural? Bronze Age?; good condition; Category A/E**

A prominent mound, lying just beyond the south-western end of the proposed route. It has a basal circumference of approximately 70 metres, is 2.75 metres high. It has been interpreted as a bronze age round barrow or burial mound (RCAHM, 1917, 84 *et al.*) and appears not to have been disturbed by 18th-19th century antiquarians, or looters. However, it has recently been suggested that it may be a natural feature (Sites and Monuments Record for Carmarthenshire, Cardiganshire and Pembrokeshire).

**PRN 11089 - NGR SN 62 NE - ROMAN ROAD
cropmark; Roman; fair condition; Category A**

Line of Roman Road probably established in the AD 70s, now represented by a cropmark. The presence of this road - known widely, but incorrectly, as the 'Via Julia' - has been long known, and physical evidence on the ground was seen by the antiquarian Richard Fenton in the early 19th century (Fisher, 1917, 62), but good field evidence has only recently been available in the form of aerial photographs. These show the road to include a section running through the western half of the project area north of the A40, in particular through Glanbrydan Park, Down Farm and Coed-mawr Farm. It shows up particularly well running through Down Farm, immediately north of the A40, as two parallel, straight 'cropmarks' representing the moisture-retentive side ditches either side of the causeway. The crossing of the stream, Nant Brydan, has not been identified but elsewhere along the road early fords have been noted, possibly strengthened by causewayed approaches 'and we know they could be accompanied by footbridges' (James, 1991, 65).

**PRN 24937 - NGR SN 6603 2526 - CAPEL ISA(F) HOUSE
dwelling; post-medieval; condition good; Category B, Grade II listed**

Large house lying immediately north-west of the A40, built in 1812-13 by Thomas Bedford of Llandeilo for Thomas Lewis of Stradey, with some later alterations (Cadw, 1995, 4). Large, two-storeyed building, originally square in plan but extended west by one bay in the 19th century and now with a three-bayed southern facade (*ibid.*). Hipped slate roof and substantial chimney stacks on north and south ridges. Roughcast. Lights all square-headed, with sash windows; 'regency' doorway with pediment and elliptical arched fanlight. Associated stable-range to west of good quality.

Still inhabited. Grade II listed building.

The land originally formed part of the Abermarlais Estate (Jones, 1987, 21) the core of which lies near Llanwrda, Carmar., to the north-east of the assessment area, but was bought by Thomas Lewis of Stradey. The house, also known as 'Capel Bach', is said to be the site of the medieval Capel Isaf (PRN 876), a chapel-of-ease to Llandeilo-fawr parish, but there is some dispute concerning the attribution, location and survival of the chapel of this name. Samuel Lewis, writing in 1833, does not mention Capel Bach but does describe a second chapel-of-ease, Capel yr Ywen (PRN 4016) which lay, 'in ruins', half a kilometre north of the project area. The Ordnance Survey First Edition of 1887 marks the lawn in front of (south-east of) the house as the site of a chapel, but according to Francis Jones the present house incorporates 'what is said to be have been the old chapel' writing that inside the attic of present house is 'a curious belfry-like structure, and under the drawing room a cellar' (Jones, 1987, 21). The listing details say nothing of this (Cadw, 1995, 4).

The house lay south of the original turnpike road (PRN 34007), a northwards kink at the Caledfwlch junction with the Cwm-ifer road having been straightened out between 1831 (Ordnance Survey 1", Old Series, of 1831) and 1838 (Llandeilo-fawr tithe map).

3.3.3 Field boundaries and land use

The proposed route pipeline crosses a total of 35 field boundaries. Each boundary was allocated a Primary Record Number (PRNs 38645 - 38680).

A variety of forms are represented, and many boundaries are accompanied by drainage ditches while five natural (but modified) streams cross the project area. It is apparent from consultation of the Ordnance Survey Original Surveyors' Drawings, Sheet 189, from 1812 and tithe map of Llandeilo Fawr parish, from 1838, that most of the field boundaries within the project area and its environs had been established by the early 19th century. However, their nature - mainly straight, low hedgebanks, probably without rubble cores - suggests that they are, in the main, post-medieval creations. This cannot, nevertheless, be proved at present and both further research, and physical analysis, need to be undertaken.

All field boundaries crossed by the proposed route are described below. However, they were subject only to rapid recording. The route was walked from south to north (28 July, 1999) and therefore land use descriptions - be they for fields, streams or roads etc. - apply to land lying *north* and *north-east* of the boundaries described. Those fields occupying the alluvial floodplain are noted.

Where a mature tree lies on, or near the pipeline route midline, it is indicated in ***bold italic***. Likewise for telegraph poles etc. However, information regarding Tree Preservation Orders is beyond the scope of this report.

PRNs 38681 - 38686 are positive, linear features (earthwork shadows) which show on aerial photographs from 1945 (RAF 106/UK/1034/3166; Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire). They do not appear to be marked on the Ordnance Survey Original Surveyors' Drawings, Sheet 189 of 1812 and so may represent former boundaries and/or watercourses which have been subsequently modified.

See Fig. 2 for boundaries etc. past and present.

Boundary PRN 38645 (NGR SN 6565 2487)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low earth bank, with close willow hedge
Current land use - Concrete trackway to level crossing over the railway (PRN 38423). A trackway has been present here since at least 1812 and is marked on the Ordnance Survey Original Surveyors' Drawings, Sheet 189. See PRN 38646.

Boundary PRN 38646 (NGR SN 6567 2488)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low earth bank, with close willow hedge. Shallow (c.0.30 metre deep) ditch along south-west side.
Current land use - Pasture. ***Telegraph pole on route midline.***

Boundary PRN 38647 (NGR SN 6575 2495)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Sinuous, unmaintained willow hedge, on low bank?, with a shallow (c.0.20 metre deep) ditch along south-west side
Current land use - Rough pasture. Internal boundaries shown on maps from 1838 up to 1964 have gone, leaving no physical evidence; there is, however, a large, loose tree-stump in the eastern quarter.

Boundary PRN 38648 (NGR SN 6592 2505)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Sinuous, meandering channel lined with willow, unmaintained. Now terminates north of railway line PRN 38418, presumably culverted beneath it under ground. Bridge beneath A40 not seen. *Mature oak standard just west of route midline*
Current land use - Pasture.

Boundary PRN 38649 (NGR SN 6602 2520)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Willow hedge, with bank?
Current land use - Pasture. A slight, but broad terrace runs south-west - north-east through this field, but appears natural.

Boundary PRN 38650 (NGR SN 6610 2515)

Marked in 1812 - (no)
Marked in 1838 - No
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Curving, but partly straightened stream - Nant Coch - lined with willow. Wet. Diverted into straight channel to run beneath railway line PRN 38418, where it passes through a 20th century concrete culvert. Bridge beneath A40 not seen.
Current land use - Pasture. Alluvium/higher ground boundary crosses field.

Boundary PRN 38651 (NGR SN 6622 2527)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Straight monospecific willow hedge.
Current land use - Alluvium. Gravel trackway to level crossing and bridge over the railway (PRN 38425). A trackway has been present here since at least 1812 and is marked on the Ordnance Survey Original Surveyors' Drawings, Sheet 189. See PRN 38652.

Boundary PRN 38652 (NGR SN 6624 2528)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Straight monospecific willow hedge, with ditch along south-east side which deepens to c.0.5 metres before passing beneath the railway line - see PRN 38425.
Current land use - Alluvium. Pasture; cut for hay. Location of well PRN 38426.

Boundary PRN 38653 (NGR SN 6630 2540)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - No
Marked in 1906 - No
Nature of boundary - Gone, removed between 1838 and 1887. Represented by a straight, linear depression c.1.5 metres wide and c.0.10 metre deep
Current land use - Alluvium. Pasture; cut for hay.

