A4067
SWANSEA VALLEY ROUTE
STAGE THREE
PONTARDAWE to YNYSMEUDWY

AN ARCHAEOLOGICAL ASSESSMENT

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SWANSEA
APRIL 1990

THE A4067 SWANSEA VALLEY ROUTE STAGE THREE
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An Archaeological Assessment

1. INTRODUCTION

1.1 After preliminary consultations, the Glamorgan-Gwent Archaeological Trust was commissioned by West Glamorgan County Council to carry out an assessment of the impact on the archaeological heritage of the proposed Stage 3 of the Swansea Valley Route, from Pontardawe to Ynysmeudwy.

1.2 The geographical area covered by this report conforms to the proposed route of the road as shown in West Glamorgan County Council's drawing number 26.1347.P8. The area to be affected was surveyed in the field in March 1990 and extensive documentary research was undertaken.

1.3 The Trust gratefully acknowledges the assistance of the staff of West Glamorgan County Council, the Royal Institution of South Wales, the Swansea Canal Society, and the owners of the land affected by the proposals. The finance for the assessment was provided by West Glamorgan County Council.

2. TOPOGRAPHY AND GEOLOGY

2.1 The proposed road runs north-east through the Swansea Valley from Pontardawe to Ynysmeudwy. It follows the route of the old Swansea Vale Railway and then crosses the River Tawe, running through farmland on the flood plain of the valley. After crossing the Cwm Du brook it joins the Godre'r Graig bypass at Ynysmeudwy.

2.2 The underlying geology of this area is sandstone. The Tawe Valley Disturbance geological fault runs approximately along the line of the river, dividing the area into Lower Pennant sandstone in the south-east and Upper Pennant in the north-west. Occasional mudstones, siltstones and coal seams are present, the latter having spurred the industrial development of the valley. Above this are glacial sands and gravels, and then a layer of alluvial silts of varying depth. The ground has been raised along the railway, and in the area of the Glanrhyd roundabout, by the addition of a large amount of colliery spoil.

3. EVIDENCE FOR PREHISTORIC ACTIVITY

3.1 It is likely that some of the archaeological evidence for prehistoric activity which might once have existed in the valley bottom will have been destroyed by the river's movements or buried

under a considerable depth of silt. Land in the area of the proposed Glanrhyd roundabout has recently been made up with a thick layer of colliery spoil, which may also conceal archaeological evidence.

3.2 Despite this, river bank locations often acted as foci for human activities of various types, and it is to be expected that, where palaeochannels have not been destroyed by subsequent fluvial erosion, some evidence may survive of adjacent post-glacial human activity. It is likely that any such evidence will be of high quality, as the anaerobic conditions resulting from waterlogging will have preserved important organic evidence which does not survive to anything like such an extent on 'dry' sites.

3.3 Within the area to be affected by the proposed road there are no recorded prehistoric sites, and no evidence has been found of any reported antiquities of the period in the immediate area. The present survey strongly suggested that all surface undulation is attributable to either natural processes or later human activity.

4. EVIDENCE FOR HISTORIC ACTIVITY

4.1 The present survey has identified a number of features which are of historical interest and are likely to be affected by the construction of the new road. The Swansea Valley Route is the latest in a series of bulk transportation systems to be built along the valley, the others being the Swansea Canal and the Swansea Vale Railway. These transportation systems, and the rich natural resources of the area, have attracted a variety of industries to the valley.

4.2 Swansea Vale Railway (Primary Record Number (PRN) in County Sites and Monuments Record: DO4; Fig 1)

4.2.1 The Swansea Vale Railway had its origins in a series of tramways built along the valley from the eighteenth century onwards. One tramway, built in 1819 from Llansamlet to Swansea harbour, may have been the scene of an early steam locomotion experiment in its first year, when there is some evidence that one of George Stephenson's engines was used. In the railway mania of the 1830s and 1840s schemes were discussed for a railway up the western side of the Swansea Valley, where most of the industries were located, but these were abandoned because of the cost. Instead a group of coal owners banded together to build a private mineral railway, which did not require an Act of Parliament, up the eastern side of the valley.

4.2.2 Work began in 1845 and, after problems in the early years, an Act of Parliament was obtained in 1855. In the same year the railway reached Pontardawe, and carried up to 1000 tons of coal a day. In 1860 the first passengers were carried, and in 1861 the railway was extended to Ystalyfera. In 1876 the line was bought by the Midland Railway.

4.2.3 Industries that were built close to the railway often had their own sidings. The Glanrhyd tinplate works (see paragraph 4.8.4) had a number, controlled by a signal box at the junction with the main line. This signal box is no longer visible, although it is possible that surviving parts are concealed by thick undergrowth.

4.2.4 Passenger services on the Swansea Vale Railway were discontinued in 1950 and, as factories closed down and mines were worked out, freight diminished. In 1964 the line was shut down and the track lifted.

4.3 Swansea Canal (PRN CO3; Figs 1 and 4)

4.4.1 The Swansea Canal was designed by Charles Roberts and Thomas Sheasby and was built between 1794 and 1798. Like all canals, it provided the reliable water transport essential for industrial development before the railways came, and at its peak was carrying 400,000 tons of cargo a year. It was unique in Britain, however, in also supplying water power for many of the new enterprises along its route. Until the canal was closed to navigation in 1931, it provided power for at least 42 installations along its 16 miles, and reputedly for the first electric house lighting in the valley, at Clydach.

