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Southern pipeline (Villages) Routes

Archaeological assessment

GAT Project G1750c
Report no. 465
November 2002
Revised December 2003

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Craig Beuno Ffordd y Garth, Bangor, Gwynedd LL57 2RT

EPRN: 43583

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Prepared for Symonds Group
by
A. Davidson

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SOUTHERN PIPELINE (VILLAGES) ROUTES

ARCHAEOLOGICAL ASSESSMENT (G1750c)

SUMMARY
An archaeological assessment was carried out in advance of a series of new pipelines between the Waste Water Treatment Works at Penrhos, Holyhead and the villages of Valley, Four Mile Bridge and Trearddur Bay. This involved consultation of existing records and documents and a field search. Twenty three archaeological features were identified of which 5 were categorised as national importance, 9 of regional importance, 2 of local importance, 1 of of minor importance, and 6 requiring further assessment before they could be allocated. There will be no impact upon 9 of the features. There will be a slight impact on 6 of the features, and an unknown impact on the remaining 8, as their exact location or findspot is unknown. Those sites which will be slightly affected will be recorded during the works. A comprehensive watching brief will be undertaken along the more sensitive parts of the route, and an intermittent watching brief on the remainder of the route.

1. INTRODUCTION

Gwynedd Archaeological Trust have been asked by Symonds Group Ltd to undertake an archaeological assessment in advance of a series of new pipelines that lie between Caergeiliog, Valley, Four Mile Bridge, Trearddur Bay and the new proposed treatment works at Penrhos, Holyhead (SH25938135) (see figures 2-4 for the location of the five sections of proposed pipelines considered in this report).

An initial version of this report was produced in November 2002. This is a revised version, taking into account slight changes to the proposed route, and the sites of three pumping stations situated at Caergeiliog, Valley and Trearddur Bay.

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, in particular the Penrhos collection. 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 2 September, 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. Additional site visits were undertaken in November, 2003.

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). The proposed pipelines run from Caergeiliog and Valley through Four Mile Bridge, on to Trearddur Bay, and finally to the treatment works at Penrhos, Holyhead (see fig's 2 – 4).

The geology of Holy Island is largely composed of pale green chlorite schists, part of the New Harbour Group of the Mona Complex (Keeley 1987). Boulder clay overlies this, with the rock 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). At Valley the route crosses lands that were formerly tidal prior to the construction of the cob south of the village designed to reclaim the Cleifiog sands. The lower lying land is therefore fluvial, though the pipeline does cross the former shoreline at the base of the hill below Pencaledog, and again close to the railway crossing in Valley where the land rises towards the farm of Bryn Hyfryd.

The history of vegetation within the area is partly known from a pollen study 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, which would have covered most of the area up to 3000 BC, 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

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 (PRN 15691 - 2), though little can be seen of them now, and three barrows lay close to the shore at Porth Dafarch (PRN 1772-4), 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 overlie 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 Irish raiders 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 within earlier Bronze Age barrows (Edwards 1986).

The development of the parochial system in the 12th century encouraged the change from a *clas*, or 'mother' church to a collegiate one, with responsibility for a number of lesser churches and several smaller chapels in the area including Capel Gwyngenau and Capel St Ffraid, which both lie close to the proposed pipeline.

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 little more than 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 Llansanfraid (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 was finally opened in 1825 following the completion of the Menai Suspension Bridge. The Stanley Embankment (grade II listed, 20074) carried the road over Afon Lasinwen, the tidal strait between Holy Island and Anglesey, replacing the ferries and fords. 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 . The village of Valley dates largely from the time of its use as a construction village for the emabankment. Much of the present area occupied by the village would have been below high water until the construction of the Cruglas dam in the late 18th century.

4.3 The Existing Archaeological Record

(See figure 2)

The gazetteer of sites below is divided, for convenience, into 5 series, corresponding to individual lengths of pipeline construction. Each length is referred to by a letter (A to E) and each site is referred to by the letter and a sequential number.

Eighteen features were identified within the survey area. These are listed below along with recommendations for further assessment and mitigatory measures.

A1. Gorad fish weir, Newlands, Valley (PRN 7193) SH29128080
Category: A Impact: Slight
The fishweir at Newlands has been identified within a recent archaeological assessment as being of national importance (Hopewell 2000). The trap consists of a 1.6m wide wall standing to a height of 1.0 m. The wall initially runs perpendicular to the shore before turning to run parallel to it for some 200m prior to turning back in towards the shore for another 100m. The weir almost certainly dates from the 18th century, and may well have an earlier origin, though no records have been found to confirm this (Barnes 1988).
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid the weir by placing the outfall in a manner which does not impact upon the stonework. Although the line of the weir is generally clearly visible, two lesser walls are connected to the end of the principal masonry. It may be necessary to survey these in order to ensure all elements of the weir are avoided.*

B1 Pen-caledog, Valley (PRN 11143) SH30107890
Category: B (Listed Building Grade II) Impact: None
An 18th century farmhouse of two storeys. The house is unoccupied and boarded up, and is in relatively poor structural condition. The construction of the pipeline should not have any direct impact upon the house or outbuildings.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid.*

B2. Racecourse, Valley SH295791
Category: D Impact: Unknown
This is marked on the first edition OS map of 1839 (1" to the mile). It was established on the low flat lands reclaimed from the sea after the Cruglas dam was built in the late 18th century. It is unlikely that any structures would have accompanied its use as a race course, though coins and other metalwork may be present.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Watching Brief.*

B3. Tre Ifan, Caergeiliog SH30517863
Category: B Impact: None
A 17th century house, formerly listed Grade II, though deleted from the list in 1998, presumably because of heavy restoration.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *None.*