Boundary PRN 38654 (NGR SN 6640 2545)

Marked in 1812 - No
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Gone, removed after 1964 (Ordnance Survey 1:10000). Represented by a straight, linear depression and slight bank with a total width of c.3 metres.
Current land use - Alluvium. Pasture; cut for hay.

Boundary PRN 38655 (NGR SN 6650 2555)

Marked in 1812 - No
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Straight bank, very low, with monospecific willow hedge.
Current land use - Alluvium. Pasture. Crossed from north-south by 20th century channel for the stream Nant Beuddan, with low bank either side, which had been cut by 1945 (RAF 106G/UK/1034/3166 of 1945; Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire). Nearly dry.

Boundary PRN 38656 (NGR SN 6655 2557)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Very low bank, with shallow ditch to north-east and willow hedge.
Current land use - Alluvium. Cobble track with 20th century concrete culvert over Nant Beuddan. See PRN 38657.

Boundary PRN 38657 (NGR SN 6655 2559)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Very low bank, with shallow ditch to south-west and willow hedge.
Current land use - Alluvium. Pasture.

Boundary PRN 38658 (NGR SN 667 257)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - The route runs parallel with, and just north of the course of the Nant Beuddan, which has been partly straightened here; it is shown in a similar form on the 1838 tithe map. Nearly dry. Willow hedge to south.
Current land use - Alluvium. Pasture; crossed by cobble track shown in 1887.

Boundary PRN 38659 (NGR SN 6675 2575)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Nant Beuddan, which here is c.2 metres deep and partly straightened; it is shown in a similar form on the 1838 tithe map. Nearly dry. Willow hedge within. See PRN 38428 (culvert beneath A40)
Current land use - Pasture, on south-eastern edge of higher ground. Now a large field but depicted as subdivided into 11 small, regular enclosures on the tithe map of 1838, with a farm, 'Hendy Llwyd', towards the north-east (PRN 38429). With the exception of 2 enclosures towards the south-west (see PRN 38660), these boundaries (and the farm) had gone by 1887 and have left no physical evidence, but the boundaries of one field show as positive features on aerial photographs (see PRN 38429).

Boundary PRN 38660 (NGR SN 6685 2585)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Gone. Marked on the Ordnance Survey 1:10000 of 1964 but now represented only by a line of small, broadleaved standards. *1 x mature oak standard on midline, to the north-east.*
Current land use - (see PRN 38659)

Boundary PRN 38661 (NGR SN 6702 2602)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Natural, meandering stream, no artificial enhancement/straightening, c.1.5 metres deep but overgrown with soft vegetation. Wet; willow hedge within. Shown in a very similar form on the 1838 tithe map.
Current land use - Alluvium. Pasture, recently reseeded.

Boundary PRN 38662 (NGR SN 6712 2615)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low, straight mixed hedge, with a bank? *1 x oak standard on midline, to the north-east.*
Current land use - Alluvium. Pasture, recently reseeded.

Boundary PRN 38663 (NGR SN 6720 2625)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low, straight mixed hedge, with a bank?
Current land use - Alluvium. Pasture, recently reseeded.

Boundary PRN 38664 (NGR SN 6725 2630)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - The Nant Brydan. Partly straightened stream, c.1.5 metres deep. Wet, but sluggish. Low willow hedge, without a bank, along east side, and farm track to west. Shown in a very similar form on the 1838 tithe map. See PRN 38430 (culvert beneath A40). *2 x mature oak standards immediately to the north of route midline.*
Current land use - Alluvium. Pasture.

Boundary PRN 38665 (NGR SN 6730 2630)

Marked in 1812 - (no)
Marked in 1838 - No
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low, straight willow hedge, probably without a bank. *1 x mature oak standard c. 20 metres south of route midline.*
Current land use - Partly alluvium. Pasture. In 1838 and entirely different system of boundaries was marked between this boundary and PRN 38668.

Boundary PRN 38666 (NGR SN 6737 2640)

Marked in 1812 - (no)
Marked in 1838 - No
Marked in 1887 - No
Marked in 1906 - No
Nature of boundary - Not marked as a boundary, but present as a straight, overgrown but wet ditch crossing field from north-south from the direction of Llannon Villas (PRN 38431). Also represented by a barbed wire fence.
Current land use - Partly alluvium. Pasture. See PRN 38665.

Boundary PRN 38667 (NGR SN 6740 2645)

Marked in 1812 - (no)
Marked in 1838 - No
Marked in 1887 - No
Marked in 1906 - No
Nature of boundary - Straight boundary marked on Ordnance Survey 1:10000 of 1964, now gone, without physical evidence. Boundary further east, shown on Llandeilo Fawr tithe map of 1838 and still present in 1946 (RAF 106G/UK/1471/4376; Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire) has also gone, without physical evidence.
Current land use - Pasture. See PRN 38665.

Boundary PRN 38668 (NGR SN 6750 2648)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low bank with shallow ditch along western side, and mixed, predominantly willow hedge.
Current land use - Alluvium. Tarmacked lane, unclassified. A trackway has been present here since at least 1812 and is marked on the Ordnance Survey Original Surveyors' Drawings, Sheet 189. See PRN 38669.

Boundary PRN 38669 (NGR SN 6752 2648)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low bank with shallow ditch along eastern side, and mixed, predominantly willow hedge.
Current land use - Alluvium. Pasture, recently reseeded.

Boundary PRN 38670 (NGR SN 6762 2655)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - The Nant Clawdd-mawr. Sinuous but partly straightened and deepened stream, c.2 metres deep. Wet, but sluggish and overgrown. Low willow hedge. Shown in a very similar form on the 1838 tithe map, the name 'Clawdd-mawr' translates as 'large ditch' suggesting artificial enhancement.
Current land use - Alluvium. Pasture, recently reseeded. Two short boundaries shown crossing field from north-west to south-east from 1838 (Llandeilo-fawr tithe map) to 1964 (Ordnance Survey 1:10000) have gone, without physical evidence. *Telegraph pole on route midline.*

Boundary PRN 38671 (NGR SN 6770 2665)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Very low (c.0.2 metres) bank, without a real hedge but with many more-or-less mature oak and sycamore standards.
Current land use - Alluvium. Pasture. The boundary was followed by a trackway to Pentre Farm in 1812 (Ordnance Survey Original Surveyors' Drawings, Sheet 189) and in 1838 (Llandeilo-fawr tithe map), which had largely become abandoned by 1887 (Ordnance Survey 1:2500, First Edition of 1887) and now has no physical evidence.

Boundary PRN 38672 (NGR SN 6775 2668)

Marked in 1812 - (no)
Marked in 1838 - No
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Gone. Boundary marked on the Ordnance Survey 1:2500, First Edition of 1887 and the Ordnance Survey 1:10000 of 1964.
Current land use - Alluvium. See PRN 38671.

Boundary PRN 38673 (NGR SN 6780 2670)

Marked in 1812 - ?
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Tall, mixed hedge, no apparent bank.
Current land use - Alluvium. Pasture, recently reseeded.

Boundary PRN 38675 (NGR SN 6790 2673)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low bank with close hedge, mainly hazel and hawthorn.
Current land use - Alluvium. Tarmacked lane, unclassified. A trackway has been present here since at least 1812 and is marked on the Ordnance Survey Original Surveyors' Drawings, Sheet 189. See PRN 38676.

Boundary PRN 38676 (NGR SN 6790 2675)

Marked in 1812 - Yes
Marked in 1838 - Yes
Marked in 1887 - Yes
Marked in 1906 - Yes
Nature of boundary - Low bank with close hedge, mainly hazel and hawthorn.
Current land use - Alluvium. Pasture.

Boundary PRN 38677 (NGR SN 6790 2678)

Marked in 1812 - Yes

Marked in 1838 - Yes

Marked in 1887 - Yes

Marked in 1906 - Yes

Nature of boundary - The Nant Clawdd-mawr. Sinuous, partly straightened and deepened, c.2 metres deep, but cleared at this point. Wet, but sluggish.