4.4.2 This unique dual role emphasizes the desirability of preserving the canal together with the associated industrial installations wherever possible. Only two canal sections remain in a restorable condition, from Clydach to Trebanos and from Pontardawe to Godre'r Graig. These are currently being renovated by the Swansea Canal Society.

4.5 Waun Coed Branch Canal (PRN CO3i; Figs 1 and 5)

4.5.1 George Crane, owner of the Ynyscedwyn iron works, built the Waun Coed branch canal four miles downstream from his works in 1828. The branch canal joined a tramway from his collieries at Gelli-nudd and Waun Coed to the Swansea Canal. The tramway ran down an incline, crossed the river on a bridge of which the abutments can still be seen, and terminated at an ambitious wharf system including ancillary buildings and a dry dock for the repair of barges.

4.5.2 The branch runs north-west for 300 metres and then curves to join the Swansea Canal. The remains of a bridge over the branch canal can be seen here, but there are no surviving signs of any lock which may have been needed to enter the canal.

4.6 Tawe Bridge at Pontardawe (PRN 2114w; Figs 1 and 2)

4.6.1 The eponymous bridge over the Tawe is now no longer used for motor traffic, having been replaced by the A474 bridge. It retains some of its mid-eighteenth-century structure, designed by William Edwards who is famous for the bridge at Pontypridd. An earlier bridge on this site is the lowest on the Tawe mentioned by Edward Lhuyd at the end of the seventeenth century; below this, it seems ferries were used.

4.7 Other Canal Structures (PRNs CO3e and CO3b2; Figs 1, 3 and 4)

4.7.1 Near the proposed Ynysmeudwy roundabout is one of the few remaining working sluices (PRN CO3e) on the canal. It has been well maintained and still carries surplus water from the canal via a leat to the River Tawe. The leat emerges from a tunnel via a masonry arch into a natural watercourse, about 15 metres upstream from where the proposed road crosses it.

4.7.2 On the west bank of the Tawe, at the confluence of this river and the Cwm Du brook, about 25 metres of a stone-lined feeder channel for the canal (PRN CO3b2) survives. The feeder originally curved through the fields to join the canal just below lock 12, but since the 1920s this feature has been filled in and destroyed by ploughing.

4.8 Industrial Installations (PRNs 1615w, 2655w, 2656w; Fig 1)

4.8.1 In 1844 the Ynysmeudwy Pottery (PRN 1615w) was built next to a leat feeding the canal. It used canal water for its power, and over the thirty years of its life produced a wide range of ceramics from firebricks used in steelworks, tiles and chimney pots to fine domestic wares. A good selection of the pottery's output can be seen in the Royal Institution of South Wales museum in Swansea.

4.8.2 In 1877, two years after the pottery closed, the Bryn Tinplate Works (PRN 1615w) opened on the site. Virtually every tinplate works in the country was in the Swansea area; in 1913, 4 out of every 5 British tinplate workers were employed within 20 miles of Swansea. Pontardawe has been described as deriving its entire prosperity from the tinplate industry. Tin was imported from Cornwall, there was a steelworks in Pontardawe, and coal came from the many local collieries. The Bryn tinplate works used the canal for transport, until a railway branch line was built in 1886. This crossed the Tawe on a bridge of which one pier still stands. The works closed in 1939, but the buildings were not demolished until after 1973. The area was then landscaped to produce a level field.

4.8.3 Intermittent excavations have taken place on the Ynysmeudwy Pottery/Bryn Tinplate Works site during the last decade. No plans have yet been published, but it seems that the landscaping subsequent to demolition has destroyed much of what remained of both the pottery and the tinplate works.

4.8.4 On the other side of the Tawe was another tinplate works, the Glanrhyd (PRN 2655w). This opened in 1879, and was later served by a network of sidings built off the Swansea Vale Railway. Its output was about twice that of the Bryn works, and it was still in operation in 1949. By 1963, however, its buildings had been demolished, leaving a few pieces of upstanding and fallen masonry and some rubbish dumps. Some of the sidings can still be traced, and a concrete and masonry tunnel system survives which still carries a stream under the sidings.

4.8.5 A by-product of the coal industry in the Swansea Valley was the manufacture of cheap fuel briquettes from a mixture of coal dust and a tar produced in the manufacture of coal gas. Warwick and Co's Patent Fuel Works (2656w) was constructed close to lock 12 on the Swansea Canal in 1875, and had its own tramways linking the factory with the railway on one side, and the Cwm Nant Du collieries over the canal on the other. Traces of both tramways can still be seen. The factory had closed by the time of the nationalisation of the mines and the buildings had been demolished by 1963. Only occasional pieces of rubble survive.

5. STATUTORY PROTECTION OF ARCHAEOLOGICAL SITES

5.1 The docks at the eastern end of the Waun Coed branch canal, together with the tramway and incline, are scheduled as an ancient monument under the provisions of the 1979 Ancient Monuments and Archaeological Areas Act. The scheduled area does not, however, cover the entire structure of the docks, and the Glamorgan-Gwent Archaeological Trust has previously recommended that the area be extended.

