

GLYNEA COLLIERY BYNEA, LLANELLI

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

PROJECT RECORD No. 39946

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Report commissioned by: Ove Arup & Partners

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INTRODUCTION

It has been proposed to remove the spoil tips from Glynea colliery and re-use the material on the Millennium Coastal Park Eisteddfod Fields, Llanelli. Following removal, Glynea colliery would be transformed into a community park. Because of a lack of understanding of the surviving colliery remains and uncertainty as to how the various elements of the site interrelated it was agreed that an archaeological assessment was required. Information from the assessment would then be available to inform the planning process as to the suitability or otherwise of the proposed scheme and enable appropriate mitigation proposals to be developed. To facilitate this, Louise Austin, Development Control Officer of *Archaeoleg Cambria Archaeology*, formulated a design brief for *Ove Arup & Partners*, consulting engineers. Simon Power of *Ove Arup & Partners* enquired if *Archaeoleg Cambria Archaeology* Field Operations would be prepared to undertake the assessment. Field Operations prepared a costed specification which was accepted by Ove Arup in December 1999. The design brief and specification are included in Appendix 2.

Glynea colliery (SS54799914) is situated in the village of Bynea, a suburb on the southwestern fringes of Llanelli, Carmarthenshire (Figure 1).

Part of the site is a Scheduled Ancient Monument (CM 262). The schedule is included in Appendix 3.

For reference purposes the colliery has been assigned record no. 8937 on the Dyfed Sites and Monuments Record, and the brickworks no. 39947.

SUMMARY OF FINDINGS

By 1863 when coal was first raised at Glynea Colliery the pumping pit had been sunk, and the pumping pit engine house constructed. A winding pit and horizontal-engine winding house were in use three to four years later. The pumping pit engine house and horizontal-engine winding house survive, albeit in a ruinous condition. The colliery was abandoned in 1883, at which time a spoil heap had been created to the west of the buildings and one on the opposite side of the main railway line. Machinery was sold off.

The colliery was re-opened in 1891, re-using the existing buildings. A brickworks was built on the site in 1893. In 1926, the operating company was declared bankrupt and the brickworks and mine finally abandoned. A substantial spoil heap had been created to the west of the colliery buildings during this 26 year working period. Machinery and plant sold the following year.

Aerial photographs taken in 1947 show that most of the colliery ancillary buildings and almost the whole of the brickworks had been demolished. Major buildings - the pumping pit house and the horizontal engine winding house - were standing but ruinous.

Between 1947 and 1961, a large portion of the spoil heap immediately to the west of the winding shaft was removed, so severing the link between the surviving colliery buildings and the main bulk of the surviving spoil heap further west.

HISTORY

(from information supplied by Malcolm Symons)

Glynea colliery was started by the Llanelly Copperworks Company (then operating under the title 'Sims, Williams, Nevill, Druce and Company') with the sinking of a pumping pit in late 1861/early 1862. It was sited adjacent to the Llanelli-Llandeilo railway. The first coal was raised in September 1863; this is the most likely time when the colliery tip was started. The second shaft (the winding pit) was sunk in 1886/67 to the Swansea Three Feet Seam at about 290 ft (88m). The company partners decided to deepen this shaft to the Swansea Two Feet seam in February 1871, but it is not known if this decision was ever implemented. The colliery reached an annual production rate of 50-60,000 tons per annum in the 1870s, but was abandoned by the company (then operating as 'Nevill, Druce and Company') in December 1883, pumping having ceased in September of that year. The reason given for the abandonment was that the colliery had been operating at a loss. The machinery and plant were sold by auction in November 1883.

The colliery remained idle for eight years until re-opened by the newly-formed Glynea Colliery Company in 1891. Initial workings were not effected through the Glynea shafts which remained flooded after the 1883 abandonment, but from shafts of old collieries which had been incorporated into the Glynea workings before abandonment as airpits (the Berwick and Bynea shafts). It is not certain when the Glynea shafts were finally de-watered, but the brickworks associated with the colliery was constructed in 1893 and apparently used fireclay from Glynea.

The Glynea Colliery Company changed its name to the Glynea and Castle Coal and Brick Company in 1900. This came about because the Glynea Colliery Company purchased the Cille colliery in the Furnace area of Llanelli (northwest of the town and some five miles from Glynea) in 1895, re-named it the Castle colliery and worked it under the separate company name of the Castle Colliery Company. The two companies were merged and registered under the joint name in 1900.

In 1916, two directors of the nearby St. David's Tinplate Company Ltd (William Morgan and William Isaac Williams) acquired the Glynea and Castle Coal and Brick Company and changed its name to the New Glynea Colliery Company. The Glynea colliery was re-named the New Glynea colliery at this time. The colliery was electrified soon after being taken over in 1916. The colliery worked under the new company name for ten years, being finally abandoned on 31 December 1926 after 35 years of continuous working. The cause of abandonment was given as 'financial difficulties'. The abandonment documentation stated that the colliery was closed by a Receiver and that old working plans were being deposited in lieu of properly drawn and certified abandonment plans. The plant and machinery was sold in April/May 1927 and the colliery dismantled. William Isaac Williams was declared bankrupt in 1928.

additional historical notes

Glynea was a large colliery for the Llanelli area with two main shafts and a number of associated air pits, some of which were smaller. One, perhaps both, of the main shafts was sunk to 440 ft (134m) to just below the Swansea Two Feet Seam (Bushy Vein). Extensive workings are recorded in the Lower Swansea Six Feet (Fiery Vein), Swansea Three Feet (Golden Vein) and Swansea Two Feet Seams.

The colliery was prone to explosions of methane gas, with 13 separate instances serious enough to be listed by the Mines Inspectorate between 1870 and 1919. The worst of these, on 18 October 1913, caused the deaths of eight men. A total of 34 fatalities are recorded at the colliery over its working lifetime.

The numbers employed in the colliery during its first working period is not known. The first recording is in the List of Mines of 1894 when 69 were employed (56 below ground, 13 above). This increased steadily over the years with a maximum workforce of 445 (359 below ground, 86 above) in 1921. It then decreased to 216 (173 below, 43 above) by the year of abandonment, 1926.

The colliery is and was known locally as 'Pwll-y-bont' because of its proximity to the road bridge over the Llanelli-Llandeilo railway.

It is unlikely that the Glynea shafts have been filled-in. The shafts of collieries closed at the times of financial difficulties were usually just bricked over or blocked at the surface.

LANDSCAPE, COLLIERY AND VILLAGE DEVELOPMENT

The first large scale map of the Glynea area, dated 1751 (Figure 2), shows an entirely rural landscape of dispersed farms surrounded by small fields. At this time the medieval open- or strip-field system was still, at least in parts, in operation. The site of the future colliery consisted of small fields, one of which was subdivided into two strips, with open, unenclosed land to the south and southwest. Glynea farmhouse lay several hundred metres to the southeast of the later colliery. However, even at this early date what might be termed proper industrialisation had begun with the first colliery steam engine in the Llanelli area at Engine Fach, built 1750, a few hundred metres to the north of Glynea (Symons 1979, 317), which was linked to a shipping place at Spitty Bank by the first waggon road for the haulage of coal in the area - Squire, Evans and Beynon's waggon road of 1750 (Symons, 1979, 202-04). Between the 1751 map and the tithe map of 1842 (Figure 3) industrialisation had taken place. In 1766, a major colliery was developed at Genwen (Symons 1979, 180) about 500m to the northwest of Glynea. A steam engine was installed and between 1766 and 1770 the Yspitty canal constructed to transport coal from the colliery to a shipping place on the River Loughor. A new engine house was built at Genwen in 1805-06, which is still standing. An extension to the canal was constructed before 1785 to serve Cae Level pit. It would seem that the canal fell into disuse shortly after 1808. To the south of Glynea, in 1794, Baccas pit was sunk and was soon linked by a canal to a landing place on a pill of the River Loughor. In addition to Squire, Evans and Beynon's waggon road other railways were constructed in the vicinity of Glynea in the late 18th- and early 19th-century. For instance General Warde's Apple Pit railroad was built to link a pit sunk in 1806-07 to the north of Glynea with Spitty Bank. The major railway development in the area however was the construction of the Llanelli-Llandeilo line, started in 1841. The course of it is shown on the tithe map.

Even after almost 100 years of industrialisation, the tithe map of 1842 depicts an essentially rural landscape of scattered farms and small fields, with discrete coal mines linked by railways and canals. Residential development to house what was a rapidly expanding population must have been absorbed by expansion of Llanelli town as the settlements of Cwm-felin and Bynea had not begun to develop. Small fields on the site of the future Glynea colliery shown on the 1751 map were by 1842 bisected by the Llanelli-Llandeilo railway. The colliery was later built across several fields, tithe apportionments 122, 123 and 125 (Figure 10). The course of the Yspitty canal is clearly shown. To the west of the future colliery land that had been unenclosed was now divided into medium- to large-sized fields. One of the few new houses to be built in the area lay immediately to the south of the railway. It is named as Ty-newydd on later maps. A house still stands in this location.

Following the foundation of Glynea colliery in 1861-62, the first large scale maps are mine plans dated 1870 (Figures 4 & 11), with later annotations (Llanelli Library 173A5, 174, A5), and other plans not dated, but almost certainly also of the 1870s (Llanelli Library 401, 402, 403). They not only show the layout of the mine buildings and two main shafts (labeled pumping pit and winding pit on the 1870 plans), but also the plan development of the underground workings and residential and other buildings of the neighbourhood. On the 1870s plans the engine house which served the pumping pit and lay to the west of it is shown as is horizontal-engine winding house and the winding pit to the north. A large structure - the heapstead to the winding pit - lay to the north of the engine house and a further large structure to the northeast of the pumping pit. A small structure lay to the south of the pumping pit alongside the railway line. There are no indications of spoil tips on the 1870 plan. In the intervening 28 years between the drawing of the tithe map and the 1870 plan the area had witnessed considerable residential development. Cwm-felin had grown into a sizable community and terraced housing had spread down the southern side of Cwm-felin Road towards Glynea colliery. Building at Bynea was on a modest scale and consisted of just the Plough Inn and three or four other buildings on the opposite side of Cwm-felin Road from the colliery.

The first large scale Ordnance Survey map of 1879 (1:2500, surveyed 1877-78) records further changes (Figures 5 & 12). Minor alterations to the plans and layout of the colliery buildings are shown, but this may be the result of a more detailed survey by the Ordnance Survey, rather than of actual changes. Two small structures are shown alongside Cwm-felin Road on the colliery site. A siding from the Llanelli-Llandeilo railway had been constructed to serve the colliery. Running from the heapstead a bridge crossed the railway

line and siding to the south. This bridge presumably carried a tramline which was used to develop a spoil heap on a small triangular plot of land to the south of the railway. It is likely that railway trucks on the siding were also loaded from this bridge. A spoil heap approximately 100m long had developed to the west of the colliery buildings, but it had not encroached on the line of the Yspitty canal. Residential development in the vicinity of the pit was much as shown on the 1870 mine plans, though Bynea railway station was now open (named Dynea Station - presumably an error by the OS).

Two mine plans (Llanelli Library 405, 408) record the second phase of Glynea colliery's life. They are not dated though the latest workings recorded on them are 1901 for the Golden Vein and 1903 for the Fiery Vein. The layout of the buildings and surrounding landscape are taken from either the 1870 mine plans or from the 1879 Ordnance Survey, but it may be significant that only the winding pit is shown; there is no trace of the pumping pit. As the plans' main function was to record the underground workings, the brickworks which were built in 1893 are not shown.

A full cartographic record was made by the Ordnance Survey for the second edition 1:2500 map of 1907 (Figures 6 & 13). Mine buildings are shown in detail. A range of structures had been built adjoining the engine house to the south of the heapstead. A tramline is shown leading from the heapstead to the spoil heap that lies to the west. Two buildings lay on either side of this tramline, the one to the north on the spoil heap, the larger of the two to the south. The bridge present in 1879 had been dismantled and replaced by a different mechanism for loading trucks on the railway siding. The spoil heap on the south side of the railway line was no longer used. A second railway siding had been built to serve the brickworks that had been constructed between the colliery buildings and Cwm-felin Road to the east. The brickworks consisted of a substantial east-west range with three circular kilns and rectangular structure of unknown function to the south. Minor structures such as a cistern had been built to the north of the brickworks. The spoil tip the west of the pit had expanded considerably since 1879 and had, by 1907, encroached across the line of the Yspitty canal. Presumably partly because of the employment opportunities offer by Glynea colliery, Bynea had developed into a sizable settlement; a terrace of seven houses had been constructed immediately to the north of the pit on the western side of Cwm-felin road, and terraced housing and semi-detached housing had been built on the opposite side of the road from Cwm-felin almost to the Plough Inn. To the south of the railway line detached and semi-detached houses lay on either side of Cwm-felin Road, and a school had been built on the south side of the road.

The 1916 1:2500 Ordnance Survey map, which was surveyed in 1913 and 1914, records a similar picture to the 1907 map (Figures 7 & 14). Major changes in the intervening nine years were restricted to the continuing development and expansion of Bynea as a settlement. Scope for further housing along Cwm-felin Road north of the railway line was limited and therefore new housing had been constructed on the eastern side of what had been a minor road running to the north of the station and the lane that ran to Berwic Farm to the south of the station. The colliery buildings and brickworks buildings are shown pretty much as in 1907. There are what can only be omissions on the map: the heapstead is not recorded, and no tramways are shown leading from the heapstead to the spoil heap. These omissions highlight the need to exercise caution if relying solely on cartographic evidence for describing colliery development. Since 1907, the spoil heap to the west of the pit had expanded considerably in a westerly direction. Long fingers of spoil on the western fringes are the tell-tale signs of tramway deposition.

In 1915, following the fieldwork for the 1916 Ordnance Survey map, a survey of the colliery was carried out (Llanelli Library LC374). Though not stated in the survey document, it would seem that this work was commissioned by a prospective purchaser of the colliery. It contains much information on the type of machinery used, working practices and condition of buildings as the colliery prepared to enter the last 10 years of its working life. The following is a precis of the survey:

Description: 4 shafts, 1 up-cast, 3 down-cast. Depth of up-cast or winding pit 140 yds, connected to a Waddle Fan driven by a 16" cylinder engine. All coal and rubbish brought through up-cast. One of the down-casts is used for pumping. Winding engine a pair of horizontal 22" dia. cylinders, 3'.6" stroke, 9'.0" drum, cage 5'.7" single deck, trams 5'.0" x 3'.0" x 2'.3" of which 100 in use.

Head gear of timber and needs reconstruction. Method of handling trams at head of shaft very inefficient and needs improving. 2 slants close to bottom of shaft - Bushy Vein and Golden Vein. Hauling engines for both are on surface. Bushy Vein hauling engine a pair of 18" dia. cylinders, 3'6" stroke, drum 9'0" dia. Bushy Vein produces c. 80 tons per day. Cross cut from Bushy to Golden produces 30-40 tons per day. Golden Vein haulage by 14" single cylinder engine, 3'0" stroke, 4'0" drum. Working in the Golden Vein is by day work.

Water: water in Bushy Vein dealt with by a three throw pump 9" dia, rams, 15" stroke, electrically driven, power from a 75HP motor operated by the Bushy hauling engine when not engaged in hauling. Golden Vein dealt with by a Worthington steam pump, 10" cylinder. This steam pump is very inefficient and should be replaced. Water from the pit bottom is raised by a Bull Engine, 60" dia., cylinder 7'6", stroke now working 3 times in 73 seconds. This should be replaced with a electric pump, but kept as a reserve.

Surface: The condition of things on the surface is deplorable. Engines are filthy and lengths of steam pipe are uncovered. Leakages in joints are everywhere. There are many complaints about the lack of boiler power. Boilers take 16% of output. Screening of coal is very crude. Provision needs to be made for machinery for cleaning, classifying and sorting coal. Marshaling of wagons on the siding is done by a man and a horse. They should be replaced with machinery.

Office: temporary, in keeping with other surface arrangements - utterly unsuitable for the proper carrying out of the work. A new building is required.

Boilers: steam provided by 1 Galloway and 3 Lancashire boilers. 1 other Lancashire boiler purchased but not installed. Boilers not well maintained.

Electrical plant: for pumping an electrical plant consisting of a 75HP generator driven off Bushy Vein slant hauling engine when not hauling. A second-hand (15 years old) Messrs Dick, Kerr and Co London 400KW generator driven by a 3 crank, 6 cylinder tandem compound vertical engine is being installed, but the available steam pressure may be insufficient to power it.

Brickworks: capable of producing 6000-7000 bricks per day when working. Fire clay obtained from Golden Vein clay. Works need modern plant and machinery. The drying shed is in a dilapidated state and a perfect disgrace. The whole works should be abandoned and a new works built to the west of the pit.

Horses: 11 horses are kept.

If repairs and modernisation were carried out, including the installation of the electrification plant, then the pit would be profitable. Money required: £2200 for repairs etc, £1400 for overdraft at bank, £1800 to discharge pressing creditors: total £5000. It is a extremely valuable property which with careful management should be a highly remunerative undertaking.

It is not known how many of the recommendations made by the 1915 surveyors were implemented, but many probably were following the purchase of the pit in 1916, as the workforce had increased to 445 in 1921, from 69 in 1894. The survey implies that the brickworks was not working in 1915; given the damning report it is likely that it never produced another brick.