Current land use - Partly alluvium. Pasture.

Boundary PRN 38678 (NGR SN 6780 2685)

Marked in 1812 - Yes

Marked in 1838 - Yes

Marked in 1887 - Yes

Marked in 1906 - Yes

Nature of boundary - Low bank with close hedge, mainly hazel and hawthorn.

Current land use - The A40. The main Tywi Valley roadway has followed this line since at least 1812 and is marked on the Ordnance Survey Original Surveyors' Drawings, Sheet 189. See PRN 38679.

Boundary PRN 38679 (NGR SN 6779 2686)

Marked in 1812 - Yes

Marked in 1838 - Yes

Marked in 1887 - Yes

Marked in 1906 - Yes

Nature of boundary - Low bank with close hedge, mainly hazel and hawthorn.

Current land use - Pasture.

Boundary PRN 38680 (NGR SN 6775 2688)

Marked in 1812 - ?

Marked in 1838 - Yes

Marked in 1887 - Yes

Marked in 1906 - Yes

Nature of boundary - Stream, flowing south-east into the Nant Clawdd-mawr. Sinuous, c.1 metre deep, lined by young willow. Wet, but sluggish.

Current land use - Pasture.

The following positive features (earthwork shadows) show on aerial photographs from 1945 (RAF 106/UK/1034/3166; Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire). They are also marked on Fig. 2.

PRN 38681 (NGR SN 665 254)

Dubious, U-shaped feature between former boundaries PRNs 38654 and 38655.

PRN 38682 (NGR SN 665 255)

Roughly east-west feature between present boundaries PRNs 38657, 38658 and 38659.

PRN 38683 (NGR SN 671 262)

Curving, generally north-south feature between present boundaries PRNs 38662 and 38663.

PRN 38684 (NGR SN 672 262)

intermittent feature running north-north-west to south-south-east, crossed by a possible east-west element, between present boundaries PRNs 38663 and 38664.

PRN 38685 (NGR SN 673 263)

Feature running north-west to south-east, between present boundaries PRNs 38664 and 38666.

PRN 38686 (NGR SN 675 264)

T-shaped feature running roughly north - south, between present boundaries PRNs 38667 and 38668.

3.4 A review of the sources

This section is a brief description of the sources used, and an assessment of their usefulness and/or limitations.

3.4.1 Documents

Post-medieval primary sources such as Samuel Lewis's *Topographical Dictionary*, Davies, 1858 and Samuel, 1868, and traveller's accounts by eg. Richard Fenton, and Sir Richard Colt Hoare, provide much information on landscape development and the significance of landscape features and post-medieval buildings.

The historic landscape of the Tywi Valley as a whole has been subject to a brief but comprehensive analysis in Cadw/ICOMOS, 1998.

3.4.2 Historic maps

Historic maps can establish the antiquity and significance of landscape features and standing buildings, and can also show potential ground disturbance.

There are a large number of antique maps of the project area, eg. The 16th century Saxton map, Bowen's 1729 map and the Cawdor Maps at Carmarthenshire Record Office, of varying usefulness. But there is also the invaluable map book surveyed by John Ogilby in the late 17th century which shows the pre-turnpike road through the valley; the map of the Turnpike Trusts of c.1844 is also a valuable source. However, the Ordnance Survey Original Surveyors' Drawing of 1811-12 (revised in 1827) is the earliest map to comprehensively show field boundaries; these are nevertheless faint and cannot always be discerned.

Unfortunately, what is normally the most useful map tool, the tithe map and schedule is, for the project area, of little value. The copies of the tithe map and schedule for Llandeilo Fawr parish held at the National Library of Wales, the repository consulted, are very faint and almost entirely illegible. Ordnance Survey 1:2500 First and Second Edition map cover, of 1887 and 1906 respectively, is complete. A map of the Glanbrydan Estate in West Glamorgan Record Office, from c.1872, was not seen.

Copies of relevant map sources are reproduced within this report, and form part of the project archive.

3.4.3 Aerial photographs

Aerial photographs are an important source of archaeological information, particularly in rural areas. Buried features can show as crop- or parchmarks, and earthworks are strongly revealed when the sun is low on the horizon. When dated, they also indicate subsequent development. The Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire has an extensive collection of both vertical and oblique aerial photographs. Unfortunately, there is no Meridian Airmap coverage of the project area within the Sites and Monuments Record and RAF vertical shots were relied upon, which revealed evidence of possible early field boundaries/watercourses. The project deadline did not permit examination of aerial photographs held at the Royal Commission for Ancient and Historical Monuments (Wales), Crown Buildings, Plas Crug, Aberystwyth, Ceredigion.

The Roman Road surveys noted below relied on aerial photography as the main methodology, and *Archaeoleg Cambria Archaeology* has also undertaken an aerial photograph mapping programme of the Roman Road (Project Record No. 35308).

3.4.4 Field walkover

The project area ie. a 100 metre wide corridor, about the midline of the proposed pipeline route, was fieldwalked on 28 July 1999. The condition of archaeological sites, features and deposits identified during the documentary research was noted and new sites, features and deposits were identified. All were recorded via photography and site notes, whilst their vulnerability was assessed. In addition, all field boundaries crossed by the proposed route were recorded via photography and site notes.

3.4.5 Previous archaeological work

Whilst no intensive archaeological work has been carried out within the project area itself (and therefore no disturbance to potential deposits through archaeological excavation), there have been many recorded stray finds in the immediate environs including a bronze age gold hoard (PRN 01) and axe (PRN 867). A similar environment, the alluvial floodplain near Carmarthen, has been subject to intrusive archaeological and geotechnical work (Page, 1994), the results of which permit some informed guesswork on the nature of the Maenordeilo environment.

Much research work has been undertaken on the development of communications systems within the project area and the Tywi Valley as a whole. This has range from surveys of the line of the Roman Road (James, 1991; James and James, 1984; Jones, 1972), using source documentation and aerial photography, to studies of the turnpike road (Lewis, 1967 and 1971) and railway (Gabb, 1977; Morgan, 1984). Limited historic building analysis can be found in Jones, 1987.

Also of significance to the present study are two overall strategic archaeological/historic surveys which were conducted in the wider area, for planning and conservation purposes and to place the historic environment into its wider context and identify features of significance. Both were undertaken by *Archaeoleg Cambria Archaeology* (Dyfed Archaeological Trust, 1992, *Tir Cymen: The Archaeological and Historic Landscape Features of the Dinefwr District*; Sambrook, P., and Page, N., 1995a, *The Historic Settlements of Dinefwr*).

3.4.6 Geotechnical work

No geotechnical work has been carried out along the route as far as RSK Environmental Limited are aware. However, the Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire has an existing high-pressure gas main (HP 36) marked on the record map for NGR SN 62 NE.

As noted above, a similar environment near Carmarthen, has been subject to intrusive archaeological and geotechnical work (Page, 1994).

