

MINING RISK ASSESSMENT REPORT:
Land Adjacent to Lle Hyfryd
Mount Pleasant
Heolgerrig
Merthyr Tydfil
CF48 1RY

Prepared for:
Jane Shankland

June 2016

Job No: 13741




terra**firma**

REPORT TITLE : **Mining Risk Assessment
Report: Land Adjacent to Lle Hyfryd,
Mount Pleasant Heolgerrig, Merthyr Tydfil**

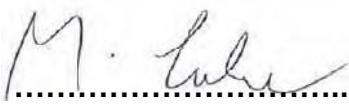
REPORT STATUS : **Final**

JOB NUMBER : **13741**

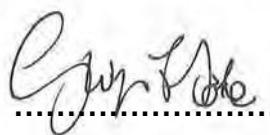
DATE : **June 2016**

PREPARED BY : 
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(Mrs R. Howells)

REVIEWED BY : 
.....

(Mr M. Lake)

APPROVED BY : 
.....

(Dr G. C. Lake)

Executive Summary

Jane Shankland is proposing the residential development of a site on Mount Pleasant, Heolgerrig, adjacent to Lle Hyfryd.

The site has remained undeveloped throughout recorded history, although it has situated in an area of previous mining activity.

Geologically, the site is underlain by rocks of the Lower Coal Measures, which are Carboniferous in age.

The Coal Authority record that the Lower-Seven-Feet (Lower Leaf) coal seam has been worked at 13m depth beneath the site.

When assessing the risks from shallow mine workings, as a rule of thumb to prevent the future collapse of mine workings migrating to the surface and forming crown holes there should be a 10:1 rock head to void ratio.

The seam is reported to be 1.6m thick. This would require 16m of rockhead cover. As workings are recorded to be at 13m depth this criteria is not satisfied. It is therefore recommended that a physical site investigation be performed to establish the geological conditions and presence of workings beneath the site.

This should entail the sinking of a number of rotary probeholes beneath the footprint of the proposed new house.

Following investigation the requirement for any necessary mine stabilisation can be confirmed.

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SECTION 1 Introduction and Proposed Development

Jane Shankland is proposing the residential development of a site on Mount Pleasant, Heolgerrig, adjacent to Lle Hyfryd.

Steven George is the Architect for the project.

Terra Firma (Wales) Limited has been commissioned by Steven George, on behalf of Jane Shankland to undertake a Mining Risk Assessment Report for the site.

The main objectives of Mining Risk Assessment were to:

- Investigate any historic mining activities that may pose a risk to the proposed development.
- Determine the geological conditions beneath the site.
- Determine if shallow workings are likely to be present beneath the site.
- Determine the likely amount of sound rock head cover above any workings.
- Provide an assessment of the risk from shallow workings beneath the site.

In order to achieve the above objectives, Terra Firma (Wales) Limited carried out an assessment programme including a review of existing data.

1.1 Limitations and Exceptions

Jane Shankland has requested that a Mining Risk Assessment Report be prepared.

The report has been prepared for the sole internal reliance of Jane Shankland and her design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma (Wales) Limited. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The report represents the findings and opinions of experienced geo-environmental and geo-technical consultants. Terra Firma (Wales) Limited does not provide legal advice and the advice of lawyers may also be required.

SECTION 2**Review of Existing Data****2.1 Physical Setting and Current Site Use**

The site situates between the dwellings of Lle Hyfryd and Gelli Du, off Mount Pleasant, Tredegar, centred on a National Grid Reference of 303320 206350. It occupies an approximate plan area of 0.04 hectares.

