
Holyhead WTW Improvements Final Effluent Scheme

Archaeological assessment

GAT Project No. G1750a

Report No. 462

October 2002

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

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Prepared for
Symonds Group

by

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**Ymddiriedolaeth Archaeolegol Gwynedd
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HOLYHEAD WTW IMPROVEMENTS

FINAL EFFLUENT SCHEME (G1750a)

ARCHAEOLOGICAL ASSESSMENT

SUMMARY

An archaeological assessment was carried out in advance of a new pipeline between the Waste Water Treatment Works at Penrhos, Holyhead and the outflow at Soldiers Point. This involved consultation of existing records and documents and a field search. Seven archaeological features were identified: 4 were categorised as regional importance and 3 of minor importance. The pipeline will have a slight impact on 5 of these features, all of which are linear tracks or railways, and unknown impact on the remaining two, as the exact location of the one, and the full extent of the other are presently unknown. Field evaluation is recommended at these two sites to ensure sufficient information is obtained to enable appropriate mitigation to be undertaken. Those sites which will be slightly affected will be recorded in advance and, where possible, re-instated afterwards. A watching brief will be undertaken along the entire route during the initial earth removal process, and during trench excavation if it is considered appropriate.

1 INTRODUCTION

Gwynedd Archaeological Trust have been asked by Symonds Group Ltd to undertake an archaeological assessment in advance of a new pipeline between the Waste Water Treatment Works at Penrhos, Holyhead (SH25938135), and the outflow at Soldiers Point (SH23618361), a length of 5.5 Km.

2 SPECIFICATION AND PROJECT DESIGN

No brief has been prepared for this work, but a project design was produced which conforms to the guidelines specified in *Standard and Guidance for Archaeological Desk-based Assessment* (Institute of Field Archaeologists, 1994, rev. 1999), and the project has been monitored by Gwynedd Archaeological Planning Service.

Gwynedd Archaeological Trust's proposals for fulfilling the requirements were, briefly, as follows:

- a) *to identify and record the cultural heritage of the area to be affected;*
- b) *to evaluate the importance of what was identified (both as a cultural landscape and as the individual items which make up that landscape); and*
- c) *to recommend ways in which damage to the cultural heritage can be avoided or minimised.*

A full archaeological assessment usually comprises 6 phases:

- 1) *Desk-top study*
- 2) *Field Search*
- 3) *Interim Draft Report*
- 4) *Detailed Field Evaluation*
- 5) *Final Draft Report*
- 6) *Final Report*

This assessment has covered the work required under 1, 2 and 3. It is sometimes necessary to undertake a programme of field evaluation following the desktop assessment. This is because some sites cannot be assessed by desktop or field visit alone, and additional fieldwork is required. This typically takes the form of geophysical survey or trial excavation, although a measured survey is also an option. The present report makes recommendations for any field evaluation required.

3 METHODS AND TECHNIQUES

3.1 Desk-top Study

This involved consultation of maps, computer records, written records and reference works, which make up the Sites and Monuments Record (SMR), located at Gwynedd Archaeological Trust, Bangor. Aerial photographs were examined at the National Monuments Record, Aberystwyth, chiefly of 1940's date, and more recent photographs were examined at the Welsh Water Project Office. Estate maps, tithe maps and OS maps were examined at the County Record Office, Llangefni, and the University of Wales Bangor archives. Information about Listed Buildings and Scheduled Ancient Monuments was obtained from Cadw: Welsh Historic Monuments. Secondary sources were consulted to provide background information, particularly on the development of the port of Holyhead. A full list of sources consulted is given in section 7 of the report.

3.2 Field Search

This was undertaken on 29 August, 2002, when the route of the pipeline was walked by an archaeologist to note the present state of known sites, and to identify any archaeological features visible as earthworks.

The conditions were fine for a field search, though some fields were heavily overgrown, and access to one area, marked on fig. 1, was not possible.

Features identified were marked on copies of the 1:10,000 OS map, as accurately as possible without surveying. Each feature was described and assessed. Detail notes, sketch plans and photographs were made of the more important features. These records are archived in Gwynedd Archaeological Trust under project number G1750.

3.3 Report

All available information was collated, and the features were then assessed and allocated to the categories listed below. These are intended to give an idea of the importance of the feature and the level of response likely to be required; descriptions of the features and specific recommendations for further assessment or mitigatory measures, as appropriate, are given in the relevant sections of this report.

The criteria used for allocating features to categories of importance are based on those used by the Secretary of State when considering ancient monuments for scheduling; these are set out in the Welsh Office Circular 60/96.

3.3.1 Categories of importance

The following categories were used to define the importance of the archaeological resource.

Category A - Sites of National Importance.

This category includes Scheduled Ancient Monuments and Listed Buildings of grade II* and above, as well as those sites that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of Regional Importance

This category includes grade II Listed Buildings and sites which would not fulfil the criteria for scheduling, but which are nevertheless of particular importance within the region. Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of District or Local Importance

These sites are not of sufficient importance to justify a recommendation for preservation if threatened, but nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and Damaged Sites

These are sites, which are of minor importance, or are so badly damaged that too little remains to justify their inclusion in a higher category. For these sites rapid recording either in advance or during destruction, should be sufficient.

