

ROMAN MILITARY ROADS, FORTS AND VICI IN SOUTHWEST WALES PROJECT 2005



Paratowyd gan Archaeoleg Cambria
Ar gyfer Cadw
Prepared by Cambria Archaeology
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ROMAN MILITARY ROADS, FORTS AND VICI IN SOUTHWEST WALES PROJECT 2005

Gan / By

Duncan Schlee

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ARCHAEOLEG CAMBRIA
Ymddiriedolaeth Archaeolegol Dyfed Cyf
Neuadd y Sir, Stryd Caerfyrddin, Llandeilo, Sir Gaerfyrddin SA19
6AF
Ffon: Ymholiadau Cyffredinol 01558 823121
Adran Rheoli Treftadaeth 01558 823131
Ffacs: 01558 823133
Ebost: cambria@cambria.org.uk Gwefan: www.cambria.org.uk

CAMBRIA ARCHAEOLOGY
Dyfed Archaeological Trust Limited
The Shire Hall, Carmarthen Street, Llandeilo, Carmarthenshire
SA19 6AF
Tel: General Enquiries 01558 823121
Heritage Management Section 01558 823131
Fax: 01558 823133
Email: cambria@cambria.org.uk Website: www.cambria.org.uk

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Paratowyd yr adroddiad hwn gan / This report has been prepared by Duncan Schlee

Swydd / Position: Archaeologist

Llofnod / Signature Dyddiad / Date 10/01/2005

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith
This report has been checked and approved by

Ken Murphy

ar ran Archaeoleg Cambria, Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Cambria Archaeology, Dyfed Archaeological Trust Ltd.

Swydd / Position: Principle Archaeologist (Field Services)

Llofnod / Signature Dyddiad / Date 10/01/2005

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THE ROMAN MILITARY ROADS, FORTS AND VICI OF SOUTH WEST WALES

AN ARCHAEOLOGICAL DESK BASED ASSESSMENT, January 2005

Project Record No. 51964

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1.0 SUMMARY

This Cadw-funded project on the Roman military roads, forts and *vici* of southwest Wales adds to similar projects that have been undertaken by the other three Welsh Archaeological Trusts. It builds upon a RCAHMW-funded project undertaken in 1996 in which cropmark evidence for Roman roads obtained from aerial photographs was plotted using a GIS. The current project has enabled the 1996 work to be fully integrated into the SMR, and for the existing records to be assessed, enhanced and updated. The creation of a GIS layer that indicates the Roman road routes, their status of reliability, and the elements of which they consist, has allowed the data to be presented and accessed more easily. This provides a useful resource for the future study of the Roman road network, education, planning development control and agri-environment schemes.

The project has also included a geophysical survey of the Roman fort environs at Llandovery, providing useful evidence for the existence of several phases of fortifications and a probable *vicus*.

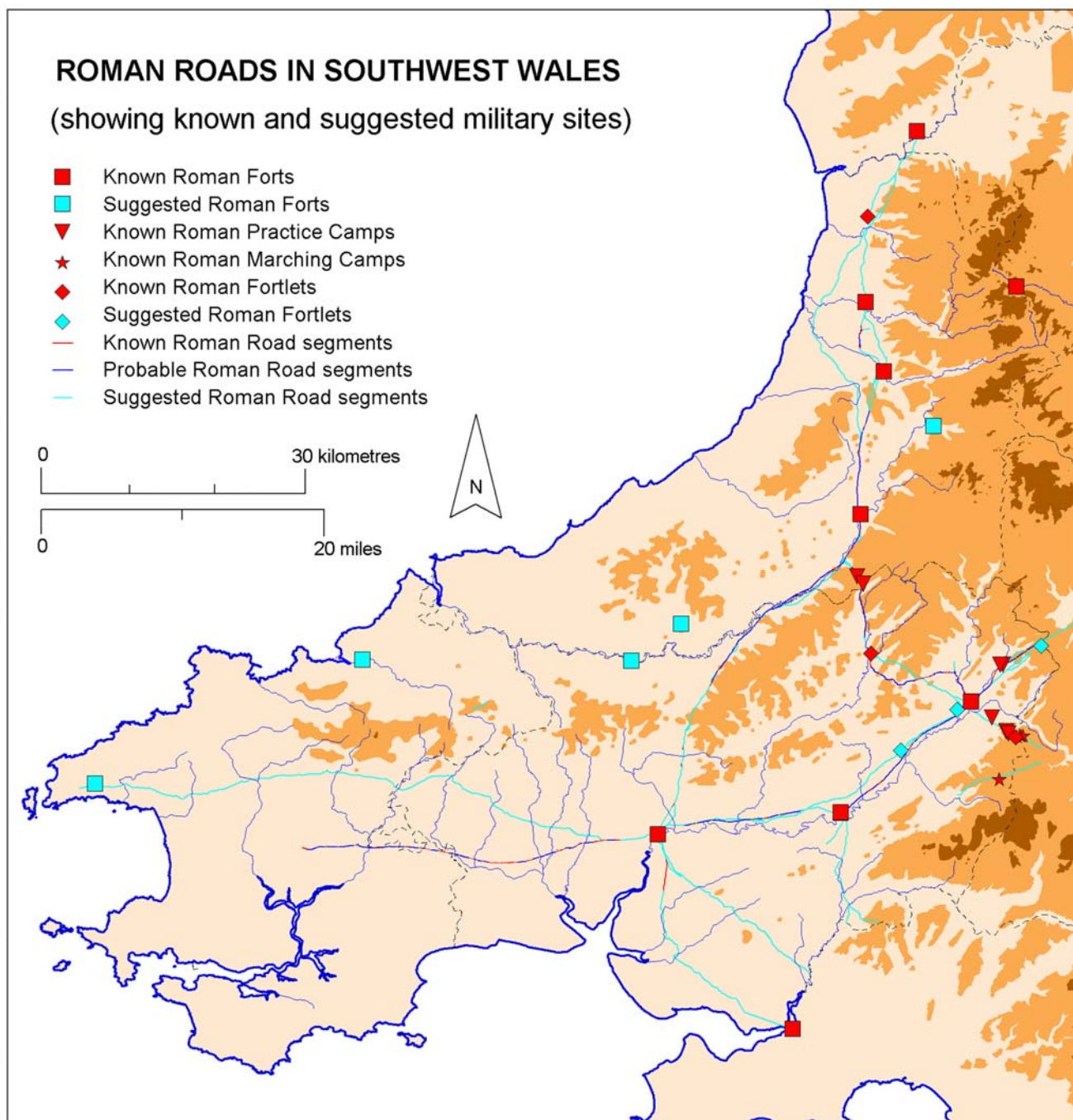


Figure 1: Map showing the known and suggested Roman roads of southwest Wales in relation to other known or suggested Roman military sites.

2.0 INTRODUCTION

The Roman conquest of Wales had established military control in northeast, central and southeast Wales by the AD60s. However, there is little clear evidence for a Roman presence in west Wales at this time. The generally accepted view is that the conquest of west Wales occurred as part of the Flavian campaigns of AD74 and 75. The network of roads across the region would originally have been constructed by the military for the rapid deployment of troops and supplies between the forts established during the conquest. After their initial construction for military purposes, the roads and forts would have seen a broader range of traffic, forming part of a larger network of transport, communications, administration and settlement established throughout Wales.

The apparent absence of any specifically military sites west of Carmarthen, has led researchers to argue that the relationship between the Demetae and the Romans was a peaceful one (Wainright 1967, 62; Wachter 1995, 391). The knowledge and threat of a garrison at Carmarthen, symbolised and delivered by the Roman road penetrating into the western reaches of the region, being perceived as sufficient to exercise control over the area.

Alternatively, the continuation of the road west of Carmarthen may indicate a more intensive Roman presence in the region with (an as yet unproven) potential for further forts and road systems having been constructed to establish and control links between Pembrokeshire and Ireland.

A general reduction and virtual withdrawal of many military garrisons from Wales is thought to have taken place by AD120 (Davies 2000, 24). With the ultimate withdrawal of the Roman army from Britain in the 5th century and subsequent breakdown of centralised government, the importance of long distance travel and communication may have been reduced. As a result the coherence and integrity of the road system would have declined eventually becoming broken up and absorbed by later landscape and land-use changes.

While some sections of Roman road continued to be used into the historic period, others fell out of use. Some stretches of road may never even have been completed. Other parts of the network have been destroyed by ploughing and erosion or masked by alluvial and colluvial deposition.

Despite this process of re-absorption into the landscape, traces of the courses of Roman roads survive to varying degrees in the historical record as place-names, in local tradition, and as cartographic and antiquarian references. In addition, traces of the roads can be identified on the ground as cropmarks, earthworks, and landscape features such as field boundaries, tracks, roads and other topographical features.

As a consequence of the events and processes outlined above, our understanding of the road network is undoubtedly incomplete. The prospect of rediscovering the now hidden remnants of the former network of Roman roads has been of abiding interest to archaeologists, historians and a variety of other interested parties for a considerable time. Their endeavours have resulted in a number of routes having been proposed, identified, and recorded. The relative merits of these routes have been keenly debated

and disputed. Despite several routes having been discounted or superseded, some of the routes now considered erroneous persist in the record as local tradition, as place-names, and on maps. The west Wales region is of added interest to some devotees of the subject because of its perceived geopolitical position at the western fringes of Roman influence within Britain.

The study of the Roman road network in west Wales has been somewhat confused by the existence of forged documents purporting to be evidence for a Roman road running across western Wales. The documents consisted of a map of Britain and a route itinerary allegedly copied from original documents by a 14th century monk named Richard Coriensis. In reality the 'monk' was 'professor' Charles Bertram of The Manne Academy, Copenhagen. He provided the antiquarian William Stukeley with the forged documents, in 1755. Colt Hoare and Richard Fenton perpetuated the problem by equating the discovery of the Roman site of Castle Flemish (PRN 1278) near Ambleston in Pembrokeshire, with a site in the forged itinerary, and by reference to the forged itinerary in Colt Hoares 1806 commentary on the 12th century Gerald of Wales' *Journey through Wales and Description of Wales*. Furthermore they adopted Bertrams 'Via Julia' nomenclature in their creation of two new routes, the Via Julia Maritima and the Via Julia Montana. Other routes such as the Flemming's Way, across the Preseli Mountains were also argued to be of Roman origin.

The forgery was exposed as a fake in the mid 19th century, but by this time the fictitious Roman place-names and road routes were so accepted that they were represented on Ordnance Survey maps. These were not finally removed from the maps until 1920.

Several short road segments have in the past been identified and recorded in the regional Sites and Monuments Record (SMR) as possible Roman roads. These identifications appear to be based on local tradition alone. While the routes may be considered examples 'folk memory', they more often appear to be examples of 'folk myth', based on misunderstanding or misinterpretation of other records. Suggested roads such as these have been excluded from the record unless they have already been allocated a Primary Record Number (PRN) or have been indicated on Ordnance Survey maps in the past. Place-name evidence also, taken to indicate a Roman presence in an area, need not necessarily be reliable, as they can perpetuate unfounded traditions.

3.0 PROJECT OUTLINE AND OBJECTIVES

This project combines elements of studies of Roman roads, forts and *vici* undertaken over several years by the Glamorgan Gwent Archaeological Trust (GGAT), the Clwyd Powys Archaeological Trust (CPAT) and Gwynedd Archaeological Trust (GAT). It builds upon a RCAHMW-funded project by Cambria Archaeology in 1996 (Murphy, K. 1996) during which the definite evidence for all known roads in southwest Wales was plotted using a GIS, and on an earlier Cambria Archaeology study which traced the Roman road west of Carmarthen.

The regional SMR contains some Roman road lines and data that are now known to be incorrect. In addition, the 1996 RCAHMW-funded project was never fully integrated into the SMR. The goals of this Cadw funded project are therefore to identify and assess the nature extent and quality of the existing records of the Roman military roads, forts and *vici*, and to update, enhance and present this data in a more comprehensively accessible format within the SMR. This enhancement includes the use of a GIS to record the locations and to present the current status and level of evidence to support the various road segments, sites and other evidence that make up the resource. The enhancement will enable easier interrogation of the data as a resource for planning, development control, research, agri-environment schemes and education.

Fieldwork elements of the project included identifying and visiting road segments thought likely (from the available data) to exhibit good survival of agger, with a view to making scheduling recommendations to ensure their future preservation. Geophysical survey to identify and characterise buried remains associated with Llandovery fort was also undertaken. The scheduling aspects of the project are presented in a separate report while the geophysical survey of Llandovery fort is presented as an appendix to this report.

4.0 METHODOLOGY

4.1 SMR enhancement

A search of the SMR for all Roman and possible Roman sites was refined to identify those sites pertaining primarily to the Roman military road network, including postulated and known roads, milestones, bridges etc. and other military sites such as known and postulated forts, camps and associated civilian settlement (*vici*). Broader categories of evidence such as domestic occupation sites, finds spots and other Roman period sites, despite their potential significance, were excluded from the main enhancement goals of project.

Existing SMR records were enhanced and updated to include the results of recent excavation and survey work, sources and more detailed descriptions. Individual segments of Roman road have been allocated PRNs only where there is sufficient archaeological evidence (usually from cropmarks or earthworks) to suggest that their identification is certain. PRNs have not been assigned to segments where a Roman road is overlain by a modern road, or the presumed course of a road is followed by tracks or field boundaries, since this is not considered to be direct archaeological evidence. Where however, evidence of this type has already been assigned a PRN these have been retained. Topographic features that may indicate the course of a Roman road are often referred to in the SMR descriptions for segments of 'certain' status.

In the past, PRNs have been allocated to the main Roman roads in the region. Some sub-sections of these main routes that run between towns, villages or forts, may also have been assigned PRNs. These existing record numbers have been retained but no new road sub-sections have been defined or allocated record numbers.

No previously allocated PRNs that have been duplicated or which have become obsolete have been removed from the database. Their descriptions will however, have been amended to reflect their current status.

In total, 64 existing SMR records were updated and modified and 180 new records were completed and added to the SMR.