Post World War 2 aerial photographs (CPE/UK/1997 - 4130-31, 1947) are the first comprehensive visual record of the colliery since its abandonment in 1926. Of the colliery buildings the horizontal-engine winding house is the most prominent structure on the photographs; its four walls were standing to their full height, though the structure is roofless. Shadow marks indicate two large windows in the north gable wall. The pumping pit engine house was also roofless, but because of its very tall, narrow character it impossible to describe it further from aerial photographic evidence alone. The foundations or walls of a rectangular

building to the west of the heapstead first recorded on the 1907 OS map were present in 1947, but all other colliery buildings had been demolished and reduced to rubble. The heapstead is not easy to make out on aerial photographs, partly because it seems to have been covered with vegetation, but also because the main colliery spoil heap ran right up to it on the western side. The top of the spoil heap and the top of the heapstead were apparently at the same level. From the heapstead the spoil heap steadily gained in height to the west, rising in a long hog-back ridge with the course of a tramline running along its crest. At the western end the tramline bifurcated, one arm leading to the northeast, the other to the southwest. Spoil had encroached over the Cae Level branch of the Yspitty canal at the extreme northern edge of the site. To the south of the main ridge the line of a second tramline is visible on aerial photographs running along a terrace or shelf. This seems to be the tramline shown on the 1907 Ordnance Survey map, and had clearly been superseded by the one described above well before the colliery's abandonment in 1926. Testimony to the scale of coal winning between the Ordnance Survey map of 1916 and abandonment is provided by the very extensive spoil heap recorded on aerial photographs. A small quarry pit had been dug into the spoil heap on its southwest corner by 1947. Apart from a still roofed structure at the extreme eastern end of the site, the brickworks had been completely demolished. Low foundations to the west of the extant building are visible, and the kilns seem to be represented by hollows and rubble. The line of the siding that served the brickworks was still present, but the railway lines had been removed. Clearly since 1926 residential development was no longer tied to the fortunes of Glynea Colliery. Bynea, however, had expanded with residential development infilling areas to the south and north of the station

1951 aerial photographs (Ove Arup & Partners, 1999) show that although quarrying of southwest corner of the tip had ceased, and that material was being removed from the eastern end of the tip. Other aerial photographs were examined for the Ove Arup report, but as these showed no changes to the site they were not examined for this study. The 1961 Ordnance Survey 1:2500 map (Figures 8 & 15) depicts the abandoned engine houses, heapstead and building to the west of the heapstead. The brickworks building that survived demolition was still roofed in 1961 and two small roofed buildings are shown to the northwest and northeast of the horizontal-engine winding house. The spoil heap from the heapstead to c. 75m to the west had been removed, and a large quarry pit had been dug in the northern side of the spoil heap. The 1970 Ordnance Survey map (Figure 9) does not show the spoil heap, the colliery buildings are shown in a cursory fashion.

TOPOGRAPHY AND CURRENT CONDITION

Glynea colliery was constructed on the edge of a low terrace at about 5m OD overlooking to the west and southwest low lying former coastal marsh land. Prior to construction, the land on which the colliery was built was farmland. The former marsh had been drained and improved in the late 18th- and early 19th-century, but in the 1860s it still probably consisted of wet and poor quality grazing. It was across the former marsh that the colliery's spoil heap was later formed. Space for the colliery buildings was confined to a triangular plot of land bordered by the Llanelli-Llandeilo railway to the south, by Cwm-felin Road to the east and northeast, and by the former marsh to the west and northwest (Drawing 1).

The site of the colliery is neglected. Dense gorse scrub obscures the spoil heap and flat land between the spoil heap and colliery buildings. Elsewhere there is bracken, brambles and saplings. A track with access between 77 and 79 Cwm-felin Road runs around the back of houses on Cwm-felin Road and leads to the extant old brickworks buildings. Evidence of fly-tipping is apparent in the vicinity of this track.

The colliery buildings

The pumping pit engine house

Constructed in 1861-62, the pumping pit engine house was designed to accommodate a beam engine. It is constructed from squared stone-blocks randomly laid, dressed stone for some quoins, jambs and voussoirs, and brick for internal arches (Drawing 2; Photographs 5 & 6). It is ruinous and ivy clad. The east wall, which would have carried the weight of the beam stands to virtually its full height of c. 10m. It is 1.8m thick. A 2m wide rounded-headed arched opening in the east wall leads into the interior. The voussoirs of this arch have been removed or fallen revealing a brickwork arch within the core of the wall. Above this a round-headed arched opening of dressed stone would have taken the pivot of the beam engine. This opening is in good condition. The north and south walls stand to the same height as the east wall but are less substantial, only 1.04m wide. Externally ivy masks detail. Internally they are a little over 2m long east-west, though the north wall extends to 5.5m at first floor level. There is a doorway in each wall, the southern one blocked with brick. There is no west wall to the building. The internal dimensions are 3.90m north-south, 2.04m east-west. To the east of the southeast corner of the engine house secondary masonry joins to a dressed stone buttress or plinth. Beyond this is the shaft, marked by a shallow, bracken-covered hollow. Externally the southern wall of the engine house forms part of a revetment to the railway siding.

Horizontal-engine winding house

Constructed 1861-62 from squared masonry randomly laid and dressed stone quoins (Photographs 7 & 8). It has secondary brick additions. Only the south wall survives to anything approaching its original height of about 5m at the gable, and this is heavily ivy covered and in poor condition. The original wide opening in the south wall has been blocked with brick and smaller openings created, presumably this took place during the second phase of the colliery workings. Other walls only stand to c. 1m high. Internally there are two machine bases, with holdfasts, with a flywheel pit between them, a conventional layout for horizontal-engine winding houses.

The heapstead

A raised covered area around the pit top enclosing the tram railway circuit. It included equipment for removing trams from their cages, discharging the coal and returning empty trams to the shaft. The headframe stood over the heapstead. An elevated heapstead allowed trams to be discharged into railway wagons or other containers. The Glynea heapstead consists of a square mound of spoil, approximately 3m high, revetted in stone, with later brick buttressing (Photograph 7). On the south side a high revetment wall prevents the heapstead from slipping on the railway siding. Spoil has been removed from against the western side to the heapstead, a process that has damaged its northwest corner and so revealing its construction of spoil and waste. Glynea bricks incorporated in the spoil indicate that the heapstead was rebuilt, at least in part, during the second period of the colliery's life. Brick vaulting on top of the heapstead is presumed to be capping to the winding shaft.

Other colliery buildings and structures

Immediately to the west of the heapstead Ove Arup's topographic survey and the 1970 Ordnance Survey 1:2500 record a wall with a return, indicating the presence of building remains. Part of this wall is probably a revetment to the railway siding, continuing the revetment to the heapstead. There may be foundations of other buildings present, but the vegetation cover is too dense to allow examination. The course of the railway siding to the brickworks seems to survive, but is now divorced from the main line by a low embankment. To the northeast of the horizontal-engine winding house low brick foundations mark the site of a long narrow building first recorded in 1907 and still standing in 1970. Other colliery buildings have been reduced to low mounds of bracken- and bramble-covered rubble. Both Hughes *et al* and the description of the Scheduled Ancient Monument mentions the foundations of the fan house. Owing to the overgrown nature of the site, it is not clear where these lie.

Spoil heap

To the south of the railway line the spoil heap recorded in 1879 as belonging to the first phase of the colliery life seems to survive undisturbed in a triangular plot of waste land alongside the railway, though it is not particularly prominent.

The main spoil heap to the west of the colliery buildings is very overgrown, rendering detailed examination impossible. A general description is however possible. The spoil heap rises up to 12.5m above the surrounding former marsh land and survives to approximately 130m east-west and 140m north-south (Drawing 1). Post abandonment quarries recorded on aerial photographs and on the 1961 Ordnance Survey map are obvious features, particularly the one on the northern side of the heap which measures 50m by 35m and is 9m deep. Less obvious on the ground, but far more destructive, has been the removal of a triangular-shaped wedge of spoil between the heapstead/colliery buildings and the surviving spoil heap. This wedge of removed material measures 70m east-west and 70m north-south against the surviving heap, and is up to a maximum of 6m deep at its western end (Photograph 2). Trial pits (below) revealed that up to a 3m depth of spoil remains in this area. The removal of this wedge of material has effectively severed any connection between the colliery buildings and the surviving spoil heap. An examination of the surviving spoil heap surface reveals much pock-marking and disturbance, unlike the relatively smooth surface recorded on 1947 aerial photographs. This is presumably due to small-scale diggings in search for waste coal. Major elements of the spoil heap survive; it is possible to trace part of the shelf on the southern side along which the tramway of 1907 was constructed, and parts of the high ridge - the course of the last tramway - survives, albeit in a much curtailed and damaged form.

The brickworks

A large polygonal building at the extreme eastern end of the site, hard up against Cwm-felin Road is all that survives above ground of the brickworks (Photographs 1 & 2). It is three-storeyed, but inside probably just a single-cell, of random masonry up to c. 3m, and brick with a little stone above. The south wall has a large window at ground floor level and a smaller one in the gable. There are two blocked round-headed openings in the west wall and large modern doorway. The east wall has been largely rebuilt. It has an asbestos roof. According to map evidence this building was part of a much larger range, now demolished. It seems probable that it was the machine shop to the brickworks, with drying sheds to the west. There is no trace of the kilns. Since the 1947 aerial photographs were taken the site of the kilns seems to have been further flattened and the cutting of the railway siding that served the brickworks filled in.

EVIDENCE FROM TRIAL PITS

Trial pit excavation was carried out over the spoil heap in 1998 and 1999 (Ove Arup & Partners 1999). A selection of the results are included in Appendix 1. Apart from trial pits on the periphery of the spoil heap, TP8 of the 1998 study was the only pit in which the ground surface underlying the spoil was encountered. Pit 8 was excavated in an area where spoil had been removed between 1947 and 1961. Here silty clay was encountered at 3.0m. Digging was abandoned at 3.8m due to collapse. Other pits revealed deep deposits of spoil - generally over 6m. Many were abandoned due to the instability of the spoil.

Initially it was proposed to excavate two trenches across through the spoil heap with the intention of revealing the course of the Yspitty canal, and so obtaining information on its depth, size and character. However, given the depth of the spoil and its unstable nature, it was decided that the possibility of detecting and recording the Yspitty canal was virtually nil, and therefore this part of the assessment was abandoned.

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Maps

Glynea Colliery, Fiery Vein, 1870 (Llanelli Library 173 A5)

Glynea Colliery, Bushy Vein, 1870 (Llanelli Library 174 A5)

Plan of Glynea Colliery, Golden Vein, n.d. but of the 1870s and later (Llanelli Library 401)

Plan of Glynea Colliery, Bushy Vein, n.d. but of the 1870s and later (Llanelli Library 402)

Plan of Glynea Colliery, Fiery Vein, n.d. but of the 1870s and later (Llanelli Library 403)

Glynea Colliery, Golden Vein, n.d. but showing workings up to 1901 (Llanelli Library 405)

Glynea Colliery, Fiery Vein, n.d. but showing workings up to 1903 (Llanelli Library 408)

Jones, W (surveyor), 1751 'A Description of Lands near or about Berwick Chappel in Llanelli Parish Carmarthenshire. Photocopy with Archaeoleg Cambria Archaeology

Llanelli tithe map and apportionment, 1842

Ordnance Survey, 1879 1:2500 Carmarthenshire LVIII.8 & 12

Ordnance Survey, 1907 1:2500 Carmarthenshire LVIII.8 & 12

Ordnance Survey, 1916 1:2500 Carmarthenshire LVIII.8 & 12

Ordnance Survey, 1961 1:2500 SS5499-SS5599

Ordnance Survey, 1961 1:2500 SS5499-SS5599

Aerial photographs

CPE/UK/1997-4130-31, 1947. Prints housed with Archaeoleg Cambria Archaeology



Figure 1. Location map at 1:25,000 scale

Reproduced from the 1998 Ordnance Survey 1:25,000 Explorer map
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Llandilo, Carmarthenshire SA19 6AF
Licence No. AL 51842A

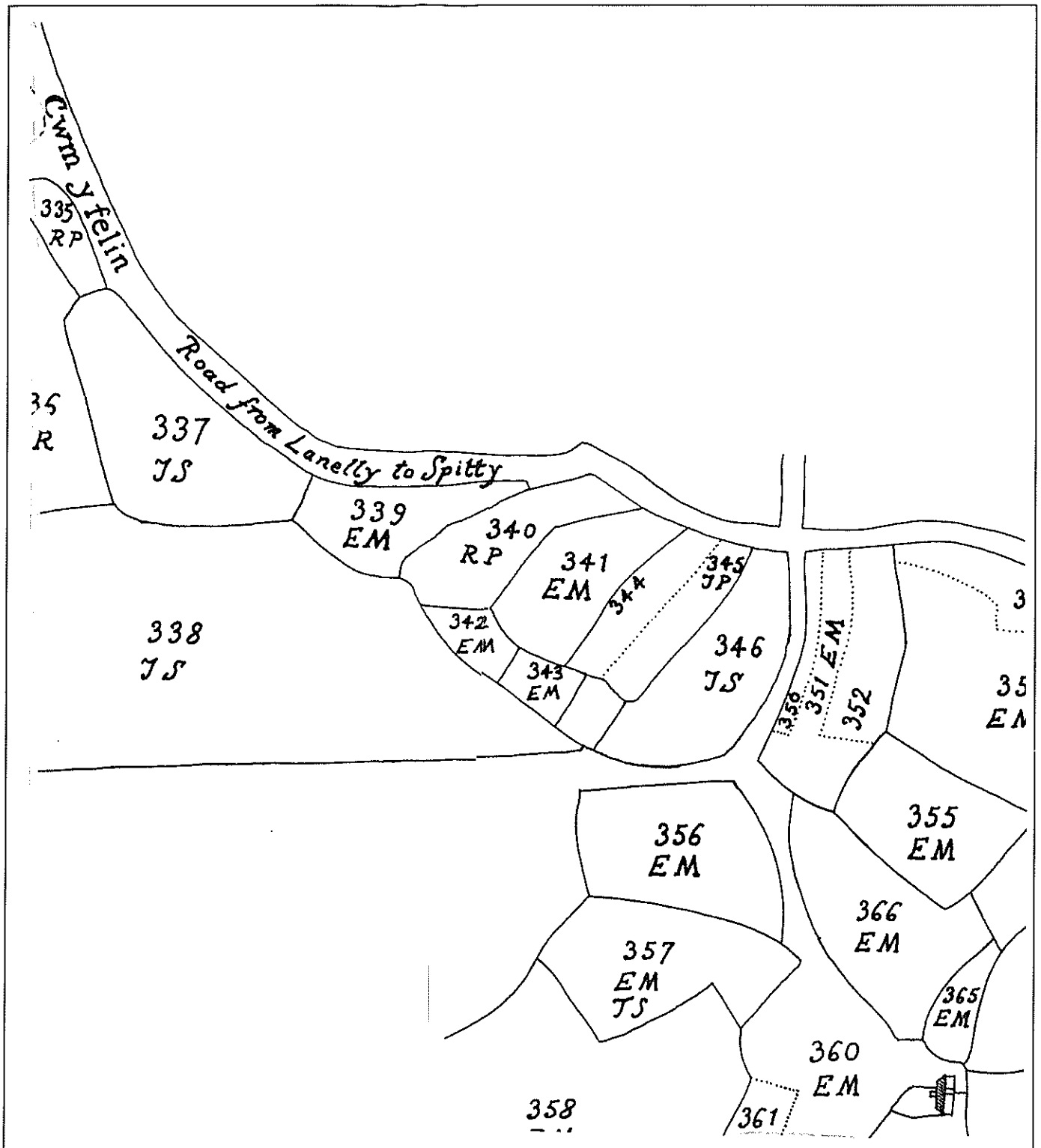


Figure 2. Extract from the 1751 'A Description of Lands near or about Berwick Chappel in Llanelly Parish', showing the future site of Glynea colliery

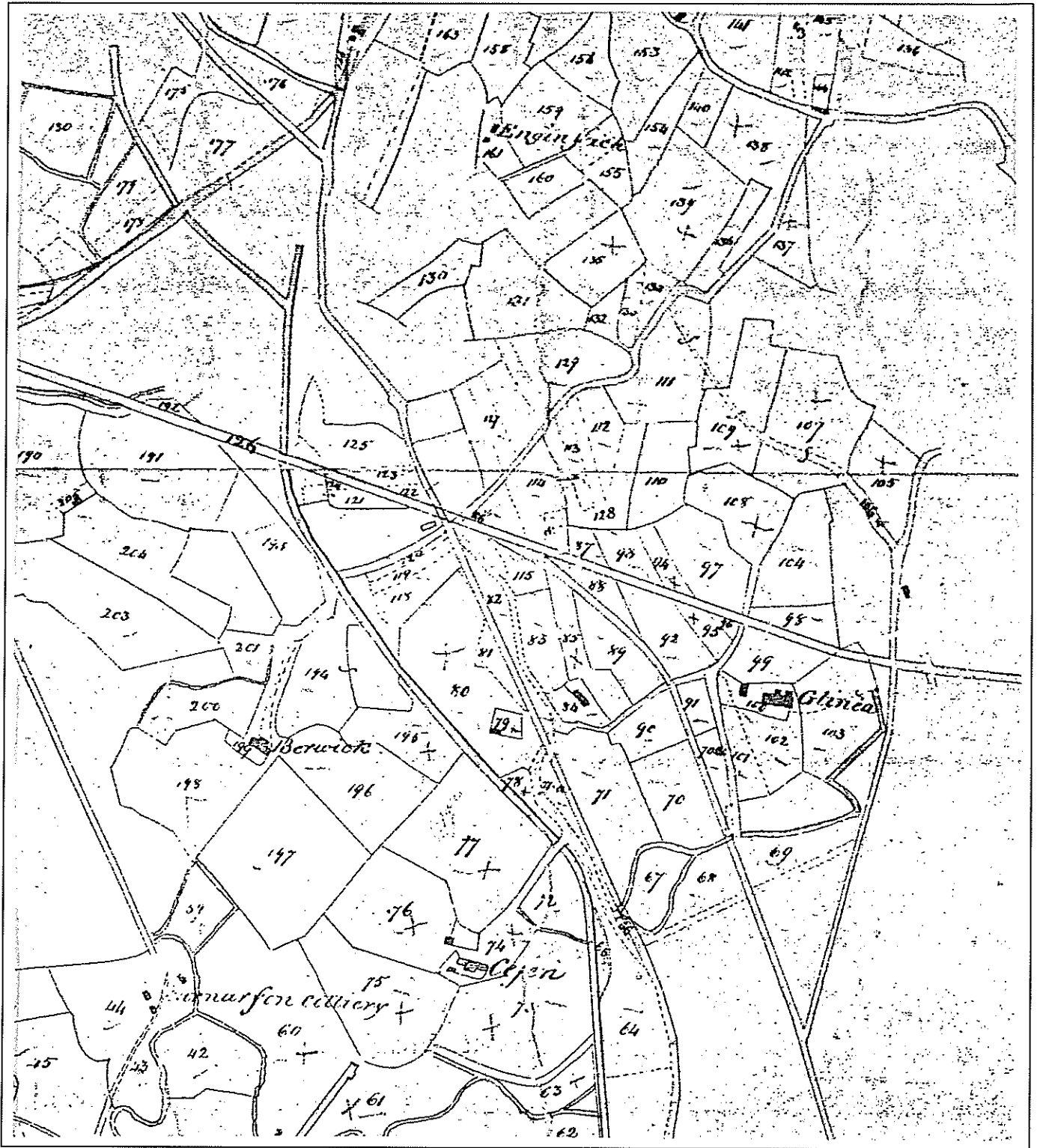


Figure 3. Extract from the 1842 Llanelly tithe map showing the future site of Glynea colliery