B4. Toll House, Caergeiliog SH30497858
Category: A Listed Grade II Impact: None
One of five Anglesey toll houses built to a design by Telford . It was built c. 1818, and charging ceased 1895. Two-storey octagonal house with single storey wings to west and south.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *None*

B5. Telford's road and walling
Category: B Impact: None/Slight
The Anglesey section of the London to Holyhead road was built on an entirely new alignment designed by Telford. Construction was largely complete by 1823, and the road fully open following the completion of the Menai Suspension Bridge in 1825. Though much of the walling has been rebuilt, and parts disrupted, original sections do remain, as do the original depots to store materials for maintenance.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid disruption to original walling.*

B6. Telford's milestone
Category: A Listed Grade II Impact: None

One of the milestones designed by Telford for the new London to Holyhead road. The distances are recorded on a cast iron plate set into a granite slab (Holyhead 5; Mona 8; Bangor 20). The Anglesey section of the London to Holyhead road was built on an entirely new alignment designed by Telford. Construction was largely complete by 1823, and the road fully open following the completion of the Menai Suspension Bridge in 1825.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid.*

C1. Bridge, Pont Rhydbont SH28007836
Category: B (Listed Building Grade II, Trearddur Bay Record no. 19948) Impact: Slight
Although a bridge has been in existence at this location since at least the early 16th century, it is probable that the present remains date from the late 18th century. It consists of a long causeway which crosses the narrow strait between Holy Island and Anglesey, pierced by a central arch with radial voussiors. The causeway has been widened on both sides. Three pipes presently run along the south side of the bridge just below the level of the parapet. These are supported on stone buttresses and concrete supports. It is necessary to replace these pipes, and it is hoped that new fastenings can be employed which will have less visual impact. See appendix A for a fuller description of the bridge.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Design new fittings to minimise impact. Detailed recording in advance of work.*

C2. Quay, Rhydbont SH27967834
Category: B Impact: None
Prior to the construction of the Stanley Embankment it was common for boats to moor at Rhyd y Bont where grain, coal and other goods were discharged and loaded. The remains of a stone quay and steps now forms part of the gardens of the houses at Glan y Mor. Although undated, the quay is almost certainly of late 18th century date (see James 2002, 63), but must have gone out of use following the construction of the Stanley Embankment in 1822-5.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid. Detailed recording and re-instatement if there is to be any impact.*

C3. Ford, Pont Rhydbont SH27983850
Category: C Impact: None
A ford has existed here from at least medieval times onwards. Though a bridge was built by 1530, the ford continued in use well into the 18th century. Slight remains are visible of stone in the river bed north of the bridge at low tide.
Recommendations for further assessment: *None.*
Recommendations for mitigatory measures: *Avoid.*

D1. Capel Gwyngenau, Trearddur Bay PRN 2017 SH26797809
Category E Impact: Unknown
A medieval chapel formerly existed at this site. It is mentioned in a list dated 1796 of chapels in Anglesey, however, an account of any physical remains on site has not been found (Baynes 1920, 35). A Methodist chapel was built on the site during the 19th century, and a house now occupies the site.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Watching brief in the vicinity of the chapel.*

D2. Roman coin hoard, Trearddur Bay PRN 2012 SH25218259
Category D Impact: None
A hoard of 13 Roman coins was found at Trearddur Bay in 1839-40. They are now in Bangor Museum. It is considered that 8 dinarii, raning from Tetricus (268-373) to Valentinian I (364-375) are from a single hoard, but the remainder are probably from another source or sources (Lynch 1986, 79).
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *None.*

D3. Capel St Ffraid, Trearddur Bay PRN 2001 SH25637899
Category A: Scheduled Ancient Monument (SAM An 107) Impact: None
The remains of a cemetery of 6th to 12th century date. A chapel formerly stood here, but was demolished by coastal erosion during the 19th century. The cemetery consists of several layers of

graves, the bottom ones within stone lined cists, in a mound of sand some 2m high. There will be no direct impact upon the site.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid.*

D4. Brooch Findspot, Trearddur Bay PRN 2011 SH25468251
Category E Impact: None
A penannular brooch dating from the 8th century AD was found here during coastal protection works. It is most likely associated with the use of the adjacent cemetery.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *None.*

D5. Buried soil, Trearddur Bay NO Grid Reference
Category E Impact: Slight
Excavations at Capel St Ffraid (D3 above) revealed the presence of a buried soil some 1m deep that contained evidence for ploughing. Both the formation of the soil (formed on sand during a stable period) and the ploughing pre-dated the 6th century, as both were cut during the digging of graves of that date. It is very likely that the soil extends beyond the site, and hence may become visible during both the pipeline and pumping station construction.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Watching brief.*

E1. Roman coin hoard, Trearddur PRN 2502 SH25908000
Category E Impact: Unknown
A hoard of 300 Roman coins was found in an urn close to the cromlech at Trearddur in 1843, and was sent to the British Museum by W O Stanley. They were lost in the post on return (Stanley 1868, 396).
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Watching Brief in vicinity.*

E2. Burial Chamber, Trearddur PRN 2504 SH25978003
Category B Impact: Slight/None
The remains of a Neolithic Burial Chamber. Only one stone now remains upright, though at its foot is another slab. The stones are located at the east end of a low rock prominence. Though some doubt remains as to the authenticity of the monument, it is recorded in 1775 as a cromlech, when it was said the upper stone had been removed to a nearby hedge (Baynes 1911).
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid. Comprehensive Watching Brief in vicinity.*