6. THE IMPACT OF THE ROAD ON ARCHAEOLOGICAL INTERESTS

6.1 Swansea Vale Railway (PRN DO4; Fig 1)

6.1.1 The proposed road covers about one kilometre of the section of railway built in 1860. However, another section is already blocked by the stage of the Swansea Valley Route constructed between Glais and Pontardawe. The signal box and part of the sidings will be destroyed or covered by the road.

6.2 Swansea Canal (PRN CO3; Figs 1 and 4)

6.2.1 The canal is directly affected by the proposed road at the Ynysmeudwy roundabout, where there will be alterations to the existing road bridge over the canal. The height of this bridge already prevents the passage of any river traffic, even a canoe, and blocks the towpath.

6.3 Waun Coed Branch Canal (PRN CO3i; Figs 1 and 5)

6.3.1 At present Waun Coed branch canal is in a rather damaged and fragile condition. The Swansea Canal Society is planning to start the much needed restoration work within the next year. Scheduled Ancient Monument consent has been given to carry the proposed road over Waun Coed canal docks on a bridge in order to preserve the canal. A 2 metre wide towpath will be allowed on the northern side with a 3.5 metre wide underpass on the opposite side to enable the landowner to move his animals. Steel sheet piles will be sunk into the edges of the floor of the canal to support the ground around the bridge when the canal is re-excavated. These will effectively protect the walls of the canal from damage.

6.3.2 The buildings on the towpath at Waun Coed lie just outside the area affected by the canal, but the possibility remains that parts of more ephemeral buildings such as sheds survive alongside the wharf.

6.4 Tawe Bridge at Pontardawe (PRN 2114w; Figs 1 and 2)

6.4.1 While this bridge is outside the immediate area of the proposed road, all its footpath connections on the eastern bank of the river will be blocked, turning it into a dead end.

6.5 Other Canal Structures (PRNs CO3e and CO3b2; Figs 1, 3 and 4)

6.5.1 The natural watercourse carrying the outfall from the canal sluice will be used for the drainage of surface water from the proposed road.

6.5.2 The embankment of the proposed road will completely cover the feeder. However, at this point the road will be carried on an embankment over geotextile matting, and we understand that no ground disturbance will be occasioned. Although the feeder will disappear from view, it will not be destroyed, and consequently no further archaeological action will be necessary.

6.6 Industrial Installations (PRNs 1615w, 2655w, 2656w; Fig 1)

6.6.1 The proposed road will pass directly over the site of the Ynysmeudwy Pottery/Bryn Tinplate Works, but in this area again the road will be carried on an embankment over geotextile matting and no topsoil stripping will be carried out. No further archaeological action will therefore be necessary.

6.6.2 The proposed road will cut through the area of the railway sidings adjoining the Glanrhyd tinplate works. The stream passing under the sidings will be diverted and the tunnel destroyed. The road will not affect the tinplate works buildings as they are shown on the OS First Series map, but this was surveyed very soon after the opening of the tinplate works in 1879. The buildings may eventually have been far more extensive, and therefore there is the possibility that later buildings may lie under the proposed course of the road.

6.6.3 The road will cut through the surviving embankment of the tramway linking Warwick's Patent Fuel Works with the railway, but will not affect the fuel works itself.

7. RECOMMENDATIONS

7.1 Specific recommendations

7.1.1 Swansea Vale Railway (PRN DO4; Fig 1)

The Swansea Vale Railway has been subject to many surveys during its history, and is fully recorded on maps and in documents. It is

therefore considered that the railway has been recorded adequately, and so no new action needs to be taken in advance of construction.

It is possible that remains survive of the signal box and the sidings at the Glanrhyd junction, and we therefore recommend that a watching brief should be kept in this area.

7.1.2 Swansea Canal (PRN CO3; Figs 1 and 4)

Care should be taken to protect the edges of the canal in the area of the Ynysmeudwy roundabout.

7.1.3 Waun Coed Branch Canal (PRN CO3i; Figs 1 and 5)

The application for Scheduled Monument Consent to carry the road over Waun Coed branch canal already takes archaeological considerations into account. In addition, we recommend that a watching brief should be carried out in this area. Any structures that are disturbed should be photographed and their position recorded.

7.1.4 Tawe bridge at Pontardawe (PRN 2114w; Figs 1 and 2)

A new riverside footpath should be constructed to keep the bridge in context and prevent it falling into disuse. This could perhaps be linked to the Cilybebyll Walk system.

7.1.5 Other Canal Structures (PRNs CO3e and CO3b2; Figs 1, 3 and 4)

Care should be taken during construction of the drainage system to avoid damage to the canal sluice outfall tunnel.

Above the canal feeder channel the proposed road will be carried on an embankment over geotextile matting. We recommend that the feeder should be carefully filled in prior to this to preserve it in situ within the road embankment.