4.2 GIS layers

Roman road routes represented on RCAHMW strip maps, and other cartographic and written sources, were digitally mapped in a GIS table created in 'Mapinfo'. Digital data from an earlier project (Murphy 1996) in which cropmark evidence identified from aerial photographic survey was also added to the GIS layer. The routes are mapped as a series of adjoining segments, presented so that the status, source and reliability of each segment can be ascertained visually. The definitions of these segments are presented below in section 3.6.

The database that accompanies the GIS contains only minimal additional information since the main details are presented within the SMR which will be the main route of access to the data.

4.3 Fieldwork and scheduling recommendations

Several stretches of the Roman roads have been assessed on the ground and described as part of previous surveys (see Section 6). Other routes have been traced and plotted from aerial surveys. Where existing evidence suggested that significant extant earthworks do not survive, no visits were made as part of this project. No visits were made along the course of suggested Roman roads.

Some previously identified road segments have recently been visited during agri-environment scheme farm visits and were therefore not re-visited as part of this project. Along some road stretches, cropmarks and earthworks have been identified from aerial survey but have not been assessed on the ground. For these sites a limited number of field visits were made to those considered likely to have surviving stretches of agger. These visits mainly consisted of 'roadside surveys' unless closer inspection was possible by public access. No visits were made by prior arrangement with landowners.

Easily accessible road segments were therefore assessed on the routes between Carmarthen and Llanfair Clydogau, Llanfair Clydogau and Llandovery, and from Llandovery towards Castell Collen. These visits were used to enhance new or existing SMR road segment descriptions, and to identify the potential of the segments for possible scheduling.

The criteria used for potential for scheduling were primarily based on subjective evaluation of preservation from the visibility and clarity of surviving extant earthworks. Also considered was the length of the road segments. Some segments, although reasonably preserved, were considered too short or fragmented for scheduling to be justified. Another consideration was the landscape setting for the road segment in relation to what technical and constructional aspects of Roman road construction it might exhibit.

Broadly speaking, the majority of the known road network has been subject to considerable destruction. Some of this has been from erosion by changing river courses and land slippage. Stretches that have been followed by later road routes are also likely to have been severely damaged if not destroyed.

The primary source of threat to the surviving evidence of the Roman road network however, is from ploughing, drainage, forestry and land-use change generally. These processes have already resulted in the fragmentation and degradation of the road network as a whole, but have also compromised those relatively well-preserved segments that have been proposed for scheduling.

Road segments that have been suggested for scheduling are presented in a separate document.

4.4 Sources

The SMR is the core source and repository for the existing data and the enhanced database. It contains descriptions of a range of sites and features known to be of Roman origin, and also sites and features postulated to be of Roman origin or to have a Roman aspect to their development.

The main source of known and suggested road routes were manuscript strip maps presenting the known and postulated routes of the Roman roads recorded by Ordnance Survey. These were derived from the work of their own field investigators as well as other sources. The manuscript maps are held at the RCAHMW offices in Aberystwyth.

The main source for 'certain' road segments was a GIS layer of road cropmarks, parchmarks and earthworks, plotted from aerial photographs by Ken Murphy for the RCAHMW.

Documentary sources for the study of Roman roads generally, and for specific sections of Roman roads, known and speculated, are listed in Section 6.

4.5 Numbering and naming of Roman roads

The major Roman roads within the study area have at various times been attributed and identified by both names and numbers. Ivan Margary initiated a system of identification using an RR prefix. Subsequent routes suggested by the Ordnance Survey were identified by an RRX prefix. Later suggestions were given an RRN prefix (probably by David Percival of the RCAHMW). Lowercase lettered suffixes (b, c etc) have occasionally been attributed to subdivisions of roads between recognised features such as forts. No modifications or additions to this road classification system have been made during this project.

Romanised names have been given to many of the Roman roads in Wales. These are all based on antiquarian sources and speculations. 'Sarn Helen' has been in use probably since the early Middle Ages and has become a general term for a Roman road (James 1991). 'Via Julia' was a name fabricated by the forger Charles Bartram for his alleged road heading through west Wales. This name was later adopted and developed by Colt Hoare into the 'Via Julia Maritima' and 'Via Julia Montana'. Where such names have been attributed to routes or segments of roads depicted on maps, these are noted, but to avoid any further confusion they have not been transferred to confirmed routes or new records.

4.6 Road status terminology

The following terms have been used to indicate the degree of reliability assigned to road segments or routes as they are represented on the GIS layer. More detailed descriptions of the form and quality of the evidence for road segments (and other relevant data) are contained within individual PRNs within the SMR.

Certain

Attributed to segments of road for which there is direct evidence in the form of excavated remains, surviving earthworks, cropmarks or parchmarks. Most of this data is derived from cropmarks plotted from aerial photographs, although some is derived from cartographic sources and fieldwork and survey. 'Certain' segments are represented as solid red lines on the reference maps, the thickness of the line indicating the clarity of the cropmark.

Probable

Where justifiable, 'certain' road segments are connected by 'probable' segments. These are intended to indicate the most likely course of the road. The course of 'probable' segments is usually simply a straight line between two 'certain' road segments, but may incorporate trackways or field boundaries that are on the same line, or may curve to respect contours or other landscape features where appropriate. 'Probable' road segments have not been attributed individual PRNs but are identified on the GIS layer under the group PRN for the road as a whole. 'Probable' routes are indicated by dark blue lines on the reference maps.

Suggested

Suggested routes are those that have been suggested or proposed by researchers, but for which there is no direct evidence. Some of these routes have now been discredited, or superseded by routes for which there is good evidence. Other suggested routes remain as possibilities in the absence of evidence to the contrary, or any alternative route suggestions. 'Suggested' routes are represented as light blue lines on the maps.

Where proposed routes that have been allocated an 'RR' reference number have been shown to be incorrect the reference number has been transferred to the new route, sometimes despite considerable differences in their courses. The previously proposed routes have been downgraded accordingly in the relevant PRN descriptions. No PRNs have been allocated to 'suggested' routes that have not previously been recorded in the SMR.

Dashed lines

During this project, some likely routes for the course of Roman roads have been identified. These are represented as dashed lines in either light or dark blue, depending on an assessment of their likelihood.

4.7 Layout and presentation of the Maps and Gazetteer

The maps accompanying this report show the Roman roads of all categories within the region covered by this project. They are derived from the GIS maps that form part of the project database. Where possible the entire route of a road is presented on one map. Where this is impractical, the route is divided up into stretches between forts.

A gazetteer of the PRNs that are represented on the detailed Route maps is included as Appendix 1 in this report. The information in the gazetteer is derived from edited versions of the enhanced SMR data.

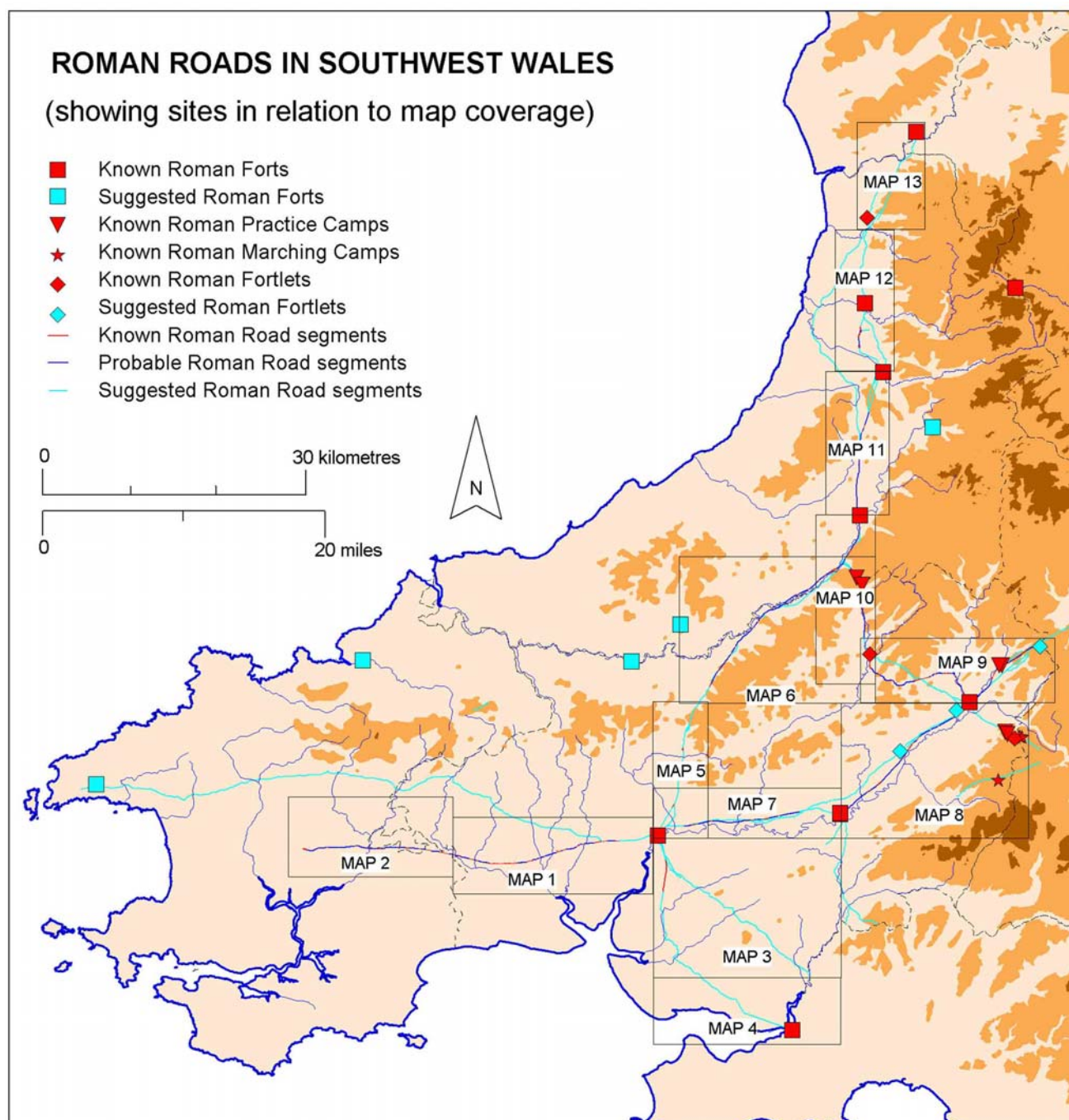


Figure 2: The Roman road network and the key to the map coverage of the route maps within this report.

5.0 DESCRIPTIONS OF ROMAN ROAD ROUTES

5.1 The road west of Carmarthen -PRN 14277- (Maps 1 and 2)

Since the recent confirmation of the existence of a Roman road running west of Carmarthen, a considerable amount of fieldwork and documentary research has been undertaken (see section 6). The road starts at the fort and town of Moridunum and can be traced westwards for 38km as far as Wiston village in Pembrokeshire. Much of the evidence for the road is in the form of cropmarks. Although this evidence becomes less frequent towards the west, the overall frequency of cropmarks and other landscape features means that the course of the road can be plotted with a reasonable degree of confidence. In total 14 km of agger has been recorded from parchmarks. In three lengths totalling 2.7 km the agger survives as an earthwork up to 1.0m high (Murphy in Page et. al. 2002). Much of the rest of the route can be traced in tracks and field boundaries, but only 2.25 km of the 38km confirmed of Roman route is followed by modern roads.

For the first 5 km westward, the course is unknown. The most direct route would be on a line to the north of the A40, but no cropmark evidence for this has been identified. Most of the road follows a route also recognised as the most convenient by recent engineers since it is never more than 1 km from the A40 or from the railway line to Fishguard. The road was laid out in a series of straight lengths of between 4 and 6 km long. Six of these lengths have been identified: Ffordd-las to Wenallt, Llwynbrain to Bryngwyn, Bryngwyn to Fforest, Fforest to the Afon Taf, the Avon Taf to the Afon Daulan and from the Afon Daulan to Sarn Gwm. The change in direction usually occurs on hill summits or ridge crests, in order to make fore and backsights on the route of the road. The lengths of the straight segments may suggest that the landscape was relatively clear of trees (Murphy in Page et. al. 2002), or indicate the practical limits of visibility.

Beyond Wiston there is as yet no evidence of significant Roman military activity. The road may have headed for a single coastal destination. It may have split into several roads to different destinations, or it could have ended, linking up with pre-existing but less substantial road or track networks.

In addition to the road itself, there is cropmark evidence for extensive quarrying, presumably for construction materials, along several sections of the road.

Status: Certain

Figs: Maps 1 and 2

‘Suggested’ route (discredited): PRN3419

‘Certain’ route: PRN14277

‘Certain’ road segments: PRNs 28101 to 28151, 33920 to 33941, and 42018.



Photo 1: The Roman road south of Carmarthen (PRN7459) near Bwlch-y-gwynt (the line runs diagonally from upper left to lower right as a field boundary, cropmark and fossilised road-line).

5.2 The road from Carmarthen to Loughor, PRN 3401, RR 60d, (Maps 3 and 4)

Although the existence of this stretch road is mentioned in the Antonine Itinerary as 'Iter XII' (Wroxeter to Carmarthen via the borders and southeast Wales), physical evidence of the exact course of the route is sparse. Colt Hoare (Colt Hoare 1806) named this section of the road as the 'Via Julia Maritima', but did not offer a concise route. Margery's route RR60d (PRN 3401) is only a suggestion (James, H. 1991). His route runs from a crossing at Hendy, then a course followed by the B4306, crossing the Gwendraeth Fawr at Pontyberem and the Gwendraeth Fach at Llangendeirne. The route joins the straight line of the B4309 then via Cwm-ffrwd, Bolahaul and Pensarn. Beyond sections of road on this route being quite straight, no physical evidence that this is the course of the Roman road has been identified. In fact parts of this route have been shown by M.C.S Evans (Evans 1988) to be turnpike roads constructed by the Kidwelly Trust between 1779 and 1831.

An earlier route shown on Ogilby's Road map of 1675 between Glamorgan, southeast Carmarthenshire and Carmarthen, ran via Kidwelly. Heather James (James 1991, 72-73) also suggests that this may have been the Roman route. Such a route may suggest the possibility of a fort, fortlet or naval station at Kidwelly, but no evidence of such has yet been identified.