APPENDIX I

Photographs

Photo 1: The former railway station (PRN 38422) from the south-west

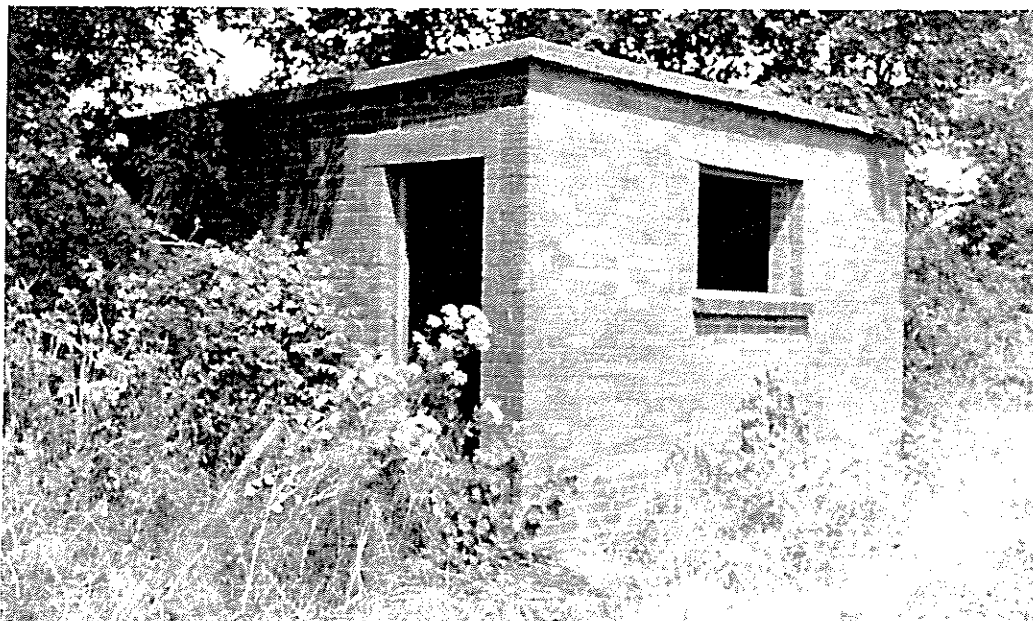


Photo 2: Level crossing and bridge (PRN 38425) from the north

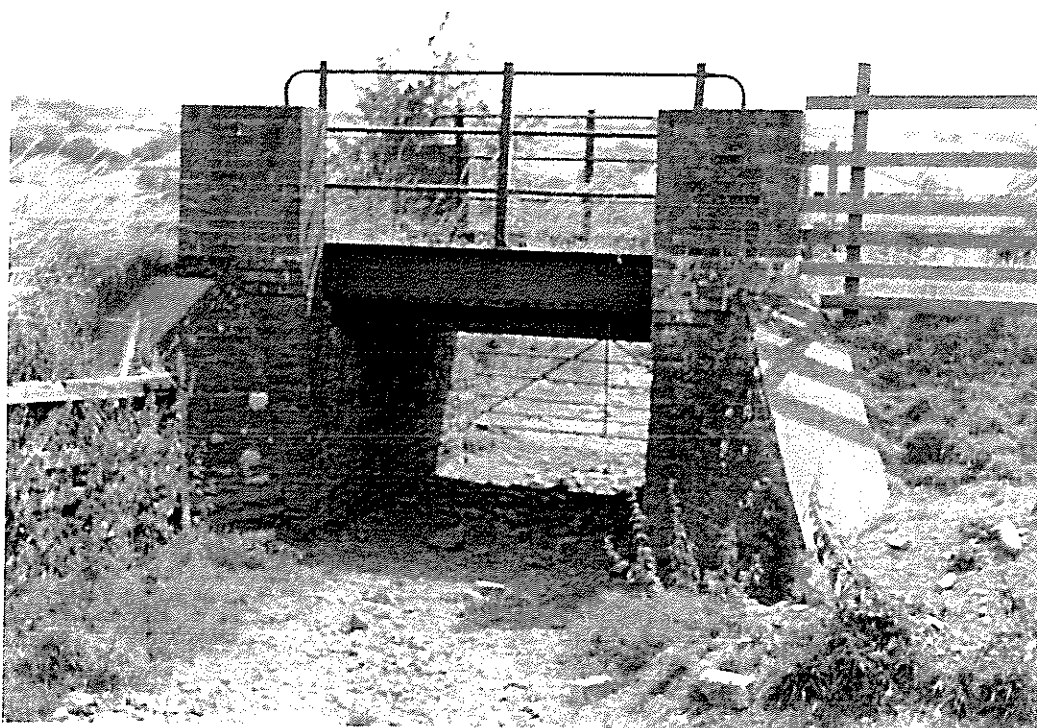


Photo 3: Well (PRN 38426) from the south



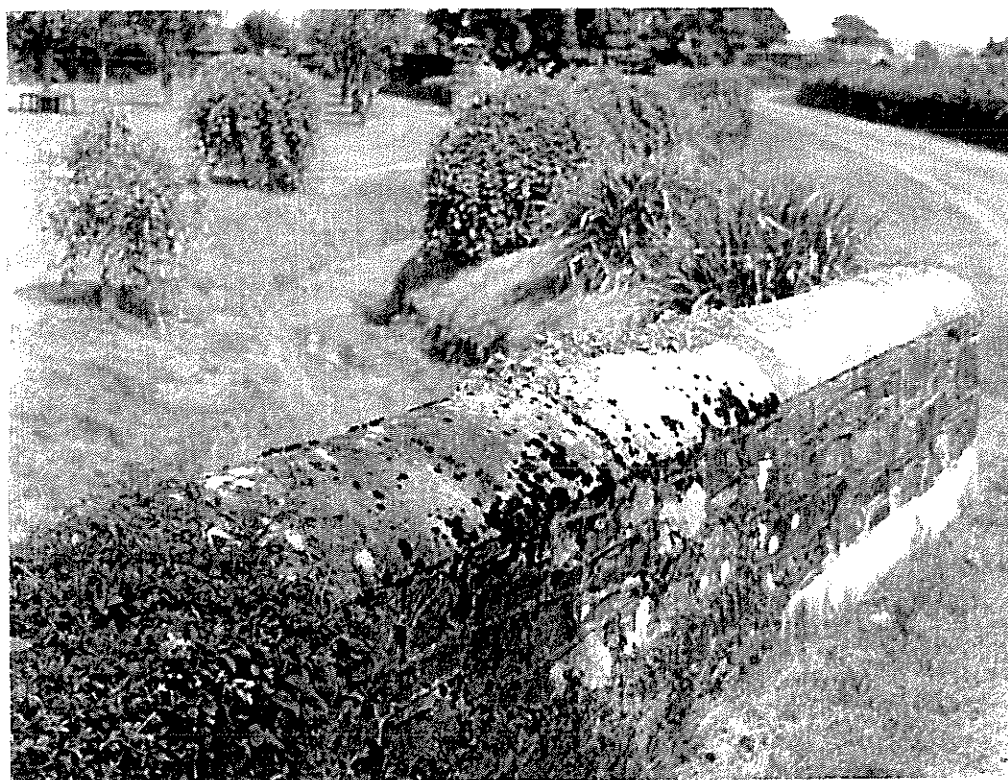
Photo 4: The redirected Nant Beuddan (PRN 38657) from the north