E3. Burial Chamber, Trefignath PRN 2500 SH25868055
Category A Scheduled Ancient Monument (An 11) Impact: Slight/None
A Neolithic Burial Chamber. It is situated on a natural knoll with views all round, though less so to the south. The site has three chambers which were built in succession from west to east, with the cairn being successively enlarged on each occasion. It was fully excavated between 1977 and 1979 (Smith 1987). In addition to the chambers, evidence was found for domestic settlement pre-dating its use for burial, and dating from the period 3,600 to 4,000 BC. Flints and pottery were found.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid. Comprehensive Watching Brief in vicinity.*

E4. Possible prehistoric settlement, Trefignath PRN 14,587 SH25738062
Category E Impact: Unknown
Trial excavation undertaken in August 2001 as part of a wider programme of field evaluation (Davidson and Hopewell 2001, site 41) discovered two pits containing carefully placed large stones. A concentration of smaller stone, some of it burnt, lay alongside. The date of the remains is not known, though burnt stone is typically found on Prehistoric sites. It may be part of a domestic settlement, or just possibly associated with Trefignath burial chamber (site E2 above).
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid. Trial excavation in advance of pipeline construction. This could take the form of a comprehensive watching brief, providing time was allowed to clean the area and excavate any archaeology. This type of work may affect use of the pipeline as a route for vehicles during construction.*

E5. Romano-British Settlement, Trefignath PRN 14,599 SH25548075
Category B Impact: Unknown
Trial excavation undertaken in August 2001 as part of a wider programme of field evaluation (Davidson and Hopewell 2001, site 39) discovered remains of a late prehistoric or Romano-British round house with internal drains. Three pieces of pottery date from the Roman period. The full extent of the settlement was not determined.
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Avoid. Comprehensive watching brief in vicinity.*

E6. Pen y Lon cottage, Trefignath (site of) PRN 14,588 SH25578080
Category C Impact: Unknown
A series of cottages and associated fields are depicted on the early estate maps, located adjacent to the minor road north-west of Trefignath. In 1769 these were called Pen y Lone and are represented as two buildings, one at the north edge of a small enclosure. In 1817 only one is marked, whilst another building is shown to the north-west. This latter is the farm called Penbonc-deg in 1853, and Bonc-deg on later maps. The 25" OS map of 1889 shows Bonc Deg and the small fields surrounding it, but Pen y Lon was no longer marked. The sites are clearly marked on the tithe map of 1848 (see fig xx), though the structure at Pen y Lone is not named, and only the northernmost one is marked. Excavations on the site of the more southerly of the 1769 structures in August, 2001, revealed wall foundations and stone spreads interpreted as the remains of a former house (Davidson and Hopewell 2001, site 10).
Recommendations for further assessment: *None*
Recommendations for mitigatory measures: *Comprehensive watching Brief in vicinity.*

E7. Romano-British settlement, Ty Mawr PRN 14602 SH25548097
Category: B Impact: Unknown
Remains of a late prehistoric or Romano-British settlement were found at this location during trial evaluation carried out in August 2001. The features found included stone-capped drains, burnt stone and fragmentary stone walls. The full extent of the settlement was not recovered, and it is not known if it continues as far as the proposed route.
Recommendations for further assessment: *Trial excavation along line of route.*
Recommendations for mitigatory measures: *A route along the east side of the field boundary should avoid the settlement.*

E8. Railway line
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.*

Entire Route

Many sites of archaeological importance cannot be recognised by assessment techniques alone, and only become apparent during field evaluation (geophysical survey and trial excavation) or during a watching brief. Given the high archaeological potential of the route between the Trearddur burial chamber and the railway it is recommended that this area is soil stripped under full time supervision of an archaeologist. Any features revealed will then need to be fully excavated. This may prevent the corridor being used as a through road for construction vehicles, so it is recommended that the soil stripping is undertaken early in the scheme so that any subsequent excavation does not hold up construction. A comprehensive watching brief should also be held in the vicinity of Capel Gwyngenau (D1).

The remainder of the route will be adequately examined by an intermittent 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
A1	A	Slight/None	Avoid
B1	B	None	Avoid
B2	D	Unknown	Watching Brief
B3	B	None	Avoid
B4	A	None	Avoid
B5	B	None/Slight	Avoid/Basic record
B6	A	None	Avoid
C1	B	Slight	Basic Record/Minimise impact
C2	B	None	Avoid
C3	C	None	Avoid
D1	E	Unknown	Watching Brief
D2	E	Unknown	Watching Brief
D3	A	None	Avoid
D4	E	None	None
D5	E	Slight	Watching Brief
E1	E	Unknown	Watching Brief
E2	B	Slight/None	Watching Brief
E3	A	None	Watching Brief
E4	E	Unknown	Watching Brief
E5	B	Unknown	Watching Brief
E6	C	Unknown	Watching Brief
E7	B	Unknown	Field Evaluation/Watching Brief
E8	B	Slight	Avoid/Basic Record
Entire route	E	Considerable	Watching Brief

5. SOURCES

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OS 1:10,000 map sheets SH 70 SW (1980) and SH 70 SE (1979)
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25" County Series Anglesey XI.3 surveyed 1887 revised 1924
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Aerial Photographs
National Archaeological Record, Aberystwyth
Welsh Water Collection of Photographs taken for the scheme