In Roman times, the Afon Loughor was most probably crossed where the fort is situated. From there, the road may have followed the course of the present day B4308 through Trimsaran across Mynydd Pen-bre, crossing the Gwendraeth Fawr at Pont Spwdwr, via Morfa Bach then following a minor road around the Kidwelly Tin Works site. From there, along the western side of Maes Gwenllian and along the side of Kings Wood and Wenallt to Llwyn Crwn and then to Pont Rhyd-onnen, through Llandyfaelog and on to Bwlch y Gwynt.

In 1986 an aerial survey undertaken by Terry James (James 1987) identified a good road line (PRN7459) running northwards from Bwlch y Gwynt towards Carmarthen as far as Cwmffrwd. From there, the course is not known. A straight line continuing north from the proven course, links up well with a proposed road route indicated on the RCAHMW strip maps for RR60d, which was apparently identified from aerial photographs. This suggestion requires confirmation.

The identification of one convincing stretch of Roman road cannot, however, be taken to suggest that the remainder of either of the proposed routes are any more or less likely. Other suggested routes towards Carmarthen are to the east of the proven segment, all converging on a stretch of pre-turnpike road traditionally referred to as 'Roman Road'. Recent archaeological work (PRN46370) did not find any surviving evidence of a Roman road in this location. The proposed course changes direction at Pensarn towards the bridge crossing the River Towy and approaches the fort and town at Carmarthen.

Status: Suggested

Figs: Maps 3 and 4

'Suggested' Routes (not proven): PRN218, PRN3401

'Certain route': None

'Certain' road segments: PRN7459

5.3 The road from Carmarthen to Llanfair Clydogau, PRN 3382, RR69d (Maps 5 and 6)

The route from Carmarthen to Llanfair Clydogau is unproven as far as New Inn (SN47333693). The suggested route, however, which basically follows the A485, seems plausible considering the constraints of the terrain. In this stretch only three cropmarks presumed to be indicating the course of the Roman road have been identified. PRNs 33943 and 33942, are both located close to, and are aligned with, the A485. Cropmark PRN14308, however, indicates that the Roman road takes a different route to that currently suggested, cutting across farmland, apparently to take a more direct route towards Carmarthen, although this projection remains unproven.

Northwards from New Inn, the course of the modern and Roman roads continue on more or less the same alignment. Where, however, the modern road deviates from this course, the Roman road has been clearly identified and plotted from cropmark evidence.

A major divergence between the modern and Roman roads occurs on the approach to Lampeter at roughly SN55304601. Here, the modern road follows the valley edge on the east side of the Afon Teifi while the Roman road crosses the river at SN55634629 to follow the valley edge on the north side, following a more direct and easier terrain. It has also been suggested that the Roman route may cross the river to connect with a hypothetical fort in the vicinity of Lampeter (Ken Murphy pers. comm.). Continuing northeastwards from Lampeter, the Roman route is roughly followed by meandering minor roads until it crosses back to the east side at SN61985052 on the approach to Llanfair Clydogau.

Of the entire route from Carmarthen to Llanfair Clydogau, approximately 20km is followed by modern roads, but 14km of this is only of suggested route status and has not been confirmed. From New Inn to Llanfair Clydogau there are four significant direction changes in the course (at approximately SN48103860, SN50504200, SN54004560 and SN58804810) between 4 and 5km apart, with several minor changes about 2km apart.

Status: Certain

Figs: Maps 5 and 6

‘Suggested’ route: Not proven

‘Certain’ route: PRN3382

‘Certain’ road segments: PRNs 14308; 33942; 33943; 33947-33951; 33960-33969; 51963; 29498; 51948-51950.

5.4 The road from Llandeilo to Carmarthen, PRN 11089, RR 623, (Map 7)

Following recent aerial photographic survey work (Murphy 1996; James and James 1984) the course of the Roman road between Llandeilo and Carmarthen is now much more certain than was previously the case. None of the 13.5 km confirmed Roman route is followed by modern roads, although the suggested routes from Abergwilli to Carmarthen, (approximately 3.4 km) and west of Llandeilo (approximately 4.5 km) lie on the line of existing roads.

The road leading from the northwest side of the fort at Llandeilo appears likely to continue northwestwards to link up with (or become) the road leading to Carmarthen (Hughes 2004). An alternative, or additional route may have exited the fort on its southwest side, following existing paths and road lines to join (or become) the main Roman road at Broad Oak.

The first reliable segment of road to the west of Llandeilo is located to the north of the A40 at Broad Oak. It is, however, possible that this cropmark represents a track leading from a cluster of quarries to the main road, rather than the road itself. Reliable cropmarks are located where the line of the road crosses the Afon Dulas. The road continues to run westwards, on a parallel (but more direct) route on the north side of the A40. The road cuts across farmland and is occasionally visible as linear earthwork cuttings, but is not followed by field boundaries or tracks. Physical evidence of the Roman road was recorded recently in the yard at Llwnfortune Farm (Schlee, D. 2004). The line of the road is indicated by cropmarks and earthworks on either side of the farm (PRNs 33954 and 33955).

To the north of Llanegwad the Roman road crosses the A40, and continues across farmland on the south side. Between Pont-ar-gothi and Nantgaredig the probable line of the Roman road is followed by field boundaries and a trackway until a reliable cropmark on the west side of Nantgaredig. Between Nantgaredig and Danyrallt the projected line of the road appears to be respected by several field boundaries before a clear cropmark stretch to the south of Alltygog Farm. From Alltygog to Fronun the Roman road and the A40 probably converge. West of Fronun the line of the road is visible as a cropmark to the south of the A40 and then is reflected in the line of trackways and road lines as far as the Bishops Palace at Abergwilli. The suggested route from here to the Roman town follows existing roads, past the Amplitheatre and along Priory Street.

Slight changes of direction appear to occur at Broad Oak, Cefn-hernin, and Nantgaredig, each approximately 4 km apart. Direction changes also occur elsewhere at shorter intervals, but the locations and distances between these are uncertain due to the gaps in the evidence for the road line.

Status: Certain

Figs: Map 7

‘Suggested’ route (discredited): PRN3419

‘Certain’ route: PRN11089

‘Certain’ road segments: PRN33944-46; PRN33952-33959; PRN13015



Photo 2: Possible line of Roman road running southwest of Llandeilo (the possible course is marked by the alignment of trees crossing the fields towards the bridge and Bridge St. and the low bank in the left, representing the west side of the agger).

5.5 Roman roads from Llandeilo to Loughor and Neath (Maps 7, 8 and 3)

Roman roads linking Neath and or Loughor with Llandeilo have been hypothesised, but no detailed routes have been proposed, and no substantiated evidence discovered. Suggested routes are indicated on the maps, but are not described in detail and have not been allocated PRNs.

Recent geophysical survey at the site of Llandeilo Roman fort indicates roads leaving the fort from its south and east gates. The road from the east gate is assumed to join the road to Llandovery, but approximately 90m from the fort, a side road branches off. This branch road is assumed to lead to a river crossing point to the south of the modern town. The road leading from the south of the fort is also assumed to lead to a possible alternative crossing point on the river. Either or both of these roads may be associated with a Roman route to Loughor or Neath.

Cartographic evidence suggests a possible Roman road route running southwest from Llandeilo, the line of which is 'fossilised' in field boundaries between SN62702190 and SN60501890. Recent field observations suggest the road line is visible as a low agger approximately 10m wide cutting across a field at SN62512157, on the line of a current footpath. Further southwest the route becomes uncertain.

Status: Suggested

Figs: Partial coverage on maps 7, 8 and 3.

'Suggested' route: Not proven

'Certain' route: None

'Certain' road segments: None

5.6 The road from Llandovery to Llandeilo, PRN11089, RR623 (Map 8)

Following recent aerial survey and cropmark plotting (James and James 1984; Murphy 1996), the course of the Roman road between Llandovery and Llandeilo is now established with reasonable confidence. The main area of uncertainty is at Llandovery where the road crosses the Towy and approaches the fort. The dearth of reliable evidence in this area is primarily due to the shifting course of the Towy resulting in uncertainty as to the position of the river in Roman times and the likely subsequent erosion of the road and bridging structures.

Although the previously suggested route for the road to Pumsaint along Heol Rhos has now been superseded by the establishment of a less direct, but more provable route towards Cilycwm, this does not preclude the likelihood that the crossing point towards Llandeilo was somewhere between the modern chain bridge and Nantyrhogfaen Cottage. A possible Roman fortlet is situated at SN754342, on a slightly elevated location overlooking the road and the possible crossing point. From Pantllwyfen to below Glan-Mynys, the line of the road is followed by the A40, after which the Roman road continues on a straight course to the south of the modern road. Between the Afon Mynys at SN73293242 and Pont Allt-y-cloriau at SN72603206, the course of the Roman road has been eroded away by shifting meanders in the river although its line is apparent from flanking cropmarks.

There is evidence for a change in the course of the road to a more southwesterly direction in the vicinity of Llanwrda, where the road crosses the Afon Dulais. There are slight changes of alignment at SN70443043 and SN69352881 at Down Farm (SN66752597), presumably reflecting the course of the Towy in Roman times.

Between SN64762453 and SN63242318 the line probably runs beneath the A40, and from there, presumably continuing straight towards the northeast facing gateway of the fort at Llandeilo.

A branch of the road may have bypassed the fort to link more directly with the line of the road traced to the west of Llandeilo. A possible Roman fortlet (PRN853) located at SN68692769 was, until the identification of the road skirting the valley floor, thought to lie adjacent to a proposed route for the Roman road following the ridge from Abermarlais westwards and to the north of Llandeilo. Little or no other evidence for such a route has yet been identified. 4.25km of the 19.5km confirmed Roman route is followed by modern roads.

Status: Certain

Figs: Map 8

'Suggested' route (discredited): PRN4079

'Certain' route: PRN11089

'Certain' road segments: PRN33970 to PRN33980

5.7 The road from Llandovery to Brecon Gaer, PRN 6379, RR62b (Map 8)

The western part of this route RR62b (also referred to as part of the Via Julia Montana) extends into the study area to the west of Trecastell. It formed the main coach road until the route now followed by the A40 was built in 1769. Although the existence of such a Roman route is not questioned, the exact course is yet to be proven. The route over Mynydd Trecastell via Y Pigwn is currently favoured, considering the presence of several Roman period earthworks in the locality. The route here consists of a rutted track that in fact cuts across the corner of one of the Y Pigwn marching camp earthworks. The exact line of the road may have altered during its use as the coach road. A Roman milestone discovered during work on the road at the Heath Cock Inn in 1769 bore inscriptions dating to AD 258-268. Situated to the west of the Y Pigwn marching camps are a Roman fortlet or signal post and a possible practice camp. Travelling west, the road makes a couple of zigzag descents before a long straight stretch, turning at Picton Court towards the Fort at Llandovery. This last stretch (SN7734) has been confirmed from cropmark evidence and from the discovery of wooden piles thought to be part of a causeway (PRN4085).

An alternative route has been hypothesised running from the Usk valley past the marching camp at Arosfa Garreg Llwyd and on to Llangadog or Gwynfe. While this is undoubtedly an early route it would appear to post-date the marching camp since it cuts across its northwest corner.

Status: Probable

Figs: Map 8

‘Probable’ route (not proven): PRN6379

‘Certain’ road segments: 4085

5.8 The road from Llandovery to Castell Collen, RR623, PRN 3419, (Map 9)

Heading northeast from Llandovery is a 2.3km straight stretch of the RR623 which is followed by the modern A483. At Abercychan both the modern and Roman roads make a turn. The Roman road sticks to the valley floor continuing straight for approximately 1.8km, while the modern road diverges to take a more elevated route along the side of the valley. The Roman road again alters course slightly after about 1km, then again near Talgarth where it turns again at the location of two now destroyed marching camps known as Upper Lodge (PRNs 6269 and 6270). From here the road was previously thought to follow the same course as the modern road towards Lletherhir Farm, a straight road marked as Roman on OS maps. Recent aerial survey shows, however, that the Roman route lies parallel, to the south of this road on a straight line for about 3.5km, before it rejoins the proposed route through forestry, passing north of a probable Roman fortlet (PRN273) at SN84944152, and across the county border. Approximately 2.6km of the 9.5km length of confirmed Roman route is followed by modern roads.

Status: Certain

Figs: Map 9

‘Certain’ route: PRN3419

‘Certain’ road segments: PRN33981-33982; PRN34114-34115



Photo 3: The line of the Roman road RR623 (PRN33982 at SN79463769). The south side of the agger can be seen running parallel in front of the hedge.

5.9 The road from Llandovery to Pumsaint, RR62c, PRN 51972, (Map 9)

As the crow flies, the Roman forts of Pumsaint and Llandovery lie approximately 13km apart. Suggested courses for the Roman road connecting the two forts have utilised all or parts of known Turnpike and Pre-turnpike roads. The actual route of the Roman road however, has now been ascertained by Hugh Toller (1993) and has been confirmed by aerial photography. The road takes a less direct route, in order to avoid too many steep inclines. This route has recently been published (James, in Burnham B and H. 2004, App. 5.6)

Although the route of the Roman road is now quite well established, its exact course into the fort at Llandovery is not yet entirely clear. The route indicated on the map follows a footpath to join a short stretch of hollow way (PRN33983). After another blank stretch, a clear earthwork terrace is visible on the slopes of Allt y Gilfach (PRN33984). From there the route is assumed to follow an indirect course along the contour of the slope, though no trace is visible until SN76613586. This route is assumed to have been dictated by the course of the Afon Tywi at the time.

South of Dolauhirion Farm the road is visible as a curved cropmark, while to the north there is a well-preserved segment of agger (PRN33985). The Roman road is traceable intermittently as cropmarks to the east of the modern road before crossing the river in the vicinity of Glan-rhyd-erryd and heading towards Erryd Farm. To the northwest of Erryd Farm is a circular cropmark (PRN33991) that may be the site of a watchtower situated close to where cropmark evidence suggests the road line splits. One route heads north towards Cilycwm, the other follows the contours of the slope round to a westerly course (PRN 33993) en route to Pumsaint.