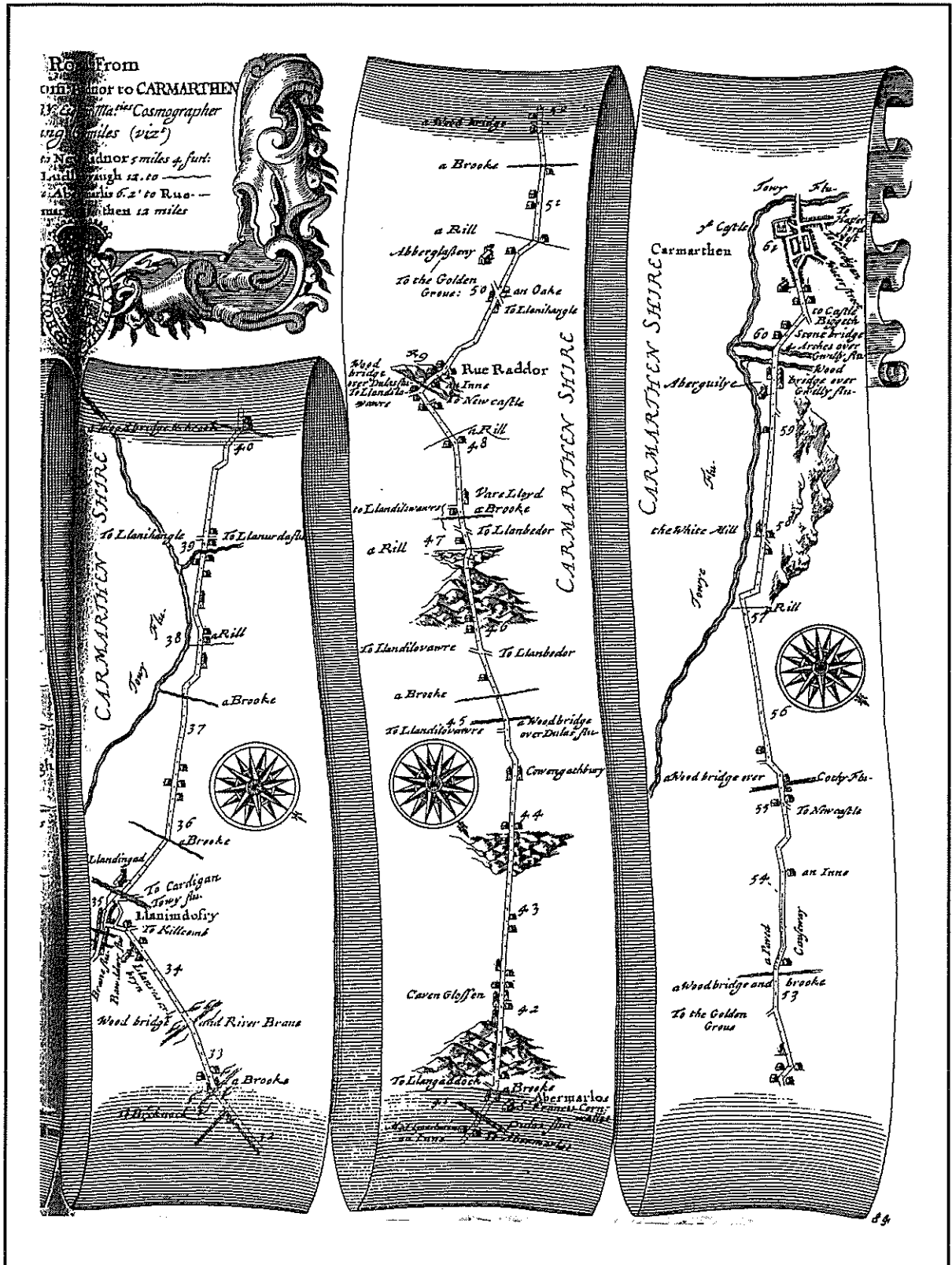


Photo 5: Glanbrydan South Lodge (PRN 18193) from the south



Photo 7: Bridge (PRN 38433) and Nant Clawdd-mawr from the west

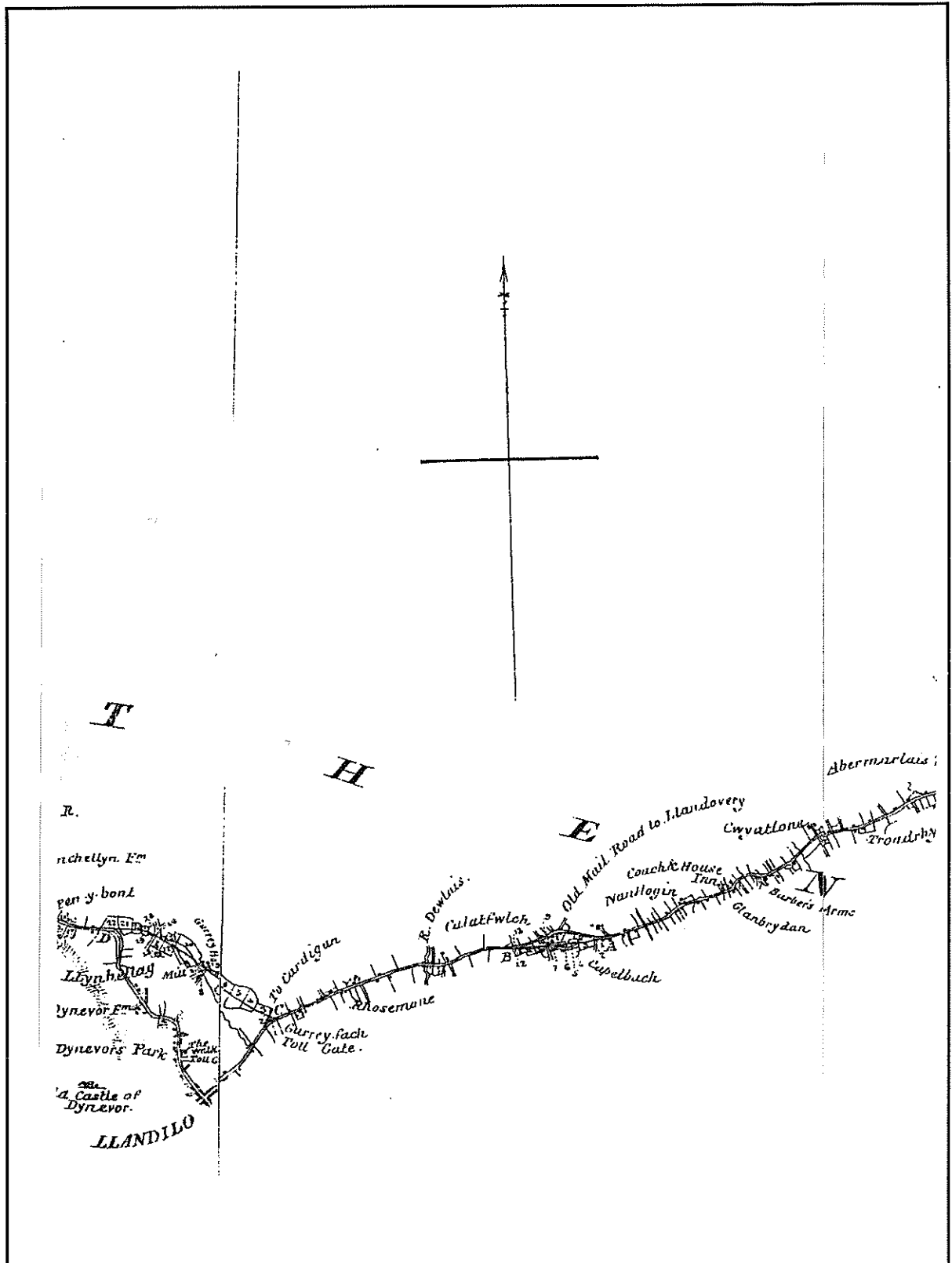




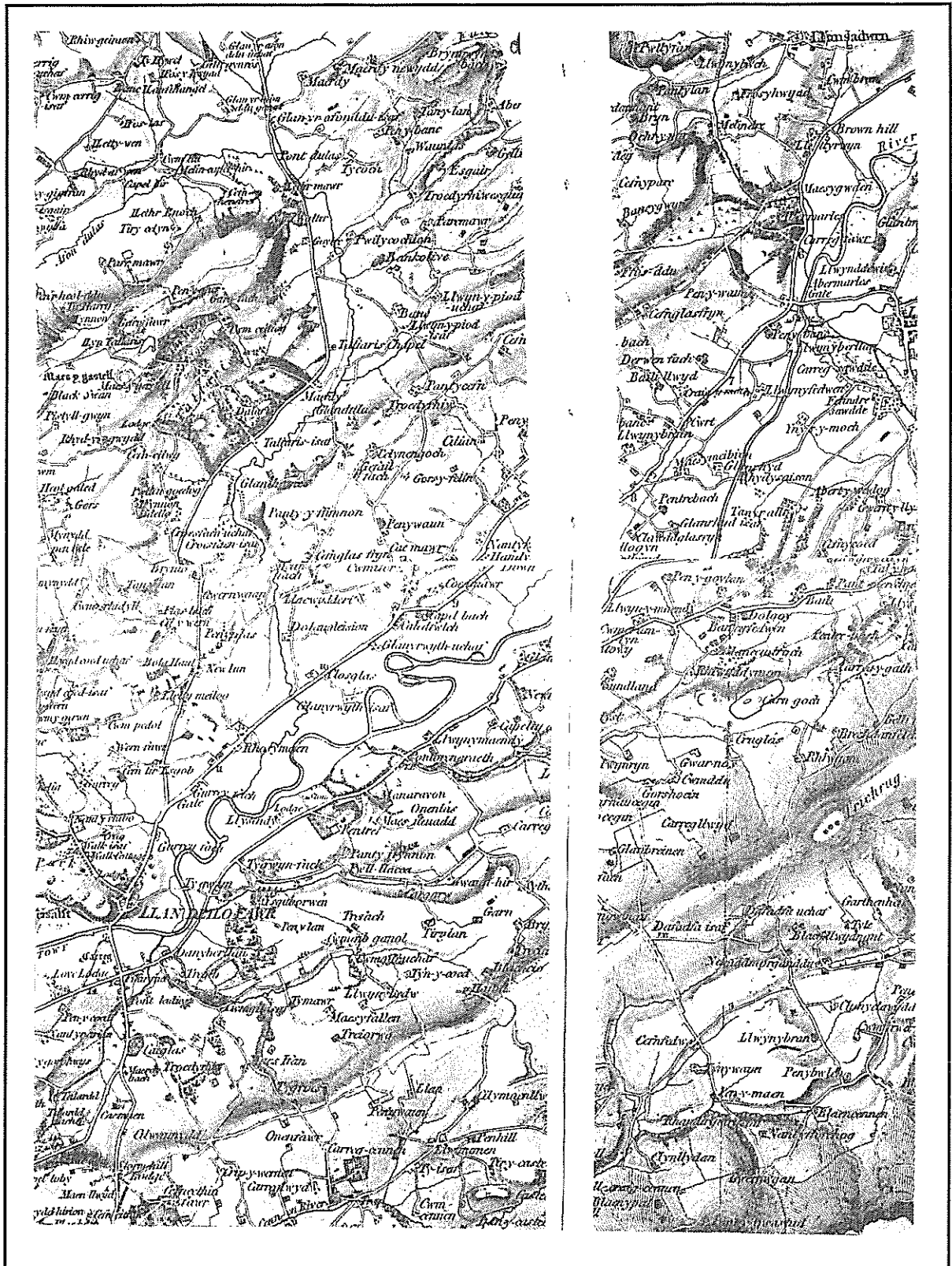
Copy of 'The continuation of ye Road from London