7.1.6 Industrial Installations (PRNs 1615w, 2655w, 2656w; Fig 1)

The embankment covering the canal feeder will continue over the Ynysmeudwy pottery/Bryn tinplate works. Although the use of geotextile matting will remove the need for topsoil stripping, we recommend that special care should be taken in this area to avoid damage to any remains, in view of the relationship of the factories to the canal.

The position of the Patent Fuel Works tramway line has already been recorded on maps. If any topsoil stripping takes place in this area, a watching brief should be carried out to observe any surviving remains of the tramway.

In view of the possibility that hitherto unrecorded buildings of the Glanrhyd tinplate works may be present, a watching brief should be carried out in this area. Any structures that are disturbed should

be photographed and their position recorded. The tunnel carrying the stream beneath the railway sidings should be accurately surveyed prior to destruction.

7.1.7 Other structures

The proposed course of the road will cut across one other area that has been used industrially in the past; the sewage works at SN 7387 0534. It is considered that the existing records of these works are adequate, and that no further investigation will be necessary.

7.1.8 Contractor's compound

The contractor's compound will be on land just west of the Lon Tan yr Allt roundabout. This area was formerly used in the building of the Glais-Pontardawe stage of the Swansea Valley route and does not disturb any known sites of historical or archaeological interest.

7.2 General Recommendations

7.2.1 Archaeological Monitoring of Construction Works

In addition to the areas mentioned in paragraphs 7.1.1, 7.1.3 and 7.1.6, an archaeological watching brief should be carried out in any areas of natural ground surface that are subject to topsoil stripping, as previously urecorded archaeological information may be both exposed and damaged by road construction. The line of the proposed road from the canal feeder to the Ynysmeudwy roundabout was heavily disturbed by the insertion of a 2 metre deep sewer in 1967, and so this section would require less intensive monitoring.

7.2.2 Contingency Arrangements

If the watching brief identifies areas of archaeological interest meriting salvage recording, immediate consultation with the Project Engineer would be advisable to make arrangements for such recording.

7.2.3 Impact on Water Table Levels

The proposed drainage operations in connection with the new road involve surface water only, and are unlikely to have a significant effect on the level of the water table. However, any lowering of the water table could possibly cause damage to unrecorded archaeological and palaeoenvironmental deposits, and therefore every effort should be made to retain existing levels.