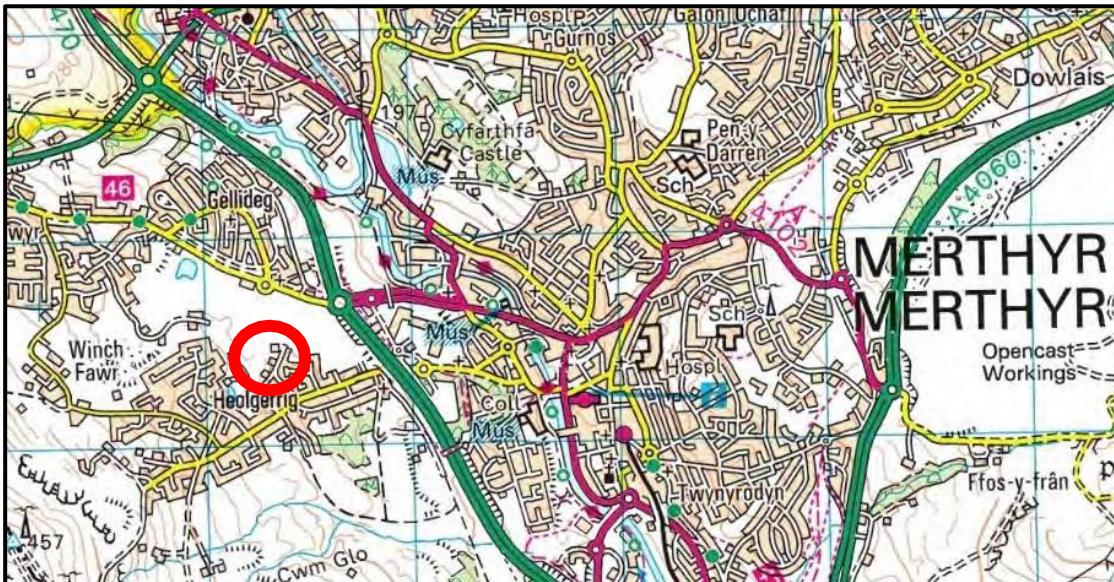


Figure 2.1: Site Location - OS Map 166 Rhondda & Merthyr Tydfil (Not to Scale)

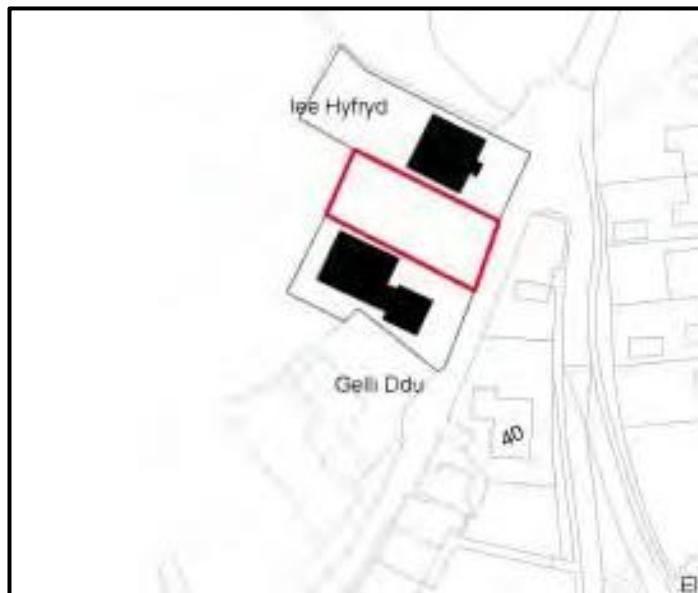


Figure 2.2: Site Layout

2.2 History

The history of the site has been traced using historical Ordnance Survey maps obtained from Landmark Information Group. These are presented in **Annex A**. A summary of the history of the site is given below. Distances, where quoted are approximate.

1875

The site in 1875 is seen to situate within an area dominated by coal mining activity and lies upon an area of colliery spoil. A tramline passes through the centre of the site in a northeast to southwest direction, leading down to a coal level 15m from the site. A main tramline runs along the southeast boundary of the site. No.2 Pit is present 140m southwest. An air shaft is denoted 160m south-southwest, and an old level is present 200m south. Levels are also shown to the 280m north and 300m northeast.

1904

The level just southwest of the site is no longer in use and the connecting tram line has been dismantled. The No 2 Pit shaft has also closed as has levels to the north. However, a new air shaft can be seen 75m to the northeast and a coal level lies 160m northeast.