to St Davids by John Ogilby, Esq., his Majesty's Cosmographer', n.d., late 17th century (held with Sites and Monuments Record for Carmarthenshire, Ceredigion and Pembrokeshire).



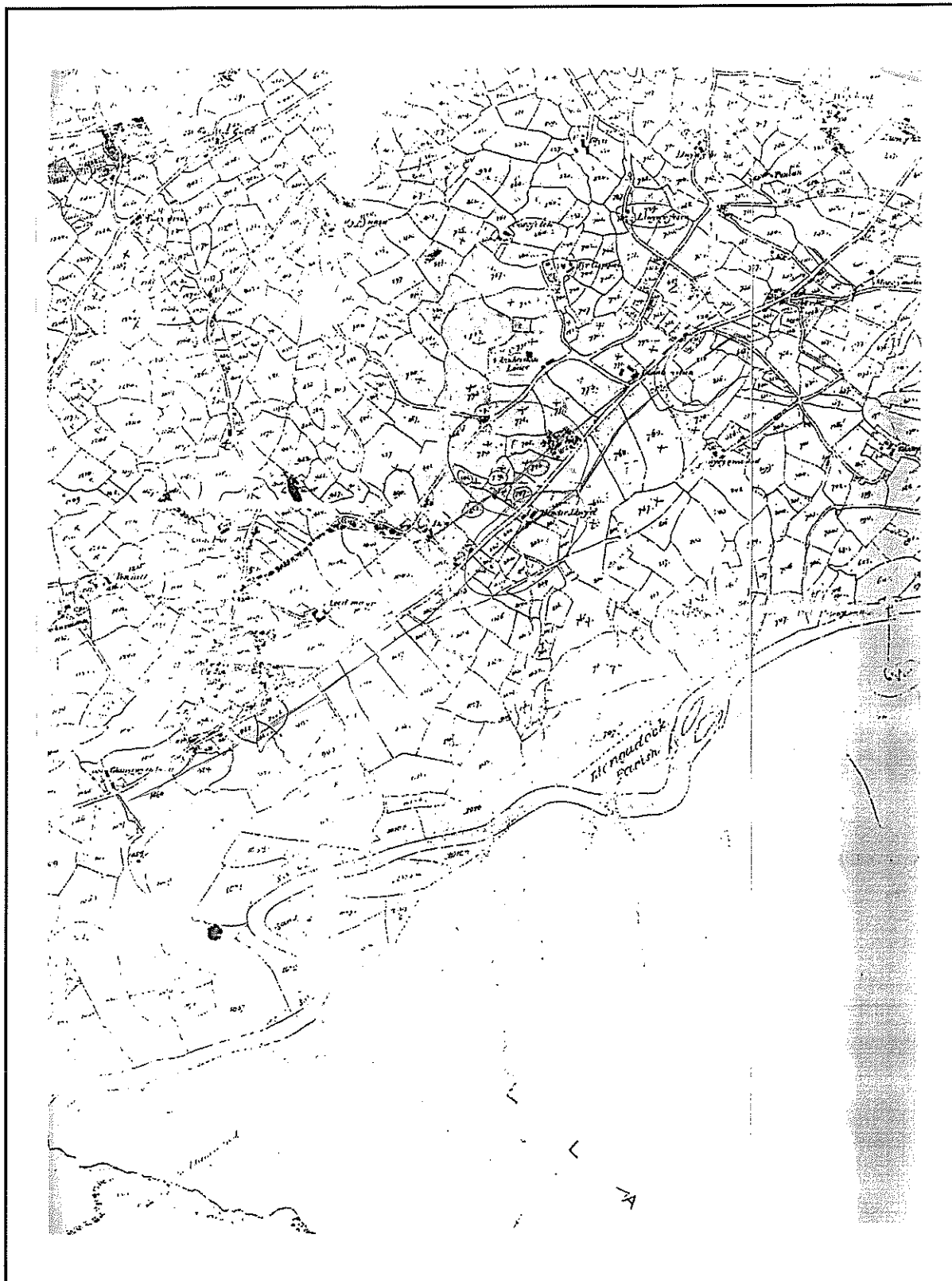
Copy of National Library of Wales, 'Emanuel Bowen's Map of South Wales', 1729.