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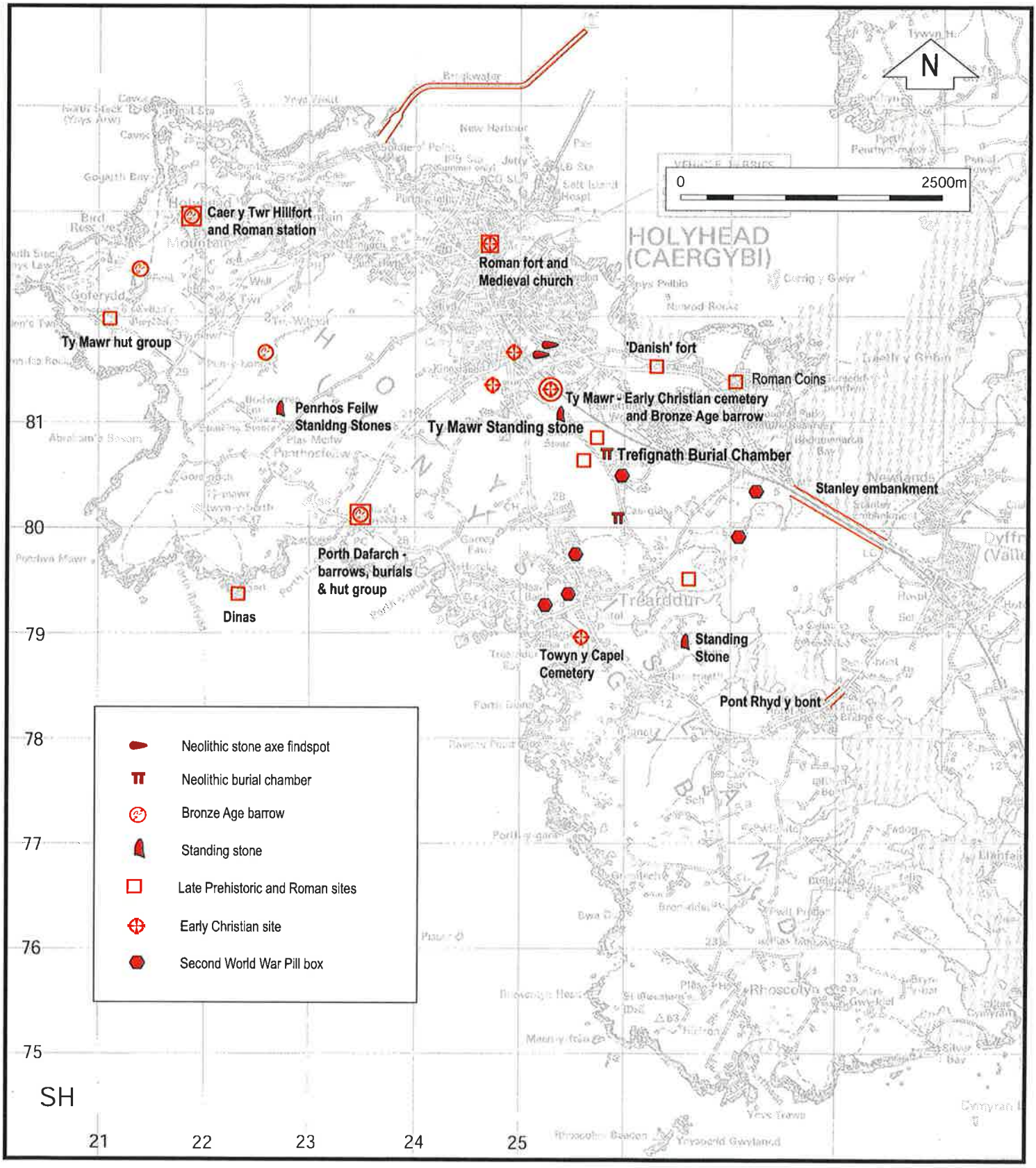

Fig 1. Location of sites in proximity to study area.