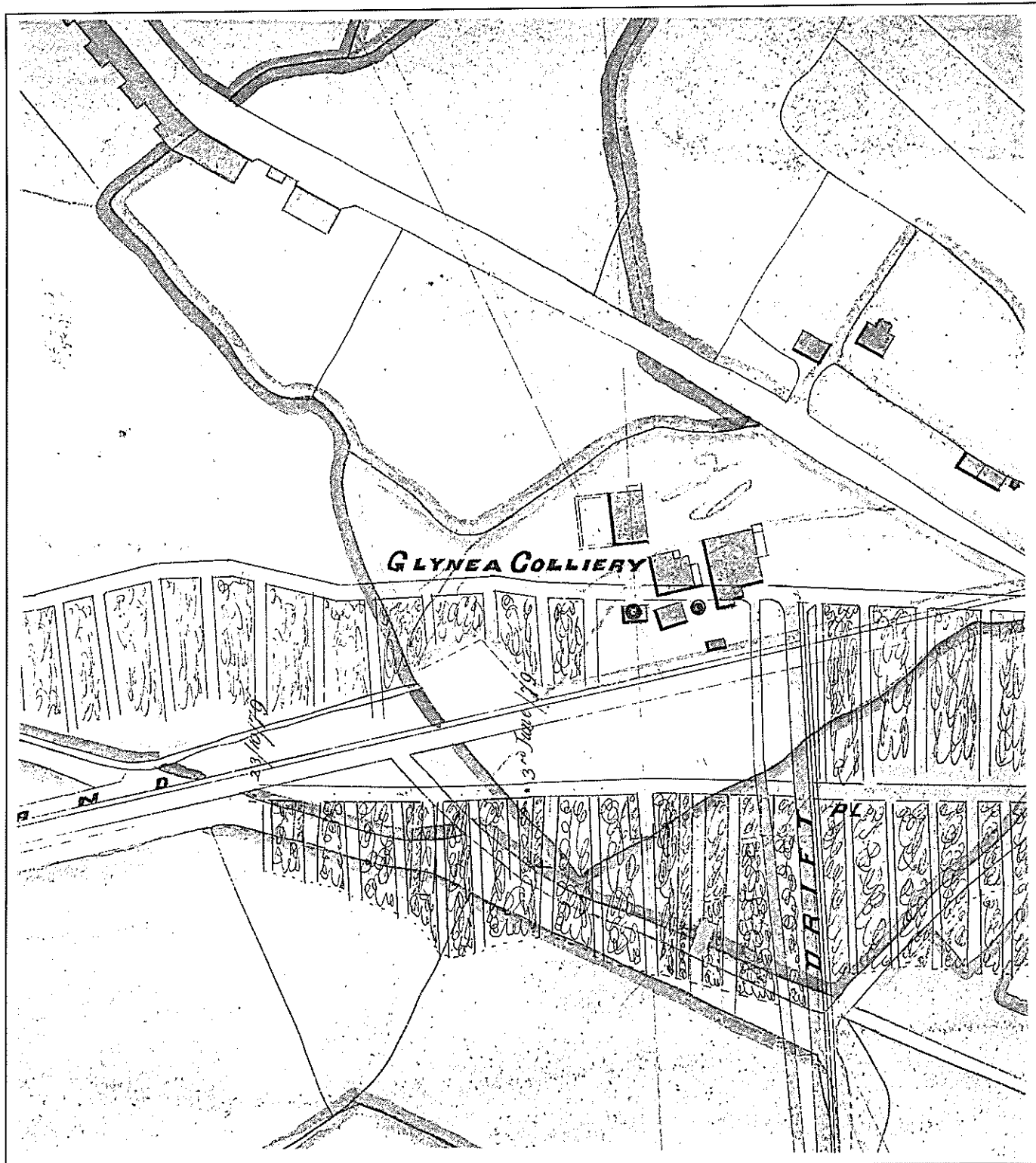


Figure 4. Extract from an 1870s plan showing Glynea colliery (Llanelli Library 402)

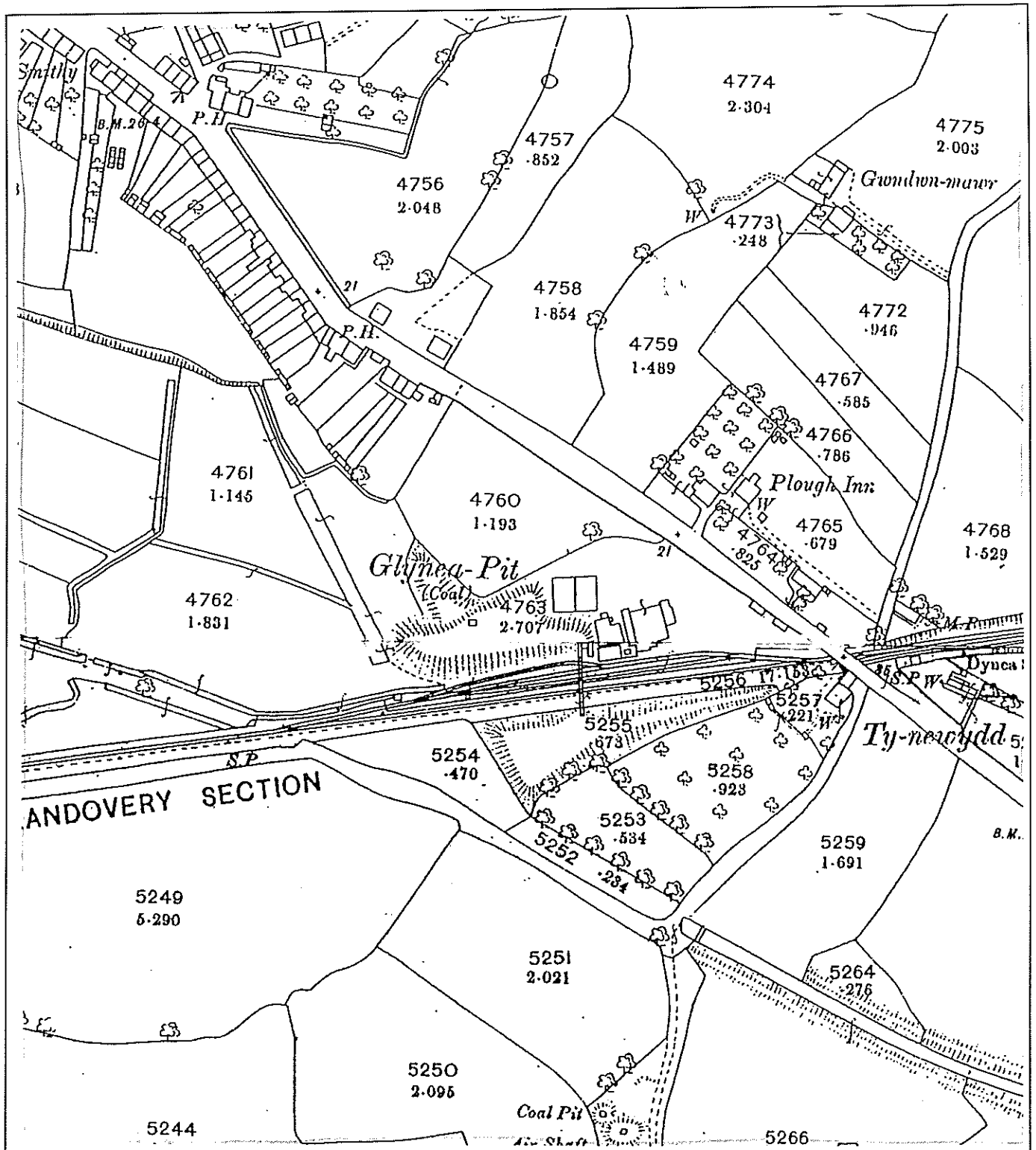


Figure 5. Extract from the 1879 Ordnance Survey 1:2500 map

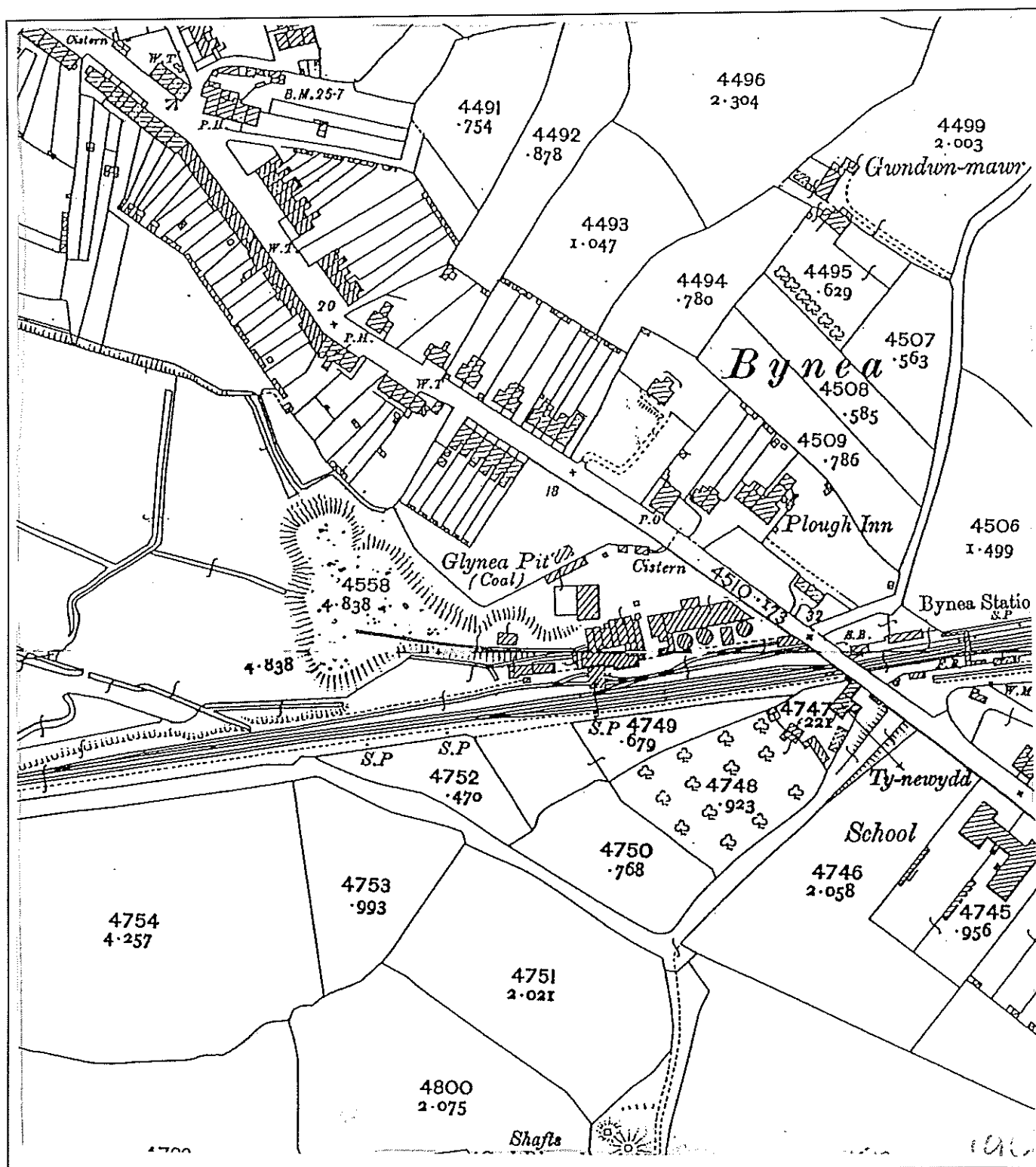


Figure 6. Extract from the 1907 Ordnance Survey 1:2500 map

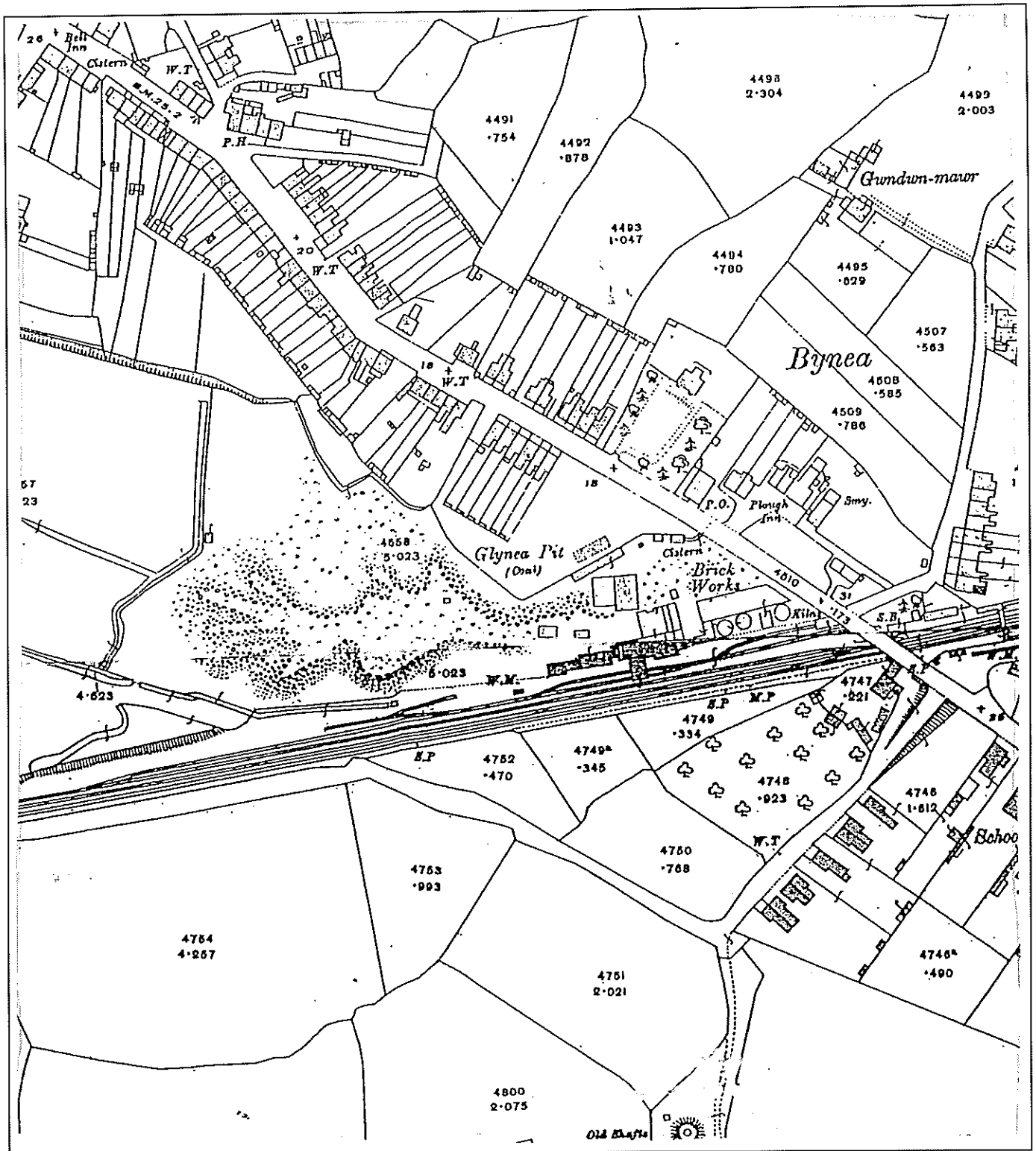


Figure 7. Extract from the 1916 Ordnance Survey 1:2500 map

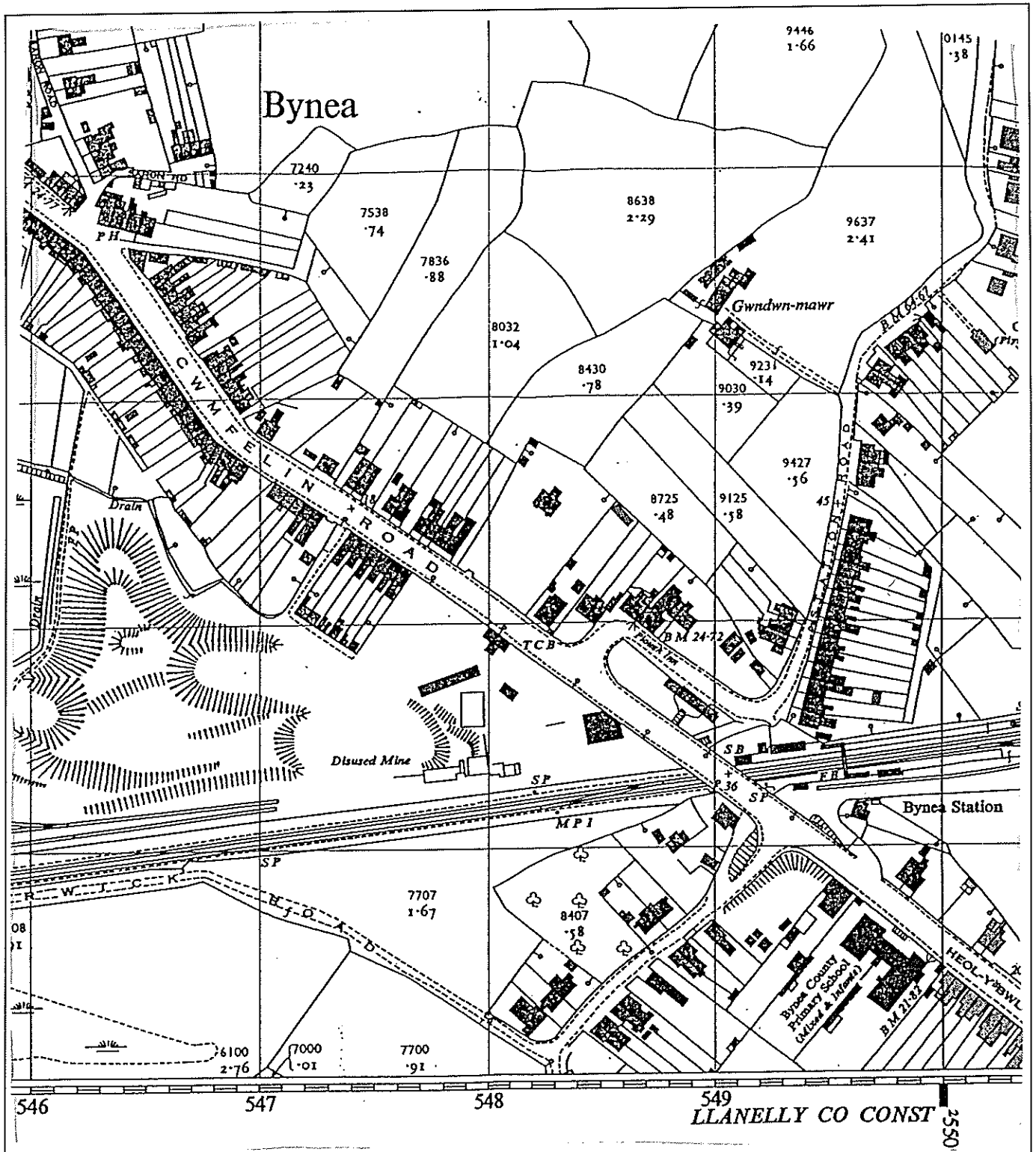


Figure 8. Extract from the 1961 Ordnance Survey 1:2500 map

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Llandeilo, Carmarthenshire SA19 6AF
Licence No. AL 51842A