1919

Shafts and coal levels to the north and northeast are now defunct. Two new coal levels are denoted 200m south and 260m southwest. The site remains unchanged.

1951

All coal mining activity in the surrounding area has ceased. There have been no discernible changes to the site since 1919.

1964

The area southeast of the site has been residentially developed, although much of the old colliery land remains as fields. The colliery spoil immediately northwest of the site is shown as a refuse tip.

2006

The site and immediate surrounding area remains unchanged since 1964.

2016

Lle Hydfryd has been built on land immediately north of the site.

2.3 Geology

The 1:10,560 scale geological map of the area (Sheet SO 00 NW) shows the site to be underlain by rocks of the Lower Coal Measures. These rocks generally comprise mudstones with sub-ordinate sandstones, siltstones and coal seams.

The conjectural outcrop of the Seven-Feet coal seam, which aligns south-southwest to east-southeast, lies beneath or just outside the sites southern corner. This seam dips towards the south and may underlie apart of the site at shallow depth. The generalised geological section records the Five-Feet coal seam underlies the Seven- Feet seam by 4.7m. This can be expected to underlie the site at shallow depth.

Lower in the geological sequence, at a depth of 34.5 m below the Five-Feet seam the Garw coal seam is present.

Although not conjectured on the geological map, stratigraphically the Gellideg coal seam may be present approximately 4m below the Five-Feet seam.

Made ground in the form of colliery spoil is anticipated across the site.

2.4 Mining

A Coal Authority Mining Consultants Report was obtained for the site. This is presented in **Annex B**.

The report details the outcrop of the Lower-Seven-Feet (Lower Leaf) coal seam 30.7m northeast of the site. The report also records that this seam is 1.6m in thickness and has been worked at 13m depth beneath the site.

The Seven-Feet coal seam outcrop is noted to be 6.4m northeast of the site. This is presumably the upper leaf of the seam.

There are no known mine entries upon the site. However, a mine shaft is recorded very close to the sites northern corner (in the rear garden of Lle Hyfryd) and it is likely that this accessed the workings in the Lower-Seven-Feet (Lower Leaf) coal seam.

Also detailed just southwest of the site is the coal adit (level) illustrated on the 1875 historical map, as well as a second adit further southwest.

SECTION 3 Assessment of the Risk from Past Shallow Coal Mining

Based upon the geological and desk study information the stratigraphical sequence beneath the site and within 40m of the ground surface is taken to be:

- Colliery Spoil
- Completely weathered Measures
- **Seven-Feet (Upper Leaf) coal seam**
- Measures
- **Seven-Feet (Lower Leaf) coal seam**
- Measures
- **Five-Feet coal seam**
- Measures
- **Gellideg coal seam (possibly absent)**
- Measures

The Coal Authority records workings in the Lower-Seven-Feet (Lower Leaf) coal seam beneath the site.

When assessing the risks from shallow mine workings, as a rule of thumb to prevent the future collapse of mine workings migrating to the surface and forming crown holes there should be a 10:1 rock head to void ratio.

The seam is reported to be 1.6m thick. This would require 16m of rockhead cover. As workings are recorded to be at 13m depth this criteria is not satisfied. It is therefore recommended that a physical site investigation be performed to establish the geological conditions and presence of workings beneath the site.

This should entail the sinking of a number of rotary probeholes beneath the footprint of the proposed new house. The probeholes should be taken to a depth of 30m into bedrock.

Any workings with $\geq 30\text{m}$ rockhead cover are not deemed to present a significant risk from collapse at the surface.

Appropriate permission should be sought from the Coal Authority prior to any site investigation works.

Following investigation the requirement for any necessary mine stabilisation can be confirmed. If shallow workings are confirmed to exist with insufficient rockhead cover a probe drilling and grouting exercise will be necessary.

Once all investigatory works have been undertaken then the most suitable foundation solution may be recommended, although please note that to make these recommendations investigation of the shallow ground conditions would also need to be undertaken.

