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Archaeological Watching Brief Report for Land at

CAPEL BWLCH CILAN

For Dwr Cymru

Blair Poole BA Msc MIFA

L~P:ARCHÆOLOGY

EVENT PRN: 45975

Archaeological Watching Brief Report for Land at

CAPEL BWLCH CILAN

Client: Dwr Cymru

Local Authority: Gwynedd Council

NGR: 229987,327220

Planning App: N/A

Author(s): B Poole

Doc Ref: LP0606C-AWB-v1.2

Date: November 07

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Abstract

To support the increased summer population of the area around Abersoch a series of water mains renewal and upgrading was undertaken by Dwr Cymru. Archaeological monitoring of this work was requested by Gwynedd Archaeological Planning Service.

The Archaeological Watching Brief on the water mains renewal at Capel Bwlch was carried out between the 15th and 19th October 2007 on behalf of Dwr Cymru by Blair Poole of L – P : Archaeology. This involved monitoring machine excavation of topsoil and the excavation of a 0.6m wide pipe trench.

The archaeological investigation revealed a clear sequence of natural deposits on the site, which comprised a loose topsoil overlying glacial till, which in turn overlay the natural shale bedrock.

The investigation revealed that Field 1 contained no archaeological features, however Field 2 contained a shale filled ditch measuring 4m wide, running in a north south alignment,. This was identified 20m to the east of the Field boundary and was located along the alignment of the tunnel linking St Tudwal's railway with Bwlch quarry.

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1. Introduction

- 1.1.A phase of open-cut main laying at Capel Bwlch, Cilan was carried out as part of the mains rehabilitation program by Dwr Cymru in order to manage the extra demand placed on the system during the summer months (FIGURE 1).
- 1.2.As part of this scheme Gwynedd Archaeological Planning Service (GAPS) requested that a phase of archaeological monitoring be undertaken during the groundworks across the two Fields (FIGURE 2). Field 1 (0026) to the west and Field 2 (1715) to the east.
- 1.3.The site is centered at NGR SH 299 272 and lies to the north of Hendy Capel the disused Bwlch quarry.
- 1.4.A visible earthwork, seen on aerial photographs of the area, is present in the west section of Field 2. This aligns with a tunnel associated with Bwlch quarry on the Ordnance Survey 1st edition.
- 1.5.This archaeological monitoring was carried out by Blair Poole of L – P : Archaeology on behalf of Dwr Cymru in response to the GAPS request.
- 1.6.The Local Authority is Gwynedd Council, who take archaeological advice from Gwynedd Archaeological Planning Service (GAPS). Ashley Batten of GAPS monitored the archaeological involvement during works at the site to ensure the correct standards and practices were adhered to.
- 1.7.L – P : Archaeology allotted an internal site code of CIL/CPMR 07 for this site.

2. Planning Background

- 2.1. Planning Policy Wales, adopted in 2002, and the associated Welsh Office Circulars 60/96 and 61/96 replaced the earlier Department of the Environment PPG 16 “Archaeology and Planning” issued in November 1990.
- 2.2. These documents provided guidance for planning authorities, property owners and developers as well as other relevant bodies or individuals on the preservation and investigation of archaeological remains within a planning context and are used to guide the adopted Local or Unitary Development Plan Policies relating to archaeology.
- 2.3. Planning Policy Wales (2002) outlines the Welsh Assembly's planning policies. The historic environment is discussed within Chapter 6. Welsh Office Circulars 60/96 - Planning and Historic Environment: Archaeology, and Welsh Office Circular 61/96 - Planning and the Historic Environment; Historic Buildings and Conservation Areas, advise on legislation and procedures relating to historic buildings, conservation areas and archaeology. These will be taken into consideration during the preparation of forthcoming LDF's.
- 2.4. The local authority is Gwynedd Council. The current Unitary Development Plan was adopted in 2001. It should be noted that an updated draft Unitary Development Plan was deposited in the Summer of 2004 and is in the process of public consultation.
- 2.5. In the current Unitary Development Plan Policy B7 covers archaeology and is reproduced below in full for clarity:

Proposals that will damage or destroy archaeological remains of national importance (whether scheduled or not) or their setting will be refused.

A development which affects other archaeological remains will be permitted only if the need for the development overrides the significance of the archaeological remains.

In areas where there are likely to be archaeological remains, the developer will be required to commission either an archaeological assessment and/or Field evaluation in order to determine the archaeological impact of the proposed development before the planning authority determines the application. The assessment/evaluation results must be submitted with the planning application, in addition to a plan showing how the impact of the proposal on the

archaeological remains will be mitigated.

If a proposed development will have an adverse impact on archaeological remains, then the developer should prepare sympathetic plans, which retain the remains in situ. Planning conditions or agreements will be used in appropriate cases to ensure that the work of excavating and recording the remains takes place prior to commencement of the development.

Schemes that will facilitate the management and interpretation of archaeological sites for educational or tourism purposes will be supported.

3. Geology & Topography

3.1.GEOLOGY

3.2.Superficial Deposits

- 3.2.1. The stratigraphy encountered during the excavation on site revealed sands and gravels typical of glacial till deposits. The British Geological Survey indicates that the superficial deposits in this area are tills of Diamicton origin.
- 3.2.2. Tills are usually represented as unsorted glacial sediment formed by the part of glacial drift deposited directly by a glacier (EVANS 1975: 32). These vary widely and can consist of sand or clay to mixtures of clay, sand, gravel and rock.
- 3.2.3. Excavations revealed that underlying till takes the form of undefined sand deposits with glacial pebbles held in matrix. The till was identified at a depth of approximately 0.2m below the present ground level.

3.3.Bedrock

- 3.3.1. In areas where bedrock was encountered during the excavation, this were seen to comprise fragmented grey coloured shale. The height of the bedrock undulated greatly from approximately 30mOD to 44mOD.
- 3.3.2. The British Geological Survey records the solid geology of the area as Ordovician sedimentary rock from the Llandeilo, Llanvirn and Arenig forms.

3.4.TOPOGRAPHY

- 3.4.1. The site is bounded to the north by a series of Fields used at present for pasture. In the northeast corner of the site the remains of St Tudwal's railway can be seen.
- 3.4.2. The south of the site bounds an unnamed road and Lon Pentre Bach bounding the southeast perimeter of the site.
- 3.4.3. Field 1 is relatively flat at an elevation of approximately 31mOD and the west boundary of the site is marked by an access track to Bwlch Farm. Field 2 has a steep gradient from a high point of 44mOD at the southern corner of the site to an elevation of 32mOD at the northern corner of Field 2.

4. Methodology

- 4.1. A detailed methodology can be found in the specification of works for the site supplied to GAPS prior to commencement of works (STATTER 2007).
- 4.2. The groundworks under investigation comprise the machine stripping of topsoil to a depth of 0.3m below ground level at 3m wide along the length of the pipeline route. Following this a 0.6m wide trench was excavated along the centre of the stripped area to a depth of 1.2m below ground level for the service pipes to be laid in.
- 4.3. The groundwork contractor, Daniel Civil Engineering, used a 13 tonne 360° tracked excavator with a 1.8m wide toothless ditching bucket for the topsoil strip and a 0.6m wide bucket for the pipeline excavation.
- 4.4. A fully qualified and experienced archaeologist monitored all agreed groundworks.