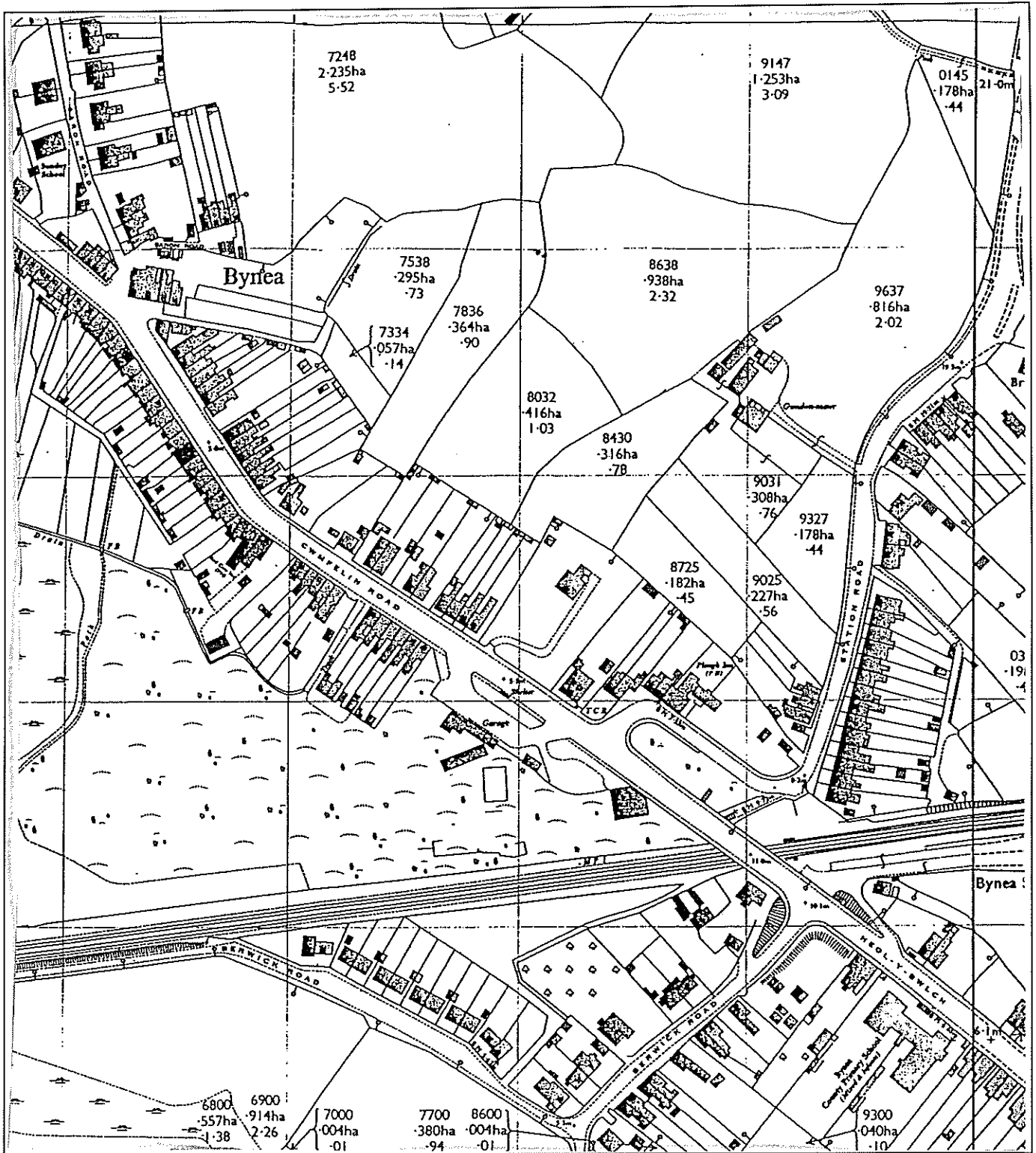


Figure 9. Extract from the 1970 Ordnance Survey map

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Licence No. AL 51842A

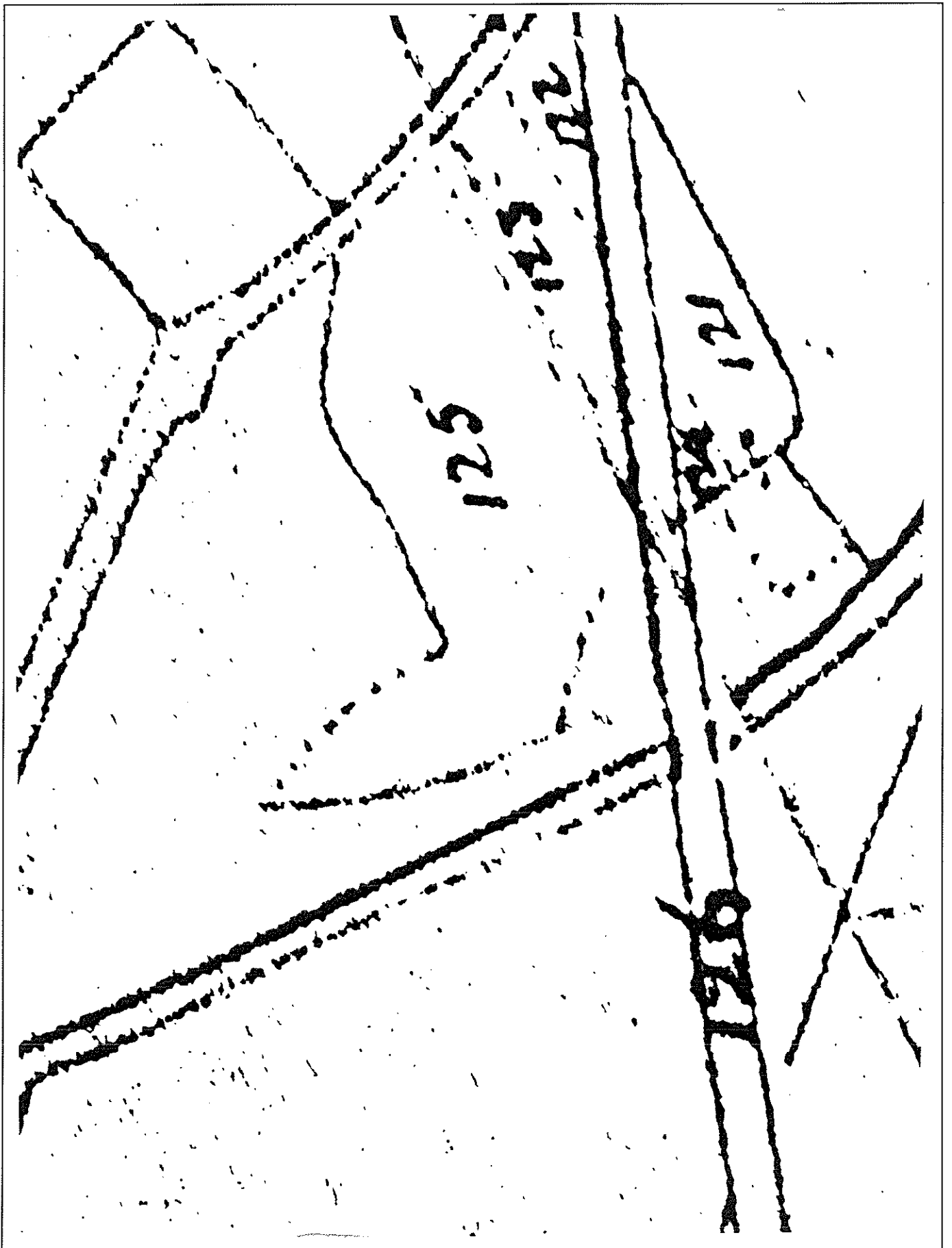


Figure 10. Part of the 1842 Llanelly tithe map showing the future site of Glynea colliery enlarged to c. 1:1250

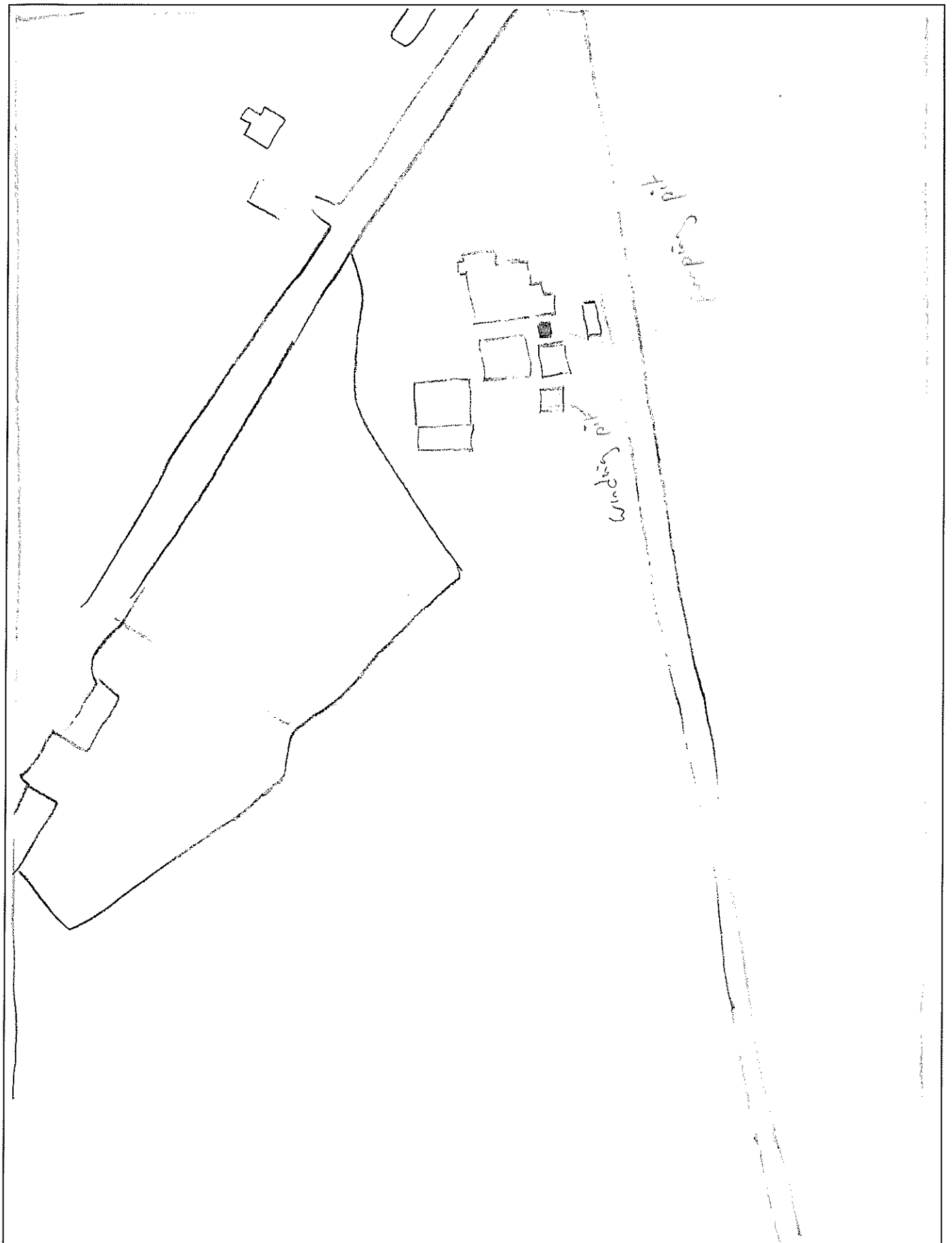


Figure 11. Tracing of part of an 1870s mine plan of Glynea colliery enlarged to c. 1:1250