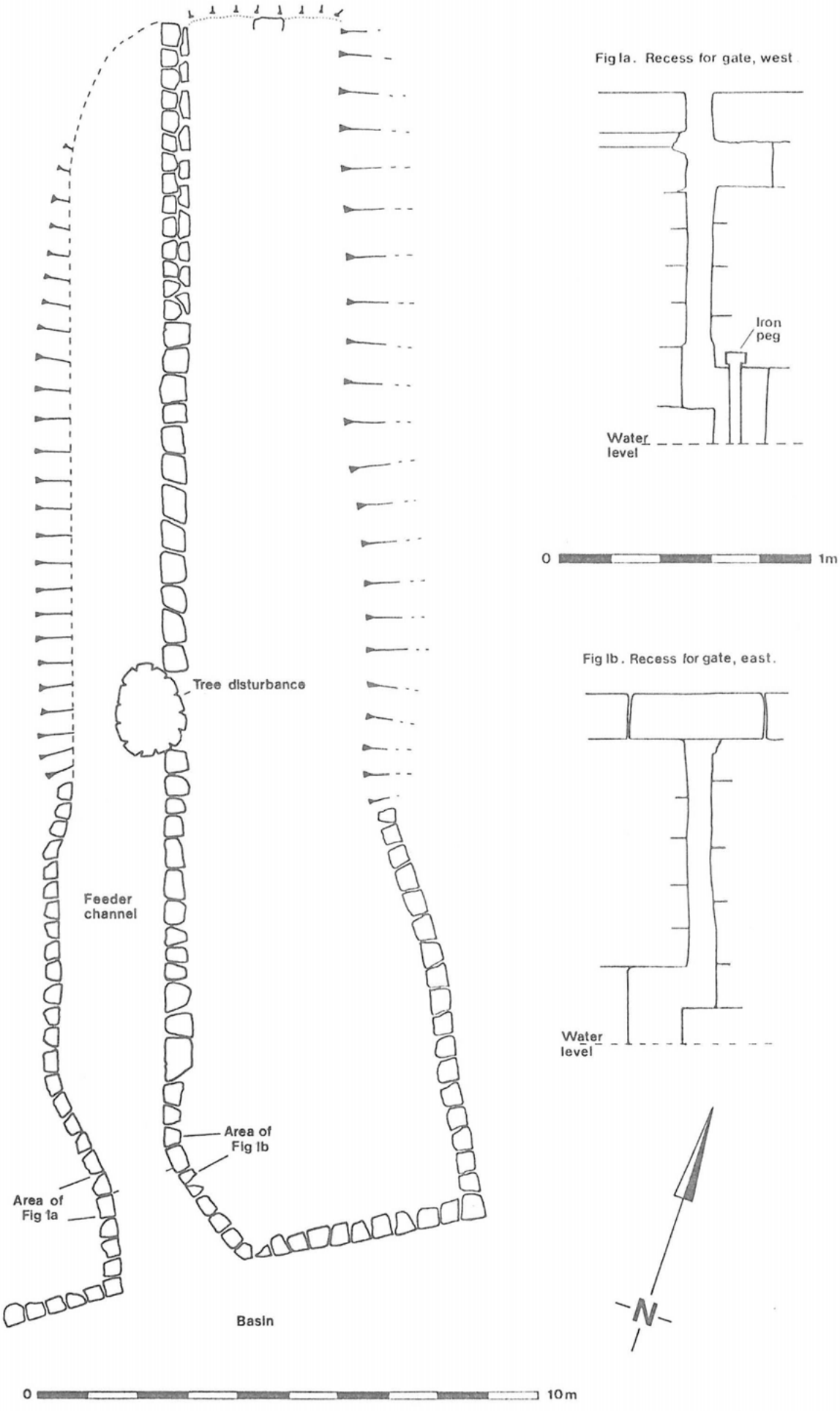
GAZETEER OF SITES OF HISTORICAL INTEREST IN THE SWANSEA VALLEY

Recorded sites on line of proposed road

✓	CO3i	Waun Coed Branch Canal docks		SN 7374 0500	post-medieval 01046.26w
✓	DO4	Swansea Vale Railway	from	SN 7252 0377	post-medieval 01699w
✓	CO3b2	Canal feeder		SN 7402 0548	post-medieval 01046.18w
✓	1615	Ynysmeudwy Pottery/Bryn Tinplate Works		SN 7407 0570	post-medieval 01615w

Recorded sites close to line of proposed road

	CO3	Swansea Canal	from	SN 7410 0575	post-medieval 01046.0w
	CO3e	Sluice and leat		SN 7413 0575	post-medieval 01046.37w
	2114	Pontardawe river bridge		SN 7247 0370	post-medieval 02114w
✓	2655	Glanrhyd Tinplate Works		SN 7302 0431	post-medieval 02655w
✓	2656	Patent Fuel Works		SN 7386 0552	post-medieval 02656w



Swansea Canal: Ynysmeudwy feeder channel and basin.

C03.

C03

A4067 SWANSEA VALLEY STAGE THREE ; PONTARDAWE TO YNYSMEUDWY.

This stage of the road at Ynysmeudwy crosses the remains of a feeder associated with the Swansea Canal. These remains are situated about 30m. north of the junction of the Cwmdu Brook with the River Tawe close to Ynysmeudwy. Presently in an area of scrub woodland, where trees have disturbed some of the stonework, approximately 22m. of stone lined feeder channel survive. This runs in a north westerly direction.

The channel runs between two embanked areas, which have revettment walling. The channel is deeply silted and overgrown, and there is some damage to the masonry from trees growing out of the walling. This is surrounded at the southern end by a depression some 10m. in diameter.

The eastern embankment has walling on its west, south and part of its east side. On average, the surviving masonry appears to be approximately 2m. high, although flooding and silting of the channel precludes further study. The masonry is of semi-dressed Pennant sandstone, built in courses into the bank: the walling is stepped slightly along the southern side to slope back into the earth. To the north end, the top course of masonry is missing for a length of 6m., then complete for the rest of the length of the channel.

Less survives of the western section, to the north a 13m. length of revettment has collapsed, with the loss of 1.5m. of masonry, but leaving a couple of courses just visible in the sediments. The masonry is of good quality and on the whole remains in good condition. Where the top courses have gone, it can be seen that the wall is on average 0.6m. wide, and has an inner face. A number of the stones on the remaining top course are over 1m. long and 0.6m wide, and up to 0.15m. deep. To the south, the channel walling is more complete.

The channel widens slightly then narrows to just over 1m., where on each side of it there is one recessed vertical groove, presumably to hold some form of sluice gate. These slots are 0.1m. wide and recessed into the wall 0.14m., on average. At the base of the western groove a vertical iron peg some 0.6m. long is set into the masonry and continues down into the silt. This is set into a wider 0.2m. recess running into the base of the vertical groove. The opposite slot is a mirror image, but lacks the iron peg.

The channel then widens and the revettments turn sharply outwards to open the feeder out into the depression, probably a basin of some type. This area is again heavily silted and overgrown by scrub vegetation. Water that lies in this area apparently drains down and runs out into the Cwmdu Brook. A rusted iron pipe approximately 0.45m. in diameter, appears to run between the basin and the brook, but it is half buried in the sediment. Where it runs into the brook, it turns to face the current. This would force water into the pipe and so into the feeder and basin, to be held in place by the sluice gates. The canal is fast flowing and any opening into it from the feeder channel would, if facing downstream, feed water into the canal on a siphon principle. At the point where the pipe reaches the stream are the remains of the wooden bases of two uprights, perhaps for the piers of a small bridge or wharf.