Category E - Sites needing further investigation

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A-D, are temporarily placed in this category, with specific recommendations for further evaluation. By the end of the assessment there should be no sites remaining in this category.

3.3.2 Definition of Impact

The direct impact of the proposed development on each site was estimated. The impact is defined as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

None:

There is no construction impact on this particular site.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the feature, *e.g.* part of a trackway or field bank.

Unlikely:

This category indicates sites that fall on the margins of the study area, but are unlikely to be directly affected.

Likely:

Sites towards the edges of the study area, which may not be directly built on, but which are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of a site affecting its overall integrity. Sites falling into this category may be linear features such as roads or field boundaries where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of a feature or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the site is unknown, but thought to be in the vicinity of the proposed development.

3.3.3 Definition of field evaluation techniques

Field evaluation is necessary to allow the reclassification of the category E sites, and to allow the evaluation of areas of land where there are no visible features, but for which there is potential for sites to exist. Two principal techniques can be used for carrying out the evaluation: geophysical survey and trial trenching.

Geophysical survey

This technique involves the use of a magnetometer, which detects variation 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 back-filled or silted with topsoil contain greater amounts of iron and can therefore be detected with the gradiometer. Strong readings can be produced by the presence of iron objects, and also hearths or kilns.

Other forms of geophysical survey are available, of which resistivity survey is the other most commonly used. However, for rapid coverage of large areas, the magnetometer is usually considered the most cost-effective method. It is also possible to scan a large area very rapidly by walking with the magnetometer, and marking the location of any high or low readings, but not actually logging the readings for processing.

Trial trenching

Buried archaeological deposits cannot always be detected from the surface, even with geophysics, and trial trenching allows a representative sample of the development area to be investigated. Trenches of an appropriate size can also be excavated to evaluate category E sites. These trenches typically measure between 20m and 30m long by 2m wide. The turf and topsoil is removed by mechanical excavator, and the resulting surface cleaned by hand and examined for features. Anything noted is further examined, so that the nature of any remains can be understood, and mitigation measures can be recommended.

3.3.4 Definition of Mitigatory Recommendations

None:

No impact so no requirement for mitigatory measures.

Detailed recording:

Requiring a photographic record, surveying and the production of a measure drawing prior to commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

Basic recording:

Requiring a photographic record and full description prior to commencement of works.

Watching brief:

Requiring observation of particular identified features or areas during works in their vicinity. This may be supplemented by detailed or basic recording of exposed layers or structures.

Avoidance:

Features, which may be affected directly by the scheme, or during the construction, should be avoided. Occasionally a minor change to the proposed plan is recommended, but more usually it refers to the need for care to be taken during construction to avoid accidental damage to a feature. This is often best achieved by clearly marking features prior to the start of work.

Reinstatement:

The feature should be re-instated with archaeological advice and supervision.

4 ARCHAEOLOGICAL FINDINGS AND RECOMMENDATIONS

4.1 Topographic Description

Holy Island, or Ynys Gybi, is located off the western coast of Anglesey, to which it is joined by the Stanley Embankment, and also by the bridge at Four Mile Bridge (Pont Rhyd y Bont). Holyhead (Caer Gybi) is the principle town on Holy Island, and the proposed development site lies to the south-east of the town. The site is to the south and west of the aluminium works, and is bounded to the north by the railway and the new A55. To the south it borders the outskirts of the village of Trearddur Bay.

Geologically Anglesey is composed largely of Pre-Cambrian rocks, most notably the Mona Complex. These bedded rocks have undergone intense pressures leaving them deformed and folded, and volcanic events have resulted in their interbedding with lavas, ashes and tuffs. These make up much of the bedrock of Holy Island (Davies 1972).

The bedrock under the study area is composed of pale green chlorite schists, part of the New Harbour Group of the Mona Complex (Keeley 1987). Boulder clay overlies this, with the bedrock outcropping in places, and occasional patches of glacial gravels. The soils formed over these substrates are brown earths of the Rocky Gaerwen and Trisant types (Geological and soil survey maps). These soils can carry crops or excellent pasture, and were frequently chosen for settlement in the prehistoric period. The Rocky Gaerwen soils are shallow with frequent rock outcrops, and farms and fields tend to be smaller on these than on deeper soils (Keeley 1987).

A pollen study was carried out to the north-west of Trefignath burial chamber (Greig 1987). This suggested that the Boreal period vegetation was of a scrubby sub-arctic type. The woodland developed in the usual sequence, from open woodland with birch to denser, mixed oak forest, but with an unusual amount of willow. The climax forest contained oak and elm with hazel as an under-storey. A band of peat, with little pollen survival due to the drying out of the bog, was dated to about the start of the Neolithic period. The band contained charcoal and other evidence for burning, suggesting forest clearance in the immediate area. When the pollen record continued it showed that the forest had been replaced by grassland and arable fields. In the medieval period, and later, expanding arable farming caused increased erosion into the bog.