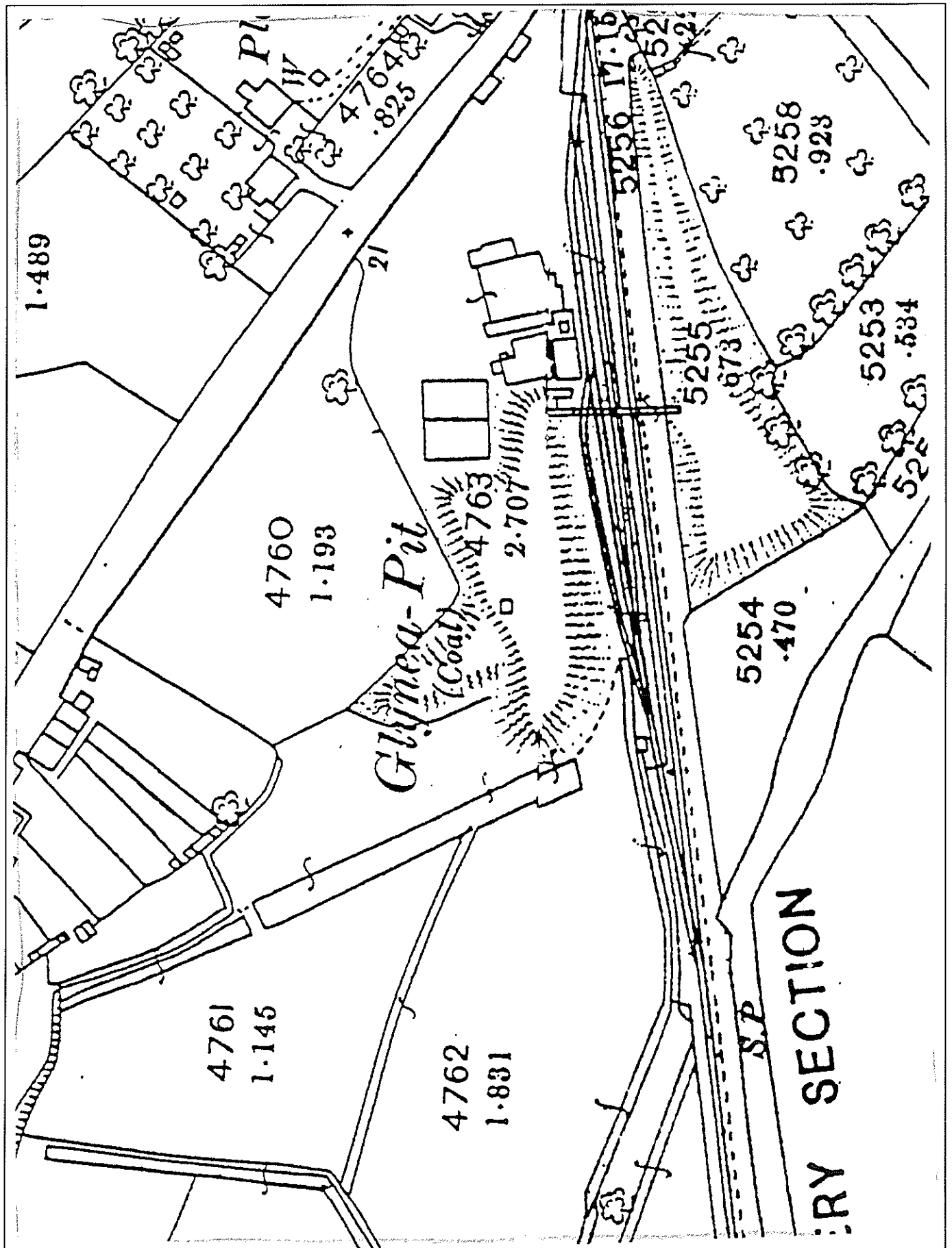


Figure 12. Part of the 1879 Ordnance Survey 1:2500 map enlarged to 1:1250

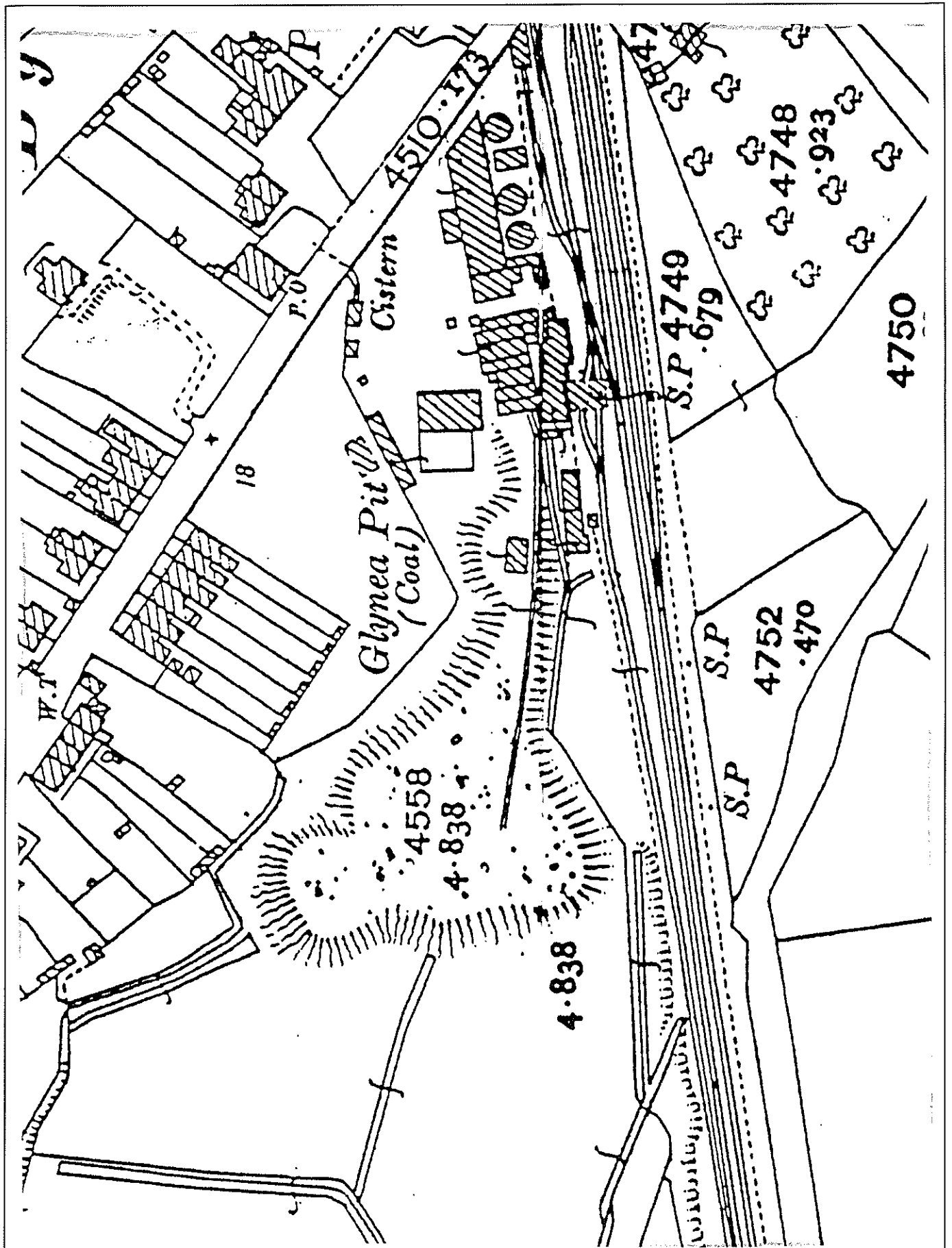


Figure 13. Part of the 1907 Ordnance Survey 1:2500 map enlarged to 1:1250

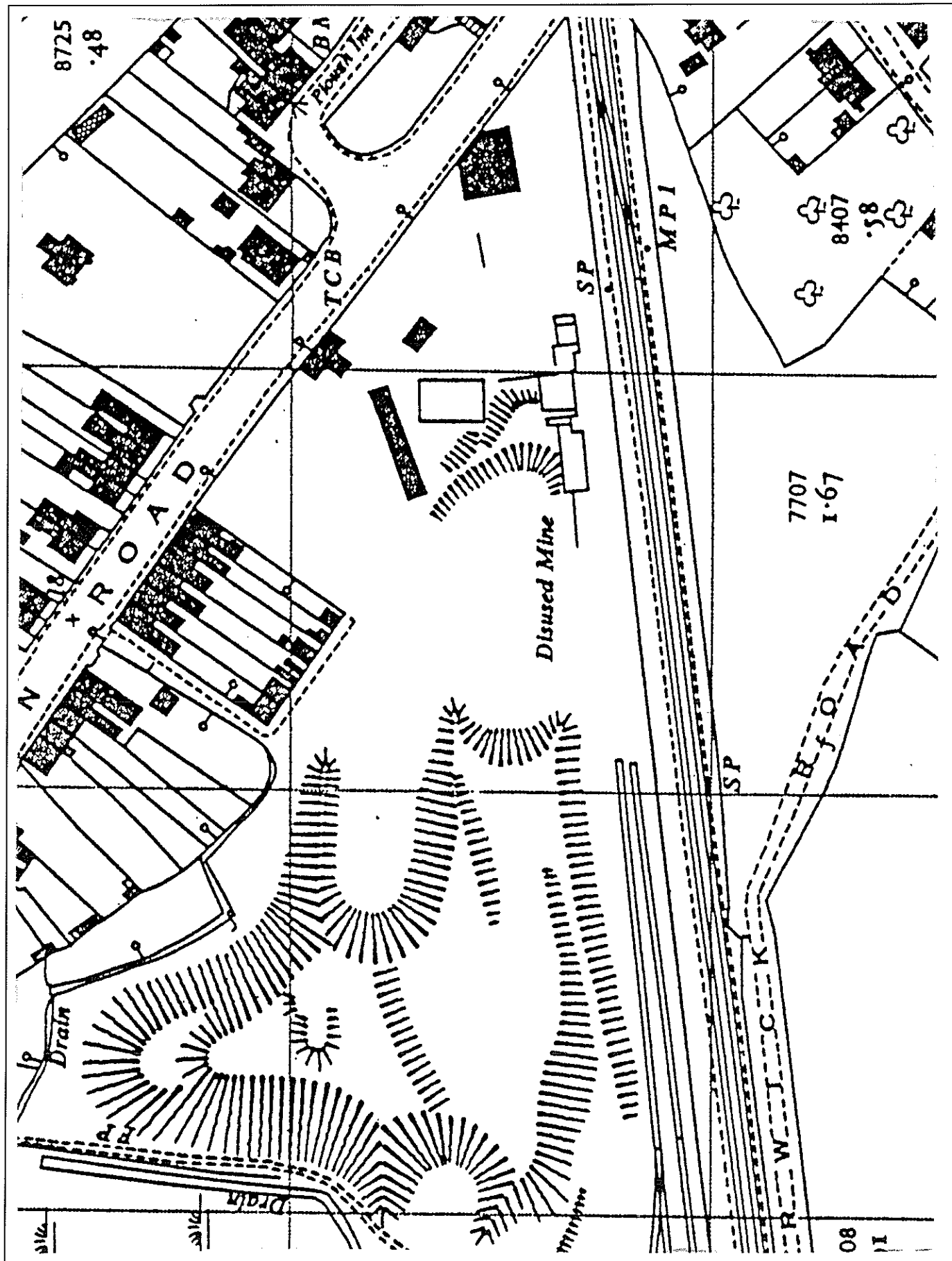


Figure 15. Part of the 1961 Ordnance Survey 1:2500 enlarged to 1:1250

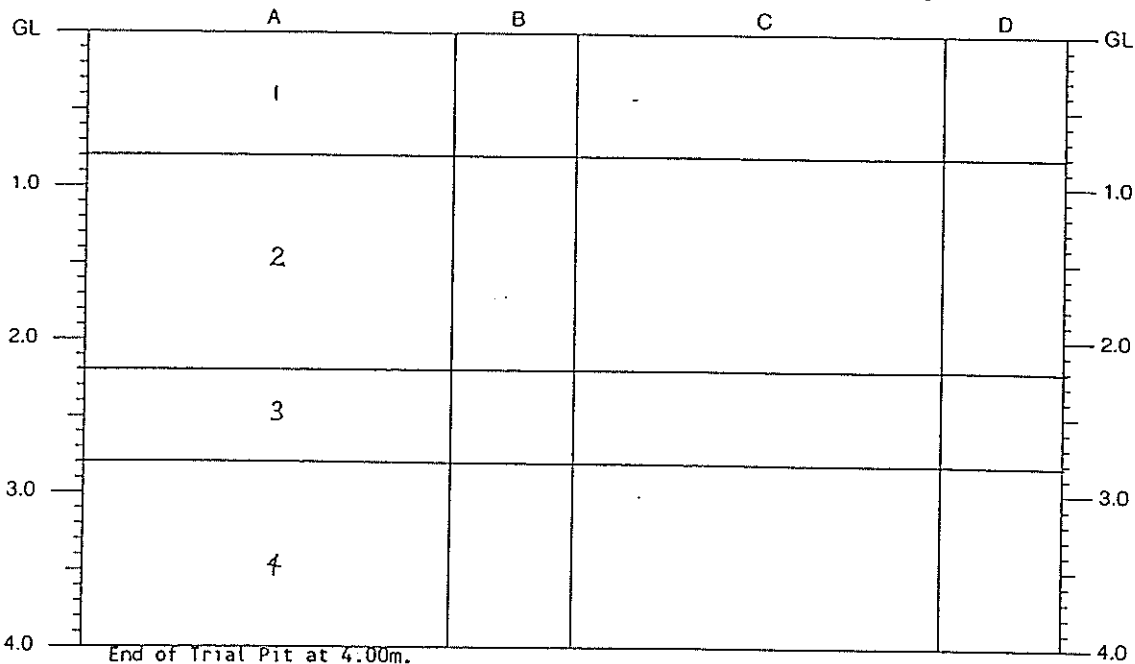
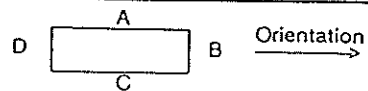
APPENDIX 1

TRIAL PIT RECORDS

**TRIAL PIT RECORDS -
PREVIOUS
INVESTIGATION**

Dimensions : 4.00m by 2.00m

Orientation : N



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-0.80	1	MADE GROUND. (Loose) black grey slightly sandy fine to medium sub-angular gravel of ash with occasional sub-angular cobbles of slag (<190mm diameter)			
0.80-2.20	2	MADE GROUND. (Loose) red orange sandy fine to medium sub-angular gravel of ash with occasional sub-angular cobbles of slag (<190mm diameter).	0.80 1.80	B B	
2.20-2.80	3	MADE GROUND. (Loose) black brown clayey slightly silty fine to medium sub-angular gravel of ash.	2.80	B	
2.80-4.00	4	MADE GROUND. (Loose) red orange sandy fine to medium sub-angular gravel of ash with some cobbles of slag and occasional boulders of slag.	3.80	B	

Date of Excavation 18/03/98
 Equipment Tracked excavator
 Stability Unstable below 3.00m

Groundwater
 No. Struck Behaviour
 1 3.00 Rapid

Logged by GL
 Checked by RHG

Remarks Pit terminated at 4.00m due to collapse of pit walls. 2.5hrs. dayworks gaining access through woods.

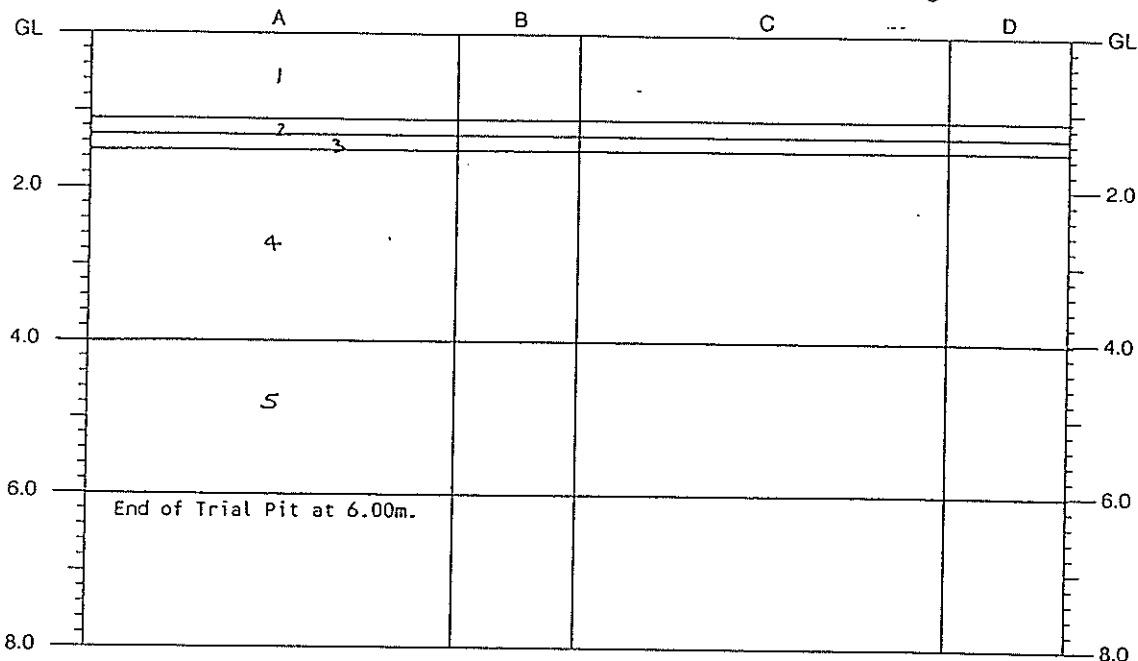
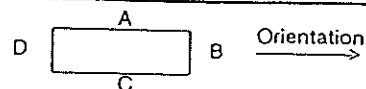
See key sheet
 and appendices
 for explanations.

Form 2/0

Trial Pit Record		Project Glynea Tips Millenium Coastal Park	Contract 158041
Exploration Associates			Trial Pit TP1

Dimensions : 2.00m by 3.00m

Orientation : W



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-1.10	1	MADE GROUND. (Loose) black slightly clayey fine to medium sub-angular gravel of ash.	1.00	B	
1.10-1.30	2	MADE GROUND. (Loose) red orange slightly sandy fine to medium sub-angular gravel of ash with occasional sub-angular cobbles of slag.	1.20	B	
1.30-1.50	3	MADE GROUND. (Loose) black grey clayey fine to medium sub-angular gravel of ash.	1.40	B	
1.50-4.00	4	MADE GROUND. (Loose) red orange slightly sandy fine to medium sub-angular gravel of ash with occasional sub-angular cobbles of slag.			
4.00-6.00	5	MADE GROUND. (Loose) grey brown clayey, slightly fine to medium sub-angular gravel of ash with occasional sub-angular cobbles of slag and occasional boulders of slag	3.00	B	

Date of Excavation 18/03/98
 Equipment Tracked excavator
 Stability Unstable below 4.50m

Groundwater
 No. Struck Behaviour
 1 4.50 Rapid

Logged by GL
 Checked by RHG

Remarks

See key sheet
 and appendices
 for explanations.

Form 2/0

Trial Pit Record

Project

Glynea Tips
 Millenium Coastal Park

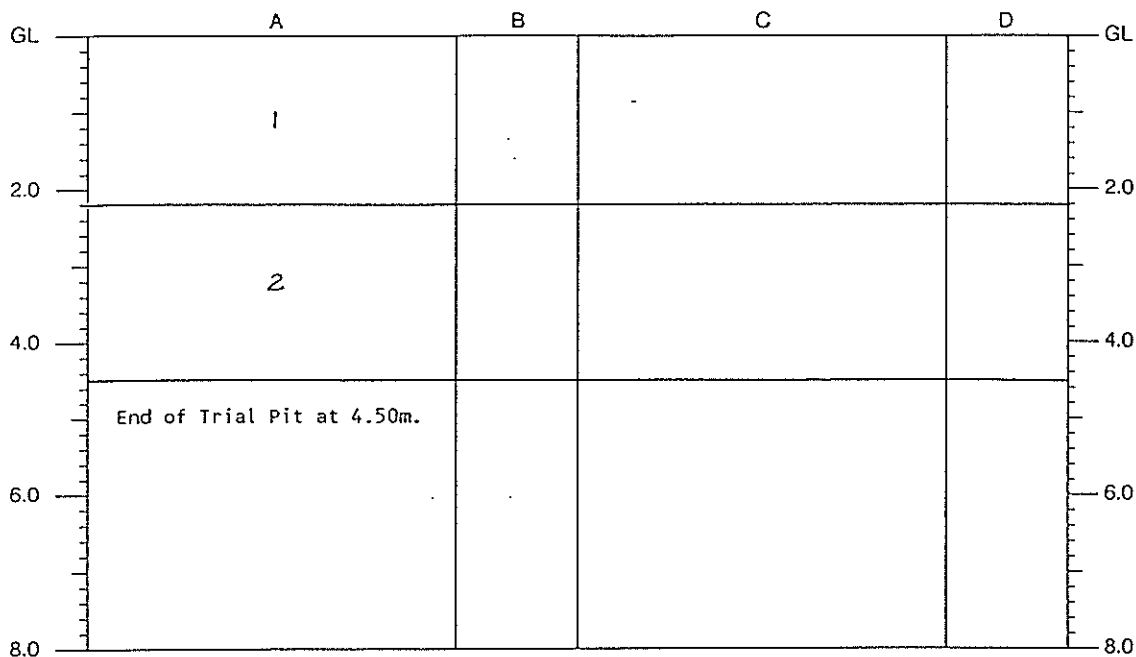
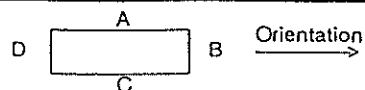
Contract 158041

Exploration Associates

Trial Pit TP2

Dimensions : 2.00m by 4.00m

Orientation : S

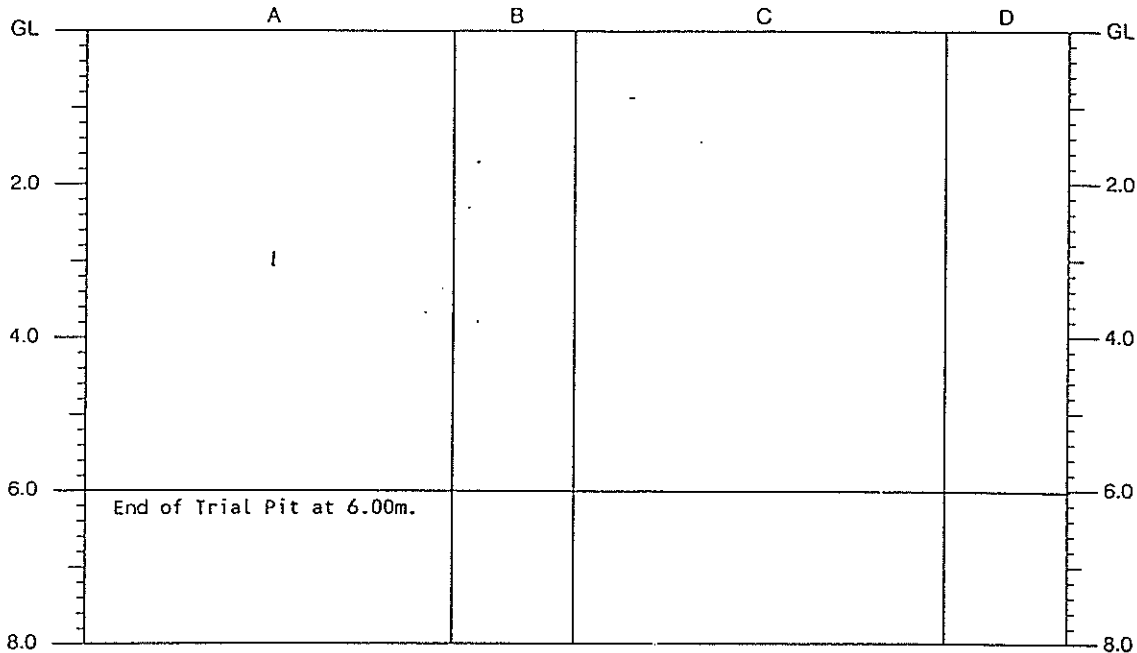
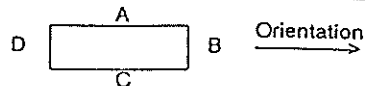


Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-2.20	1	MADE GROUND. (Loose) red orange slightly sandy fine to medium sub-angular gravel of ash with occasional sub-angular boulders of slag.	2.00	B	
2.20-4.50	2	MADE GROUND. (Loose) black grey slightly clayey fine to medium sub-angular gravel of ash with much sub-angular cobbles of slab and occasional sub-angular boulders of slag	4.50	B	
Date of Excavation 18/03/98		Groundwater			
Equipment Tracked excavator		No. Struck Behaviour			
Stability Unstable below 2.500m		1 4.00 Rapid			
				Logged by GL	
				Checked by RHG	
Remarks Pit terminated at 4.50m due to pit walls collapsing.					
See key sheet and appendices for explanations.					
Trial Pit Record		Project		Contract 158041	
		Glynea Tips Millenium Coastal Park		Trial Pit TP4	
Exploration Associates					