The modern and Roman road lines converge to ascend the hill to Penybank Uchaf. Here, the Roman road deviates from the modern course in places and is visible as earthworks and parchmarks on either side of the road on the descent of the hill. At the foot of the hill a long straight segment of road is visible as upstanding agger along much of its length between SN72333801 and SN70703760. From Bryn Farm to Pont-yr-Efail, the Roman route is assumed to follow the modern road and then follows the A482 (also the route of the 1788 and 1832 Turnpikes). Earthworks visible where the modern road deviates from the earlier course may be of Roman or Turnpike origin.

From Maesyannis (SN67513762) the Roman road line may or may not be followed by field boundaries on the north side of the road to join cropmark PRN33996 at Gilfach Wen. From Penmaen to Ynysau the Roman route probably follows a direct track towards Derwen Fawr Farm. Here the modern and Turnpike roads diverge from the Roman road line and the Roman road changes course northwards towards Pumsaint. At SN65544023 a cropmark (PRN33998) suggests the road line may turn northeast, to head for the south gate of the Pumsaint fort.

Status: Certain

Figs: Map 9

'Suggested' route (discredited): PRN3420

'Certain' route: PRN51972

'Certain' road segments: PRNs 4076; 13152; 30208; 33983-33985; 33987; 33989; 339893-339898; 51960-55961; 51966; 39103



Photo 4: An aerial photograph of the road from Llandovery to Pumsaint, facing to the southeast. The segment in the center of the frame survives as an extant agger. Beyond the farm the road curves round to the left.



Photo 5: The Roman road RR62c survives as a cutting in the hill slope at SN76663547 (facing northeast).



Photo 6: The Roman road RR62c at SN71673785, surviving as extant agger.

**5.10 The road from Pumsaint to Llanfair Clydogau, RR62c, PRN51972,
(Map 10)**

The Roman road leading northwards from Pumsaint has been assumed to follow the course of the existing modern A482, crossing the Afon Twrch in the vicinity of Pont ar Twrch before continuing up the slope past Bryn-meio-g-isaf Farm. Although there is no direct evidence to confirm this route, it adheres more or less to a northerly line to link up with more established segments of Roman road marked as Sarn Helen on Ordnance Survey maps. The modern road follows the line of the Roman road for over eight kilometres, with short segments of earthwork or cropmarks visible in pasture where the modern road deviates slightly from the course. Roadside quarries also indicate the course of the Roman road in places. A possible Roman watchtower (PRN1910) is located at SN64574790, with Practice Camps (PRNs1911 and 1941) at SN64084935 and SN64724850 respectively. Between SN63395042 and Llanfair Clydogau the route is uncertain. Of two suggested routes, one follows the modern road line, while another follows a track and hedgebanks to the north of the road. Either of these routes would form a junction with RR69c/d. This road was previously thought to follow the same line as the B4343, but recent aerial survey has shown the true line to run to the east of the modern road. The probable line of the RR69c, suggests a change in direction at SN62495094. This may have implications for which of the proposed Sarn Helen routes is more likely.

Status: Certain

Figs: Map 10

‘Suggested’ route (discredited): None

‘Certain’ route: PRN51972

‘Certain’ road segments: PRNs 33999; 34000; 34001; 51946; 51947

5.11 The road from Llanfair Clydogau to Llanio, RR69c, PRN5222, (Map 10)

Roman road RR69c continues on a roughly northeast alignment from Llanfair Clydogau to Llanio (Bremia) fort. The route changes to a more northerly course twice, at SN64245384 and SN64455507. At SN63175209, a square earthwork feature PRN 51973 may be associated with the Roman road. The fort is approached by a side spur from the main road which continues north. On this stretch, only 0.75km of the Roman road is followed by the modern road.

Status: Certain

Figs: Map 10

‘Suggested’ route (discredited): PRN3382

‘Certain’ route: PRN5222

‘Certain’ road segments: PRNs 34110; 34111; 51952; 51958; 51959

5.12 The road from Llanio to Trawscoed, RR69c, PRN5222, (Map 11)

Leaving Bremia fort, the Roman road appears to head almost directly northwards, followed for 8.5km by the modern B4578 up to SN64476481. No cropmarks or earthworks have been identified along this stretch to suggest that the lines of the Roman and modern roads have diverged where the modern road meanders. From here the Roman road continues across farmland marked as an earthwork on the Ordnance Survey maps and occasionally followed by short stretches of modern roads until roughly SN65426816. At this point, two different courses have been suggested for the continuation of the Roman road to Trawscoed. The western route following field boundaries and trackways, appears more likely, at least as far as SN65837110. From this point a theoretical straight line can be plotted to link up with a segment of probable Roman road cropmark PRN34113 at SN66527225. From here, the eastern proposed route approaches Trawscoed Fort towards the southern gate, while the western proposed route approaches the west or north gate.

An alternative suggested route that bypasses Trawscoed runs from SN64466480 along the route of the A485. From Bronant a segment of the route is marked as Sarn Helen on some maps as far as SN64097056. The route continues along modern road routes, joining the B4576 and rejoining the A485 at pont Glan-Mad, north through Llanfarian, bypassing Aberystwyth at Rhydfelin, through Bow Street on the A487, to converge with the other alternative route to the southwest of Talybont at SN65238893. The suggested route continues to follow the A487 beyond Glandyfi before crossing the Afon Dyfi at Llugwy Hall (SN71209957) for the approach to Pennal Fort. There is little or no evidence to suggest this proposed route is of Roman origin.

Status: Certain

Figs: Map 11

‘Certain’ route: PRN5222

‘Certain’ road segments: PRNs 34112; 34113; 51967-51971

5.13 The road from Trawscoed to Penllwyn, RR69c, PRN5222, (Map 12)

A suggested route has been plotted to Penllwyn fort following modern roads via Llanfihangel-y-Creuddyn and Rhiwarthen-uchaf, then continuing northwards via Penrhyn-coch to join the A487 at Talybont and then to Pennal Fort. In the light of recent work, however, the route as far as Penllwyn Fort now seems unlikely.

Recent aerial photographic survey and cropmark plotting has identified several segments of Roman road to the west of the suggested route, between SN64507790 and SN64407550. These cropmarks strongly suggest a route heading northwest from the north gate of Trawscoed Fort, via Abermagwr then turning more westward following the contours of the lower slopes of Penlan Hill on the north side of the Afon Ystwyth, possibly on a similar line to that of the present B4340. A turn northwards in the vicinity of Minffordd would then link up with the known cropmark evidence.

Cropmark evidence in the vicinity of SN64517736 suggests a fork in the Roman road. One branch continues northwards, taking an uncertain route towards Penllwyn Fort, possibly incorporating parts of the earlier suggested route, especially where it crosses the Afon Rheiddol. The other branch turns eastwards to an unknown destination, possibly, eventually, Cae Gaer Fort.

Status: Suggested

Figs: Map 12

‘Suggested’ route (not proven): PRN5222

‘Certain’ route: Partial

‘Certain’ road segments: PRNs 51953; 51954; 51956; 51957

5.14 The road from Penllwyn to Pennal, RR69c, PRN5222, (Maps 12 and 13)

The suggested routes for the Roman road northwards to Pennal Fort, however likely, have little or no concrete evidence to support them. The location of the fortlet at Erglodd (PRN6203), may suggest that a different route to that currently suggested northwards from Talybont.

Status: Suggested

Figs: Maps 12 and 13

‘Suggested’ route (not proven): PRN5222

‘Certain’ route: None

‘Certain’ road segments: None

5.15 Discredited routes

The following routes have been allocated PRNs in the past, but are now considered to be discredited in the light of evidence for the other routes:

PRN 666	Garn Road road segment
PRN 3414	Blaen y Gors road segment
PRN 3962	Via Julia Montana road segment
PRN 4447	White Leys road segment
PRN 9031	Tywyn road segment
PRN 11760	Tregib road segment
PRN 46476	Letterston road segment
PRN 46493	Hayscastle road segment
PRN 5256	The suggested route for the road west of Carmarthen (partially represented on map 1)
PRN 13025	Clydai – Rhos Coch road segment in north Pembrokeshire (not represented on reference maps)
PRN 3420	The suggested route from Llandovery to Pumsaint (map 9)
PRN 4079	The suggested route from Llandeilo to Llandovery (map 7)
PRN 3419	The suggested routes from Llandovery to Castle Collen (map 9)
PRN 5222	The suggested western route between Llanio and Talybont (maps 11 and 12)
PRN 6379	The suggested route of RR62b via Arosfa Garreg Llwyd (map 8)

5.16 Possible Forts

Five features described as possible forts have been identified within the region: Cefn-Y-Gaer (PRN 9678); Bryn Teifi (PRN 7718); Alltrodin (PRN 5647); St Davids (PRN 31030) and Allt Jane (40397). None of these features have been confirmed as Roman forts and none are located on the routes of currently recognised or identified Roman roads. These features are only represented on figures 1 and 2. In addition, the existence of forts at Whitland, Kidwelly and Lampeter have recently been hypothesised but no evidence for them has yet been identified and they are not represented on the reference maps.

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APPENDIX 1:

GAZETEER

APPENDIX 2:

GEOPHYSICAL SURVEY

Fieldwork aspects of this project included a geophysical survey of the environs of the Roman fort at Llandovery, to attempt to define the presence and extent of a *vicus*. Access could only be obtained to survey the land to the north of the A483. The report is presented here as appendix 2.



Photo 7: An aerial photograph of Llandovery fort facing northwest. The fields to the north of the road were included in the geophysical survey. The fields south of the road were not surveyed (note cropmarks)

ROMAN FORT ENVIRONS G1827 (2)

GEOPHYSICAL SURVEY AT LLANDOVERY ROMAN FORT

1. INTRODUCTION

The Gwynedd Archaeological Trust was contracted to carry out a fluxgate gradiometer survey at Llandovery Roman fort by Cambria Archaeology (Dyfed Archaeological Trust). The survey formed part of a Cadw funded pan-Wales study examining aspects of Roman fort environs and Roman roads. Surveys had previously been carried out at several sites within Gwynedd, and Powys and had produced good results. The methodology developed in these surveys was adopted in the present project.

2. METHODOLOGY

Fluxgate gradiometer survey provides a relatively swift and completely non-invasive method of surveying large areas. Roman military sites are well suited to this technique as significant magnetic enhancement of the soil is an inevitable result of the day to day activities in a Roman fort. Recent surveys carried out in and around Roman forts in Gwynedd and Cumbria (Hopewell 2003 and Burnham Keppie and Fitzpatrick 2001) have demonstrated the suitability of this approach. A wide range of features was detected both within and outside the forts. Most of the sites produced evidence for the presence of *vici* in the form of ribbon development along at least one of the roads leading from the fort.

2.1 Instrumentation

All geophysical work was carried out using a Geoscan FM36 Fluxgate Gradiometer. This instrument detects variations in the earth's magnetic field caused by the presence of iron in the soil. This is usually in the form of weakly magnetised iron oxides which tend to be concentrated in the topsoil. Features cut into the subsoil and backfilled or silted with topsoil therefore contain greater amounts of iron and can therefore be detected with the gradiometer. This is a simplified description as there are other processes and materials which can produce detectable anomalies. The most obvious is the presence of pieces of iron in the soil or immediate environs which usually produce very high readings and can mask the relatively weak readings produced by variations in the soil. Strong readings are also produced by archaeological features such as hearths or kilns because fired clay acquires a permanent thermoremanent magnetic field upon cooling. Not all surveys can produce good results as anomalies can be masked by large magnetic variations in the bedrock or soil or high levels of background "noise" (interference consisting of random signals produced by material within the soil). In some cases, there may be little variation between the topsoil and subsoil resulting in undetectable features. It must therefore be stressed that a lack of detectable anomalies cannot be taken to mean that there is no extant archaeology.

The Geoscan FM36 is a hand held instrument and readings can be taken automatically as the operator walks at a constant speed along a series of fixed length traverses. The sensor consists of two vertically aligned fluxgates set 500mm apart. Their Mumetal cores are driven in and out of magnetic saturation by a 1,000Hz alternating current passing through two opposing driver coils. As the cores come out of saturation, the external magnetic field can enter them producing an electrical pulse proportional to the field strength in a sensor coil. The high frequency of the detection cycle produces what is in effect a continuous output (Clark 1990).

The gradiometer can detect anomalies down to a depth of approximately one metre. The magnetic variations are measured in nanoTeslas (nT). The earth's magnetic field strength is about 48,000 nT, typical archaeological features produce readings of below 15nT although burnt features and iron objects can result in changes of several hundred nT. The machine is capable of detecting changes as low as 0.1nT.

2.2 Data Collection

The gradiometer includes an on-board data-logger. Readings in the Roman fort environs surveys were taken along parallel traverses of one axis of a 20m x 20m grid. The traverse interval was one metre. Readings were logged at intervals of 0.5m along each traverse giving 800 readings per grid.

2.3 Data presentation

The data is transferred from the data-logger to a computer where it is compiled and processed using Geoplot 3.0 software. The following two display options are used in this report along with an interpretation drawing.

a) X-Y plot

Each traverse is shown by a line trace. These are presented side by side allowing the full range of data and the shape of any anomalies to be seen.

b) Grey-Scale

Data values are represented by modulation of the intensity of a grey scale within a rectangular area corresponding to the data collection point within the grid. This produces a plan view of the survey and allows subtle changes in the data to be displayed.

2.4 Data Processing

The data is presented with a minimum of processing although corrections are made to compensate for instrument drift and other data collection inconsistencies. High readings caused by stray pieces of iron, fences, etc are usually modified on the grey scale plot as they have a tendency to compress the rest of the data. The data is however carefully examined before this procedure is carried out as kilns and other burnt features can produce similar readings. The data on some noisy or very complex sites can benefit from 'smoothing'. Grey-scale plots are always somewhat pixellated due to the resolution of the survey. This at times makes it difficult to see less obvious anomalies. The readings in the plots can therefore be interpolated thus producing more but smaller pixels and a small amount of low pass filtering can be applied. This reduces the perceived effects of background noise thus making anomalies easier to see. The trace plots show raw data and can thus be used to assess the magnitude of anomalies modified for grey-scale plots. Any further processing is noted in relation to the individual plot.