For treated mine workings, the use of a reinforced concrete raft type foundation/floor slab foundation are likely to be suitable. Where there is determined to be a low level risk from shallow mining negating the necessity of grout treatment a reinforced concrete raft type foundation/floor slab foundation capable of spanning a crown hole of 3m with a cantilever effect on corners of 1.5m may be used.

**Annex A
Landmark Historical Maps**

Historical Mapping Legends

Ordnance Survey County Series and
Ordnance Survey Plan 1:2,500

Ordnance Survey Plan, Additional SIMs and
Supply of Unpublished Survey Information
1:2,500 and 1:1,250

Large-Scale National Grid Data 1:2,500 and
1:1,250

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1875 - 1881	2
Glamorganshire	1:2,500	1900 - 1904	3
Brecknockshire	1:2,500	1904	4
Brecknockshire	1:2,500	1919	5
Glamorganshire	1:2,500	1919	6
Ordnance Survey Plan	1:1,250	1956 - 1982	7
Ordnance Survey Plan	1:2,500	1964	8
Ordnance Survey Plan	1:1,250	1975	9
Additional SIMs	1:1,250	1984 - 1990	10
Additional SIMs	1:2,500	1988	11
Large-Scale National Grid Data	1:1,250	1993	12
Large-Scale National Grid Data	1:1,250	1994 - 1995	13