Form 2/0

Dimensions : 4.00m by 2.00m

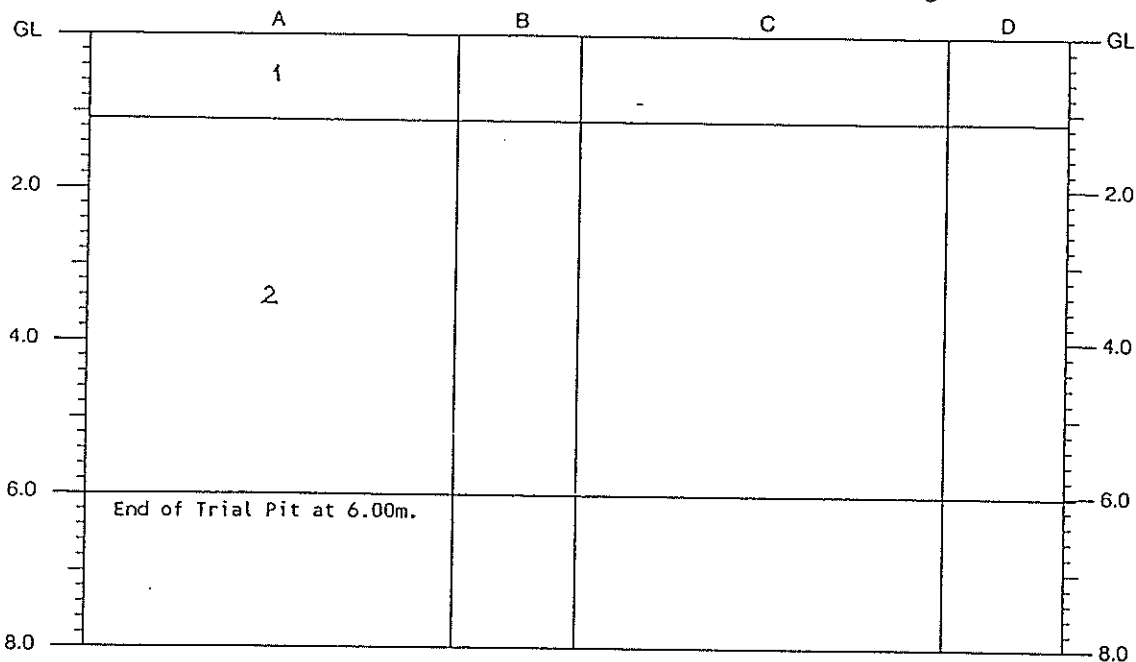
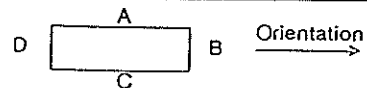
Orientation : S



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-6.00	1	MADE GROUND. (Loose) black grey slightly clayey fine to medium sub-angular gravel of ash, with much cobbles of slag, occasional cobbles of coal and occasional boulders of slag.	3.00 6.00	B B	
Date of Excavation 18/03/98 Equipment Tracked excavator Stability Unstable below 4.50m		Groundwater No. Struck Behaviour 1 4.50 Rapid		Logged by GL Checked by RHG	
Remarks See key sheet and appendices for explanations.					
Trial Pit Record		Project Glynea Tips Millenium Coastal Park		Contract 158041	
Exploration Associates				Trial Pit TP5	

Dimensions : 2.00m by 4.00m

Orientation : E



Strata

Samples and Tests

Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-1.10	1	MADE GROUND. Topsoil over (loose) red orange slightly sandy fine to medium sub-angular gravel of ash with occasional sub-angular cobbles of slag.	1.00	B	
1.10-6.00	2	MADE GROUND. (Loose) grey black clayey fine to medium sub-angular gravel of ash with much sub-angular cobbles of slag and occasional sub-angular boulders of slag.	5.00	B	

Date of Excavation 18/03/98
 Equipment Tracked excavator
 Stability Unstable below 2.50m

Groundwater
 No. Struck Behaviour
 1 3.00 Rapid

Logged by GL
 Checked by RHG

Remarks Machine standing 0.75hrs due to scrap yard closing at 16:15hrs.

See key sheet
 and appendices
 for explanations.

Form 2/0

Trial Pit Record

Project

Glynea Tips
 Millenium Coastal Park

Contract 158041

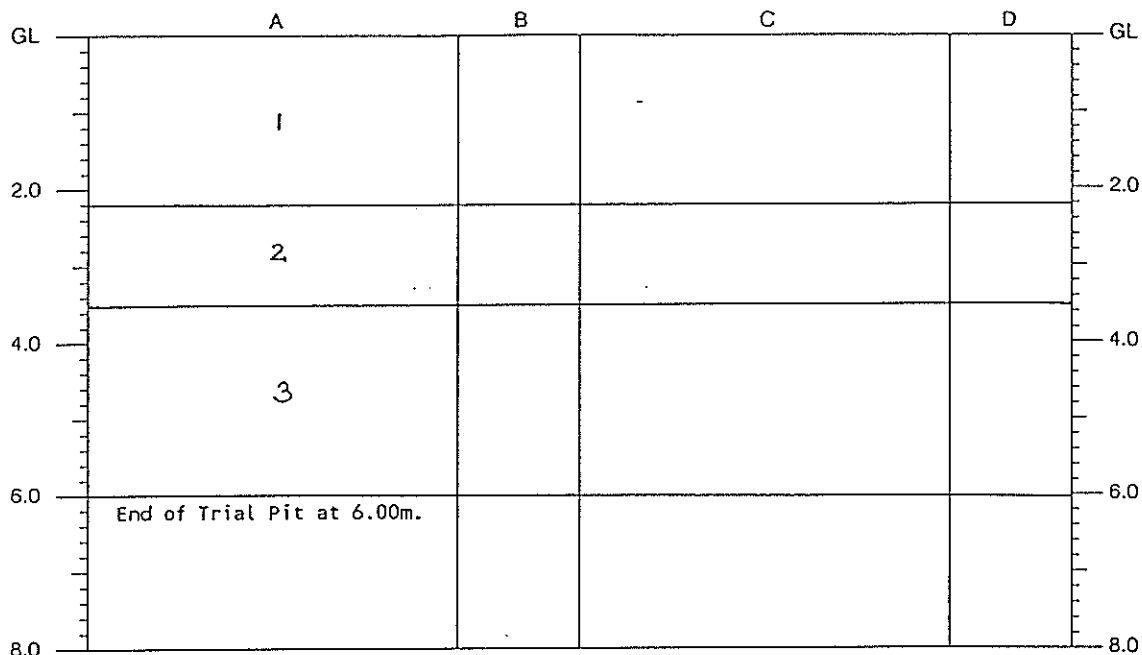
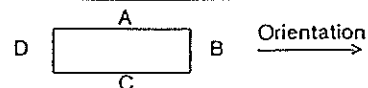
Trial Pit TP6

Exploration Associates

Dimensions : 2.00m by 4.00m

Orientation :

W



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-2.20	1	MADE GROUND. Topsoil over (loose) red orange locally black slightly sandy slightly clayey fine to medium sub-angular gravel of ash with occasional cobbles of slag	2.00	B	
2.20-3.50	2	MADE GROUND. (Loose) grey orange locally black clayey fine to medium sub-angular gravel of ash with much sub-angular cobbles of slag	3.00	B	
3.50-6.00	3	MADE GROUND. (Loose) grey black slightly clayey fine to medium sub-angular gravel of ash with much sub-angular cobbles of slag and coal, and occasional boulders of slag	5.00	B	

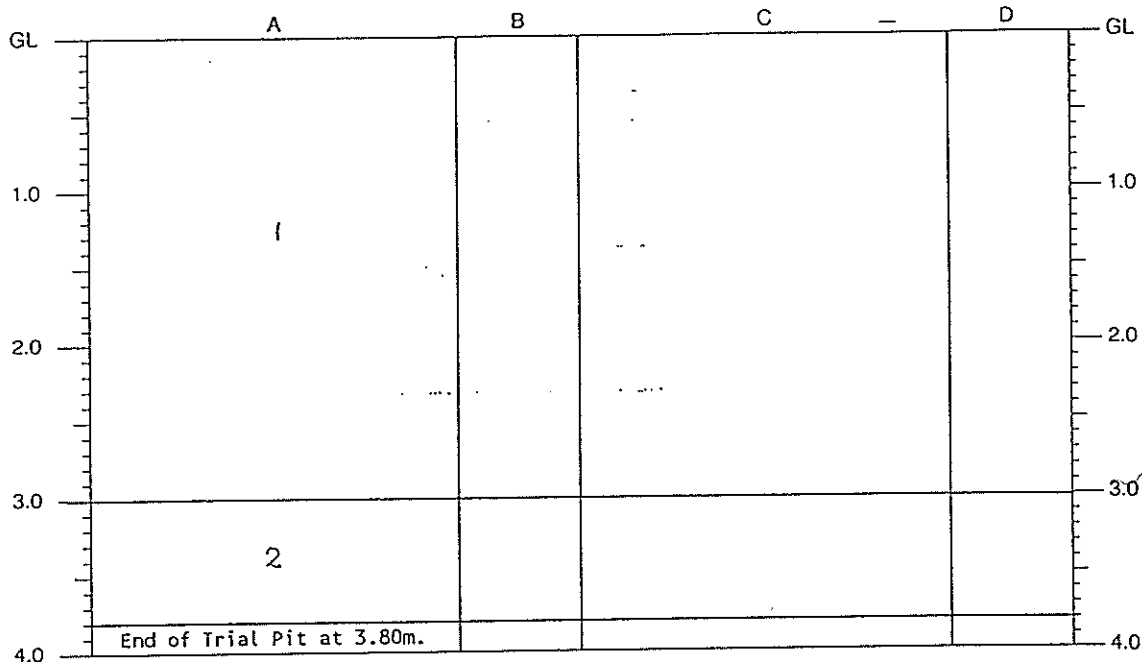
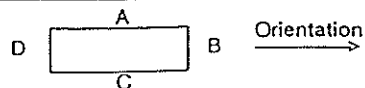
Date of Excavation 19/03/98 Equipment Tracked excavator Stability Unsatble below 4.00m		Groundwater No. Struck Behaviour 1 4.00 Rapid		Logged by GL Checked by RHG
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Remarks See key sheet and appendices for explanations.		Project Glynea Tips Millenium Coastal Park		Contract 158041 Trial Pit TP7
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Trial Pit Record Exploration Associates
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Dimensions : 2.00m by 4.00m

Orientation : E



Strata			Samples and Tests		
Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-3.00	1	MADE GROUND. (Loose) grey black slightly silty slightly clayey fine to medium sub-angular gravel of ash with occasional cobbles of slag	2.00	B	
3.00-3.80	2	Soft yellow orange very silty CLAY with occasioanl gravel of sandstone	3.50	B	
Date of Excavation 19/03/98 Equipment Tracked excavator Stability Unstable below 3.00m			Groundwater No. Struck Behaviour 1 3.00 Rapid		
			Logged by GL Checked by RHG		

Remarks Pit terminated at 3.80m due to collapse.

See key sheet and appendices for explanations.

Form 2/0

Trial Pit Record

Project

Glynea Tips
Millenium Coastal Park

Contract

158041

Trial Pit

TP8

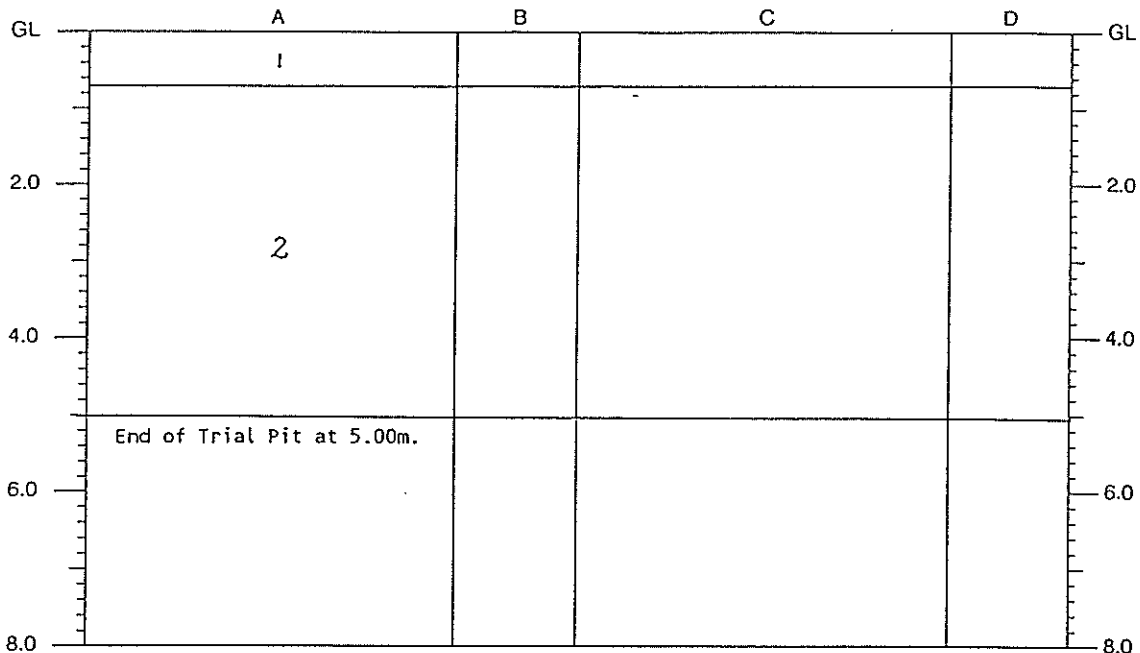
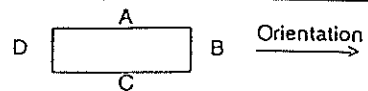


Exploration Associates

Dimensions : 2.00m by 4.00m

Orientation :

E



Strata

Samples and Tests

Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-0.50	1	MADE GROUND. (Loose) grey black slightly silty fine to medium gravel of ash with occasional sub-angular cobbles of slag	0.50	B	
0.50-5.00	2	MADE GROUND. (Loose) red orange slightly sandy fine to medium sub-angular gravel of ash with some sub-angular cobbles of slag and occasional sub-angular boulders of slag	1.00 3.00	B B	

Date of Excavation 19/03/98
Equipment Tracked excavator
Stability Unstable below 3.00m

Groundwater
No. Struck Behaviour
Not encountered during excavation

Logged by GL
Checked by RHG

Remarks Pit terminated at 5.00m due to collapse.

See key sheet
and appendices
for explanations.

Form 2/0

Trial Pit Record

Project
Glynea Tips
Millenium Coastal Park

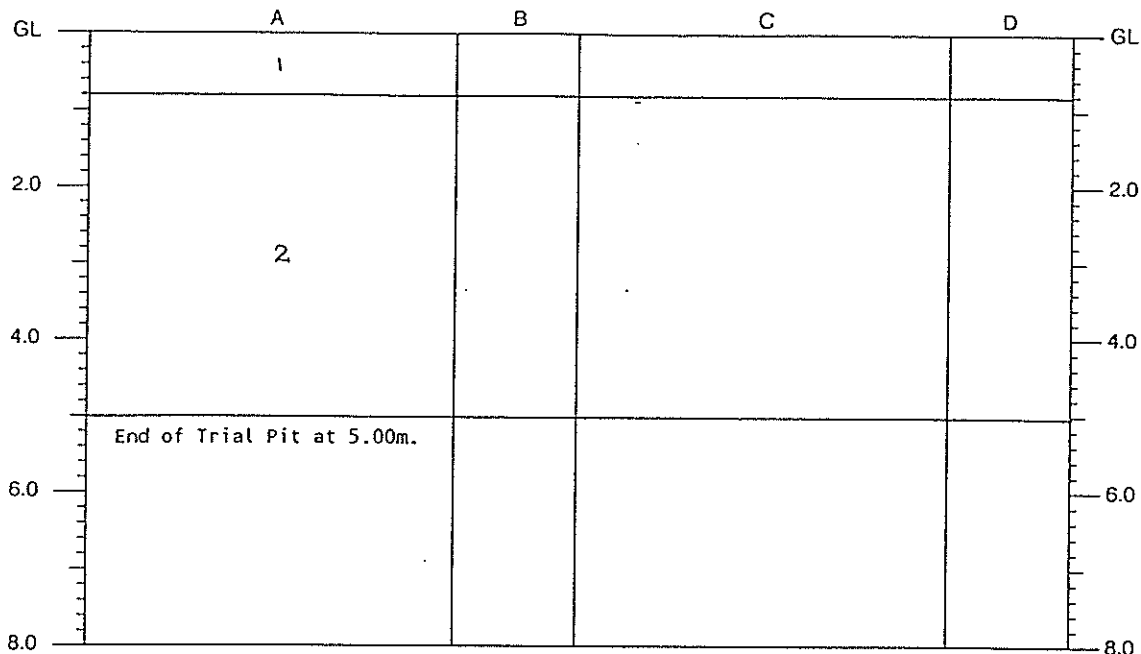
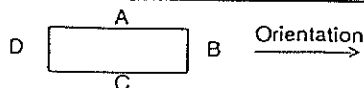
Contract 158041

Trial Pit TP9

Exploration Associates

Dimensions : 4.00m by 2.00m

Orientation : W



Strata

Samples and Tests

Depth (m)	No.	Description	Depth (m)	Type	Results
0.00-0.80	1	MADE GROUND. Topsoil over (loose) grey black silty fine to medium sub-angular gravel of ash with some cobbles of slag	0.50	B	
0.80-5.00	2	MADE GROUND. (Loose) red orange slightly sandy fine to medium sub-angular gravel of ash with some sub-angular cobbles of slag and occasional sub-angular boulders of slag.	2.00 4.00	B B	

Date of Excavation 19/03/98
Equipment Tracked excavator
Stability Unstable below 2.00m

Groundwater
No. Struck Behaviour
Not encountered during excavation

Logged by GL
Checked by RHG

Remarks Pit terminated at 5.00m due to collapse.

See key sheet
and appendices
for explanations.