2.5 Grid locations

The survey grids were located by a total station survey carried out by Pete Crane and Hubert Wilson. Hubert Wilson also prepared the background maps for Figs 3 and 4.

3. THE GEOPHYSICAL SURVEY RESULTS

3.1 Introduction

The survey was carried out in during September 2004 by the author and Pete Crane. Two separate areas of survey were carried out. Area A covered all of a roughly triangular field with maximum dimensions of 150m x 170m. The Roman fort occupies the south-eastern part of the field. Jarrett (1969) recorded four principal phases of occupation here, the first being pre Flavian and the latter extending into the mid second century. The initial phases comprised earth and timber ramparts and wooden buildings. In the third phase, early in the second century, a stone revetment was added to the rampart and the central range of buildings was rebuilt in stone. The final phase saw a reduction in area before abandonment c.160 AD The area to the north-east of the fort is very steeply sloping with a further level area in the north- west end of the field. The sloping area proved to be difficult to survey and some minor inaccuracies and additional magnetic noise will have been produced here. Area B was an

irregular area with maximum dimensions of 210m x 135m covering most of a further two fields. The fort rampart could be seen as an earthwork at the south-western end of the fields. A further shelf extended across much of the south-western field.

The data is presented as two trace plots (Figs 1 and 2), a grey scale plot (Fig. 3) and an interpretation diagram (Fig. 4). The grey scale plot was smoothed in order to reduce pixellation by interpolation in the Y-axis and the application of a low pass filter.

3.2 Results

The outline of the north-eastern part of the fort is defined by a 10 to 15m wide, magnetically quiet band containing the defensive ditches. The line of the ditches is not altogether clear but two (1 and 2) can be seen on the northern corner and a possible third (3) delineates the outside of the defences. There may also be the remains of an earlier rampart visible amongst the ditches on the north-west side. The interior of the fort contains a mass of overlapping anomalies almost certainly indicating several phases of occupation. The gradiometer cannot differentiate between the different phases and the greyscale plot therefore shows all detectable phases superimposed on each other making interpretation difficult. The rampart is probably indicated by a band of fairly random responses (4) with a break indicating the *porta principalis sinistra* (5) and a wider band of responses indicating a possible re alignment of the defences (6). The *via principalis* (7) is well defined with an internal drain running along its south-west and possibly its north-east side. The outline and some internal details of a building with dimensions of 15m x 25m (8) in the *Latera praetorii* can be seen. This produced high magnetic responses (see trace plot Fig. 1) suggesting destruction by fire. The interior of the building is not particularly clear but there are suggestions of multiple, closely spaced, transverse features possibly indicating the floor supports of a double granary. The north-western end of this range is fairly well defined. The area to the south-east is less clear and appears to consist of several phases of activity. The *praetentura* appears to contain barracks arranged *per strigas*. The suggested outline of two buildings (9 & 10) are shown on Fig. 4 but cross walls in between the buildings and other anomalous wall lines indicate that more than one phase of buildings is present.

The *retentura* is crossed by a modern iron water pipe (11). There are clearly several phases of buildings in this range. The outline of a long building arranged *per strigas* (12) could indicate more barracks but a larger rectangular building seems to overlie this (13) and other anomalous walls suggest further phases of building.

A line of noise (14) running down the slope from the *porta principalis sinistra* could indicate the line of a road, possibly turning to the north-east on the level ground at the bottom of the slope. Several other line anomalies are visible in area A, 15 is a relict field boundary shown on the 1840 tithe map. Anomalies 16 & 17 are probably ditches or drains but could be assigned to almost any period. The double linear anomaly 18 crossing the fort ramparts could be the result of drains but could be interpreted as part of an enclosure or large building. The high responses along the edge of the field (19) are modern concrete structures and piles of rubble.

Much of area B is dominated by a mass of overlapping anomalies many of which show signs of significant thermoremanent magnetism. Detailed interpretation is not possible in this area and Fig 4 only aims to illustrate certain features of the results. The main area of activity lies immediately to the north-east of the fort defences (1 & 2) and appears to be surrounded by a series of ditches. An array of three possible ditches (21) can be seen on the north-east side although they can only be traced for about 30m with any certainty. These could be the ditches of a much larger earlier fort now largely masked by later activity. Anomaly 31 could also belong to this phase.

The northern limit of much of the activity seems to be defined by the rounded corner of a rampart or ditch perhaps indicating that this area was, for some of its history, enclosed within an annexe of the fort. A further ditch (23) to the north-west of this appears to be one side of an enclosure truncated (or magnetically masked) by the annexe. The activity within the annexe is characterised by large numbers of overlapping features on different alignments and this clearly represents several phases of occupation. There appear to be two major areas of strong magnetic enhancement consistent with heavy burning.

Area 23 appears to consist of a mass of burnt buildings one of which (24) has dimensions of 25m x 15m. These are fairly well defined at the west where two or three rectangular structures are visible (14). Elsewhere the anomalies are fairly random indicating a mass of burnt rubble.

Two or perhaps three lines of strong anomalies (25) cut by what is probably a post-Roman field boundary (26) were detected immediately to the north-east of the fort. These are best interpreted as a series of kilns or ovens. A further series of similar anomalies (27) appear to be enclosed within a building or enclosure. Several other strong anomalies detected elsewhere in area B (28, 29, and 30) could be interpreted as either being either the result of industrial activity or burnt buildings. A well-defined anomaly with dimensions of 7m x 4m (32) appears to be a rectangular building standing within a rectangular enclosure.

The area (33) beside the modern road, in contrast to the rest of the annexe, exhibits little evidence for heavy burning but contains a series of overlapping linear anomalies some of which can be resolved into buildings (e.g. 34). This could be the part of strip development alongside either a road from the fort, which could have run close to the line of the present road, or a Roman road recorded about 70m to the south east (PRN 3419). This fairly low level of activity seems to extend alongside the modern road to the north-east end of the survey area. There is a lot of modern noise alongside the road making it difficult to see any detail and only a single rectangular structure (35) with dimensions of 18m x 15m can be resolved with any certainty. Several other linear features can be seen in this area although most seem to fade away as they approach a magnetically very quiet area (43) that occurs across most of the field to the west of Llanfair Farm. Feature 36 may be part of a field boundary shown on the tithe map of 1840, 37 and 38 are presumably ditches or drains but could be of any period. A series of three narrow negative anomalies (39) are probably modern water pipes leading to a manhole in the field (44). The status of the magnetically quiet area 43 is unclear. It is currently quite wet and could have been very marshy before the railway was built, thus limiting activity. A double linear anomaly (40) is visible as a well-defined bank in the field. This is not shown on the tithe map suggesting that it is early. Several other linear features including boundary 36 seem to fade as they run into the area and it is possible that this area was landscaped or infilled when the railway was built. If this is the case, bank 40 would be a modern feature.

Two other linear anomalies can be seen in area B. Feature 41 is very narrow and is probably a modern drain or pipe. Feature 42 could be part of the annexe defences or possibly a continuation of bank 40.

3.3 Conclusions and summary

The survey revealed a great deal of activity throughout much of the three fields to the north-west of the modern road. The outline of the fort is clearly visible, as are some of the internal buildings including a possible granary and barracks. There are, however, several phases of buildings and defences present making detailed interpretation impossible. There appears to be a substantial annexe to the north-east of the fort. This again contains several phases of activity. A possible array of three ditches could indicate the presence of a large early invasion fort perhaps comparable in size and function to Caersws I and Llanfor. Any early phases are masked by strongly levels of magnetic enhancement indicating either industrial activity or destruction by fire. Lines of strong anomalies immediately to the north-east of the fort may indicate a series of kilns or ovens. Industrial activity on this scale could indicate a works depot attached to the fort and this would certainly help to explain the high levels of thermoremanent magnetism in this area. Comparison with the lines of kilns at Holt (Petch 1969) adds weight to this hypothesis. It is difficult to discern any pattern across the rest of the annexe area although there are suggestions of a phase of roadside *vicus* development and there were apparently several substantial buildings that were destroyed by fire towards the northern corner.

It should be noted that there is no particular reason to assume that all of the buildings within the annexe area are Roman. It is possible that some of the phases are medieval, associated with the early ecclesiastical site at Llanfair. It has to be recognised that there is little in the annexe that can be recognised as being typically Roman by shape alone and any interpretation as such, in advance of excavation, must therefore be considered to be provisional.

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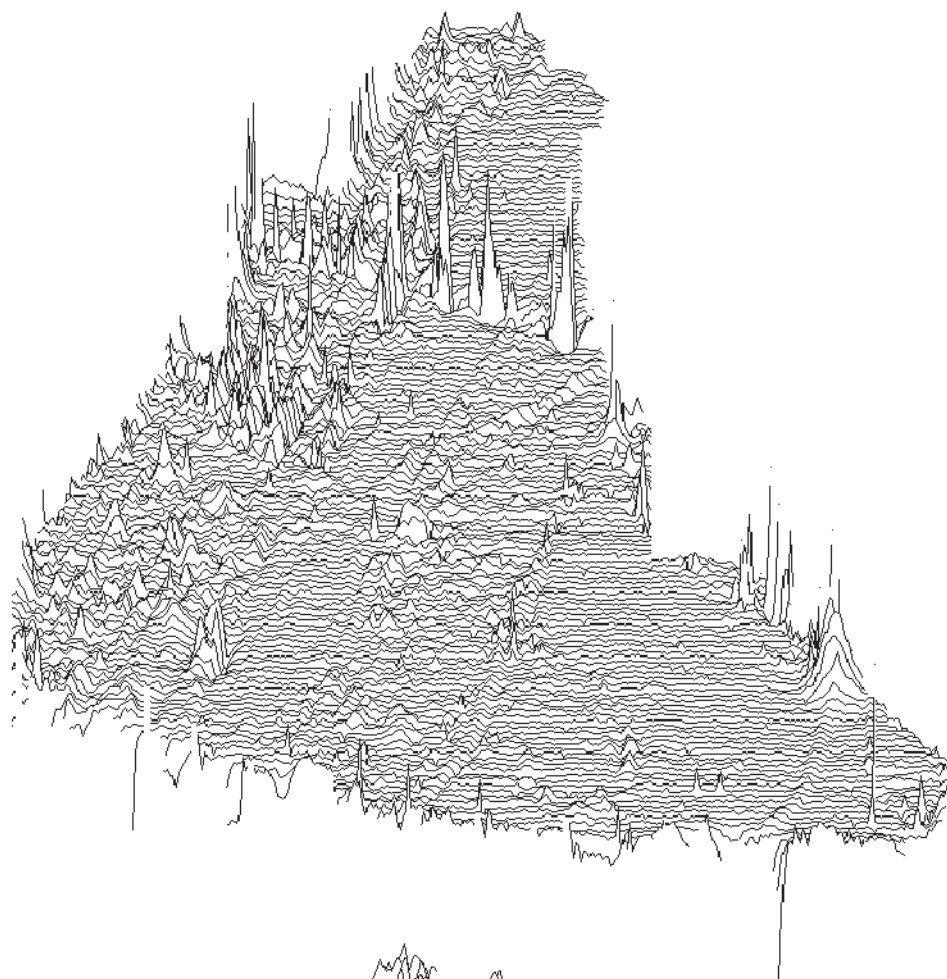


Fig. 1 Llandovery gradiometer survey
Area A, trace plot

Std dev 8.56
Min -195.25
Max 168.74

┌ 68.5 nT



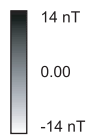
Fig. 2 Llandovery gradiometer survey
Area B, trace plot