5. Archaeological & Historic Background

TIMESCALES USED IN THIS REPORT:

PERIOD	FROM	TO
PREHISTORIC		
PALAEOLITHIC	450,000	12,000 BC
MESOLITHIC	12,000	4,000 BC
NEOLITHIC	4,000	1,800 BC
BRONZE AGE	1,800	600 BC
IRON AGE	600	43 AD
HISTORIC		
ROMAN	43	410 AD
EARLY MEDIEVAL	410	1066 AD
MEDIEVAL	1066	1485 AD
POST MEDIEVAL	1485	PRESENT

5.1.Examination of data from cartographic records, the Gwynedd Historic Environment Record (HER), and various published and unpublished sources suggests that there was no development on the site until the 19th century.

5.2.It is not the aim of this assessment to present a complete history of the area around Llanengan or Bwlch quarry from earliest times, nor is it the intention of this report to examine every artefact found in the local area. Rather, the aim is to review the data readily available to give an outline of the historic development of the site area.

PREHISTORIC

5.3.The earliest evidence for activity in the surrounding area is mesolithic flint finds found just south of Abersoch (HEATH 2006: 11). There is little evidence for activity in the area from this period, likely due to the fact that many settlements would have been coastal and rising sea levels has mean the loss of these early sites (HEATH 2006: 11).

5.4.Closer to the site, a series of flint scrapers and arrowheads were found at Cilán, thought to date to the neolithic period, although no settlement evidence has been

identified around the site area (GRUFFYDD 2003: 14). However, at Mynydd Cilan, 2km to the southwest of the site, a neolithic burial chamber has been identified (HEATH 2006: 34).

5.5. Later prehistoric activity in the Llyn peninsular can be seen around the site at hill forts such as Pared Mawr and Pen y Gaer (HEATH 2006: 203). Pared Mawr is a ramparted hill fort located along on a coastal promontory and is thought to be a defended homestead due to its small size, 30m by 24m (DYER 1992: 32). The form of the substantial ramparts have been used to date the site as no finds have been recovered from the area (HEATH 2006: 203).

5.6. Pen y Gaer is also thought to be the location of an Iron Age hill fort, located 500m to the north of the site (HEATH 2006: 254). Although Pen y Gaer is a small ramparted hill fort is one of the few in Britain that comprise a *Chavaux-de-frise*, a series of stones set on edge within the outer ditch that would act as a defense mechanism (DYER 1992: 32).

5.7. Although it is clear that there was prehistoric activity in the surrounding area, there is no evidence for prehistoric activity within the site boundary.

ROMAN

5.8. There is limited evidence for Roman occupation in the area, however it has been postulated that Roman groups may have worked the lead mines at Tanrallt, Llanengan (GRUFFYDD 2003: 19). There is little evidence for any form of settlement in the area however (GRUFFYDD 2003: 19).

5.9. No Roman activity has been recorded on the site or in the vicinity. It is likely that the presence of the nearby hill forts, especially at Pen Y Gaer, meant the area was not firmly held by the Romans.

MEDIEVAL

5.10. Through the medieval period the site is thought to have formed part of the agricultural area worked around Llanengan during this period. These settlements in this area were thought to be small farming and fishing communities (GRUFFYDD 2003: 141).

5.11. It is probable that a small settlement grew up around Llanengan around this time and parts of church at Llanengan date to the 15th century (GRUFFYDD 2003: 141).

5.12. There is no direct evidence for any activity on the site during the medieval period.

POST MEDIEVAL

5.13. The area appears to have continued its agricultural and fishing community structure well into the post medieval period. Until 1841, on the Tithe map for Llanengan, the area is clearly agricultural with the site area recorded as pasture and arable land (FIGURE 3). The land to the south of the site is also shown as arable and pasture.

5.14. The area retained this farming industry, however in the mid 19th century industrial development of the area began. This can be seen by the growth of quarries and mines in the landscape surrounding the site and the associated railways for moving the raw materials.

5.15. In 1839 St Tudwal's railway was begun, which linked the mines and quarries in the Llyn peninsula to the sea. Shortly after this, thought to be in the 1850's, Bwlch quarry and lead mine began operations to the south of the site area. St Tudwal's railway ran along the north edge of the study site by this time.

5.16. Bwlch quarry was only operated for a short period of time during the 1850's to the 1880's. The quarry's small size may account for the short lived industrial lifespan. By the 1889 Ordnance Survey 1st edition the quarry had gone out of use and was recorded as an "Old Quarry".

5.17. The quarry was linked to St Tudwal's railway by a tunnel which ran underneath the site area, within Field 2 (BOYD 1981: 264). This is clearly seen on the Ordnance Survey 1st edition of 1889 (FIGURE 4). The southern section of the tunnel appears to run underground from the quarry, below the road and into Field 2. As the Field slopes down to the north the tunnel opens up and runs across open land as a track to the railway.

5.18. The tunnel must have gone out of use shortly after this, as by the Ordnance Survey map of 1900 the tunnel had been omitted (FIGURE 5). This is also the case on the 1918 Ordnance Survey edition, which show no structures or tunnels on the site (FIGURE 6).

5.19. It is thought that the two Fields comprising the site area had been used for agricultural purposes through the post medieval period, with St Tudwal's railway and the linking tunnel to Bwlch quarry being the only development onto the site area in this period.

6. Results

6.1. This section will examine the results of the archaeological monitoring at Capel Bwlch, undertaken between the 15th and 19th October 2007.

6.2. In this report context numbers are indicated by brackets, with round brackets indicating fills and deposits (33) and square brackets indicating cut features [4], levels are indicated in metres Below Ground Level (BGL) unless accompanied by an mOD symbol.

6.3. FIELD 1 – 0026

6.3.1. Field 1, shown as 0026 on the submitted Dwr Cymru plans, is located to the north of an unnamed street on an area of land sloping gently down to the north. The pipeline route was located 50m north of the road on a flat section of the Field.

6.3.2. The first phase of works comprised a topsoil strip along the route of the pipeline 3m wide by 191m long (FIGURE 9). The topsoil was stripped to a depth of 0.4m below ground level.



Plate 1 - Field 1 topsoil strip looking northwest

6.3.3. The uppermost deposit encountered was a loose, mid brown, humic loam topsoil (100), which extended 0.1m below the present ground level (FIGURE 7).

6.3.4. A small number of modern glass and metal finds, including soft drink cans and

agricultural components were recovered from this deposit.

6.3.5. Within Field 1 (0026) two modern land drains, [108], were identified running along a north-south alignment. These land drains measured 0.35m wide by 0.15m deep and were filled with fragments of slate (107). These land drains would give extra drainage across the Field for wash off the road. The land drains [108] cut into context (101), which underlay the topsoil (100).