Historical Map - Segment A13

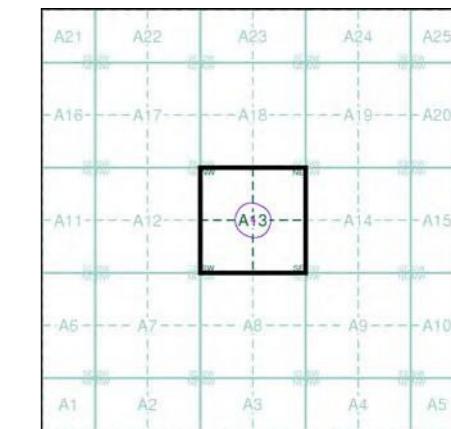
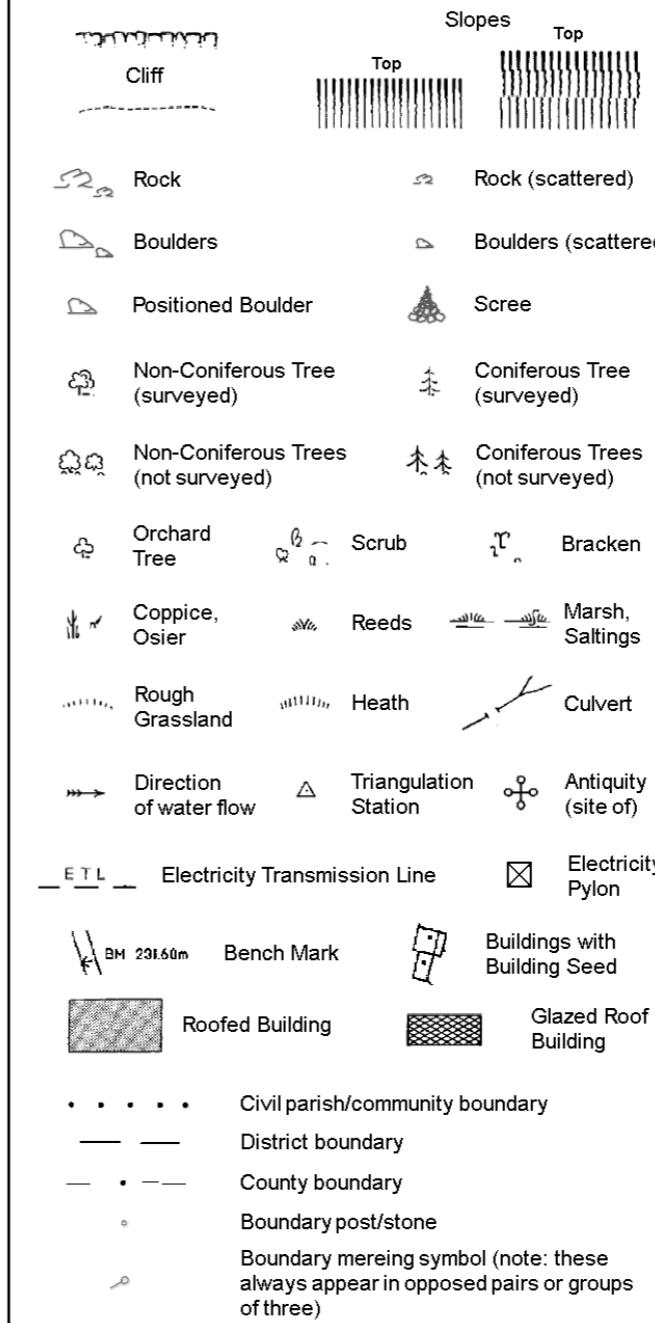
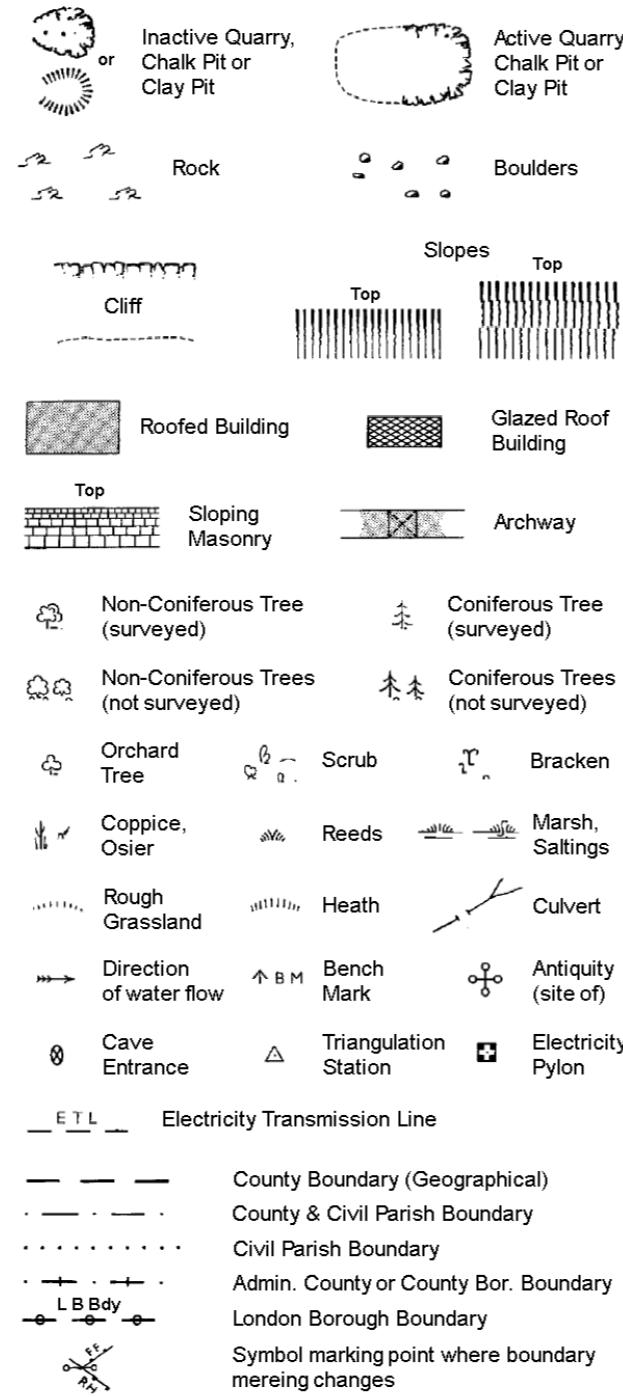