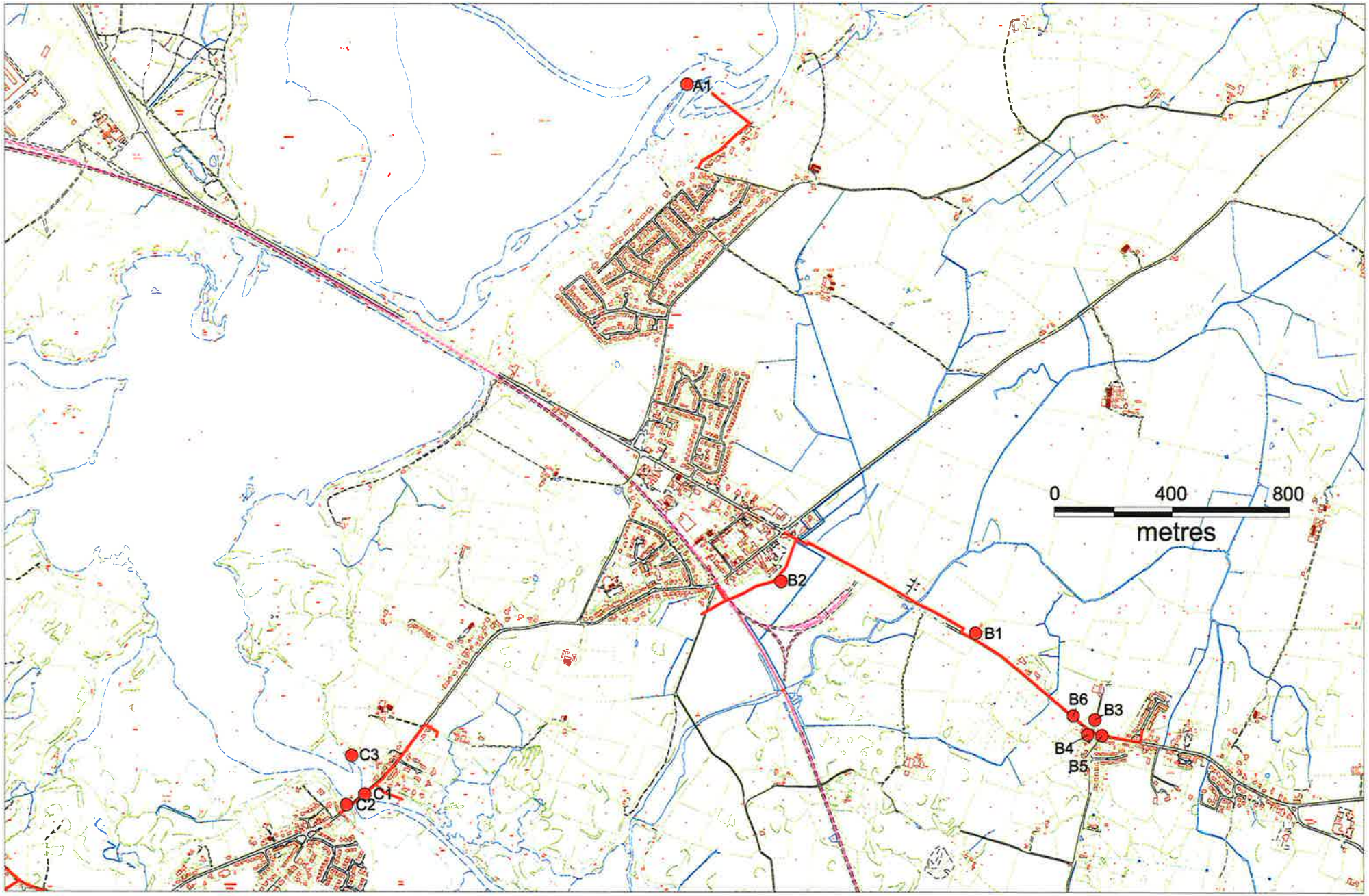

Fig 2. Location of archaeological sites areas A to C

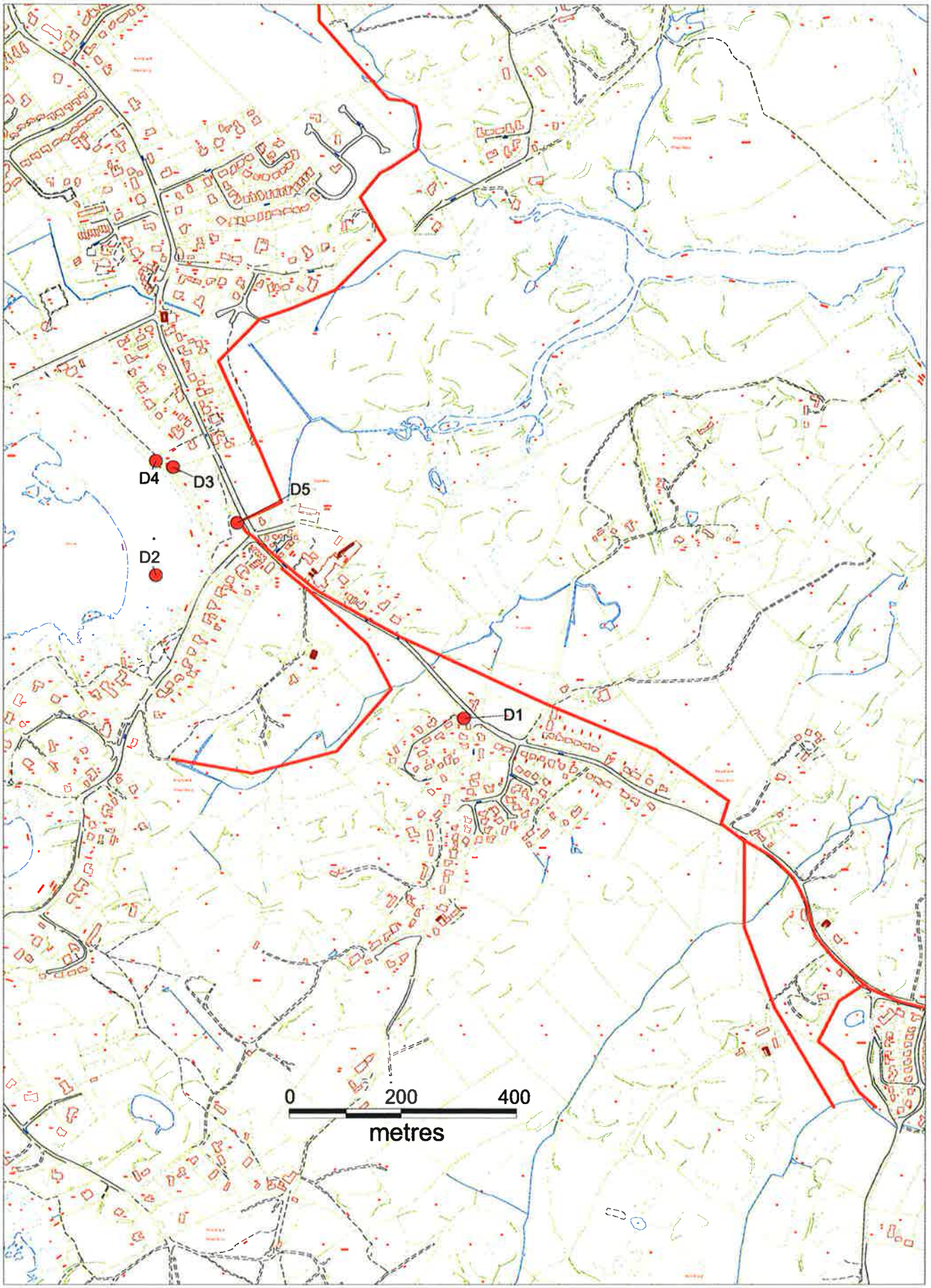

Fig 3. Location of archaeological sites area D