4.2 Archaeological and Historical Background (see figure 1)

The study area must be seen in relation to the port of Holyhead, and the rich archaeological heritage of Holy Island. The location of Holy Island within the busy western seaways linking Brittany, Cornwall, Ireland, Wales, Northern England, Scotland and the Viking countries to the east provides an international setting until post-medieval times, when its use as an official port for Ireland became of dominant importance. The port of Holyhead provided easy access in most weather, and recognition from sea was aided by the dominant mass of Mynydd y Twr, or Holyhead Mountain.

Evidence for activity from Neolithic times (*circa* 4000 BC to 2500 BC) to the present is abundant within the northern part of Holy Island. The two Neolithic tombs of Trefignath and Trearddur lie close to the study area. Four Neolithic polished stone axes have been found in the northern part of Holy Island (Lynch 1991), including two Graiglwyd axes found when excavating a hole for a turntable railway near Kingsland in 1926 (PRN 2507, SH 2504 8165), and one axe of unspecified stone found at Penllech Nest (PRN 2506, SH 251 816).

Two Bronze Age barrows were prominently situated on top of Holyhead Mountain (SH 219 829), though little can be seen of them now, and three barrows lay close to the shore at Porth Dafarch (SH 234 801), whilst others were situated at Garn (SH 211 825) and Gorsedd Gwlwm (SH 227 816). A barrow was recently discovered under the early Christian cemetery at Ty Mawr (SH 2520 8135). The Ty Mawr standing stone is one of several such stones in this part of Holy Island. There is another to the

south, next to Stanley Mill (SH 2664 7888), and a rare pairing of two stones just over 3m apart, to the west at Plas Meilw (SH 227 809) (Lynch 1991).

The island has several notable Iron Age and Roman period sites. Holyhead is dominated by its mountain, to the north-west of the town. The summit is enclosed by a stone rampart wall forming the hillfort of *Caer y Twr* (SH 219 829). A much smaller promontory fort, *Dinas* on the south coast of Holy Island (SH 223 794), is probably also Iron Age. This promontory is surrounded by high cliffs and a low bank runs along the edge of the chasm, which separates it from the mainland. These forts were probably defensive refuges, and the population lived in more hospitable areas. Towards the foot of the south-western slope of Holyhead Mountain are a group of huts near another *Ty Mawr* (SH 211 820) and a similar hut group overlies the Bronze Age barrows at *Porth Dafarch* (SH 234 801). Excavation at *Ty Mawr* demonstrated that the stone huts belonged to the 1st millennium bc, but with some activity in the 3rd century AD, as well as earlier prehistoric and post-Roman settlement evidence. The finds from *Porth Dafarch* dated the huts to the Roman period (Lynch 1991, RCAHMW 1937).

A Roman fort was constructed at Holyhead towards the end of the 3rd century or later, as a naval base against Irish raiders. A Roman coin hoard was found in the area in 1710. The coins were buried in a brass vessel, and all dated to the 4th century (PRN 2503, SH 26 81).

Holy Island was of considerable importance in the early Christian period, with the *clas* site of *Caer Gybi* large enough to attract the attention of the Vikings in 961 (Edwards 1986, 24). The foundation of this monastic community by St Cybi is traditionally dated to the mid 6th century AD. There is an unusual concentration of early Christian sites known, or suspected, on the island. These include a cemetery of long-cist graves, dating to approximately 6th to 8th century AD, discovered during the construction of the A55 dual carriageway, to the north-west of *Ty Mawr Farm*. At this site the graves were located around, and cut into, the remains of a Bronze Age barrow. Another cemetery, of similar date, lies to the south-west of the study area, at *Tywyn y Capel*, the site of a medieval chapel on the shore of *Trearddur Bay* (Edwards 1986, 31). There were early Christian cist burials found at *Porth Dafarch*.

The development of the parochial system in the 12th century saw Holyhead church change from a *clas*, or 'mother' church to a collegiate one. Responsibility remained, however, for a number of small chapels in the area, usually with associated wells, including *Capel Ulo*, and *Capel Gorlas*.

The official use of Holyhead as a port increased in the reign of Elizabeth I, when it became the departure point for the Royal Mail to Ireland. During Oliver Cromwell's Commonwealth Holyhead was garrisoned, and regular packet boats sailed to Ireland (Hughes and Williams 1981). The port subsequently grew until, by the early 19th century, it was the principle port for Ireland.

During the 17th century the road across Anglesey to Holyhead was probably just a rough track, but the forerunner to the bridge at *Four Mile Bridge* already joined Holy Island to Anglesey by 1578 (Hughes and Williams 1981). One of the earliest maps of Anglesey, published by Speed in 1630, marks *Pont-Rhydbont* (the bridge at *Four Mile Bridge*), and just to the west of it is *Llansanfraidd* (St Bride's or *Trearddur Bay*), the only place marked on Holy Island, other than Holyhead itself (Evans 1972).