6.3.6. Context (101) was a loose, red-brown, silt loam which contained a high quantity, >40%, of sub-angular and rounded stones. This deposit could be seen throughout the topsoil strip and measured 0.4m in depth. No other inclusions or finds were identified within this deposit which appears to be a naturally deposited sub soil.



Plate 2 - North facing section of pipeline excavation, Field 1

6.3.7. Following the topsoil strip, phase 2 comprised the machine excavation of the pipeline trench. The trench measured 0.6m wide and was excavated to a depth of 1.2m below present ground level.

6.3.8. The natural sub soil (101) overlay a 0.8m deep yellow sand deposit (106), which contained a number of large, c. 0.1m diameter, rounded stones. This was not bottomed during excavation and extended beyond the base of the trench at a depth of 1.2m below ground level. Context (106) is clearly a naturally deposited sand, likely associated with other glacial deposits identified in this area.

6.3.9. Although (106) occupied the bulk of the pipeline trench, to the north (106) sealed in a series of glacial gravels, which comprised three distinct layers, (102), (103) and (104). These three deposits, although distinct, are representative of glacial deposits seen across North Wales and North west England. The gravel deposits were grouped together as (105) and were only identified in the northern 20m of the pipeline trench.

6.3.10. Context (102) measured 0.2m in depth and consisted of a fine silt matrix surrounding a large amount, >90%, of small rounded stones, approximately 0.02m in diameter. This deposit overlay a 0.1m thick band of yellow sand (103) which also contained a great deal of rounded small stones. This in turn sealed in a deposit, context (104), similar in form to (102), which contained small rounded stones, approximately 0.02m in diameter which made up a large proportion of the deposit, set within a fine silt matrix. Context (104) was not bottomed as it extended beyond the base of the trench at a depth of 0.4m below (103), 1.2m below present ground level.

6.3.11. The deposits identified within Field 1 (0026) can be clearly seen to be a series of natural deposits with no features present, excluding two modern land drains running north-south across the Field.

6.4.FIELD 2 (1715)

6.4.1. Within Field 2, shown as 1715 on the Dwr Cymru plans, is located to the north of Lon Pentre Bach on an area of land sloping significantly down to the northwest, with an overall drop of 10m from the southeast corner to the northwest corner, from 44mOD to 34mOD. The pipeline route was located 60m northeast of the unnamed road on a flat area of the Field.

6.4.2. The topsoil strip along the route of the pipeline measured 3m wide by 200m long (FIGURE 9). This topsoil was excavated to a depth of 0.3m below ground level.

6.4.3. The stratigraphic sequence in Field 2 consisted of an upper deposit of loose, mid brown, humic loam topsoil (100), which extended 0.1m below ground level. This overlay the natural subsoil (101), a loose, red-brown, silt loam filled containing sub-angular and rounded stone inclusions. Context (101) was

recorded throughout the topsoil strip and subsequent pipeline excavation and measured 0.4m thick, extending to a depth of 0.6m below ground level.



Plate 3 - Feature (109) looking south

6.4.4. Identified 20m to the east of the boundary with Field 1 was a spread of stone fragments (109). This feature measured 4m wide and ran in an east-west alignment across Field 2 (FIGURE 10). Excavation revealed that the deposit cut context (101) and extended beyond the base of the trench at a depth of 1.2m below ground level (FIGURE 8). This feature is situated at the location of a tunnel associated with the quarry to the west of the site shown on the 1st edition Ordnance Survey map of the area.



Plate 4 - North facing section of (109)

- 6.4.5. The loose nature of the fill deposit may indicate that this loose stone fill represents the backfilling of an open area of the tunnel after it went out of use.
- 6.4.6. Underlying (101) within Field 2 was the natural yellow sand (106), as identified within Field 1. This context extended to the base of the trench at a depth of 1.2m below ground level where a grey shale deposit (111) was encountered. This shale is thought to be the local bedrock and could be seen at the base of the pipeline trench at a depth of 1.2m below ground level.



Plate 6 - North facing section of pipeline excavation, Field 2

- 6.4.7. Towards the southwest corner of the site the bedrock (111) could be seen to raise up, forming a steeper slope. Within the pipeline trench, 65m to the north of the southwestern gate, the bedrock (111) rose to an elevation of 42.78mOD, 0.2m below ground level. The striations within the shale followed the natural contour of the slope to the northeast.
- 6.4.8. The high level bedrock continued south along the pipeline trench for a distance of 18m, where it dropped again to 1.1m below ground level. This is a natural bedrock outcrop .
- 6.4.9. A single feature was identified within the pipeline trench in Field 2. This feature appears to be the backfilled tunnel associated with the 19th century mining activity at Bwlch quarry to the south of the site.

7. Summary & Conclusions

- 7.1. The Archaeological Watching Brief on the water mains renewal at Capel Bwlch was carried out by Blair Poole of L – P : Archaeology between the 15th and 19th October 2007. This comprised monitoring of the machine excavation of topsoil stripping and pipe trench excavation across the site area, situated at NGR SH 29987,27220.
- 7.2. Fieldwork was carried out by Blair Poole of L – P : Archaeology on behalf of Dwr Cymru.
- 7.3. It is thought that the site has been used for pasture for much of prehistory and history. However, if any ploughing was carried out on the land, as may have been the case during the Second World War, this would have been short lived and shallow.
- 7.4. The investigation identified a clear sequence of natural deposits covering the site. These were recorded as humic topsoil overlying glacial till, which in turn overlay the natural shale bedrock.
- 7.5. The investigation revealed that Field 1 (0026) contained no archaeological features, with only 2 shale filled land drains running north south cutting across the Field. Field 2 (1715) contained a single archaeological feature. To the west edge of Field 2 a shale filled ditch measuring 4m wide, running in a north south alignment, was identified 20m to the east of the Field boundary. This ditch was located at the proposed position of the tunnel linking St Tudwal's railway with Bwlch quarry.
- 7.6. The loose nature of the backfilled shale within the ditch and the lack of any retaining structure indicates that this section of the tunnel would have been open rather than covered. The depiction of the tunnel on the Ordnance Survey 1st edition does only show the tunnel as a dotted line to the south of this area, where the bank raises up. It is likely that the tunnel would have been subterranean from the quarry and under the bank, and would have exited the bank to become a track to the south of the excavation area.