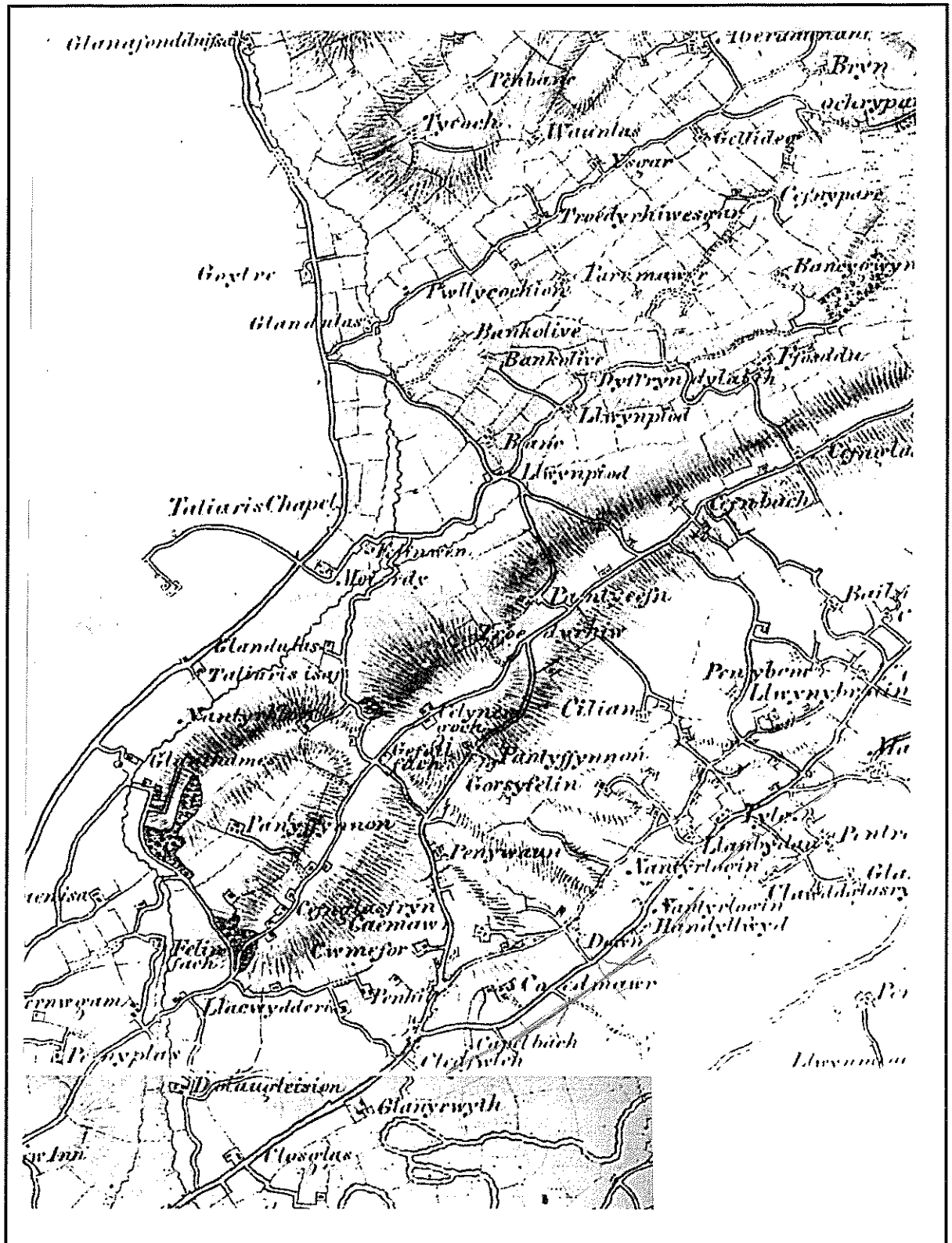
Copy of Carmarthenshire Record Office, Cawdor Maps 172, Map of that part of the Mail Road... from the town of Carmarthen to the eastern boundary of that county.... surveyed under the direction of Thomas Telford, 1" to the mile, 1824.



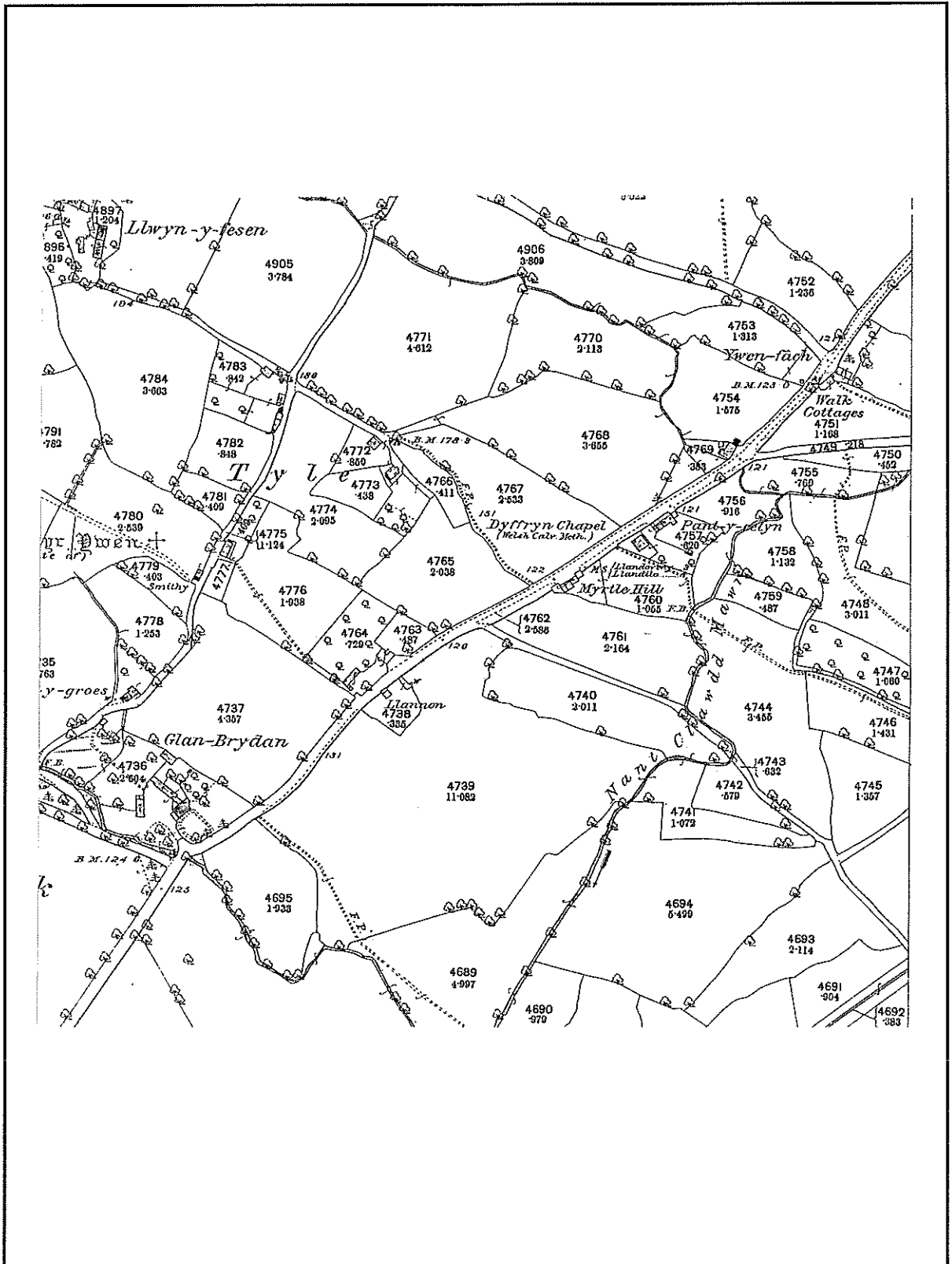
Copy of Ordnance Survey, 1" to the mile Old Series, Sheet 41, 1831.