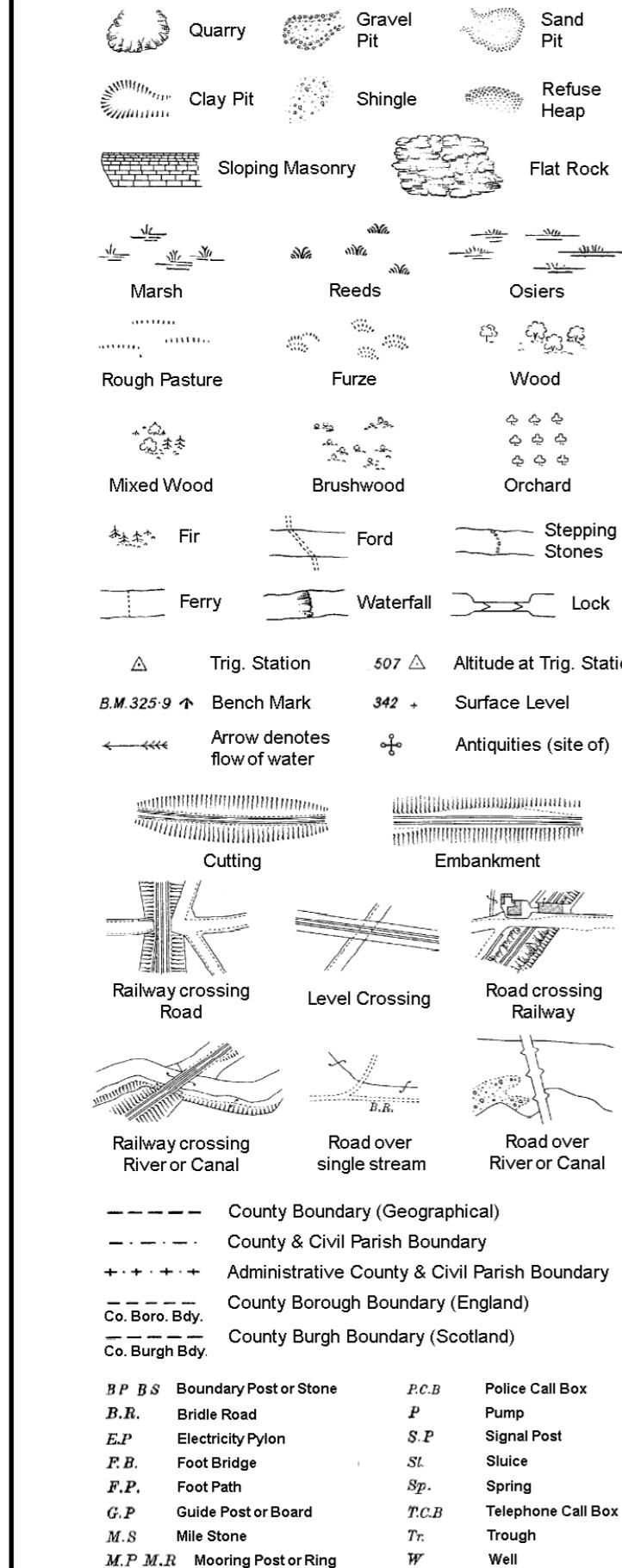
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Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