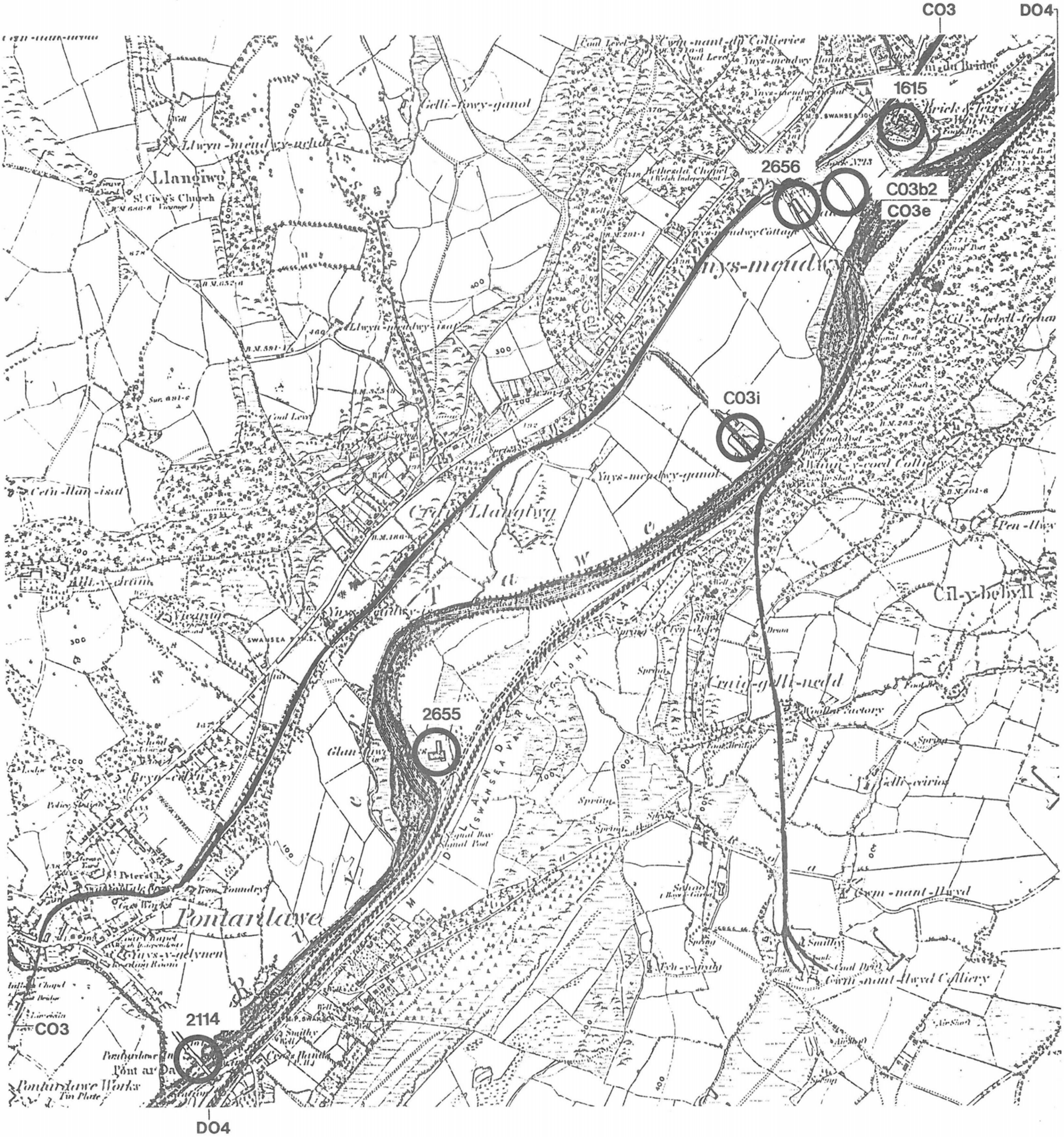


Fig.1 Location of principal archaeological sites (numbers etc are GGAT primary record numbers).