FIGURES

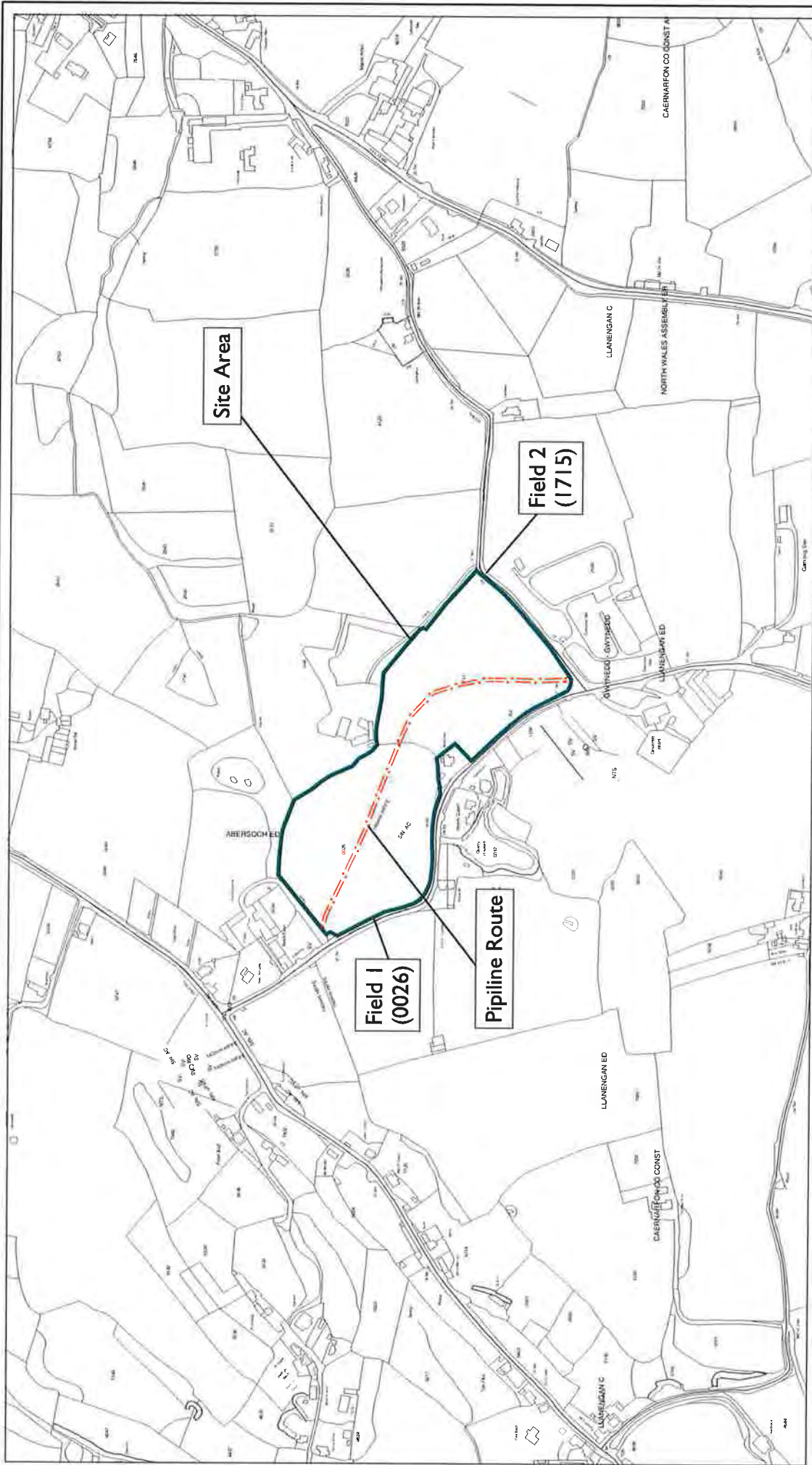
The map displays the Llanengan area, featuring the Afon Llanengan and surrounding settlements. Key locations labeled include Pen-y-Bont, Rhydolion, Llanengan, Sarn Bach, and Tai-morfa. A 'Site Area' is indicated by a dashed line and a label. The map also shows contour lines, roads, and a grid system.

Year	Male (m)	Female (m)
2000	480	520
2005	490	510
2010	500	500



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FIGURE 2 // Site Location Detail



Scale 1:5,000 @ A4

0 200m

PROJECT // 0606C - Capel Bwlch, Cilan

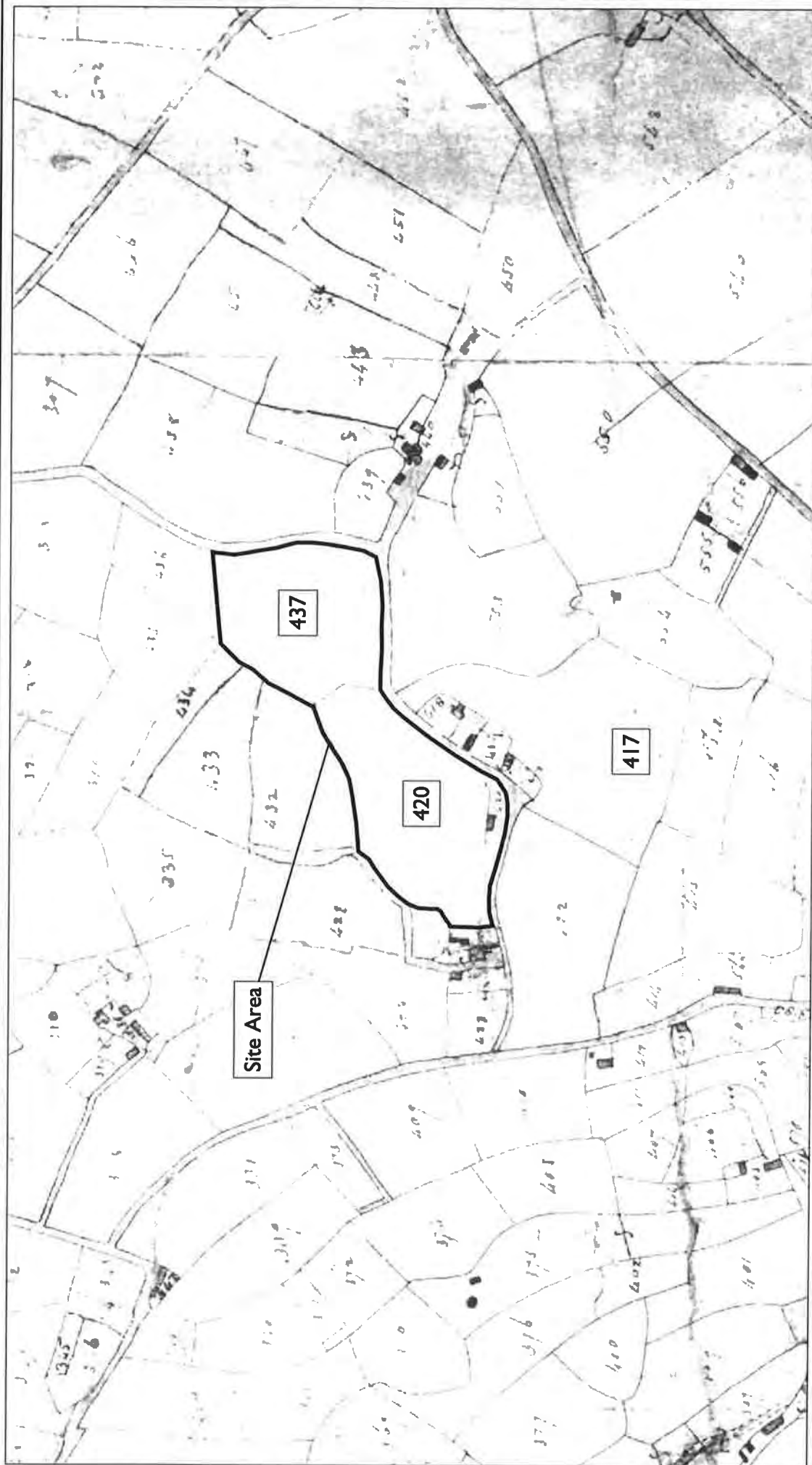
DESCRIPTION // Site Location Detailed

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DOC REF: LP0606C-AWB-v1

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FIGURE 3 // 1841 Tithe Map of Llanengan