In 1765 the road from the Menai ferries to Holyhead was turnpiked, and much improved (Ramage 1987). However, transport was still difficult until Telford built his new London to Holyhead road (the A5), which arrived on Holy Island in 1823. The *Stanley Embankment* (grade II listed, 20074) carried the road over *Afon Lasinwen*, the tidal strait between Holy Island and Anglesey, supplementing the bridge to south, and replacing a number of fords (GAT 251). The embankment was designed by Thomas Telford, started in 1822 and opened in 1823; its construction created the body of water now referred to as the *Inland Sea*. In 1846-8 the railway line was constructed along the southern side of the embankment (GAT 204, 251). Major improvements were also made to the harbour throughout the 19th century, first by Rennie and Telford who improved the inner harbour, and later the outer harbour was created by constructing a new breakwater (Hughes and Williams 1981). This was a massive undertaking, designed by J M Rendell and completed by J Hawkshaw, it used some 7 million tones of stone and took nearly 30 years to construct, during which time the population of Holyhead rose from just over 2000 to nearly 9000.

The coming of Telford's road and the railway significantly changed the landscape of Holy Island, but a comparison between the 18th and late 19th century maps show that the layout of the fields in the study area did not change considerably. There was little enclosure of open fields on Anglesey, as occurred in other parts of Britain at this time, but some common land was enclosed by Private Act (Carr 1982), such as the small areas of common land around Ty Mawr enclosed in 1861 (WPE 68/128).

Most of the land in the study area was owned by the Penrhos estate. The owners took the surname Owen in the early 16th century (Richards 1940), but in 1763 Margaret Owen, the heiress to Hugh Owen, married John Stanley and the estate passed to the Stanley family of Alderley (Ramage 1972, 1987, Richards 1940). W O Stanley was a noted antiquarian, and the Penrhos estate maps provide valuable historical evidence.

The majority of the area through which the pipeline passes consists of a number of farmsteads surrounded by regularly shaped fields. Some of the farmsteads are now abandoned and ruinous. The field layout was generally established by 1769, but numerous fields have been amalgamated at various periods since then, and some boundaries have been lost or altered. Unlike the area to the north of Holyhead (Penrhos estate map II, 772, map 14), there are few remnants of strip fields surviving in the late 18th century, though a number of smallholdings had been established, surrounded by small irregular fields, many of which have now disappeared.

4.3 The Existing Archaeological Record

(See figure 2)

6 New PRNs required

Eleven features were identified within the survey area, of which seven will be directly affected by the pipeline. These are listed below along with recommendations for further assessment and mitigatory measures.

1. Breakwater tramway SH23208346 PRN:16076

Category: B Impact: Slight

In 1847 parliamentary approval was granted for the construction of a breakwater to extend the size of the harbour at Holyhead. Initially intended to be 5360 feet long, it was later extended by a further 2,500 feet. Though the facing stones for the breakwater were limestone and were shipped in from Moelfre on the east side of Anglesey, the bulk of the stone came directly from the mountain adjoining the breakwater, and was transported in special wagons on a broad gauge (7 foot) gauge. Following completion of the breakwater the tramway was used both for maintenance and by a brickworks sited in the quarry to make use of the silica stone exposed during quarrying operations. In 1910 a contract was awarded to S Pearson and Son for repairs to the breakwater, and they laid a new standard gauge line alongside the old broad gauge, the latter falling out of use by 1913. In 1934 the standard gauge line was relaid with new rail. The line finally closed in 1979-80. Both tracks have been lifted, and the line is preserved as a road to the Breakwater quarry, now a country park. A length of the 7' gauge rail is preserved in the park (see Neale 1997 for a history of the line and rolling stock).

Recommendations for further assessment: None

Recommendations for mitigatory measures: It is important to minimise the impact upon the tramroad during construction, to re-instate the boundaries after construction, and to undertake detailed recording of the section across the tram road to record its make up and details of construction.

2. Footpath, Cae Fabli SH23208306 PRN 74525

Category: D Impact: Slight

A footpath running from Cae Fabli into open fields it is one of several footpaths which originally converged onto the water mill at Felin Ddwr (also called Tref Engan mill) to the east. It is shown on the 1840 tithe map as the principal route running past Cae Mabli and on to another smallholding (Ty Mawr) to the north, the link with Felin Ddwr does not appear to have been established by this time, so must be mid or late 19th century.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Watching Brief during construction and basic recording of a section through the line of the path.

3. Track and building at Tan y Bryn SH23178286 PRN 74526

Category: D Impact: Slight

The pipeline runs along the track past Tan y Bryn. This narrow track is clearly marked on the tithe map, when it formed the principal route to Tan y Bryn, Cae Mably and Ty Mawr, and is the south part of the footpath described in site 2.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Minimise impact and re-instate following construction.

Watching Brief during construction and basic recording.

4. Capel Gorlas (PRN 1761) ✓ SH23388243

Category: B Impact: Unknown/Likely (see figure 4)

Capel Gorlas is one of several chapels, each with an associated well, which lay on Holy Island. The exact location of Capel Gorlas is unknown, though the name is remembered in the house and buildings called Ffynon Gorlas. A well, surrounded by a stone wall and reached by a track from the present house, lies in the field south-west of the house. This is most likely the original Ffynon Gorlas. A description of 1775 describes it as 'Capal y Gorlas, in the east end of which was a famous spring called Ffynon y Gorlas' (Anon, 1775, 35). It is not clear if the well lay within the chapel, an unlikely event, or outside and to the east of the chapel. If the chapel lay west of the present well, then a possible location is on the site of two farm buildings, one a cart shed, which from their masonry and roof remains appear 19th century. At present the line of the route is shown lying between the two buildings, east of the well. It is possible the route will be moved further west, in which case it is important to move it beyond the well, so that there is no direct impact upon the remaining structure.