Form 2/0

Trial Pit Record

Project

Glynea Tips
Millenium Coastal Park

Contract 158041

Exploration Associates

Trial Pit TP10

Trial Pit Locations - This Investigation

TRIAL PIT 1

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.60	Very loose red-brown SAND to fine GRAVEL with some platy coarse gravel, cobble and boulder with small pockets of red-brown silty clay and abundant thin roots (BURNT COLLIERY SHALE)
0.60 - 3.75	Loose dark grey SAND to fine GRAVEL with a little to some coarse gravel of very weak mudstone with traces of coal and roots (COLLIERY SPOIL)

NOTES:

1. Tub samples taken of burnt shale and colliery shale.
2. Bag samples taken of colliery spoil.
3. Trial pit excavated into side of tip, back face of pit logged.
4. No groundwater seepage encountered.
5. Sides of pit unstable.

TRIAL PIT 2

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.20	TOPSOIL
0.20 - 0.70	Very loose red-brown SAND to medium platy GRAVEL with some coarse gravel (BURNT SHALE)
0.70 - 2.00 approx	Very loose red-brown platy coarse GRAVEL and COBBLE with some sand and medium gravel of weak mudstone, trace of slag (BURNT SHALE).

NOTES:

1. Bulk sample taken at 0.70
2. Trial pit excavated on slope, sides of pit very unstable
3. Tub samples taken at 0.2 and 0.70
4. Trial pit abandoned sides too unstable
5. No groundwater seepage encountered

TRIAL PIT 3

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.05	TOPSOIL
0.05 - 0.30	Loose grey brown silty SAND to fine GRAVEL of weak mudstone (BURNT SHALE)
0.30 - 0.70	Loose red-brown fine to coarse platy GRAVEL with a little cobble of weak mudstone (BURNT SHALE)
0.70 - 2.50	Loose dark grey platy fine to medium GRAVEL in a silty sand matrix with a little gravel and cobble (COLLIERY SHALE)

NOTES:

1. Bulk sample taken at 0.70 - Colliery shale
2. Tub samples taken at 0.7m and 1.2m Colliery shale
3. Sides of pit stable
4. No groundwater seepage encountered

TRIAL PIT 4

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.20	Loose dark grey SAND and fine GRAVEL in a silty, quite carbonaceous matrix with abundant roots (TOPSOIL/COLLIERY SHALE)
0.20 - 2.50	Very loose red-brown sub-angular COBBLE and BOULDER of weak mudstone, fireclay and occasional sandstone -very open matrix with occasional thin layer of sand - fine gravel (BURNT SHALE end tipped).

NOTES:

1. Tub samples taken of fine burnt shale
2. With depth less void space and more finer matrix
3. Sides of pit slightly unstable
4. Bulk sample taken
5. No groundwater seepage encountered

TRIAL PIT 5

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 1.20	Loose dark grey SAND to fine GRAVEL in a silty matrix with a little coarse gravel and cobble and occasional trace of coal, below 0.80 becoming with some cobble and boulder, roots typically to a depth of 0.20 (COLLIERY SPOIL)
1.20 - 2.20	Loose red-brown fine to coarse GRAVEL in a silty clay matrix with some cobble of weak mudstone (BURNT SHALE completely weathered)
2.20 - 2.80	Loose dark grey SAND to medium GRAVEL in a silty matrix with some coarse gravel and cobble (COLLIERY SPOIL)

NOTES:

1. Tub samples taken in colliery shale and burnt shale
2. Bulk sample taken for leachate sampling
3. Sides of pit slightly unstable
4. No groundwater seepage encountered
5. Evidence of end tipping, but gentle gradient

TRIAL PIT 6 (Top of Tip)

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.20	Loose dark grey and green silty SAND and fine GRAVEL with roots (TOPSOIL/COLLIERY SHALE)
0.20 -	Very loose red-brown and green platy very brittle coarse GRAVEL and COBBLE in a sand to fine gravel matrix (BURNT SHALE)

NOTES:

1. Bulk sample taken.
2. Sides of pit slightly unstable
3. No groundwater seepage encountered
4. One side of pit colliery spoil exposed at base
5. Tub sample of finer burnt shale taken

TRIAL PIT 7

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.30	Loose dark grey SILT and SAND of mudstone (COLLIERY SHALE/TOPSOIL).
0.30 - 3.50	Loose red-brown, grey in layers, platy fine to coarse GRAVEL with some cobble and occasional boulder in a silt/sand matrix of mudstone and fireclay, with depth becoming very loose red-brown coarse GRAVEL and COBBLE in a sand to medium gravel matrix(BURNT SHALE)

NOTES:

1. Tub sample taken 0.30
2. Bulk sample taken
3. Sides of pit stable
4. End tipped - gentle gradient
5. No groundwater seepage encountered

TRIAL PIT 8

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.40	Very loose dark grey SAND to coarse GRAVEL of clinker and burnt shale (MADE GROUND).
0.40 - 2.90	Loose red-brown SAND to medium GRAVEL with a little silt and clay matrix and a little to some cobble and occasional boulder. Becoming with depth some to much coarse gravel/cobble and occasional boulder (BURNT SHALE).

NOTES:

1. Tub sample and bag sample taken at 0.4
2. Sides of pit stable
3. No groundwater seepage encountered
4. Evidence of end tipping
5. Bulk sample taken at bottom of pit

TRIAL PIT 9

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.20	Topsoil and roots
0.20 - 4.0	Loose dark grey and red-brown SAND to fine GRAVEL with a little to some medium to coarse gravel and occasional cobble of mudstone and a trace of coal (mainly COLLIERY SHALE with some BURNT SHALE)

NOTES:

1. Tub and bag samples taken
2. Sides of pit stable
3. No groundwater seepage encountered
4. Massive outcrops of fused platy burnt mudstone boulders either side of pit

TRIAL PIT 10

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.10	Topsoil
0.10 - 0.70	Loose dark grey silty sandy fine GRAVEL with a little coarse gravel (COLLIERY SHALE)
0.70 - 4.0	Loose light and dark grey and red-brown SAND to fine GRAVEL in a silty clayey matrix with some gravel and cobble and occasional boulder of fireclay and mudstone, with depth becoming much coarse gravel (FIRECLAY AND BURNT SHALE)

NOTES:

1. Tub sample taken
2. Tub sample taken 0.70
3. Sides of pit stable
4. No groundwater seepage encountered

TRIAL PIT 11

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 2.00	Loose dark grey SAND to fine GRAVEL in a silty matrix with a little to some medium to coarse gravel and cobble (COLLIERY SHALE)
2.00 - 2.30	Soft dark grey/brown slightly sandy silty CLAY (ALLUVIUM)

NOTES:

1. Tub sample taken
2. Sides of pit stable
3. No groundwater seepage encountered.

TRIAL PIT 12

<u>Depth (m)</u>	<u>Stratum</u>
0.00 - 0.25	Very loose dark grey SAND to coarse GRAVEL with a little silt of burnt shale, colliery shale and clinker (MADE GROUND)
0.25 - 0.75	Very loose reddish brown and grey fine to medium GRAVEL in a sandy matrix with a little coarse gravel of burnt shale and clinker (MADE GROUND)
0.75 - 0.95	Loose red brown fine to coarse sub-angular GRAVEL in a silty matrix with a little cobble (BURNT SHALE)
0.95 - 2.80	Loose grey medium to coarse sub-angular GRAVEL of very weak mudstone/seatearth (COLLIERY SPOIL)

NOTES:

1. Tub and bag samples taken
2. Fast water seepage at 2.10m
3. Water sample taken
4. Sides of pit stable

APPENDIX 2

DESIGN BRIEF AND SPECIFICATION

Archaeolog Cambria Archaeology - Heritage Management

3/12/99

Design Brief for An Initial Archaeological Desk-top Assessment Glynea Colliery, Bynea

Prepared for: Ove Arup

Site Location: NGR SN 546099150

Planning application No.: S/02134

This design brief is only valid for six months from the above date. After this period Archaeolog Cambria Archaeology: Heritage Management should be contacted. Any specification resulting from this brief will only be considered for the same period. Please note that this document is written for archaeological project managers to facilitate the production of an archaeological specification of works, it is not a tender document. Any response to this brief should follow IFA Standards and Guidelines.

The project manager is strongly advised to visit the site before completing their specification as there may be implications for accurately costing the project. The project manager must consult the County Sites and Monuments Record held by Cambria Archaeology Heritage Management as part of the assessment.

1.0 Introduction

This Brief has been prepared for and at the request of Simon Power of Ove Arup, acting as consultants to Carmarthenshire County Council, by the Heritage Management Section of Cambria Archaeology, funded by Cadw-Welsh Historic Monuments to provide advice on archaeology and planning to the Planning Authorities and others in West Wales. It follows a site meeting on 23rd November 1999, between Louise Austin, Cambria Archaeology, Peter Kendall, Carmarthenshire County Council Planning Officer, Simon Power and Huw Unsworth, Ove Arup and Partners, and Mike Hogan, Millennium Coastal Park.

A lack of information relating to the implications of the proposed development on the historic environment had been noted by Cambria Archaeology and flagged up with the Local Planning Authority. At the meeting it was agreed that an archaeological assessment was required in order to bring together an understanding of the surviving historic remains on the site, their condition and significance. This information would then be available to inform the planning process as to the suitability or otherwise of the proposed scheme and enable appropriate mitigation proposals to be developed.

2.0 Site Description

The site includes remains of Glynea Colliery, Bynea, comprising visible standing masonry and earthwork features as well as buried evidence. The coal mine was started in the early 1860s and working continued with a break of 8 years in 1883 until the pit was finally abandoned in 1926. In 1893 a brickworks was also constructed on the site (pers. comm. M. Symons). [Extensive research on the history of the industrialisation and development of the Llanelli coal industry has been

undertaken by the local historian Mr. Malcolm Symons who holds an important collection of relevant documentary sources.]

The site also includes part of the Yspitty Canal which is believed to survive as a buried feature across the western part of the site, pre-dating the colliery (*Coal mining in the Llanelli Area, Vol. 1, 16th century to 1829*, 1979, M. V. Symons).

The upstanding masonry remains towards the eastern end of the application area indicate the part of the site designated as a Scheduled Ancient Monument (Carm. 262) protected under the Ancient Monuments and Archaeological Areas Act 1979. These include the remains of the Cornish Engine House, horizontal winding engine house, the base of a fan house and the heapstead (D E Bick 'The Beam-Engine House in Wales', in *Industrial Archaeology Review XII* (1989) pp. 87, 91). A pumping shaft and an air shaft also lie within the scheduled area, neither is believed to have been filled or capped. Within the scheduling description the associated waste tips and the building facing Cwmfelin Road are specifically identified as contributing to the setting of the monument.

In addition to the designated area there are further remains with known archaeological and historical significance on the site. These include the spoil tips themselves. They form an important part of the industrial archaeology on the site and are of particular significance in understanding the whole of the coal mining process and associated activity which took place.

3.0 The nature of the proposed development and archaeological requirements

The aim of the archaeological assessment is to identify the locations of all surviving structures and other historic features within the application area as well as any areas of potential archaeological interest. An assessment should be made of the form, date, condition and significance of any remains and of the interrelationships between remains.

This work will be to a sufficient level to allow appropriate enhancement, preservation or mitigation measures to be identified and undertaken within the framework of legislation, guidance and planning policies as well as the specific concerns of Carmarthenshire County Council for Carmarthenshire's Historic Environment.

4.0 Methodology

Three phases of work are identified as part of this brief

Phase 1 - Desk-top assessment

This research should:

1. Collate and assess relevant information from documentary sources including cartographic information held in the SMR, Llanelli Library, National Library of Wales, RCAHM(W) and other relevant collections.
2. Collate, assess and where appropriate rectify information from relevant aerial photographs.
3. Collate and assess available geotechnical data.

- 1 An assessment of the industrial archaeological significance of the site as a whole in relation to surviving remains across the Carmarthenshire coal field, and to the rest of the South Wales coalfield.
- 2 An assessment of the historic significance of Glynea Colliery and the broader Bynca Coal industry.
- 3 An assessment of the relevance of the Glynea colliery to Bynca's social and economic history, considering such information as the numbers of workers, worker's housing, schools and other community facilities associated either directly or indirectly with the colliery.
- 4 An analysis of the processes which took place on the site and their spatial relationship across the site, particularly in regard to the formation of spoil-tips.

6.0 Requirements

The project must be undertaken by an archaeological team of recognised competence, fully experienced in work of this character and formally acknowledged by Archaeoleg Cambria Archaeology - Heritage Management (ACA-HM) the regional archaeological curators. Details, including the name, qualifications and experience of the project director and all other key project personnel (including specialist staff) will be communicated to ACA-HM as part of a **project specification**. The contractor will be expected to produce a reasonably detailed project specification although a full programme of works will not be required.

Arrangements of the long term storage and deposition of the archive must be agreed with ACA-HM before the commencement of fieldwork.

The site archive should conform to the NMR (W) agreed structure (guidelines available) and be deposited within an approved store (normally this will be the appropriate local museum and/or NMR) on completion of site analysis and publication.

7.0 Reporting

A full report of the assessment results should be prepared and presented to ACA-HM within 3 weeks of the completion of site works. A report shall be produced that is fully representative of the results of the Assessment and include the following:-

1. Location plan of identified features and structures in relation to the proposed development.
2. Where relevant profile, plan and section drawings showing the results of the topographic survey and trial trenching, including present ground level with Ordinance Datum, vertical and horizontal scale.
3. Mapped archaeological and historical features as well as archaeological potential at least a scale of 1:500.

4. A model detailing surviving archaeological deposits, features and structures.

8.0 General

In addition two copies of the final report should be provided for the Sites and Monuments Record

ACA-HM is responsible for monitoring all archaeological work within the Carmarthenshire area. The contractor must inform ACA-HM in writing detailing proposed start dates for the project. Once notified a Project Record Number will be allocated prior to on site work commencing, to be used in all site records.

Any changes to the specification that the contractor may wish to make after approval should be communicated to the ACA HM and approved.

ACA HM should be kept regularly informed about developments both during the site works and subsequent post-excavation work.

As part of our desire to provide a quality service to all our clients we would welcome any comments you may have on the content or presentation of this design brief. Please address them to the author below.

Louise Austin - Development Control Officer
Cambria Archaeology
The Shire Hall
Carmarthen Street
Llandello
SA19 6AF

A3

Orange County, Florida

PHASE ONE

CONSTRUCT SITE ACCESS,
HAUL ROAD IN AND
HARDSTANDING FOR
SITE CLEARANCE

10cm

1/10/00 10:00 AM 10/10/00 10:00 AM

PROPOSED ARCHAEOLOGICAL DESK-TOP ASSESSMENT AT GLYNEA COLLIERY, BYNEA

SPECIFICATIONS FOR A DESK-TOP ASSESSMENT

1. Introduction

This project specification has been prepared by Archaeoleg Cambria Archaeology Field Operations in response to a brief set by Heritage Management. It has been prepared in accordance with the Standard and Guidance for Archaeological Desk Based Assessments (Institute of Field Archaeologists, 1994).

It is not intended in this specification to repeat the wording of the brief. It is taken as read that all the requirements listed in the brief will be followed, except where specified below. This specification is rather a statement of the methods by which the requirements of the brief will be met.

Archaeoleg Cambria Archaeology Field Operations has considerable experience of this type of project and always operates to best professional practice. The conclusions will be based on a considered assessment of the collected data. Archaeoleg Cambria Archaeology Field Operations has its own Health and Safety Policy, and all works are covered by appropriate Employer's Liability and Public Liability Insurances. Copies of all are available on request.

2. Project objectives

Assessment of the character and extent of surviving deposits by desk top assessment, topographic survey and archaeological field evaluation. To evaluate and assess the character and importance of standing buildings within the evaluation area.

Collation of data collected through the execution of the project and preparation of an archive structured in accordance with guidelines laid out in the Management of Archaeological Projects, Appendix 3 (English Heritage 1991).

Preparation of a report based on the results of the assessment.

3. Desk-top assessment

The desk-top assessment will comprise the collating and analysing of cartographic and documentary evidence as specified in the Brief (4.0). In addition to the desktop element a field visit will be undertaken. Particular use will be made of the cartographic and documentary information held by Malcolm Symons, and of bore-hole and other data held by Ove Arup & Partners.

4. Topographic survey

The brief requests a topographic survey of part of the site. However, as Ove Arup have already conducted a survey across the whole of the site, and a more detailed survey would require considerable vegetation clearance - something that would have

to be negotiated with the current land-owner - it is proposed that the Ove Arup survey should be annotated and modified following detailed site examination. If this proves to be inadequate, then vegetation will be cleared and a more detailed topographic survey conducted. An indicative cost for this has been provided separately.

5. Trial trenching

Two trial trenches have been allowed for. Their exact location and size will depend on the results of the desk-top assessment and examination of the topographic survey. Their purpose is to locate the line of the Ysbytty Canal and examine its structure and character.

The trenches will be machine dug. Overburden and deposits overlying the canal will slowly stripped away to reveal the old ground surface and canal. A section will then be excavated through the canal. Because of the likely deep nature of the trenches and probable unstable deposits no detailed recording will be carried out, but photographs taken and sketch plans/sections made.

It is intended to carry out this work in conjunction with Ove Arup's geotechnical engineers and therefore the only costs included in the estimate are for a watching archaeologists. Machine costs are not included. The watching archaeologists will require a degree of control over the machine.

6. Post desk-top assessment and post fieldwork

Collation and cataloguing of fieldwork data to form a site archive, in accordance with guidelines laid out in the Management of Archaeological Projects, Appendix 3 (English Heritage 1991). The archive will be deposited with an appropriate body (to be arranged); it may be temporarily held by Archaeoleg Cambria Archaeology Field Operations. Any material held by Archaeoleg Cambria Archaeology Field Operations would be available for examination.

Assessment of data collected during the execution of Sections 3-5.

Preparation of a report fully representative of the data collected during the execution of Sections 3-5.

Copies of the final report will be sent to the client who will circulate copies to the relevant bodies.

Preparation of a summary of the project results for wider dissemination (e.g. Archaeology in Wales and special interest and period-specific journals).

Deposition of the archive in a suitable archive.

7. Monitoring

It is expected that the Archaeological Curator will monitor the project. A timetable for the project, including monitoring visits, will be agreed before commencement.

8. Staff

The project will be managed by K Murphy, BA MIFA, who has wide-ranging archaeological experience, including this type of project.

APPENDIX 3

SCHEDLED ANCIENT MONUMENT ENTRY

1. To be returned to Cadw Ancient Monuments Branch
2. To be retained -

Reference: CAM 1/1/6499

NEW ENTRY TO THE SCHEDULE OF MONUMENTS COMPILED AND MAINTAINED BY THE SECRETARY OF STATE FOR WALES UNDER SECTION 1 OF THE ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979.