Site at 303250, 206350



Glamorganshire

Published 1875 - 1881

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

Historical Map - Segment A13

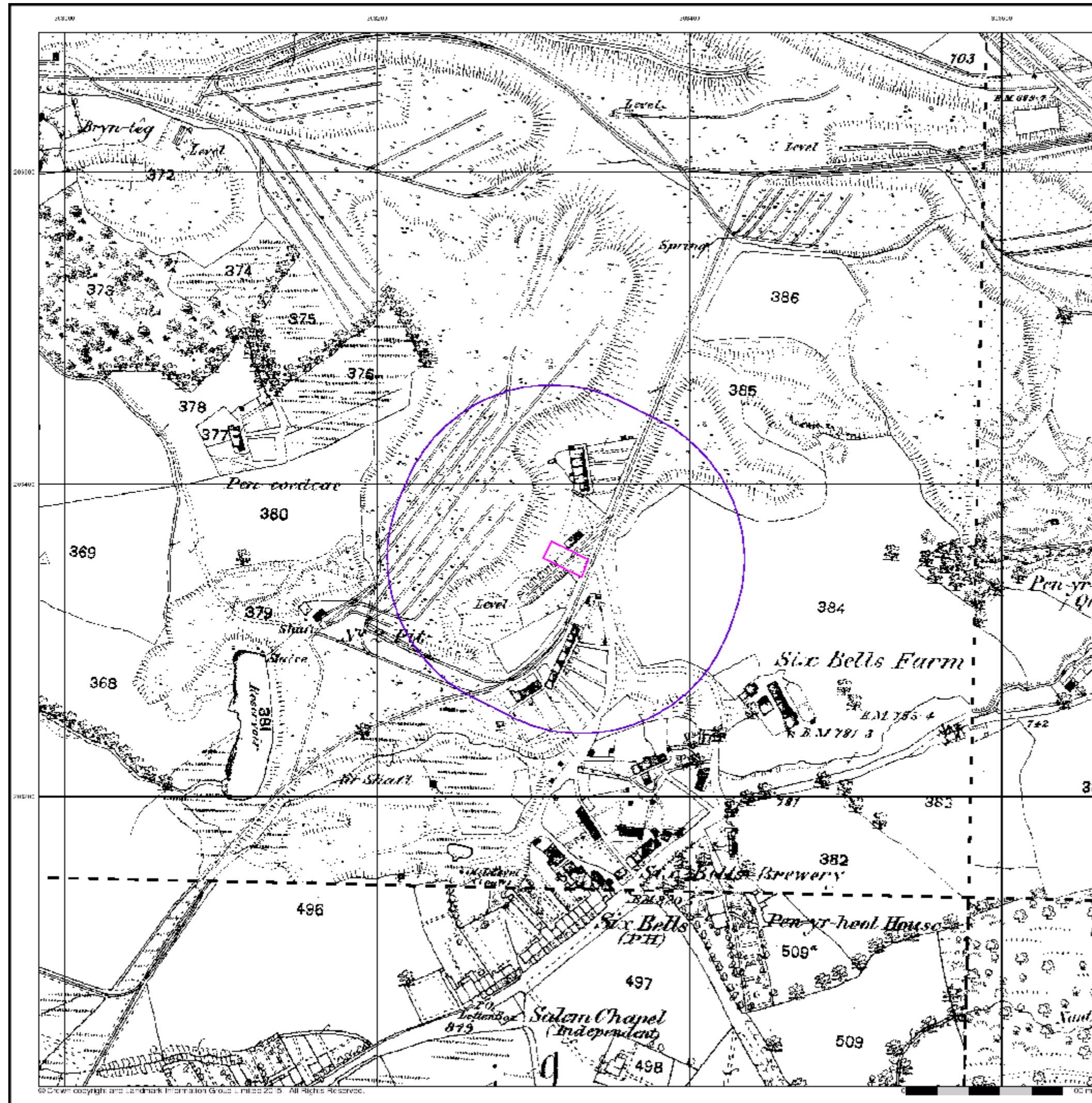
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011 04 1875 1:2,500	012 01 1875 1:2,500
011 08 1881 1:2,500	012 05 1876 1:2,500