Not to scale. For illustration only

Apportionment details

417 - Pasture land; Field 417 is shown on later OS maps as containing Bwlch Quarry

420 - Arable land

437 - Arable land

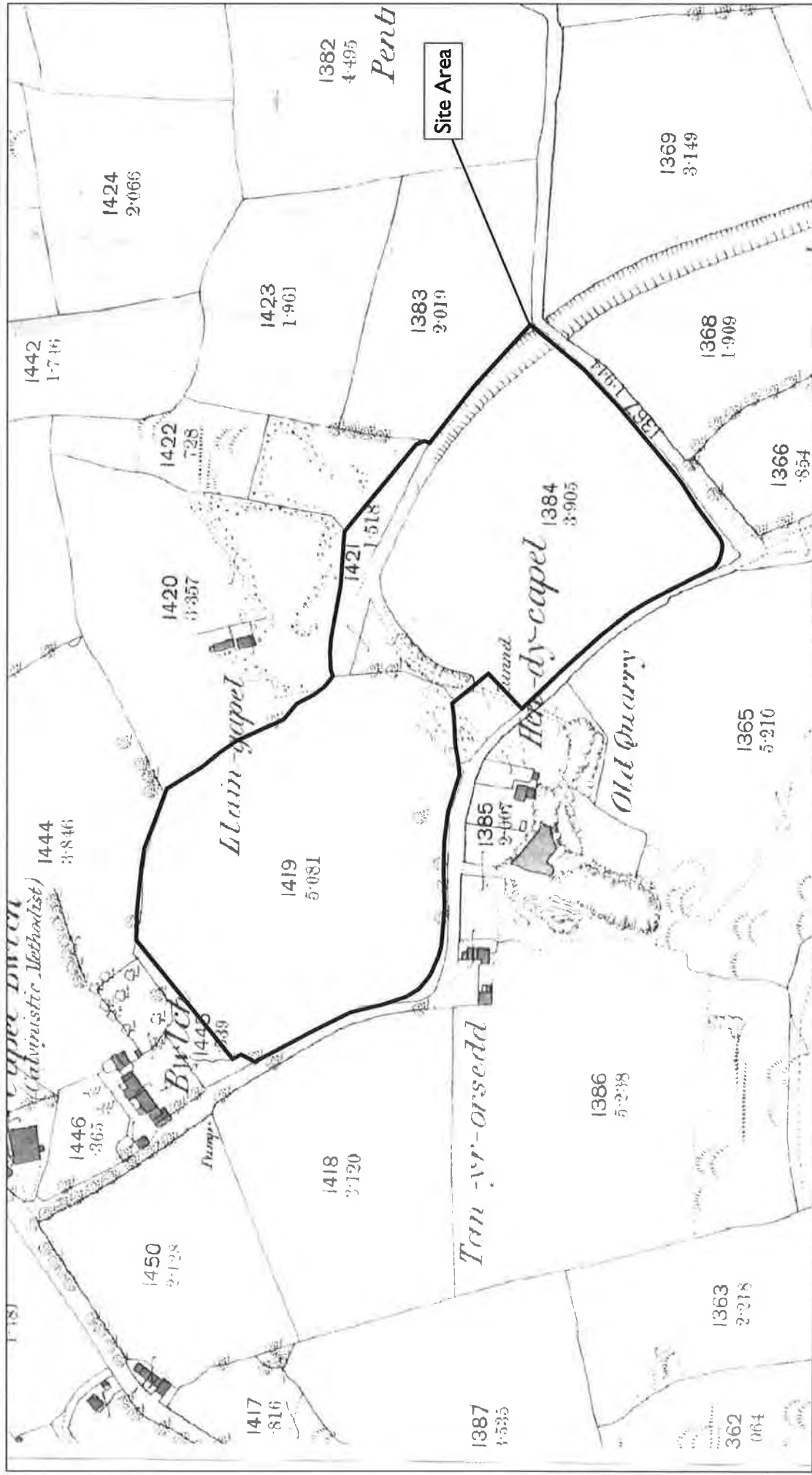
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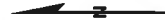
DOC REF: LP0606C-AWB-v1