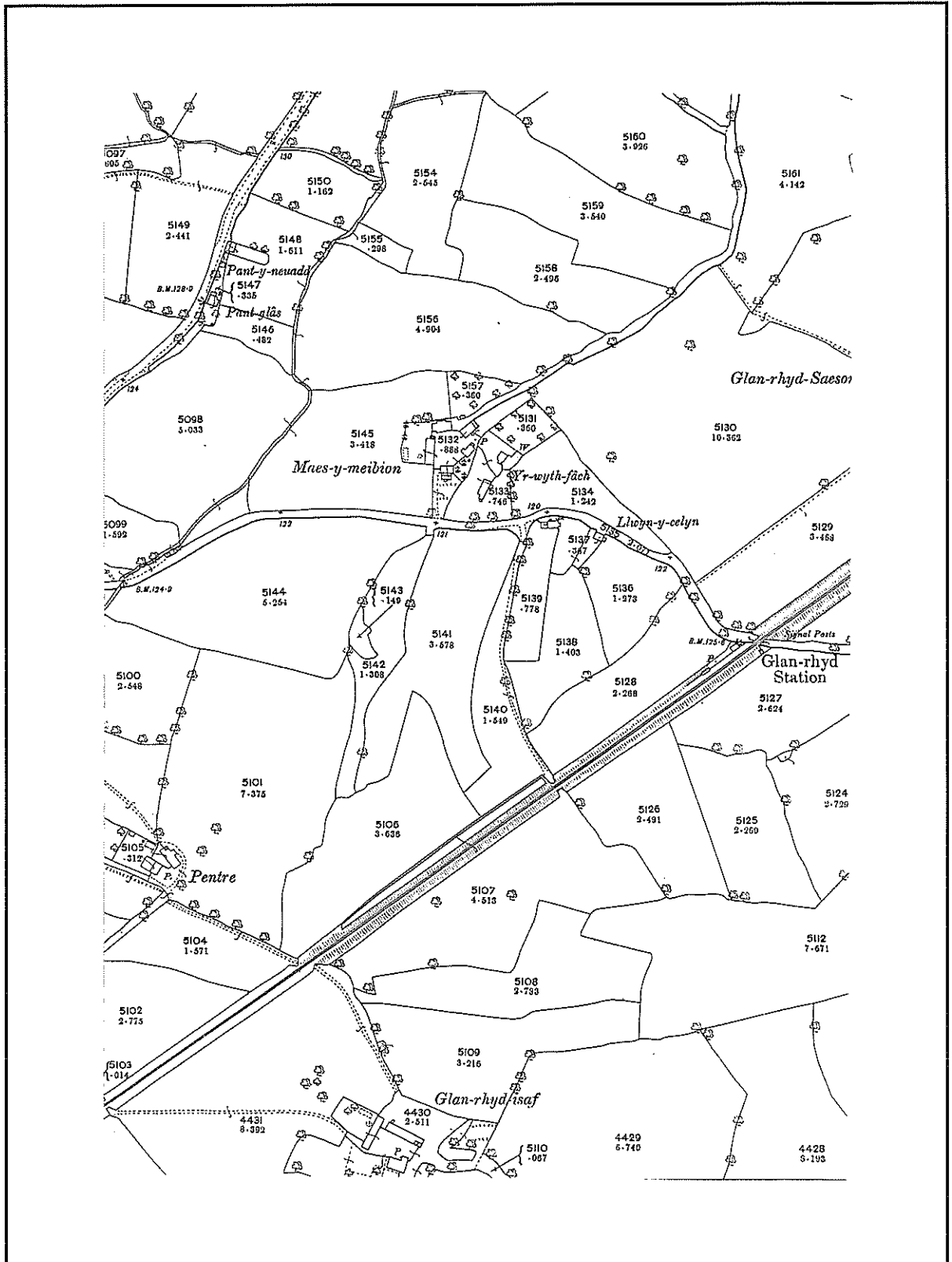
Copy of National Library of Wales, Parish of Llandilo-Fawr, Tithe Map and Apportionment, 1838.



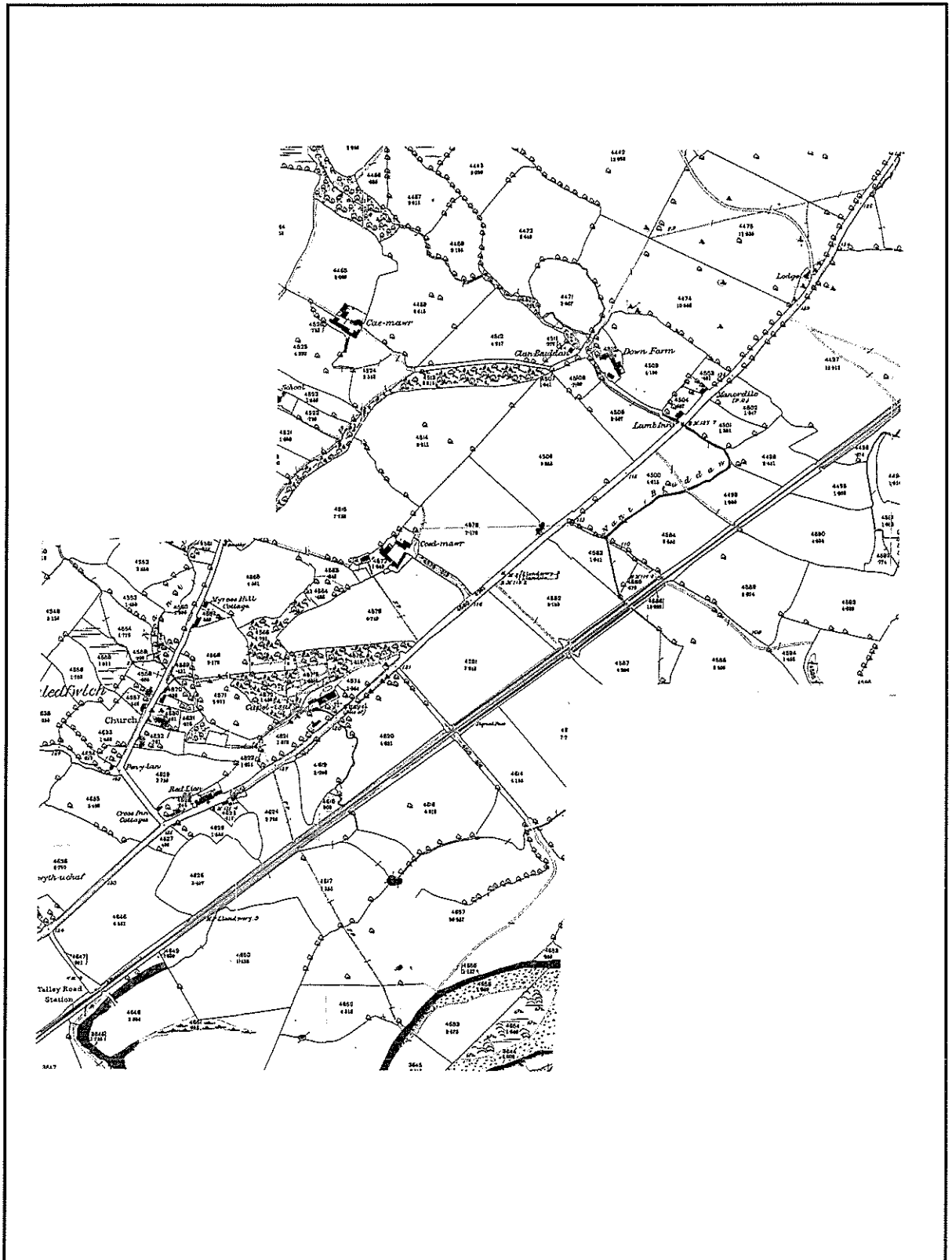
Copy of National Library of Wales, Ordnance Survey Original Surveyors' Drawings, 2" to the mile, Sheet 189, 1811-12 (revised 1827).



Copy of Ordnance Survey, 1:2500, Carmarthenshire Sheet XXXIV.1, First Edition, 1887.



Copy of Ordnance Survey, 1:2500, Carmarthenshire Sheet XXXIV.2, First Edition, 1887.



Copy of Ordnance Survey, 1:2500, Carmarthenshire Sheet XXXIV.5, First Edition, 1887.