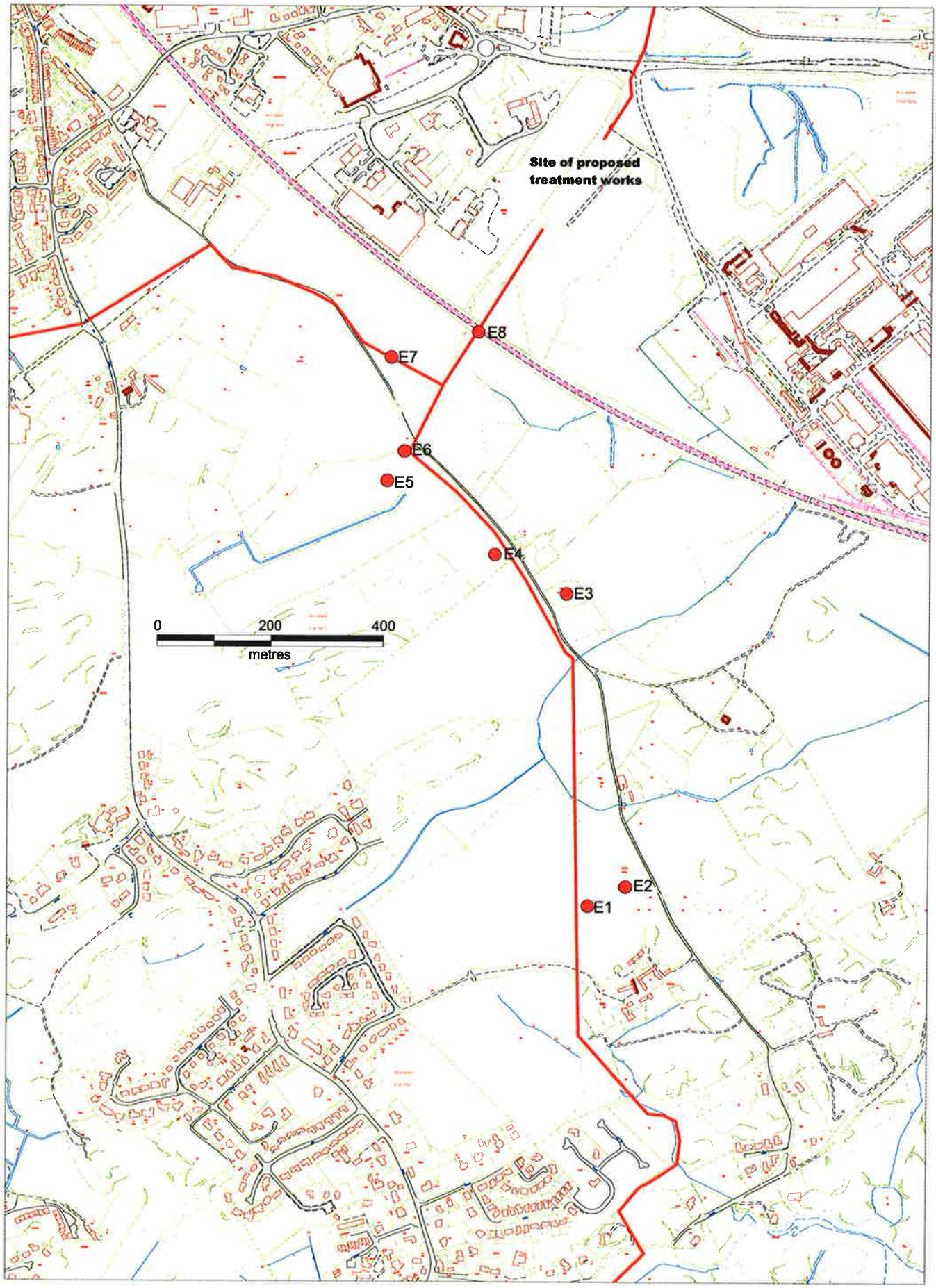

Fig 4. Location of archaeological sites area E

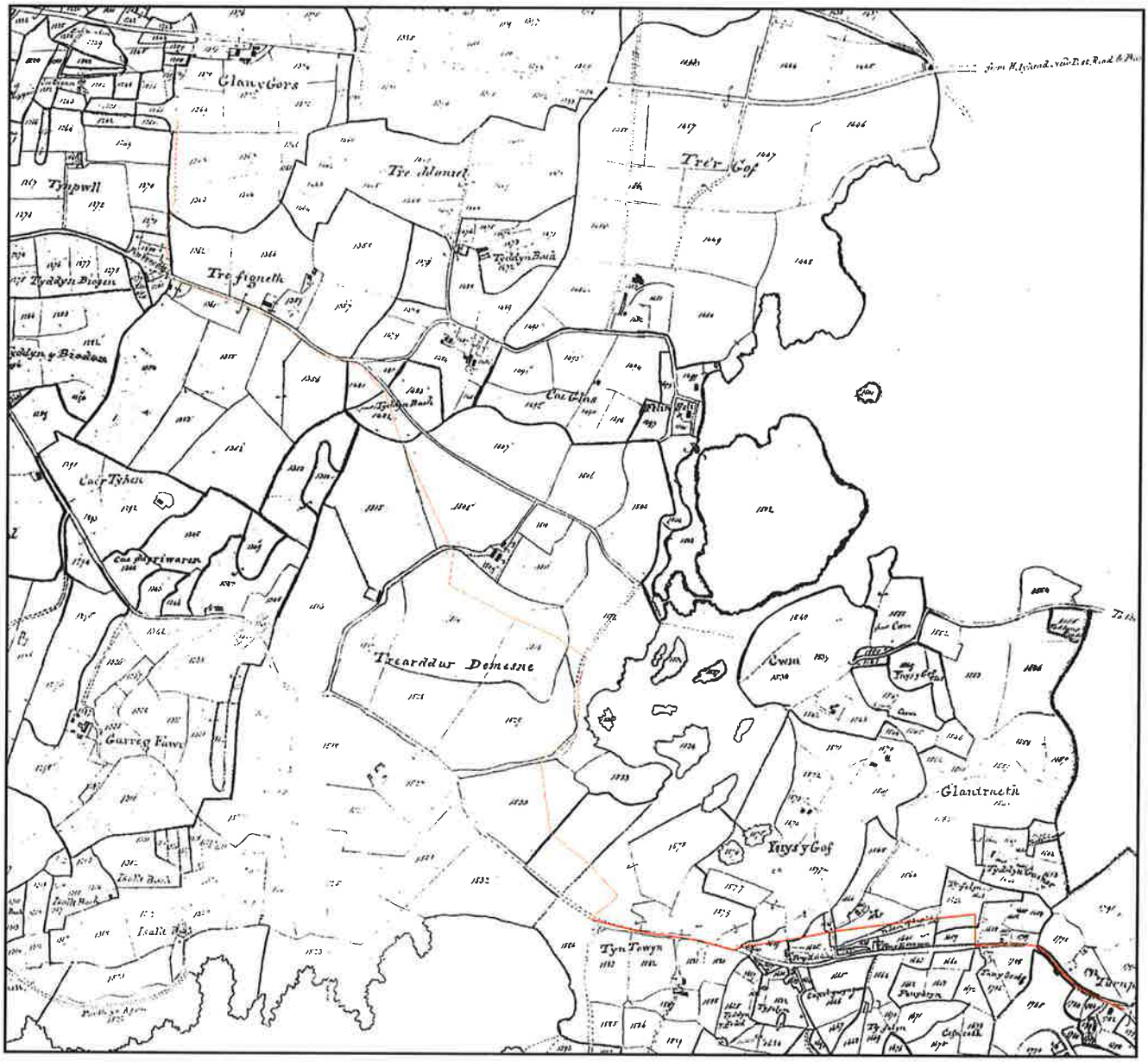