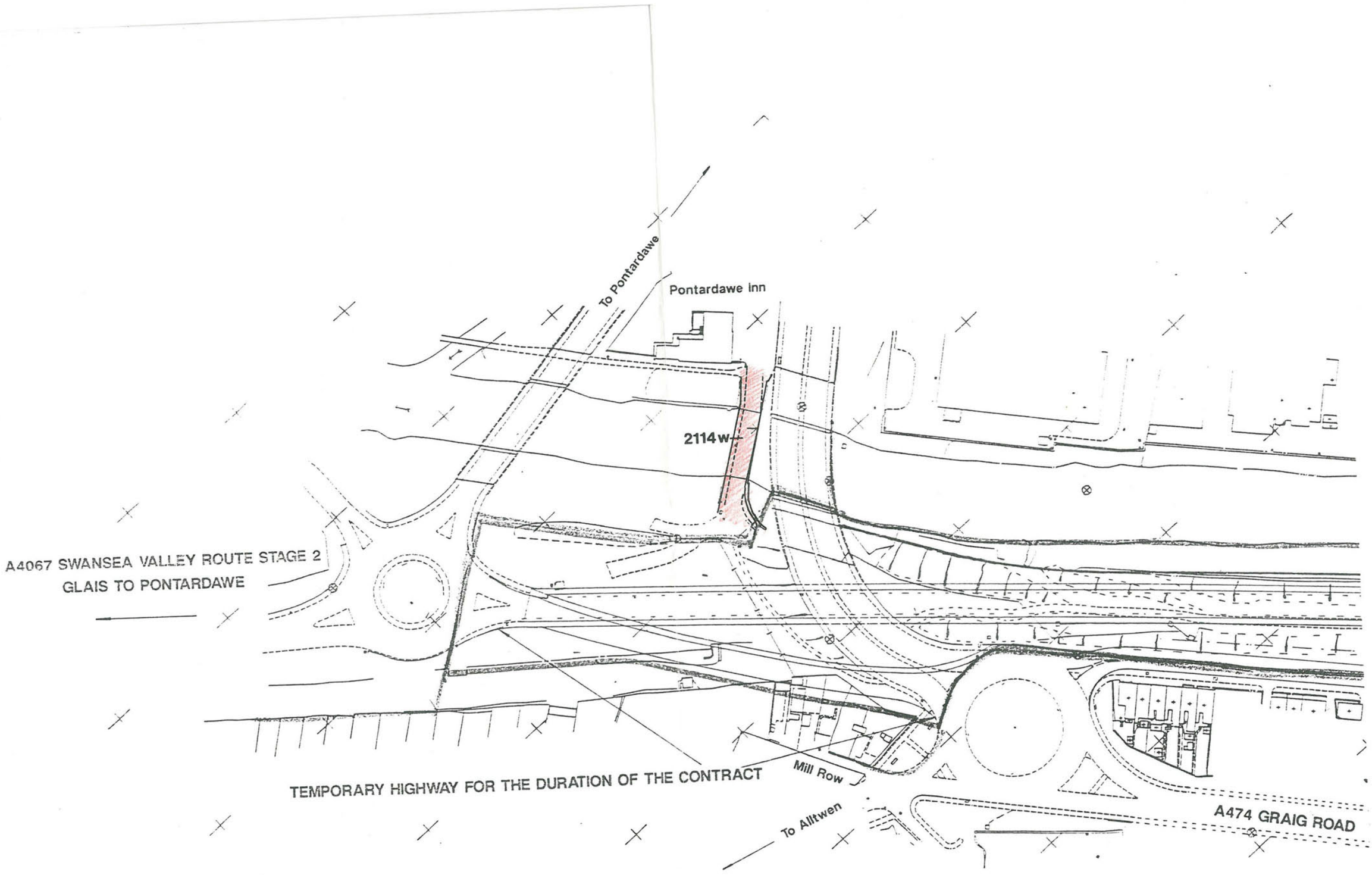


Fig. 2 The location of the Tawe Bridge (2114w) at Pontardawe.