Recommendations for further assessment: Geophysical survey along the line of the route.

Recommendations for mitigatory measures: A continuous **Watching Brief** during initial top-soil stripping, with time allowed to clean areas by hand and record any features exposed. **Basic recording** of the two farm buildings.

5. Track, Mynydd Evan SH23508229 PRN 74527

Category: D Impact: Slight

A track serving the farm of Mynydd Evan. It is not shown on the tithe map of 1841, but is clearly marked on the OS 25" map of 1890.

Recommendations for further assessment: None

Recommendations for mitigatory measures: **Watching Brief** during construction and **basic recording** of a section through the line of the track.

6. Romano-British settlement, Ty Mawr PRN 14602 ✓ SH25548097

Category: B Impact: Considerable (See figure 5)

Remains of a late prehistoric or Romano-British settlement were found at this location during trial evaluation carried out in 2001. The features found included stone-capped drains, burnt stone and fragmentary stone walls. The full extent of the settlement was not recovered. The ideal would be to avoid the area, and to take the pipeline direct to the minor road. However, if this is not possible for technical reasons, then a line to the north of the settlement should be explored by field evaluation (shown on figure 5).

Recommendations for further assessment: **Field evaluation** consisting of geophysical survey and trial excavation along the route of the pipeline.

Recommendations for mitigatory measures: *Dependant upon the results of the field evaluation.*

7. Railway line PRN 16077

Category: B Impact: Slight

The pipeline has to cross the Chester to Holyhead Line, designed by Robert Stephenson and built by the contractors E L Betts, it was opened in March 1848. Many of the original walls, culverts and fittings remain.

Recommendations for further assessment: None.

Recommendations for mitigatory measures: *Preservation in situ. If there is to be any impact then Basic Recording and Reinstatement of affected features is to be undertaken.*

4.4 Sites lying close to the route

The sites described in this section lie close to the proposed route of the pipeline, but will not suffer direct impact if the present line is followed. Care must be taken when obtaining access to the pipeline route that these sites are not disturbed.

* 8. Two footbridges over the tramway NGR SH23358352 and SH23068340

Category B: Impact: None

The two footbridges over the quarry tramway lie either side the route of the pipeline, and were constructed to provide access to the fields by farms on the south side of the tramway.

9. Burial chamber near Gorlas PRN 1750 NGR SH23408250

Category E: Impact: Unknown

An antiquarian account describes the presence of a possible Neolithic burial chamber near to the site of Capel Gorlas. The attribution is doubtful, but possible. The exact site is not known.

* 10. Spring, Cae Allt Wen NGR SH23578215

Category D: Impact: None

The remains of a wall around a spring lie just west of the pipeline route. It served the farm of Cae Allt Wen. It is not marked on the 1890 OS map, so is likely to be of later date.

11. Ty Mawr Standing stone PRN 2501 NGR SH25388096

Category: A (Scheduled Ancient Monument) Impact: None

A standing stone of Bronze Age date.

Entire Route

Many sites of archaeological importance are not recognisable by assessment techniques alone, and only become apparent during field evaluation (geophysical survey and trial excavation) or during a watching brief. Whilst field evaluation is recommended for two specific areas on the route (sites 4 and 6), the remainder of the route would be adequately examined by a watching brief during the top soil strip and, if required, during trench excavation. This would ensure all sites not identified by the assessment process but affected by construction will be identified and recorded.

4.5 Summary of importance and impact

Feature no	Category	Impact	Mitigation measures
1	B	Slight	Watching brief and Basic Recording
2	D	Slight	Watching Brief and Basic Recording
3	D	Slight	Reinstate, Watching Brief and Basic Recording
4	B	Unknown	Field evaluation followed by Comprehensive Watching Brief
5	D	Slight	Watching Brief and Basic Recording
6	B/E	Considerable	Avoid/Field evaluation
7	B	Slight/None	Avoid/Basic Recording and Reinstatement
Entire route	E	Considerable	Watching Brief

5. SOURCES

OS Maps

OS 1:10,000 map sheets SH 70 SW (1980) and SH 70 SE (1979)

25" County Series Anglesey V.14 and XI.2 surveyed 1887

6" County Series Anglesey Sheets V SW, V SE, XI NW and XI NE surveyed 1887 revised 1923