L-P:ARCHÆOLOGY

FIGURE 4 // 1889 OS First edition



Scale 1:2,500 @ A4



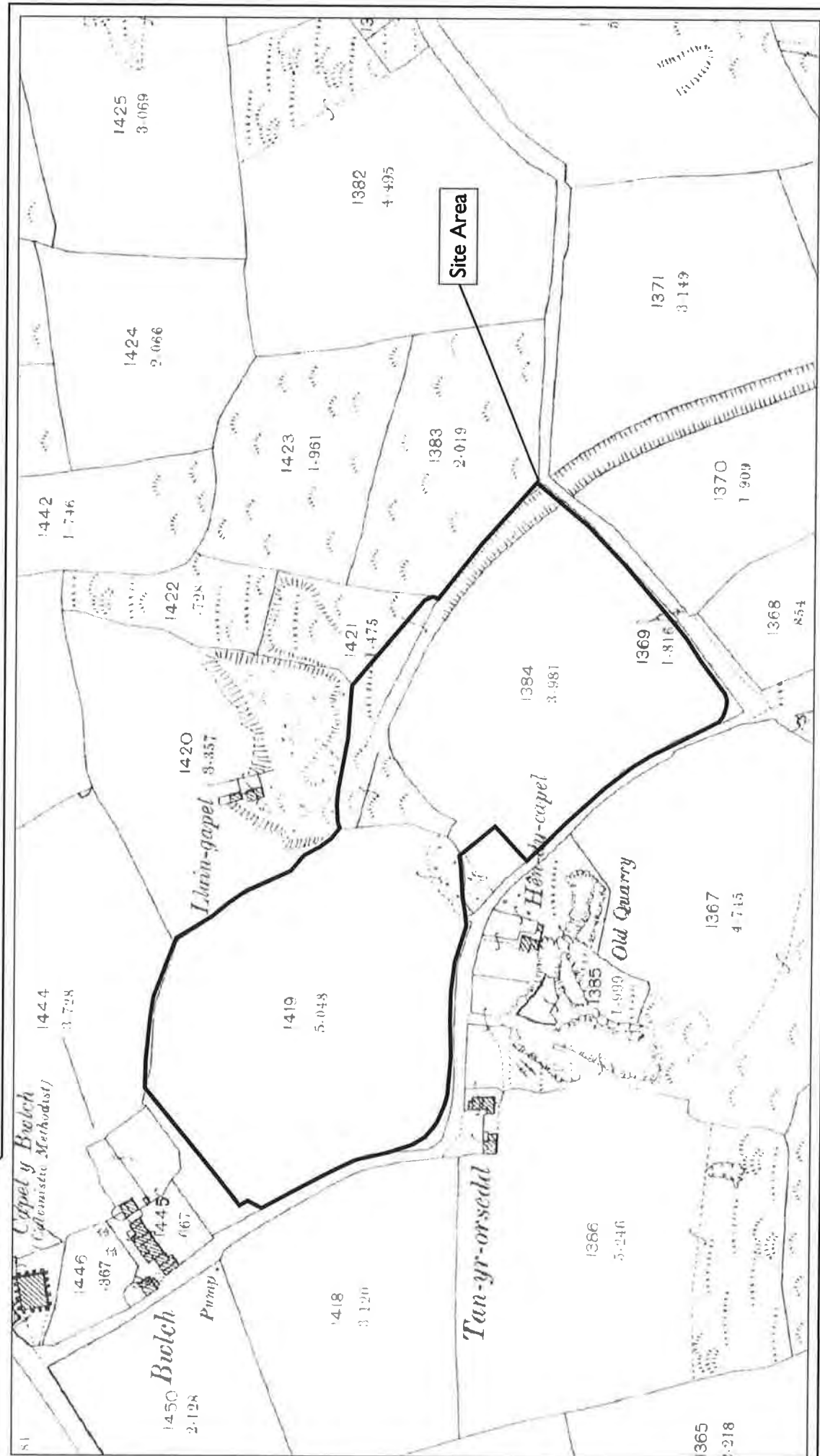
PROJECT // 0606C - Capel Bwlch, Cilan

DESCRIPTION // 1889 Ordnance Survey 1st edition of Bwlch

DOC REF: LP0606C-AWB-v1

L-P:ARCHAEOLOGY

FIGURE 5 // 1900 OS Second edition



Scale 1:2,500 @ A4

0 100m



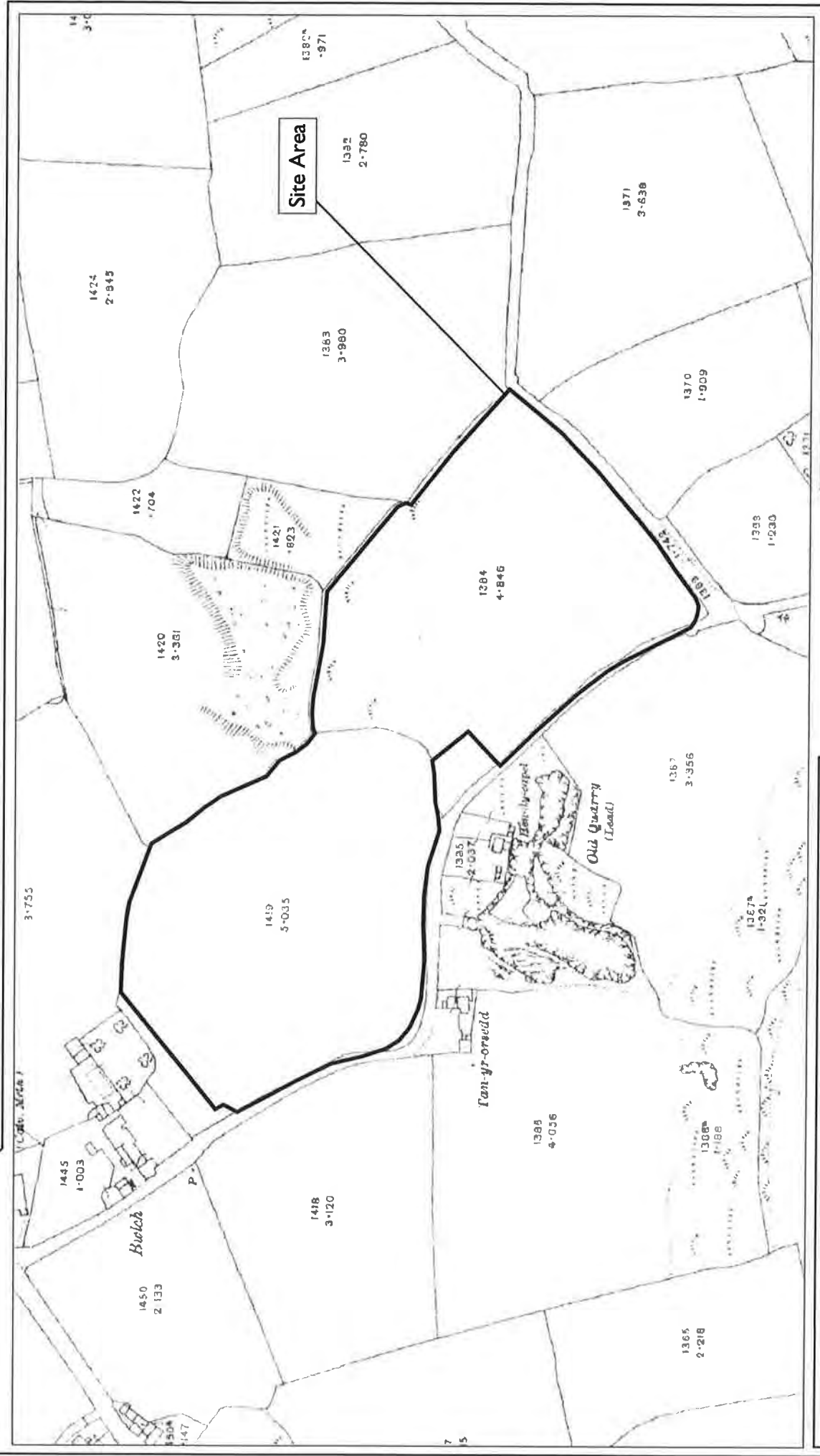
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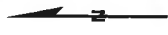
DOC REF: LP0606C-AWB-v1