Name of Monument: Glynea Colliery

Ordnance Survey Map References

County: Dyfed

1 inch/1:50,000 Sheet No: 159

District: Llanelli

6 inch/1:10,000 Sheet No: SS 59 NW

Community: Llanelli Rural

25 inch/1:2,500 Sheet No: SS 5499 (SE)

Number of Monument: CM 262

NG Reference No: SS 5479 9914

Class: Industrial Sites

DESCRIPTION OF MONUMENT AND ASSESSMENT OF ITS IMPORTANCE:

An exceptionally complete mid nineteenth-century colliery site. The pit was sunk c1860. The layout of the colliery is well represented by several features grouped tightly together. The most prominent is the remains of a Cornish engine house, with a full height gable on one side. Near this is the ruin of a horizontal winding engine house, the base of a fan house, and the heapstead.

The proposed area includes all of the above features. It is bounded on the S by the railway line, and on the N by the garage on Cwmfelin Road. The edges of the site on the W and E are north-south lines approximately 10m from the upstanding masonry. The associated small waste tips to the west and the occupied building facing Cwmfelin Road are excluded, although they contribute to the setting of the monument. The land is currently waste ground under scrub, although a rough tract across the proposed area appears to be in occasional use for vehicles.

The site of the monument is shown on the attached map.

Signed by authority of the Secretary of State.



26 July 1994

L H BURR
A SENIOR EXECUTIVE OFFICER
IN THE WELSH OFFICE

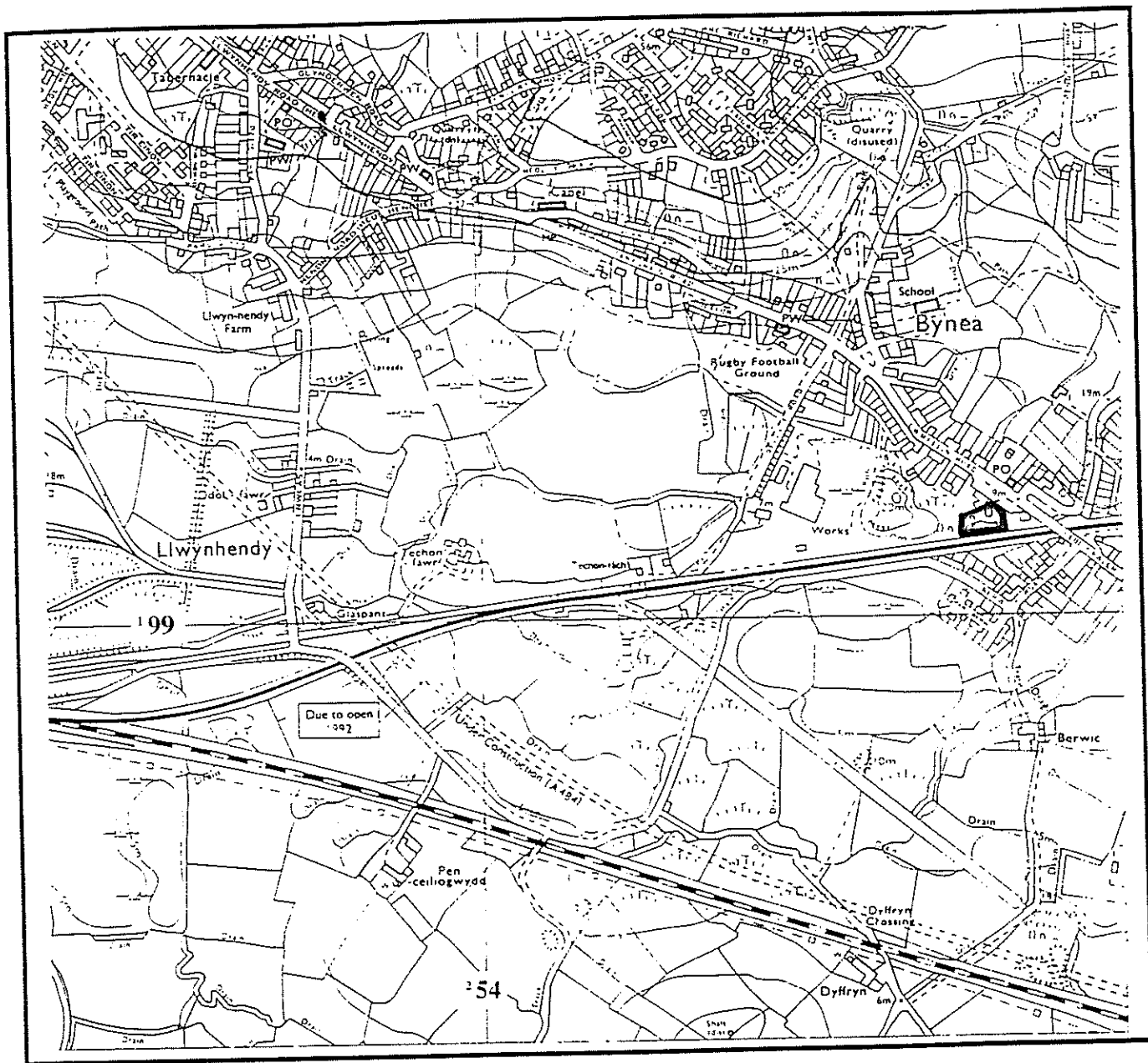


Cadw
WELSH
HISTORIC
MONUMENTS
AN EXECUTIVE AGENCY
WITHIN THE WELSH OFFICE

Ancient Monuments and Archaeological Areas Act 1979

Glynea Colliery

Cm 262



This is the Plan referred to in the Scheduling entry dated

26 July 1994

Authorised by the Secretary of State to sign in that behalf

[Signature]

File No.

CAM 1 / 1 / 6499

Extract from O.S. Sheet No.

SS 59 NW

Scale

1: 10,000



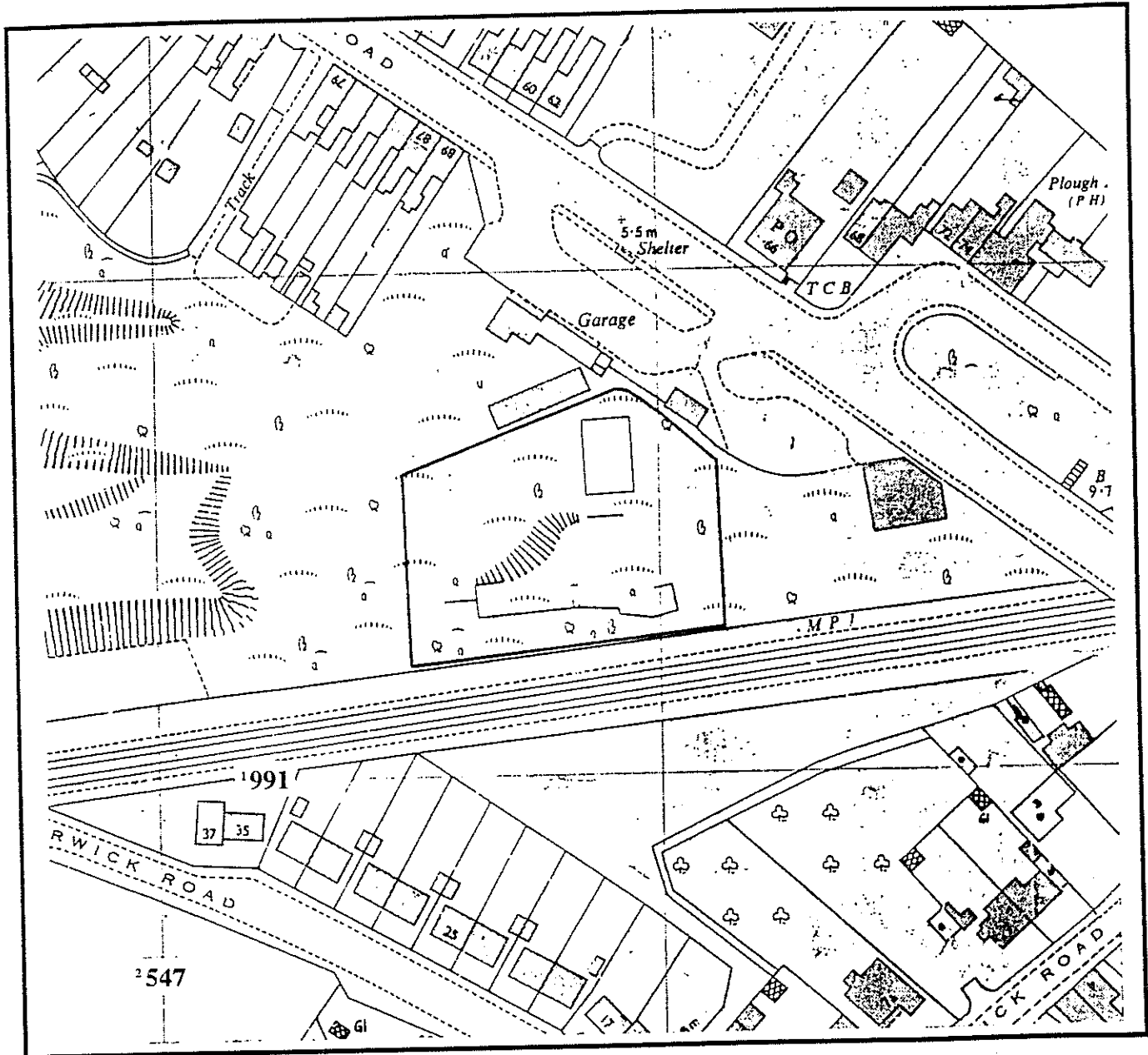


Cadw
WELSH
HISTORIC
MONUMENTS
AN EXECUTIVE AGENCY
WITHIN THE WELSH OFFICE

Ancient Monuments and Archaeological Areas Act 1979

Glynea Colliery

Cm 262



This is the Plan referred to in the Scheduling entry dated

26 July 1994

Authorised by the Secretary of State to sign in that behalf

[Signature]

File No.

CAM 1 / 1 / 6499

Extract from O.S. Sheet No.

SS 5499 SE

Scale

1 / 1250



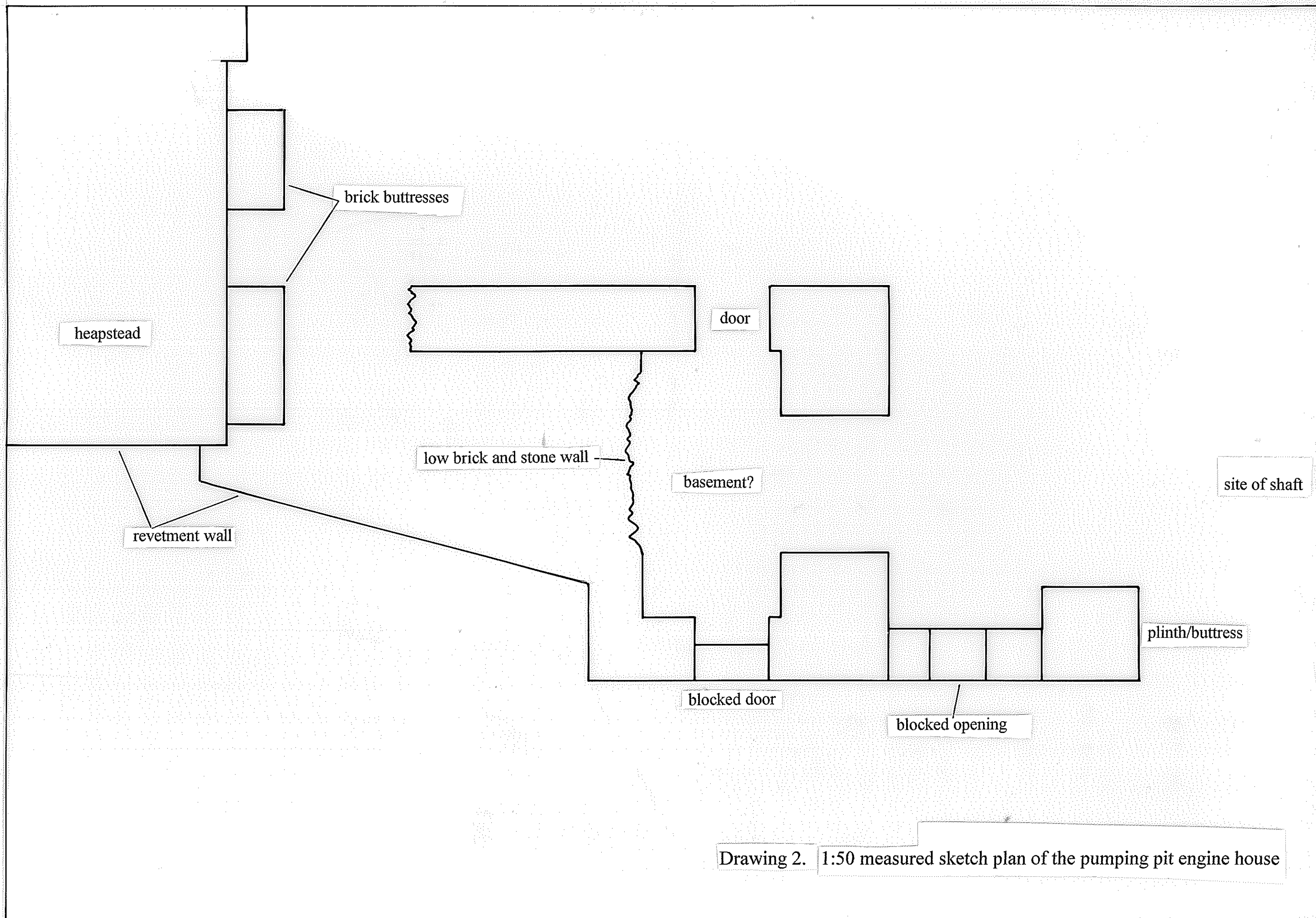
SITE LAYOUT Figure 2

LEGEND

- 8 TRIAL PIT LOGS (PREVIOUS INVESTIGATION)
- 8 ■ TRIAL PIT LOGS (THIS INVESTIGATION)

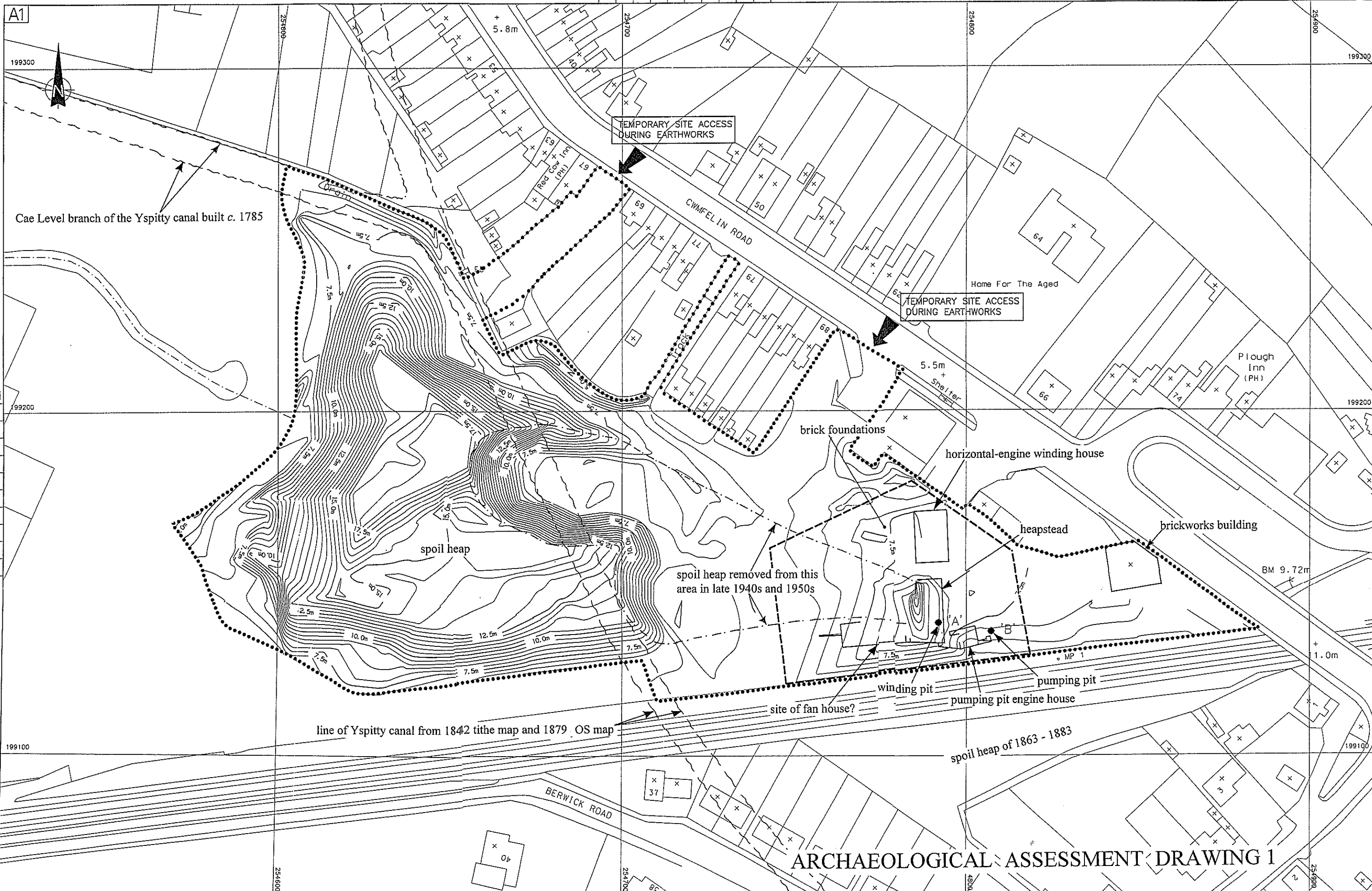
1:1250





A1

1:1000 - SCALE WITH CAUTION AS DISTORTION CAN OCCUR



LEGEND

..... SITE BOUNDARY

⊕ MINE SHAFT

--- SCHEDULED ANCIENT MONUMENT BOUNDARY

P2	31.10.99	WRF	Move site Access and Boundary
P1	25.10.99	WRF	Additional Site Access
Rev	Date	By	Description

TACP

Job Title

BYNEA TIPS REGENERATION

Drawing Title

EXISTING LANDFORM

Drawing Status
PLANNING

ARUP

Ove Arup & Partners

4 Parkway, London, EC2A 4PU, UK
Tel: 0202 473227 Fax: 0202 473271Scale 1:500
Checked: [Signature] Approved: [Signature] Date: SEPT 03

Job No. 53588/42 Drawing No. WSK01

P2

10, Park Grove,
Cardiff, CF1 3SN,
Tel: 01222 225009 Fax: 01222 224716