Aerial Photographs

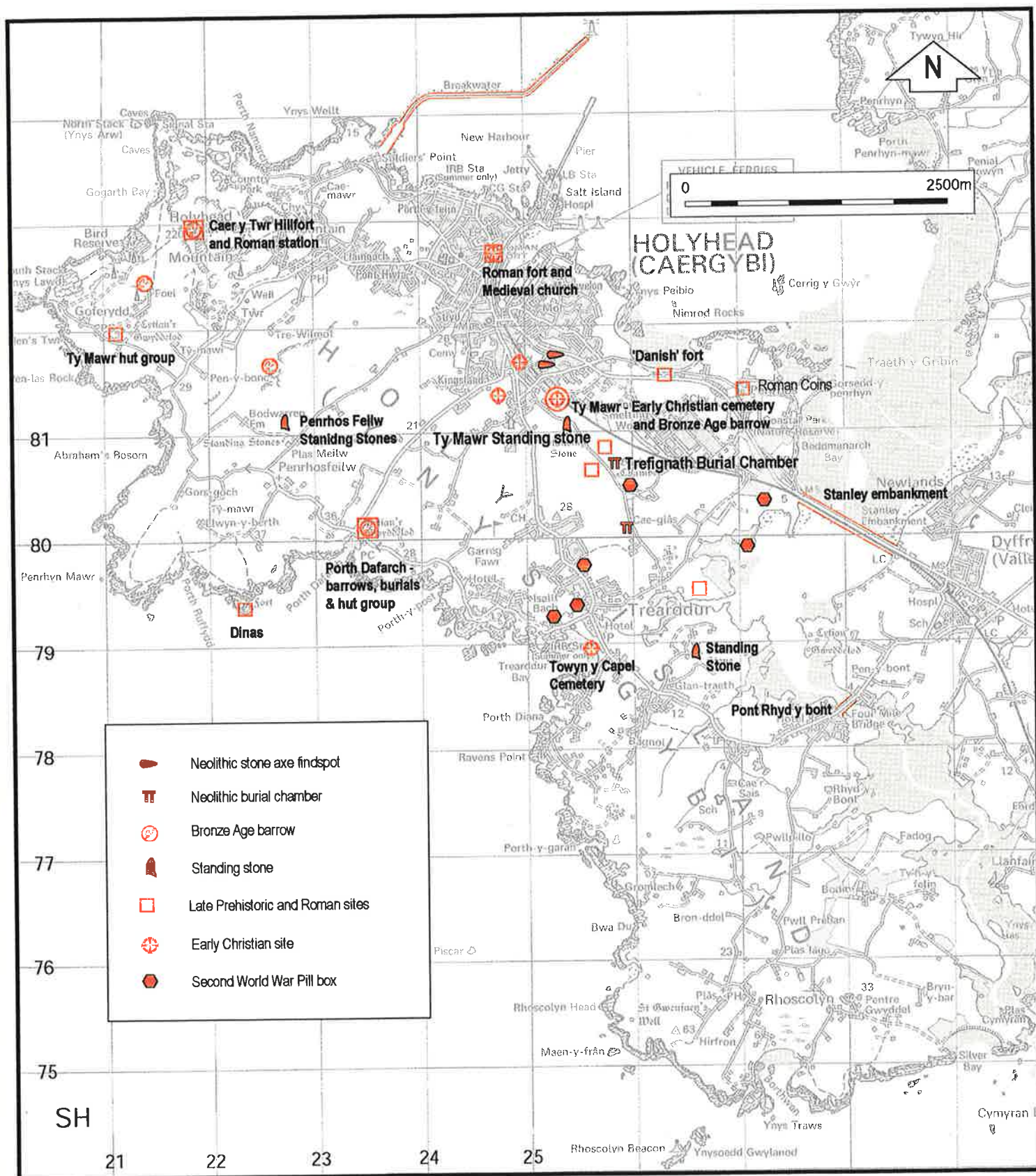
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Welsh Office Circular 60/96 1996 *Planning and the historic environment: archaeology*, Cardiff



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Fig 1. Location of sites in proximity to study area.