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FIGURE 6 // 1918 OS edition



Scale 1:2,500 @ A4



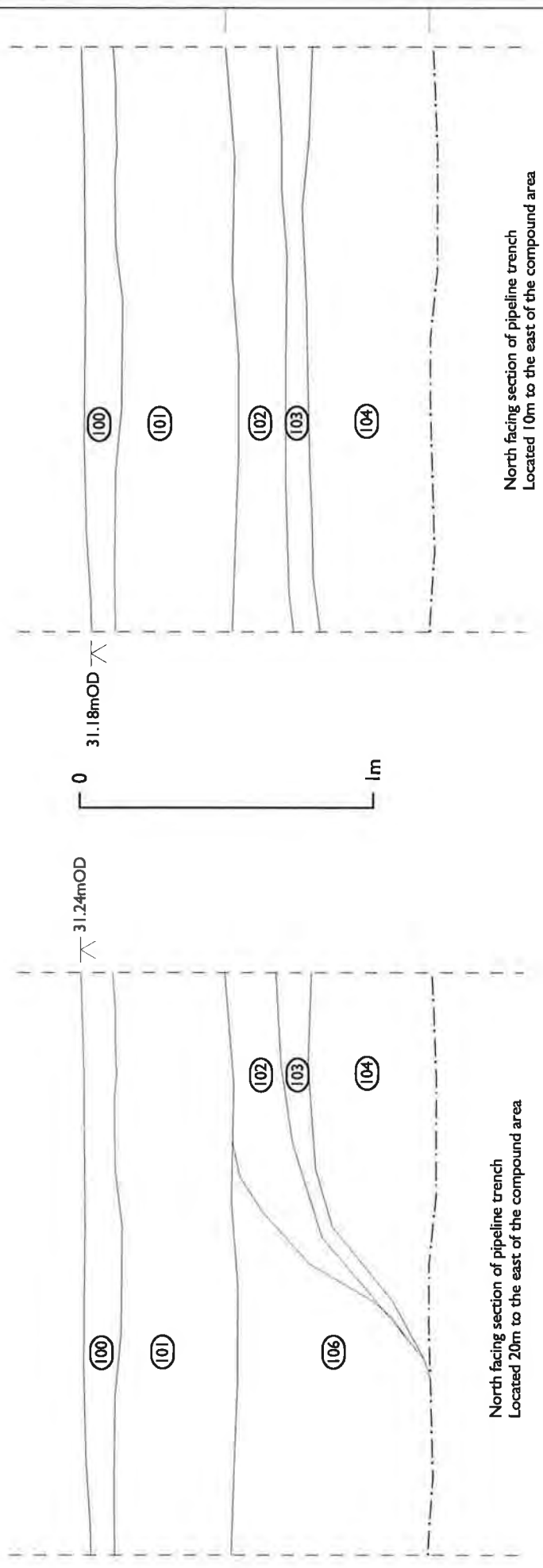
PROJECT // 0606C - Capel Bwlch, Cilan

DESCRIPTION // 1918 Ordnance Survey edition of Bwlch

DOC REF: LP0606C-AWB-v1

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FIGURE 7 // Field I Section Drawings



Scale 1:20 @ A4

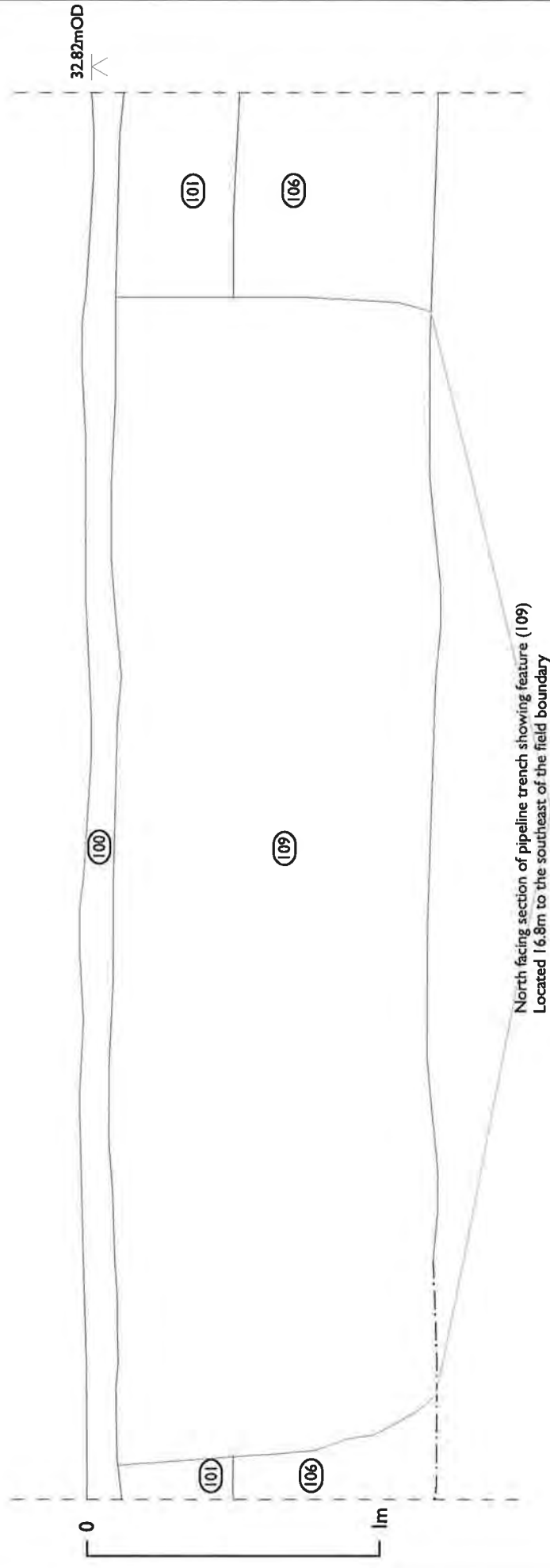
PROJECT // 0606C - Capel Bwlch, Cilan

DESCRIPTION // North Facing Sections of Pipeline Excavation in Field 1 (0026)

DOC REF: LP0606C-AWB-v1

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FIGURE 8 // Field 2 Section Drawings