Std dev 12.57
Min -197.02
Max 209.63

┌ 75.48 nT



Fig. 3 Llandovery Gradiometer survey
Grey-scale plan



Survey by D Hopewell and P Crane.
September 2004

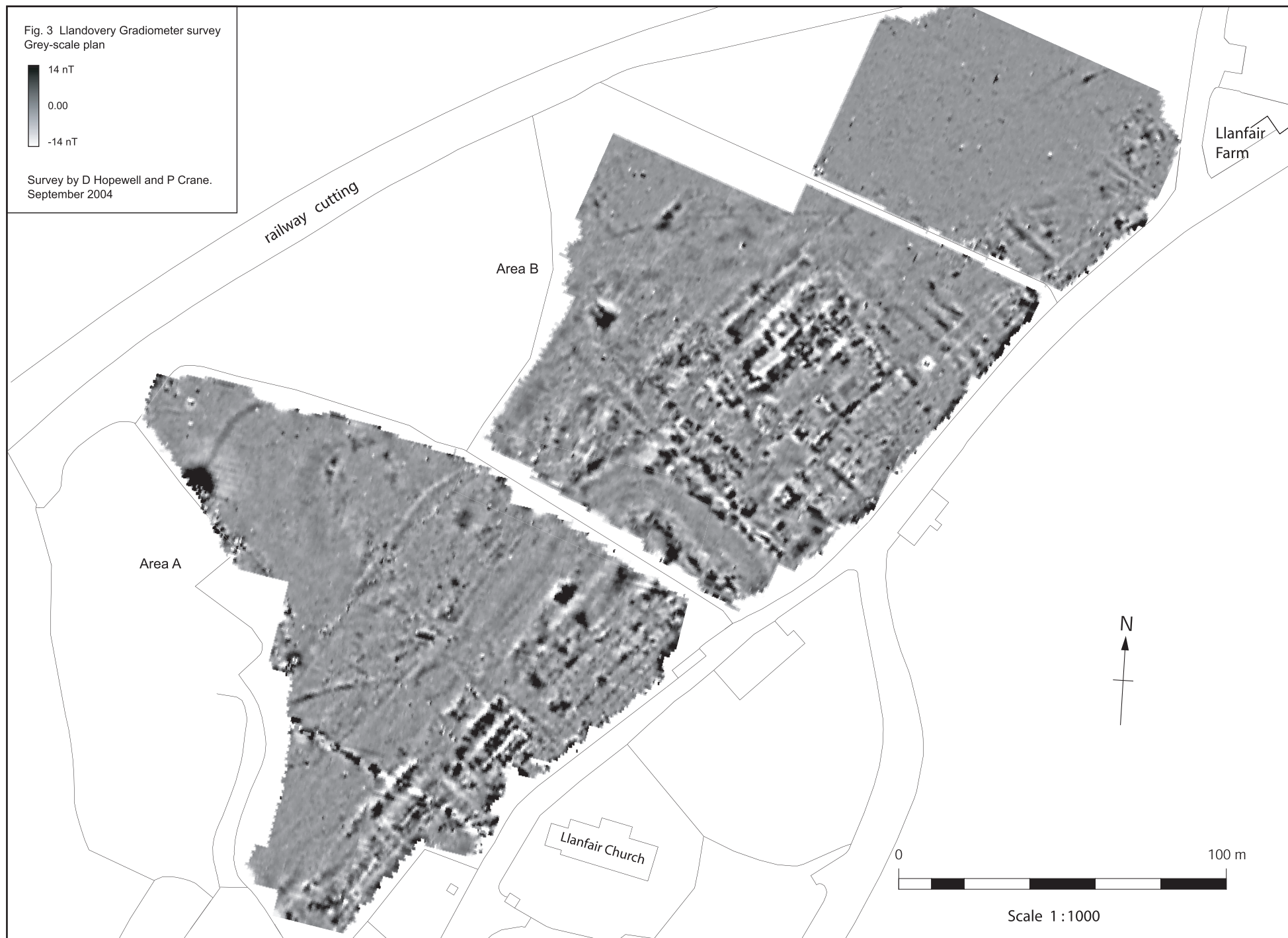
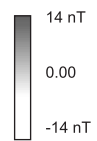
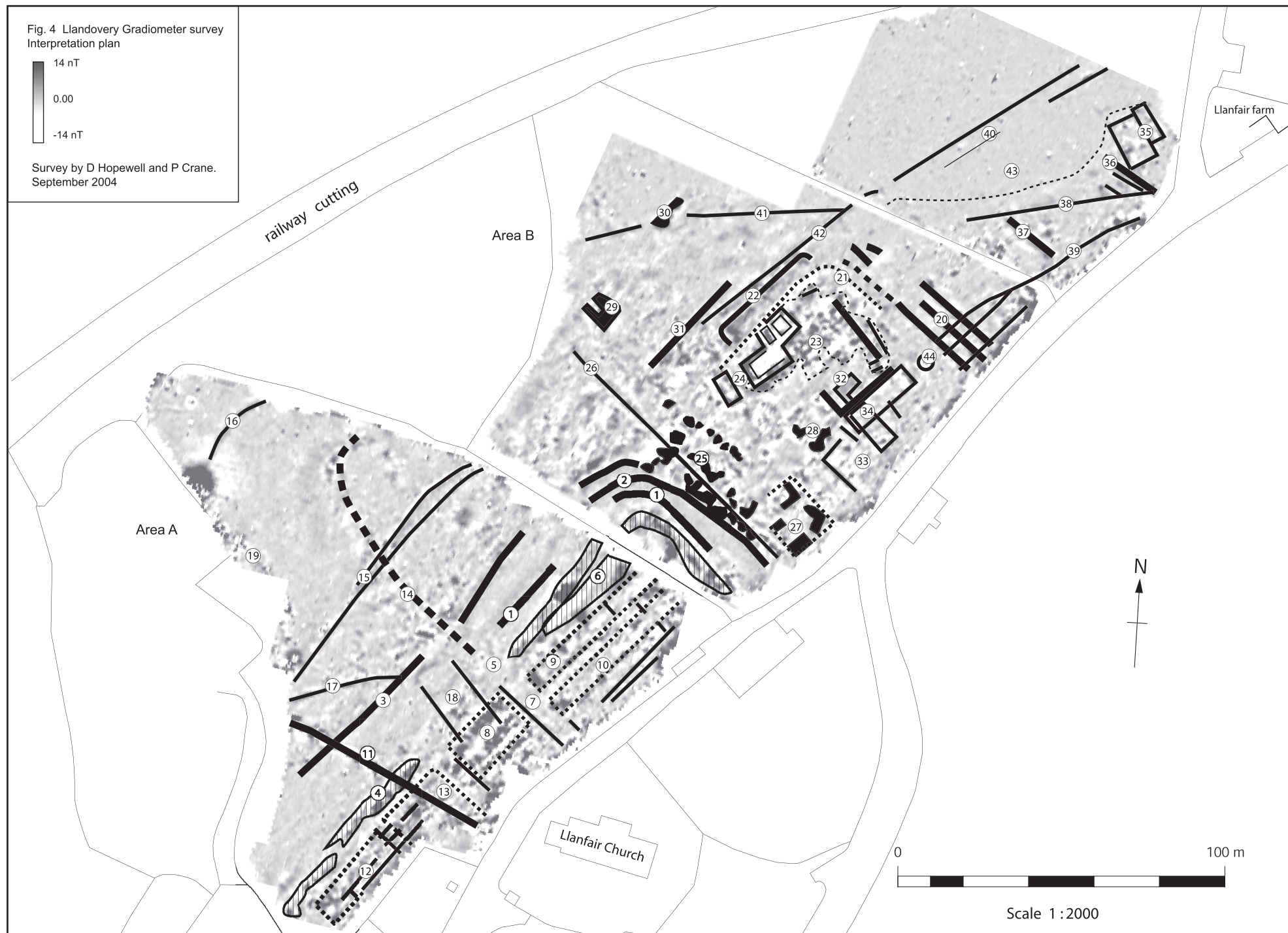
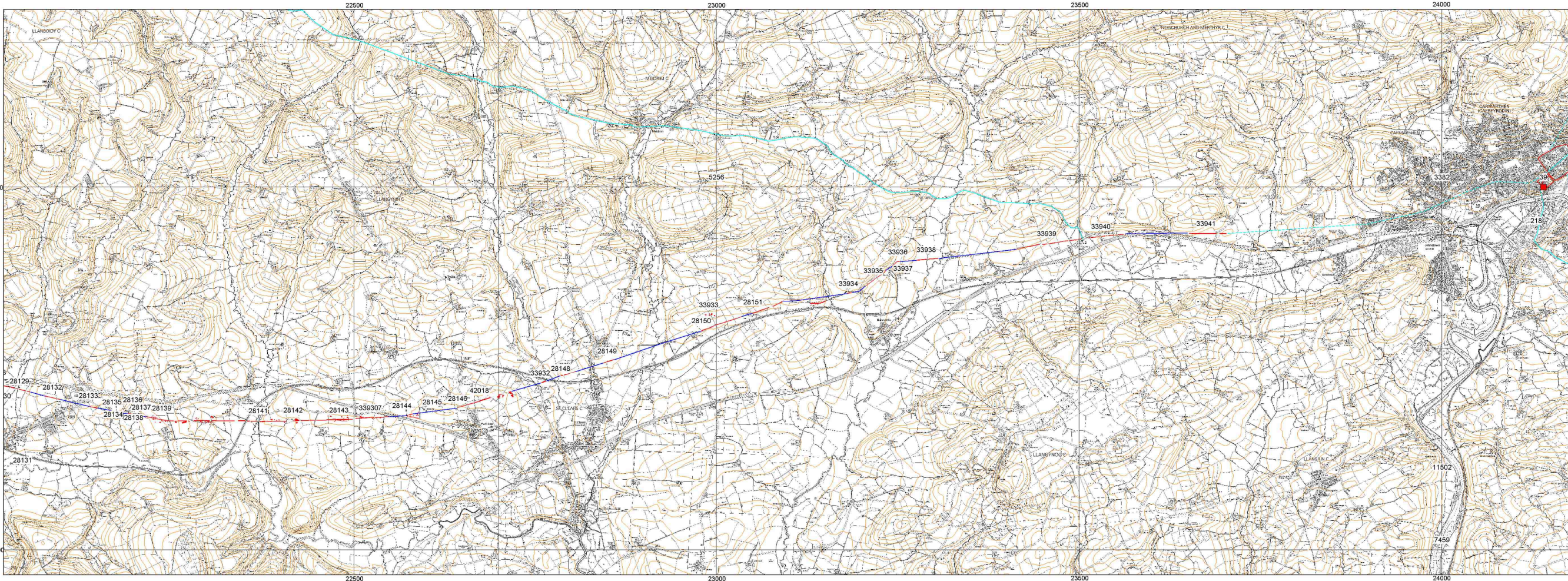


Fig. 4 Llandovery Gradiometer survey
Interpretation plan



Survey by D Hopewell and P Crane.
September 2004





**Roman Military Roads, Forts
and Vici in Southwest Wales**

Map 1
The Roman Road
West of Carmarthen
(Carmarthen to Whitland)

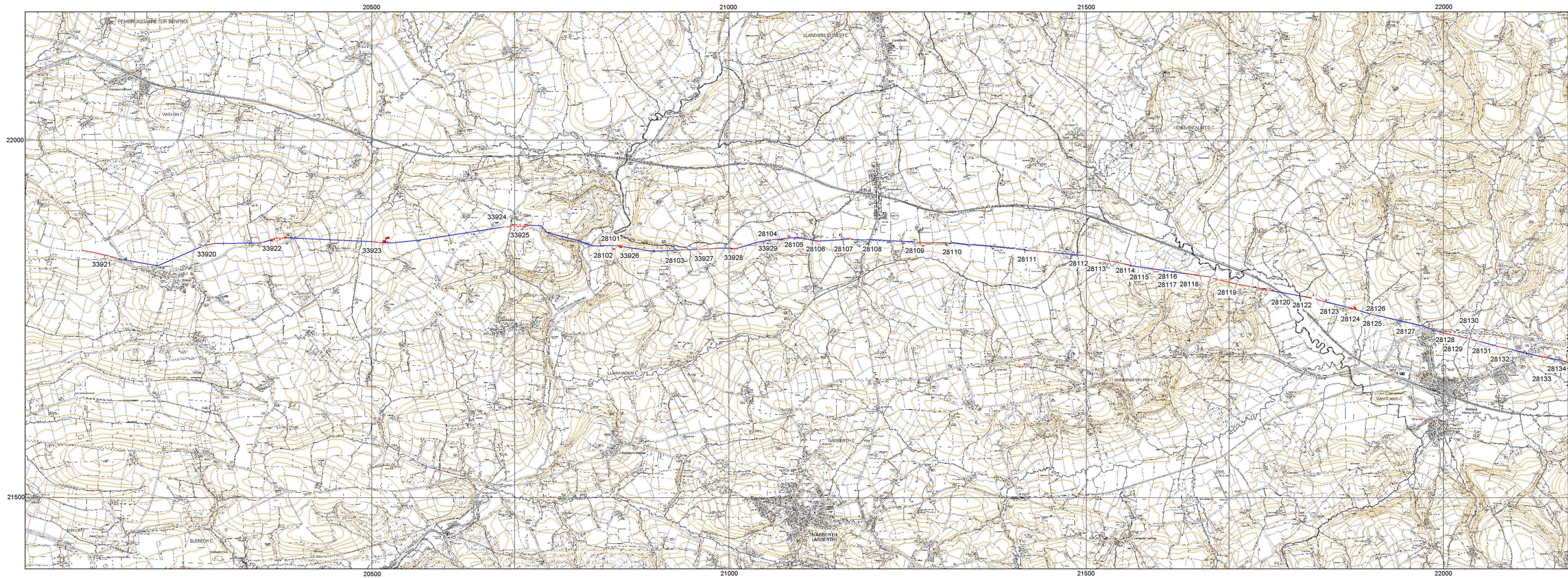
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 - 'Probable' road segment
 - 'Suggested' route (antiquarian)
 - 'Suggested' route (modern)
 - Roman fort
 - Possible Roman fort
 - Roman fortlet
 - Possible Roman fortlet
 - Roman marching camp
 - Roman practice camp

Scale: Grid squares = 1Km

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Roman Military Roads, Forts and Vici in Southwest Wales

Map 2

The Roman Road
west of Carmarthen
(Whitland to Wiston section)

KEY

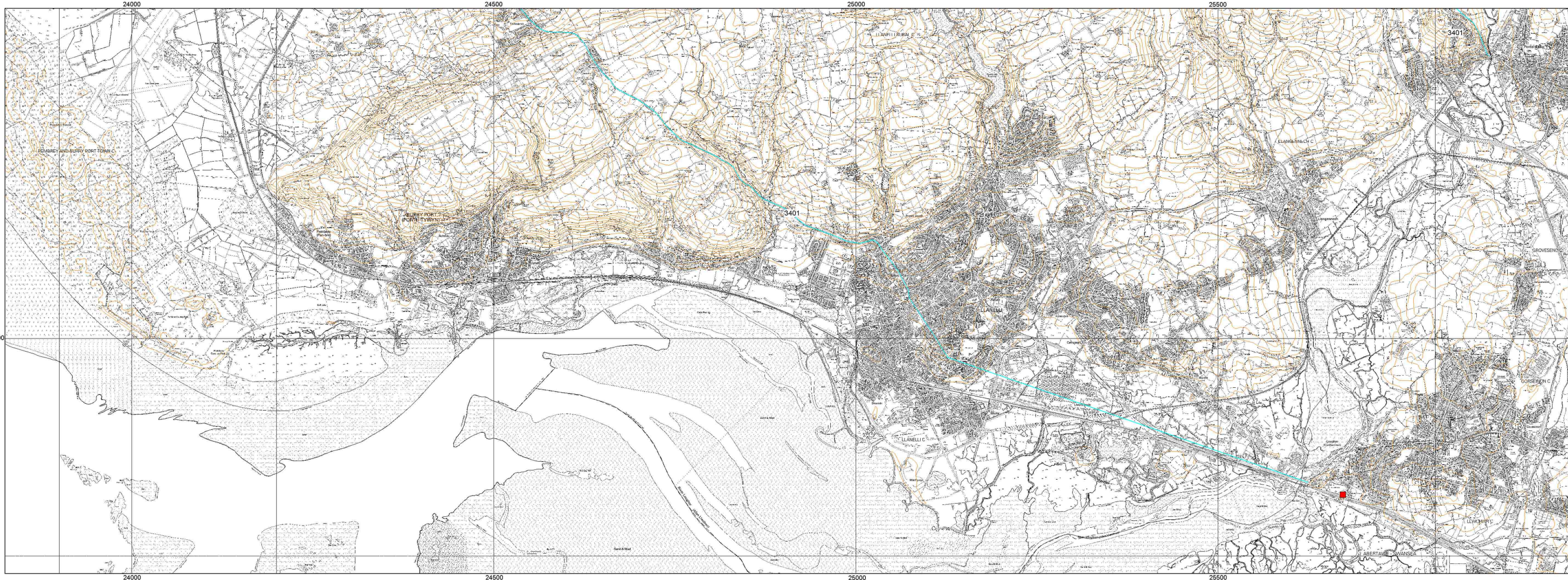
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-  Roman fortlet
-  Possible Roman fortlet
-  Roman marching camp
-  Roman practice camp