Fig 5. Tithe map of 1848 with approximate route of pipeline indicated

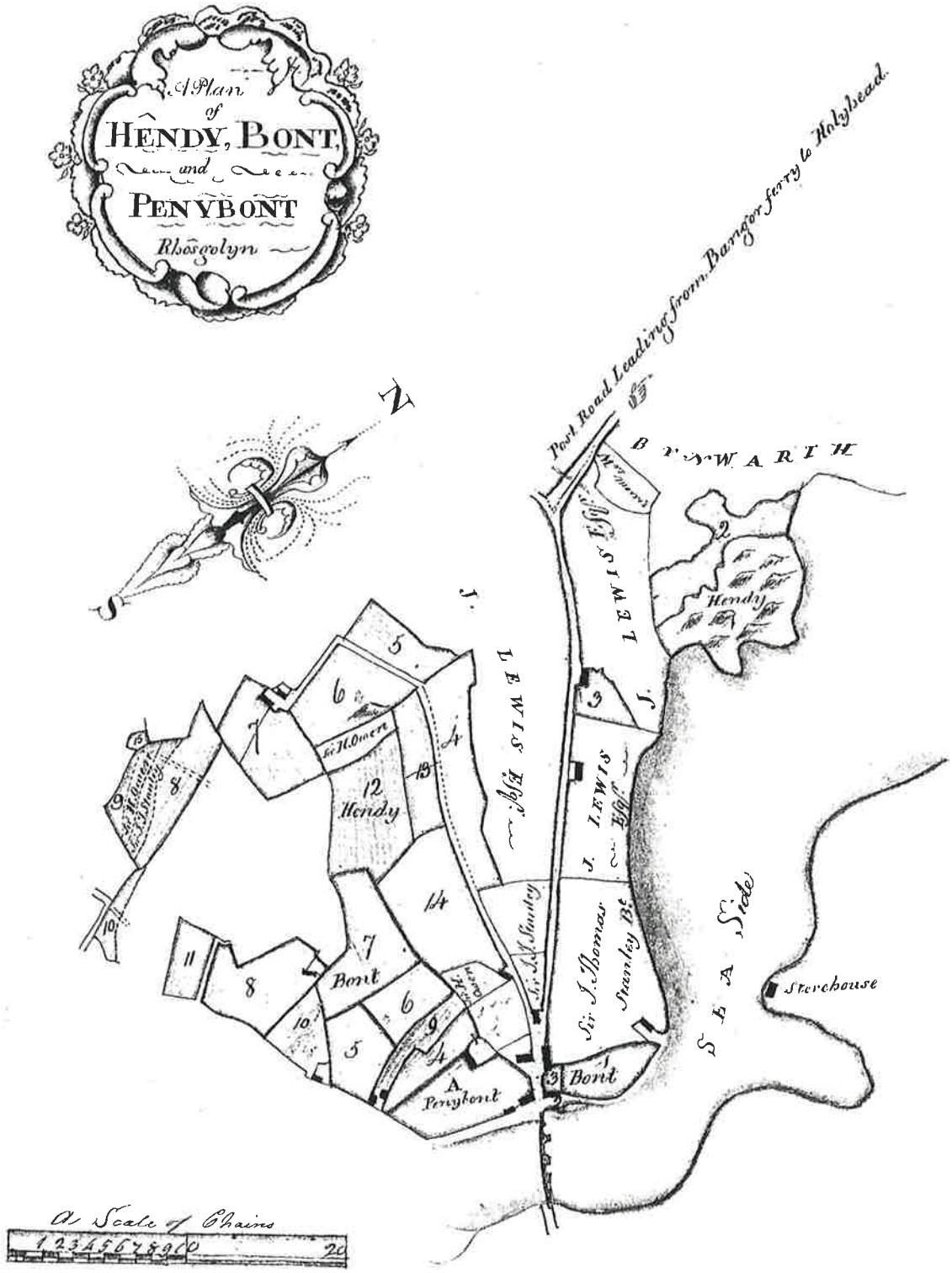

Fig 6. Map showing Four Mile Bridge (Penrhos III 208, 1805)