Fig 2. Location of archaeological sites

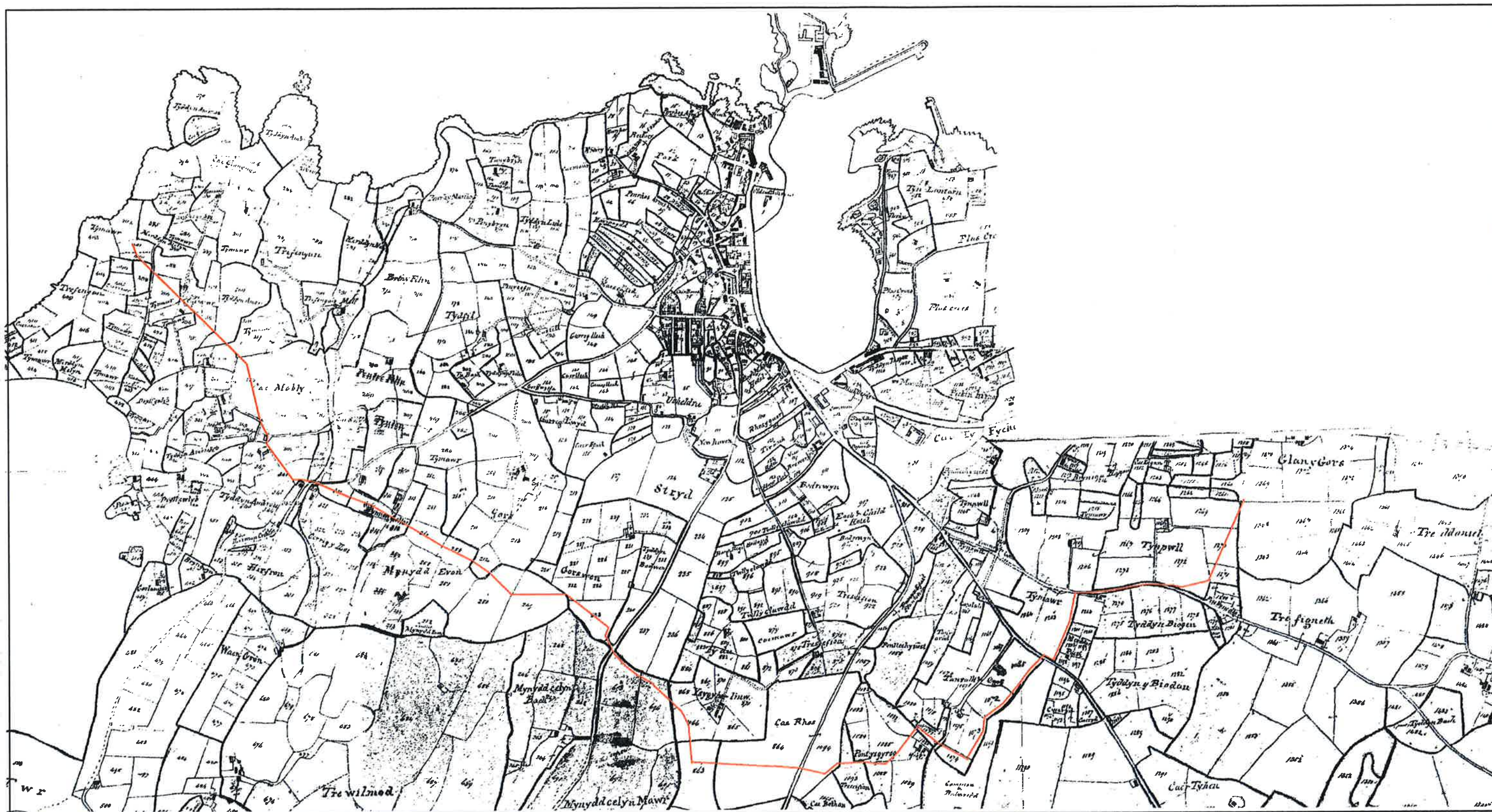


FIG 3 THE MAP OF 1845 WITH APPROXIMATE ROUTE OF PIPELINE

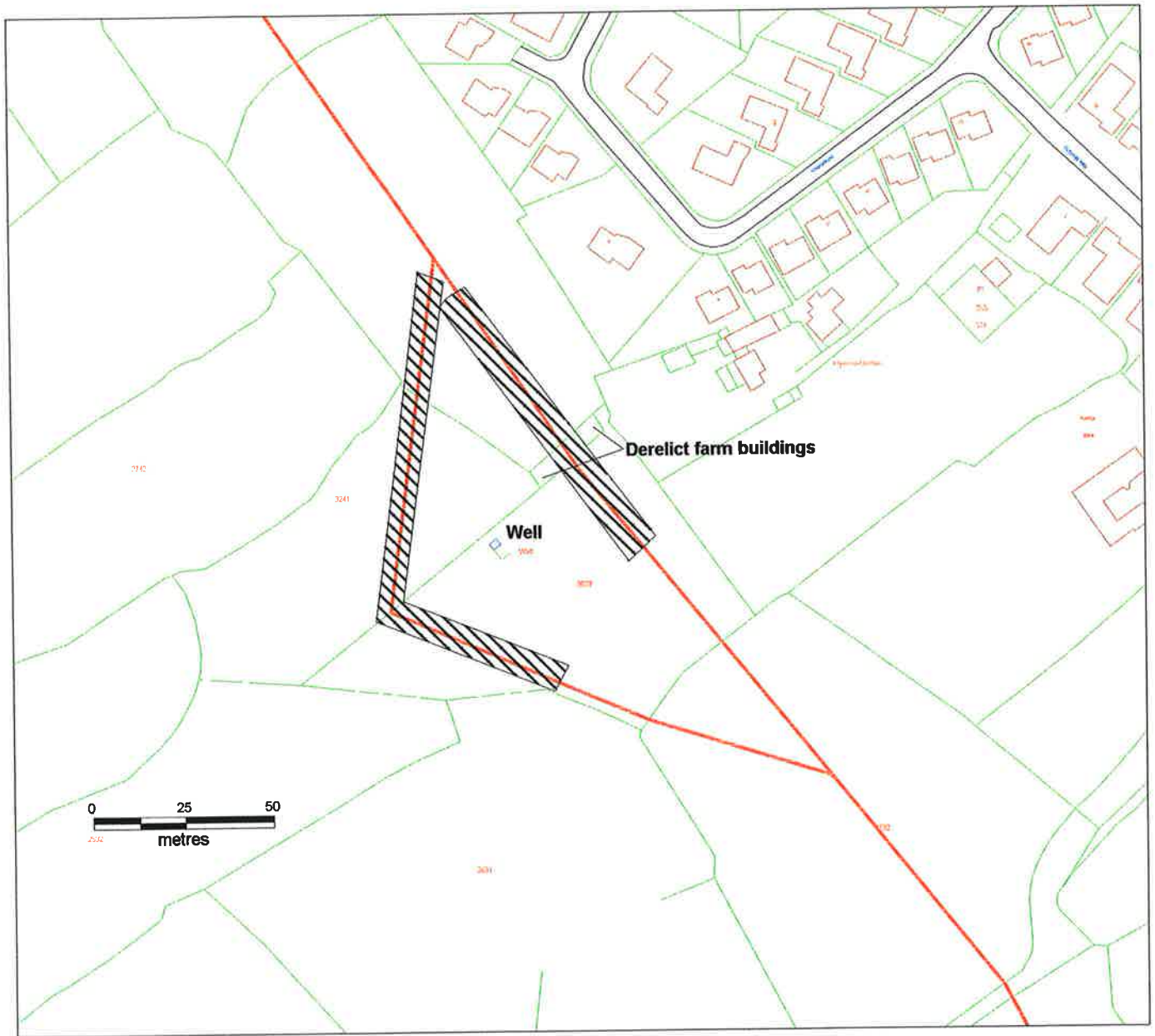