Scale 1:20 @ A4

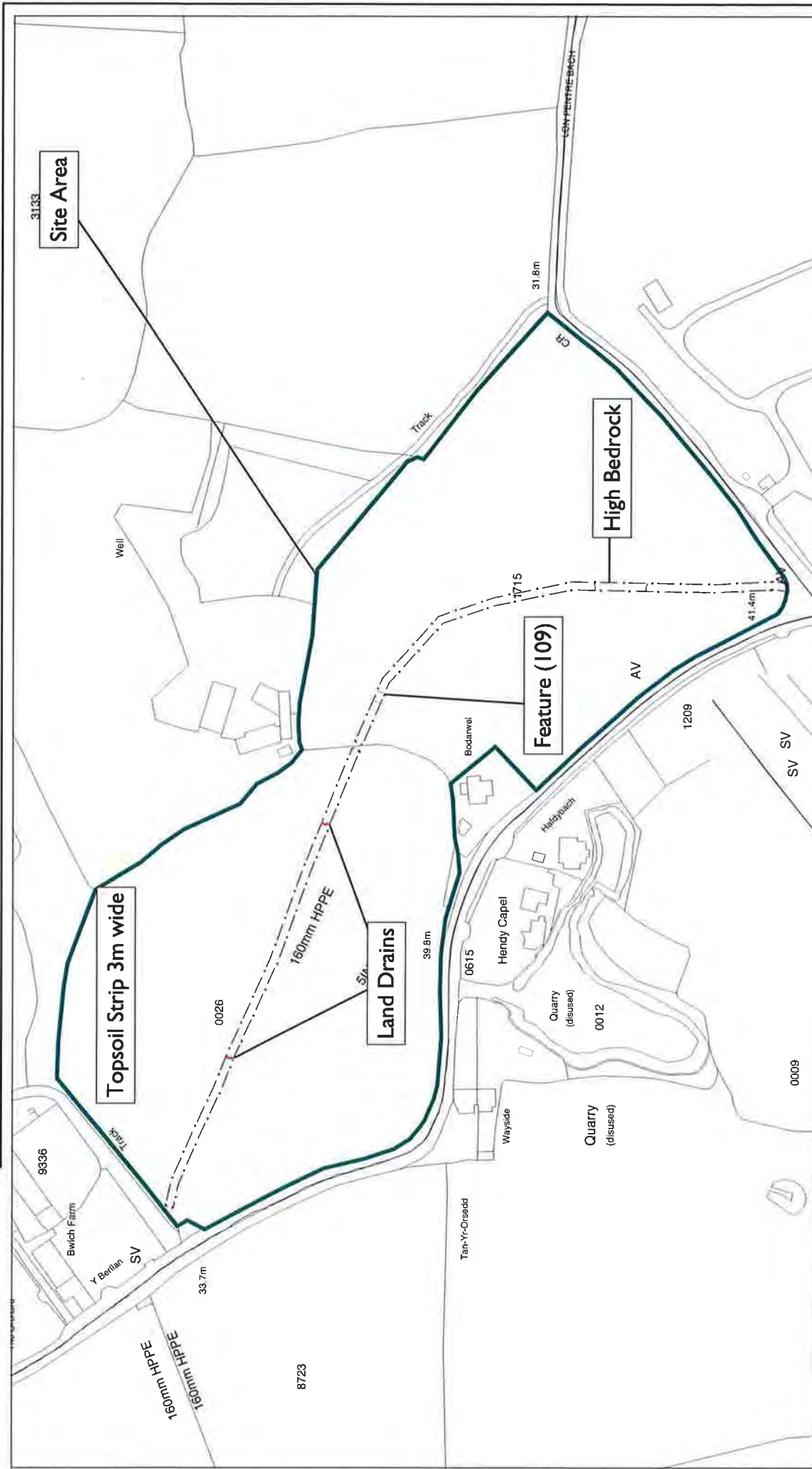
PROJECT // 0606C - Capel Bwlch, Cilan

DESCRIPTION // North Facing Sections of Pipeline Excavation in Field 2 (1715)

DOC REF: LP0606C-AWB-v1

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FIGURE 9 // Excavation Results



Scale 1:2,000 @ A4

PROJECT // 0606C - Capel Bwlch, Cilan

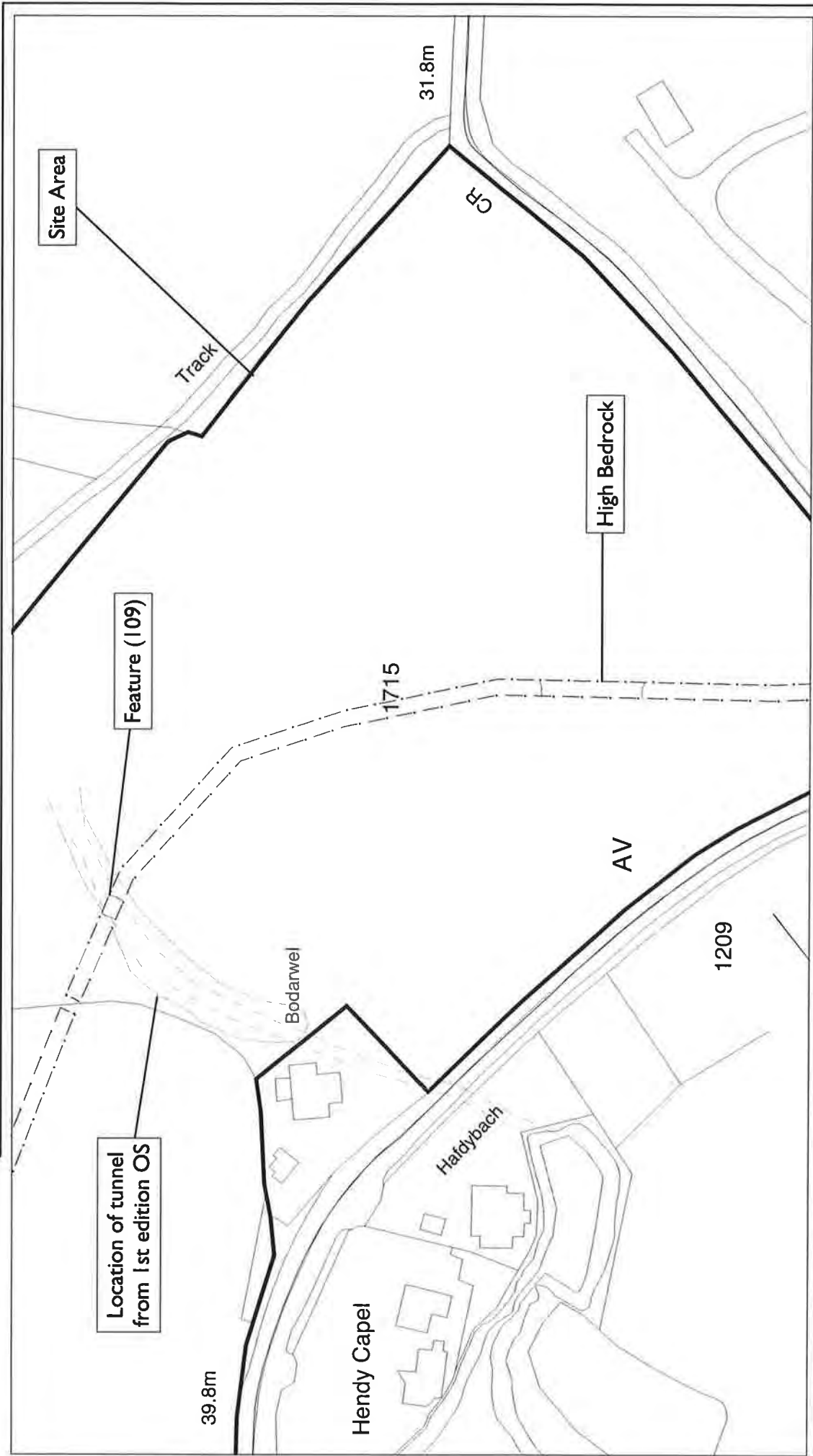
DESCRIPTION // Excavation Results

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FIGURE 10 // Field 2 results



Scale 1:1,000 @ A4



PROJECT // 0606C - Capel Bwlch, Cilan
DESCRIPTION // Excavation Results from Field 2
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DOC REF: LP0606C-AWB-v1

0 100m

SOURCES CONSULTED

APPENDIX I

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CARTOGRAPHIC

1841 Tithe map of Llanengan

1889 25" Ordnance Survey 1st edition

1900 25" Ordnance Survey 2nd edition

1918 25" Ordnance Survey map of Llanengan

2007 1:10,000 Ordnance Survey map of Llanengan