APPENDIX I

PONT RHYD-Y-BONT (FOUR MILE BRIDGE)

ARCHAEOLOGICAL ASSESSMENT

Introduction

The bridge at Rhyd-y-Bont crosses the Cymyran Strait to join Anglesey to Holy Island. For many years this was the principal route to Holyhead, which since the 16th century has been the port from which mails were carried from London to Ireland.

The bridge is listed as a building of special architectural or historic interest of Grade II importance (Record number 19948). Along the south side of the bridge are three pipes carrying waste water and sewage which require maintenance or renewing. This assessment examines the archaeological and historical significance of the bridge to allow a better understanding of the impact of the required maintenance work to the pipes.

History

There are various mentions of the name 'Pont Rhyd-y-bont' (often spelt Pont Trytbwnt) in documents of the late 16th century, and in particular it is mentioned by Leland in his description of the island dating from the 1530's as 'Pont Trytbunt, this is the brigge that givith passsage ynto the isle of the Holy hedde' (Smith 1906, 131). Saxton's map of 1576 clearly shows a bridge, and so does Speed's map of 1610. Pen-y-Bont, a farm on the east side of the bridge, is mentioned in an estate rental of 1666 (Baron Hill 4714). The name would indicate that a ford was also present, and also that the ford continued in use alongside the bridge. In this context it is interesting that Robert Bulkeley, who kept a diary from 1630 to 1636 often mentioned passing across, but he only mentions Rhyd-y-bont (i.e. the ford) and not the bridge. Remains of the ford can be seen north of the bridge.

Typically bridges require regular maintenance and rebuilding, and this is clearly seen from a number of entries in the Anglesey Quarter Session Records of the 18th century. It is of note that Rhyd-y-bont is one of only two bridges on Anglesey which were important enough to warrant enforcement of repairs by the Justices of Peace. The following entries are recorded:

1770 'That Mr Owen Hughes Treasr. be allowed £17 – money spent in repairing and amending Rudbont Bridge'.
1776 'To pay Henry Parry £5.14.0 the amount of his bill for materials and repairs done at Rhyd Pont Bridge.
1780 'Mr John Cowper Architect to view Rhydbont Bridge and make a plan and estimate of the necessary repairs wanting there.
1781 'To pay John Jones Mason £50 for repairs done at Rhyd Bont Bridge'
1781 'To pay John Jones mason £8 more which with £50 paid him before is in full of the valuation of his work etc in repairing Rhydbont Bridge.

John Cooper was a local architect, who worked under Samuel Wyatt during the rebuilding of Baron Hill, Beaumaris, but in his own right during the rebuilding of Bodorgan Hall and Plas Newydd, home of the Marquis of Anglesey. The amount of money spent in 1781 was substantial, and the use of an architect implies major works if not a rebuilding.

There are frequent references to the bridge in the 19th centuries in the Penrhos manuscripts and on maps of that date. Unfortunately, however, none has yet been found with details of any maintenance records or building records which help date the present structure.

Archaeology

The bridge consists of a long stone causeway some 120m long by 7m wide with a semi-circular arch in the centre through which the tidal waters flow into and out of the inland sea. The walls of the causeway are battered from the parapets down, which in turn sit on a wide stone base some 9m across. All are of uncoursed mortared rubble masonry. Around the arched opening the stones are laid in a vertical fashion, whereas to either side they are horizontal, which implies a rebuilding. There are five strengthening bars running across the width of the bridge. The parapet walls are just over 1m high and capped with long, flat rectangular slabs.

The underside of the arch clearly shows the bridge to have been extended on both the east and west sides. The centre part of the bridge is some 3.9 m in width, the north extension is 2.2 m and the south extension 0.97m, giving a total width of just over 7m.

The date of the present structure is difficult to assess. The central bridge is very probably 18th century and on the site of an earlier structure. Should the central bridge be earlier its importance would be significantly greater as no other bridges on Anglesey survive from before the 18th century. The two additions on either side were added at different times – the southern arch follows a different line to the central one, being slightly lower. These are probably of 19th century date.

Waste Water Pipes

Three large diameter pipes run along the south side of the bridge, just below the level of the base of the parapet. The two lower pipes are supported on stone buttresses with intermediate (and later?) concrete supports which have clearly been inserted into the stone bridge. The upper pipe sits on a concrete support which has been added to the stone buttresses.

Archaeological implications of repair work

The direct archaeological implications of replacing the pipes would be minimal, providing any new supports are carefully designed, and care is taken during the removal and re-fixing of the pipes. The indirect archaeological implications affect the setting of the monument and the views from south and north of the bridge. The present concrete supports are not particularly attractive, and their removal could be considered a positive gain if an alternative method could be found for fixing the pipes. The removal from the south to the north side of the bridge would affect the view from

the inland sea, though if colour and fastening detail were carefully managed, this would be less than the existing impact on the south side.

General view of bridge from south-east

General view of pipes along south side of bridge

Concrete stanchion inserted into wall

View showing batter, stone base of bridge and stone buttresses

View of west side of culvert

View of east side of culvert