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Roman Military Roads, Forts and Vici in Southwest Wales

Map 4

The Roman Road from
Carmarthen to Lughour
(section 2)

KEY

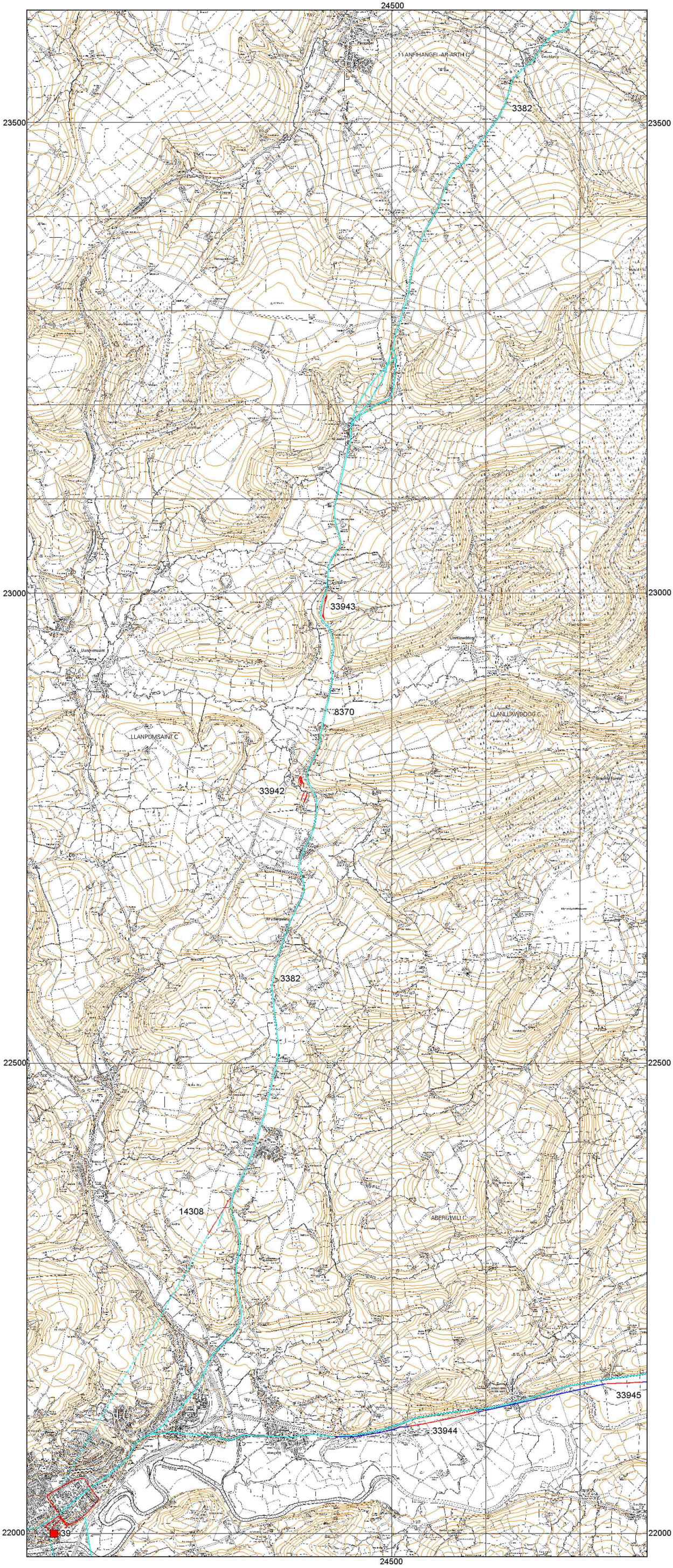
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**Roman Military Roads, Forts
and Vici in Southwest Wales**

Map 5

The Roman Road from
Carmarthen to Llanfair Clydogau
(section 1)

KEY

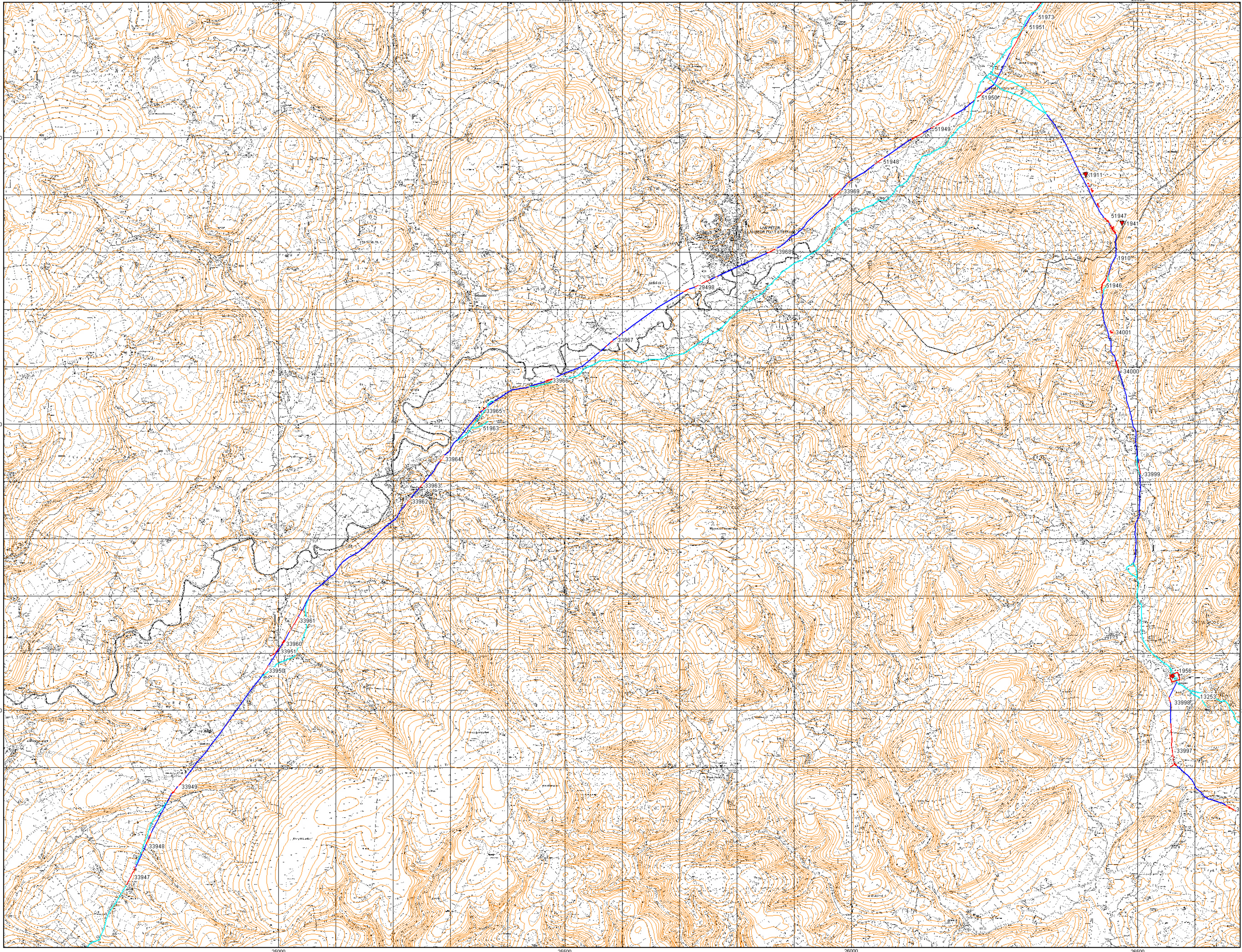
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(antiquarian)
- 'Suggested' route
(modern)
- Roman fort
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Roman Military Roads, Forts
and Vici in Southwest Wales

Map 6

The Roman Road from
Carmarthen to Llanfair Clydogau
(section 2)

KEY

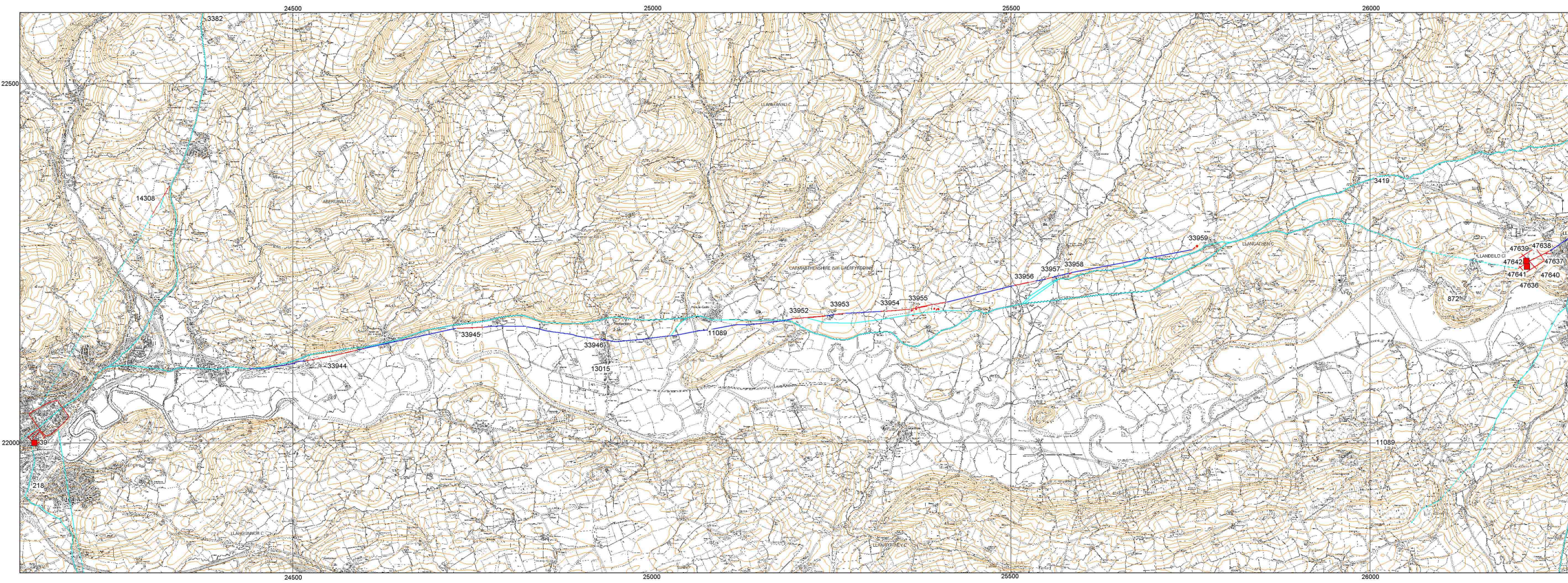
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**Roman Military Roads, Forts
and Vici in Southwest Wales**

Map 7
The Roman Road from
Llandeilo to Carmarthen

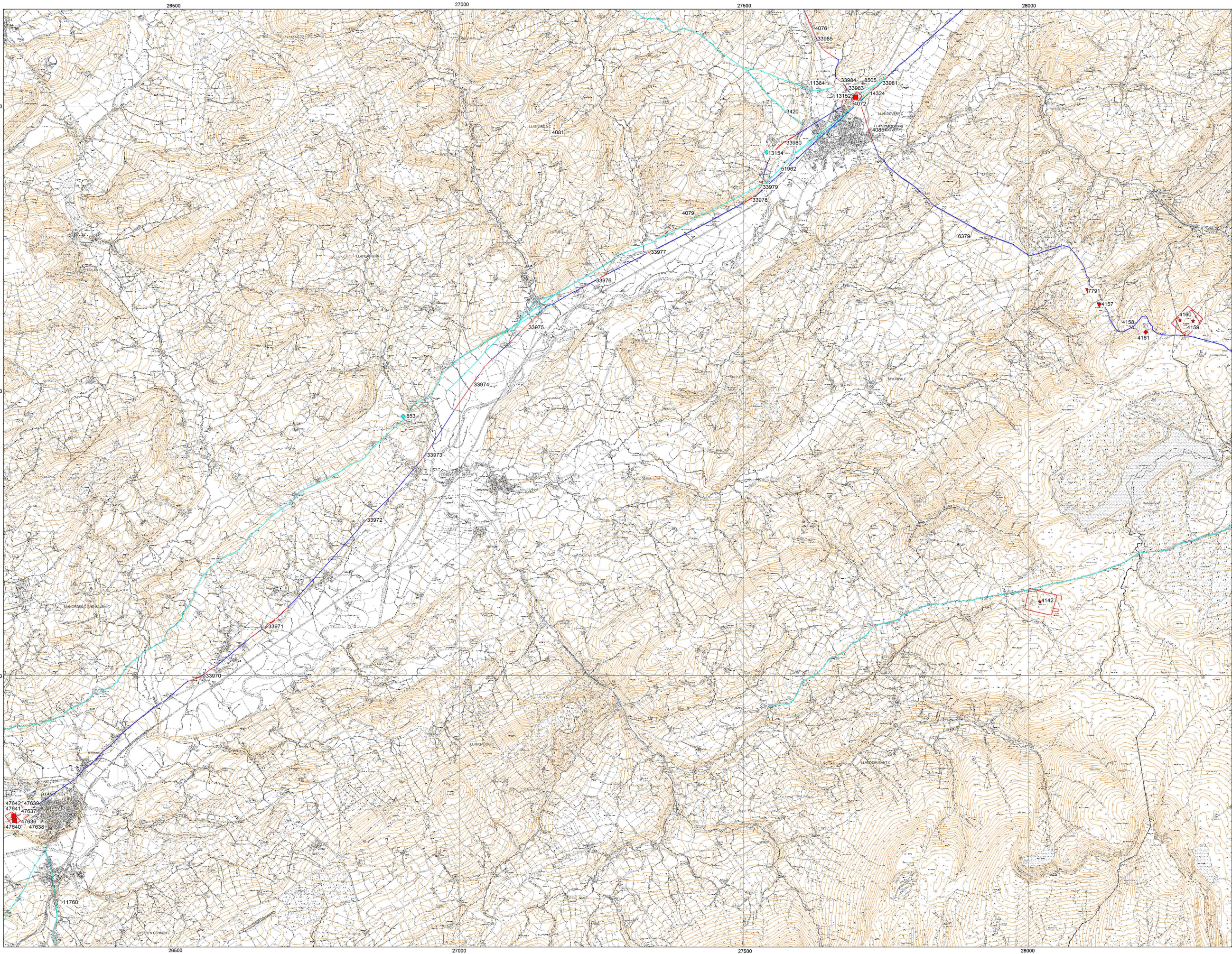
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Map 8