Fig 4. Alternative pipeline routes at Ffynon Gorlas (hatching shows area for field evaluation)

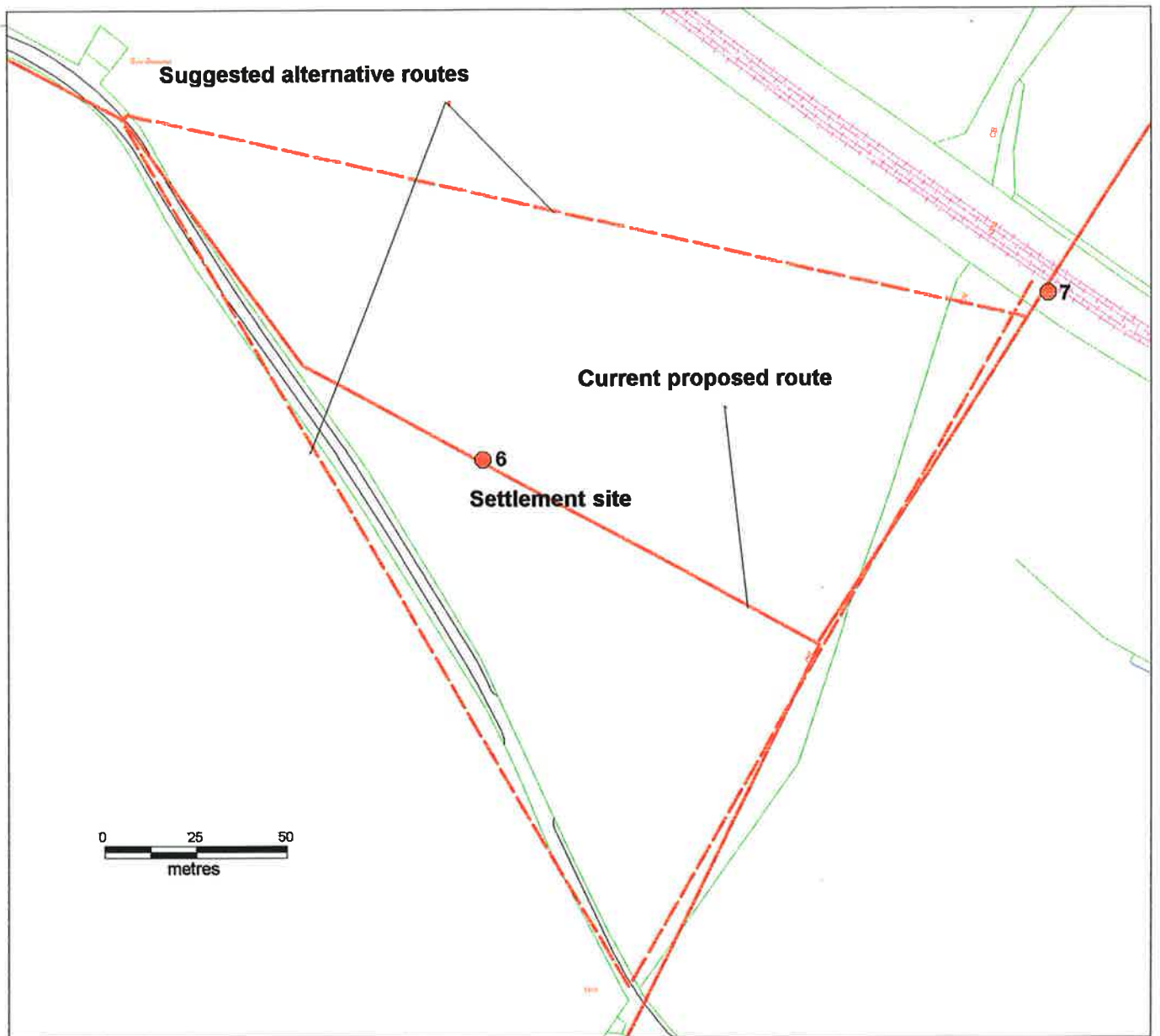


Fig 5. Alternative pipeline routes at Site 6

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