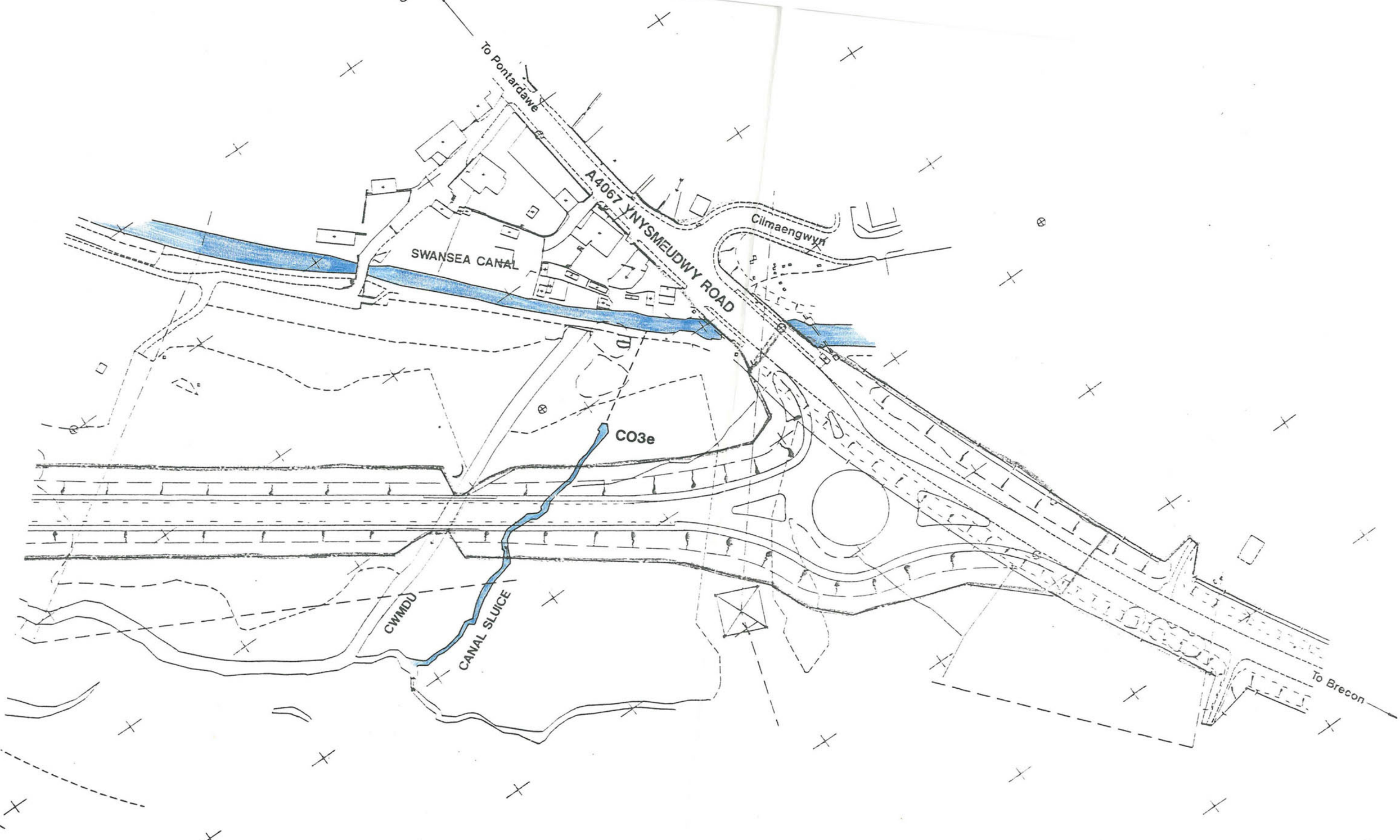


Fig. 4 The location of canal sluice C03e. The dotted line shows the approximate position of the culverted section.

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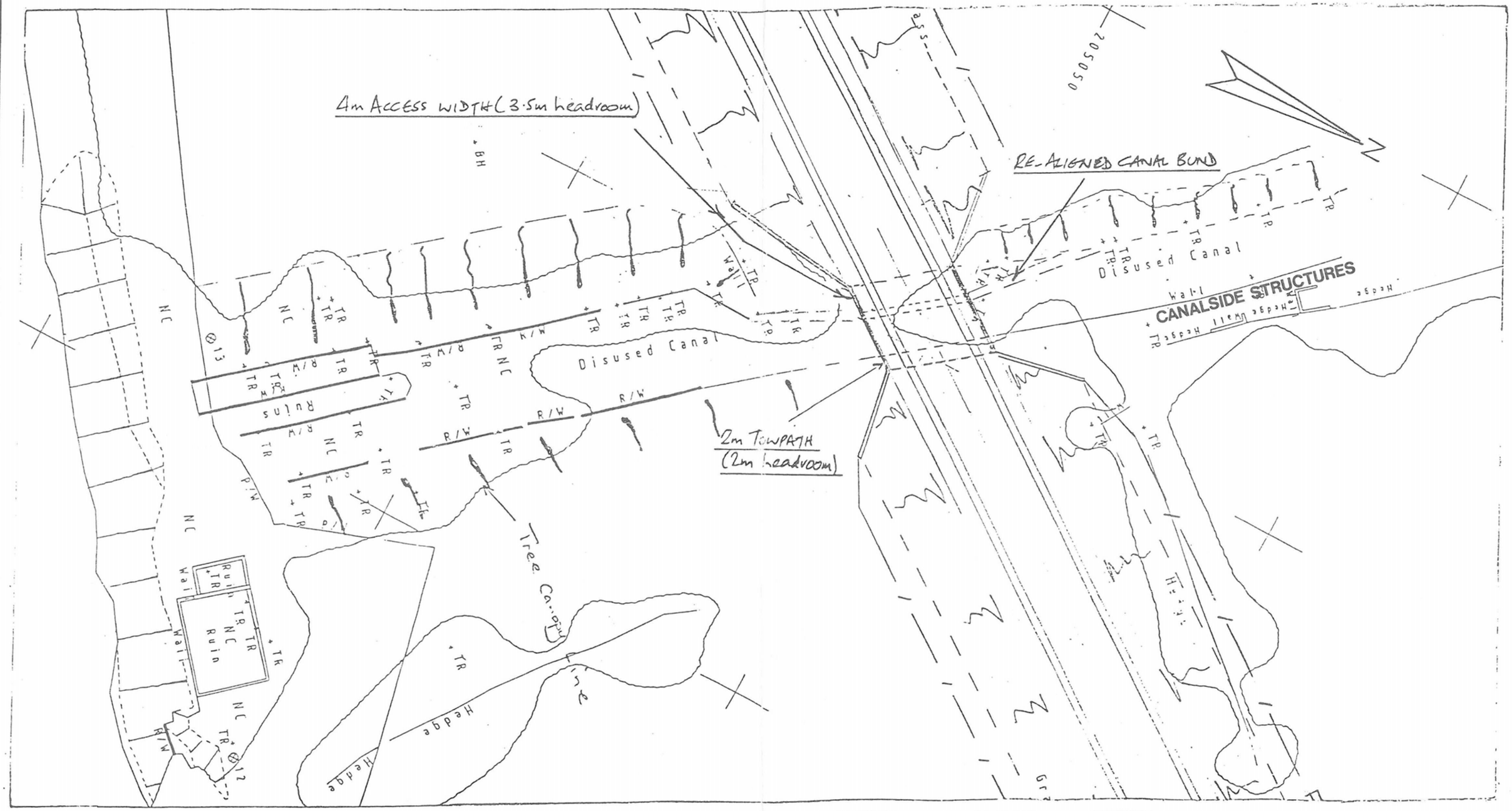

A4067~SWANSEA VALLEY ROUTE STAGE III
PROPOSALS AT WAUN COED BRANCH CANAL

DRAWING No: 26.1347/PL

SCALE : 1/500

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Fig.5