The Roman Road from
Llandeilo to Llandovery
and southeast of Llandovery

KEY

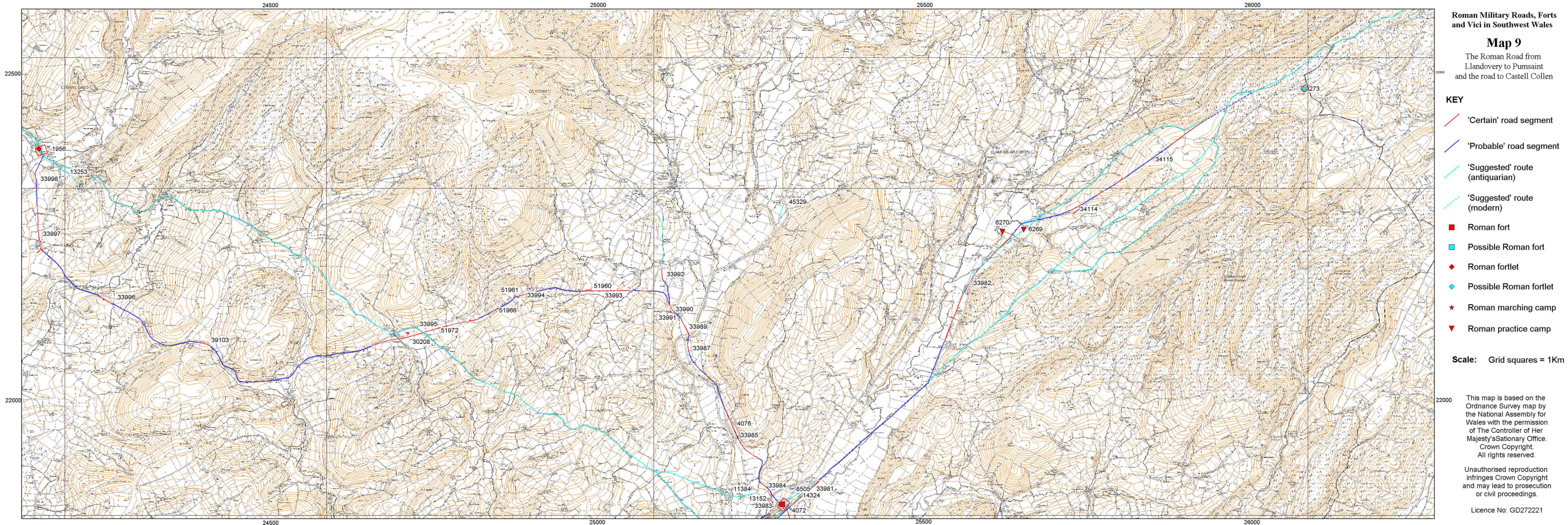
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Map 10

The Roman Road from
Pumsaint to Llanfair Clydogau

KEY

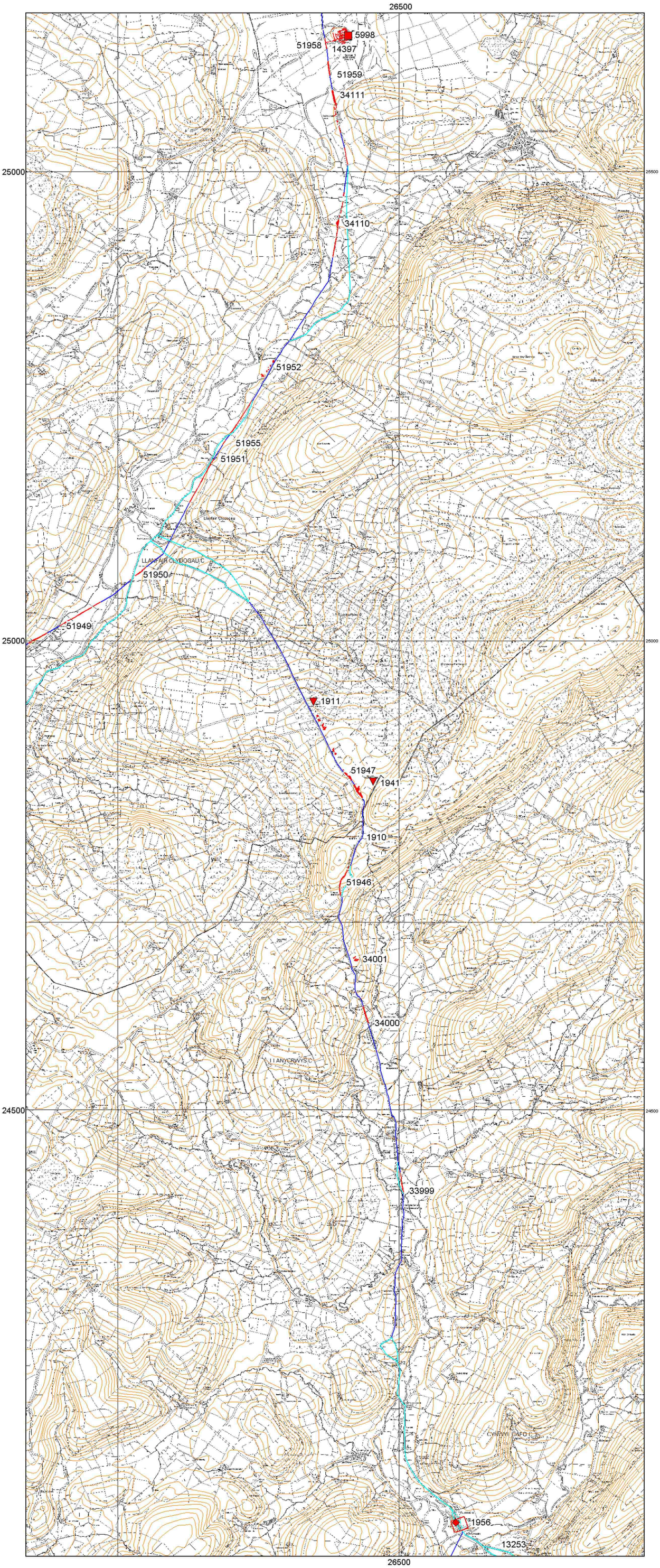
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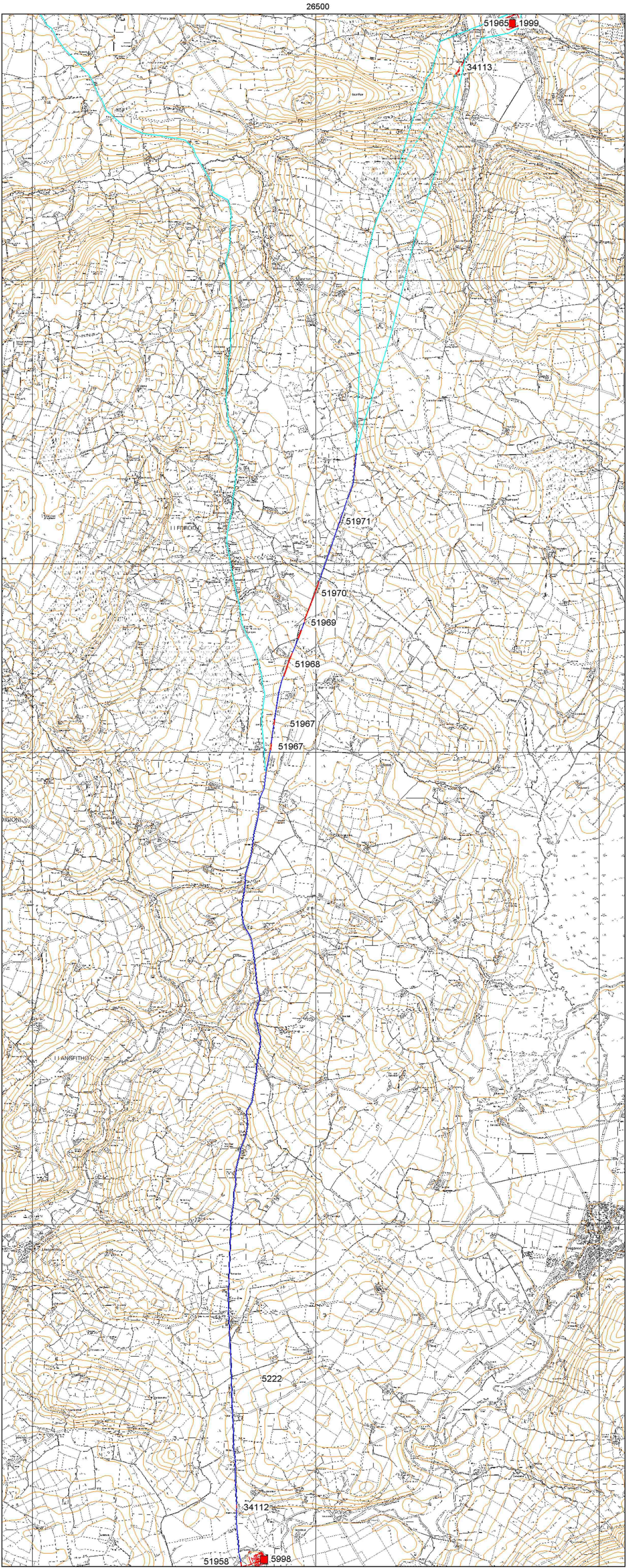
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Roman Military Roads, Forts
and Vici in Southwest Wales

Map 11

The Roman Roads from
Llanio to Trawscoed

KEY

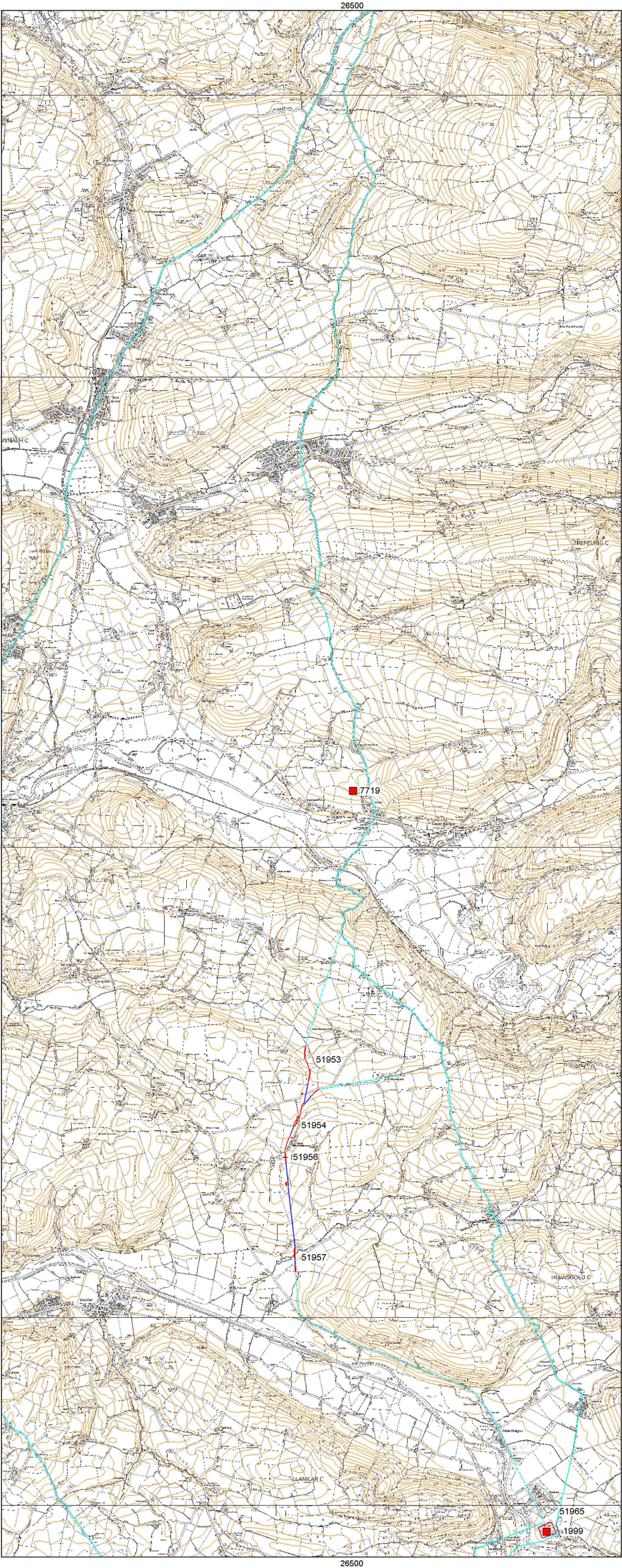
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Roman Military Roads, Forts
and Vici in Southwest Wales

Map 12

The Roman Road from
Trawscoed Fort to Pennal Fort
(section 1)

KEY

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- 'Probable' road segment
- 'Suggested' route
(antiquarian)
- 'Suggested' route
(modern)
- Roman fort
- Possible Roman fort
- Roman fortlet
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