A21	A22	A23	A24	A25
A16	A17	A18	A19	A20
A11	A12	A13	A14	A15
A6	A7	A8	A9	A10
A1	A2	A3	A4	A5



Glamorganshire

Published 1900 - 1904

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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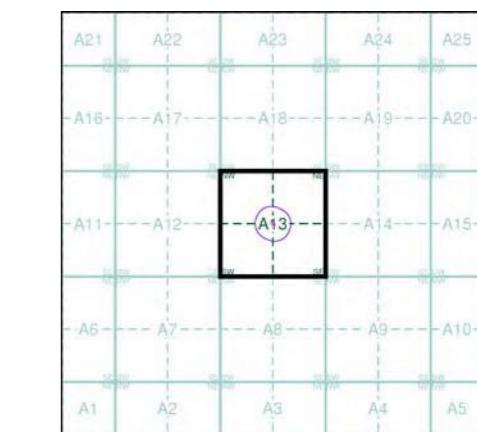
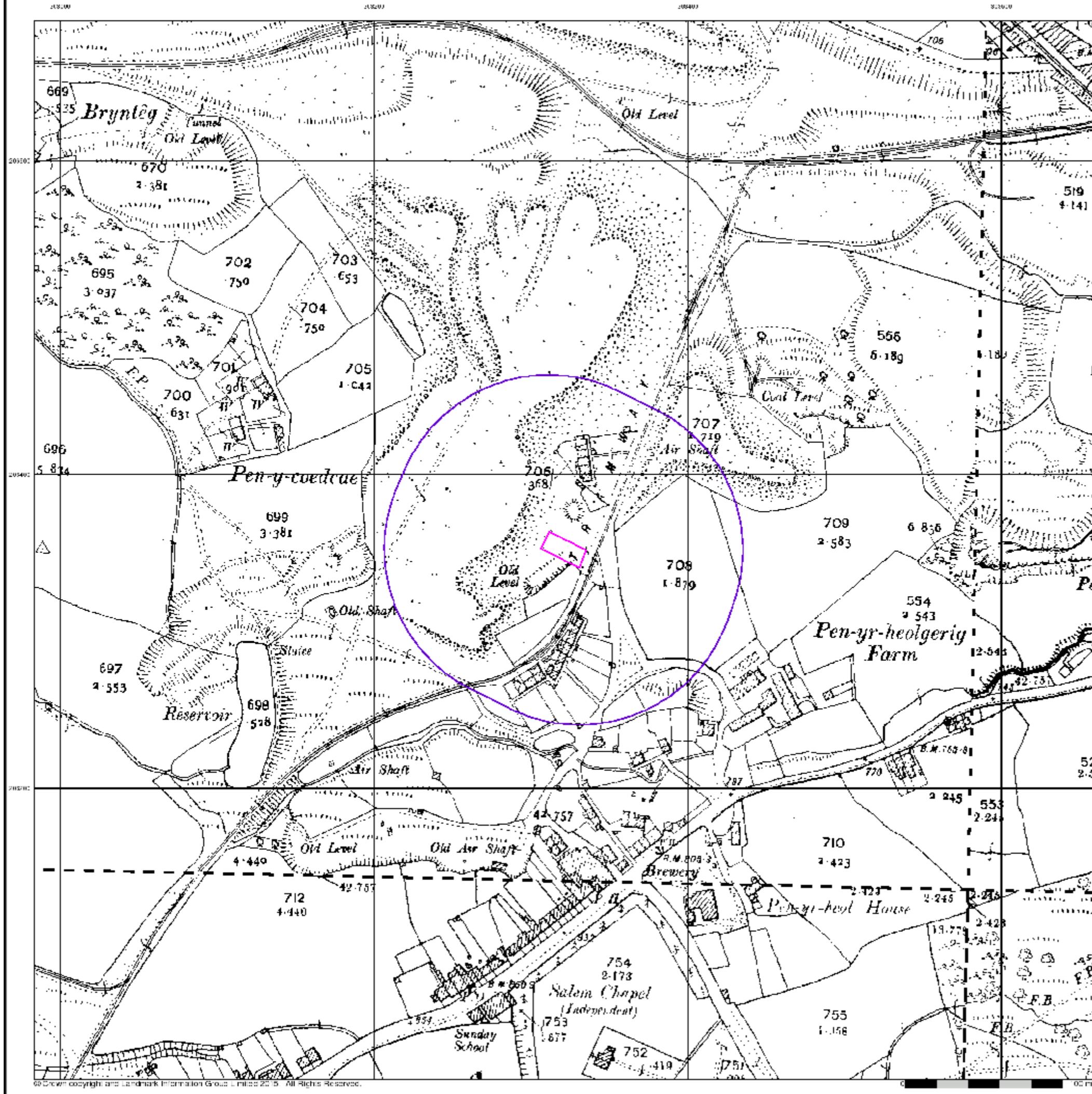
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Site Details

Site at 303250, 206350



Brecknockshire

Published 1904

Source map scale - 1:2,500

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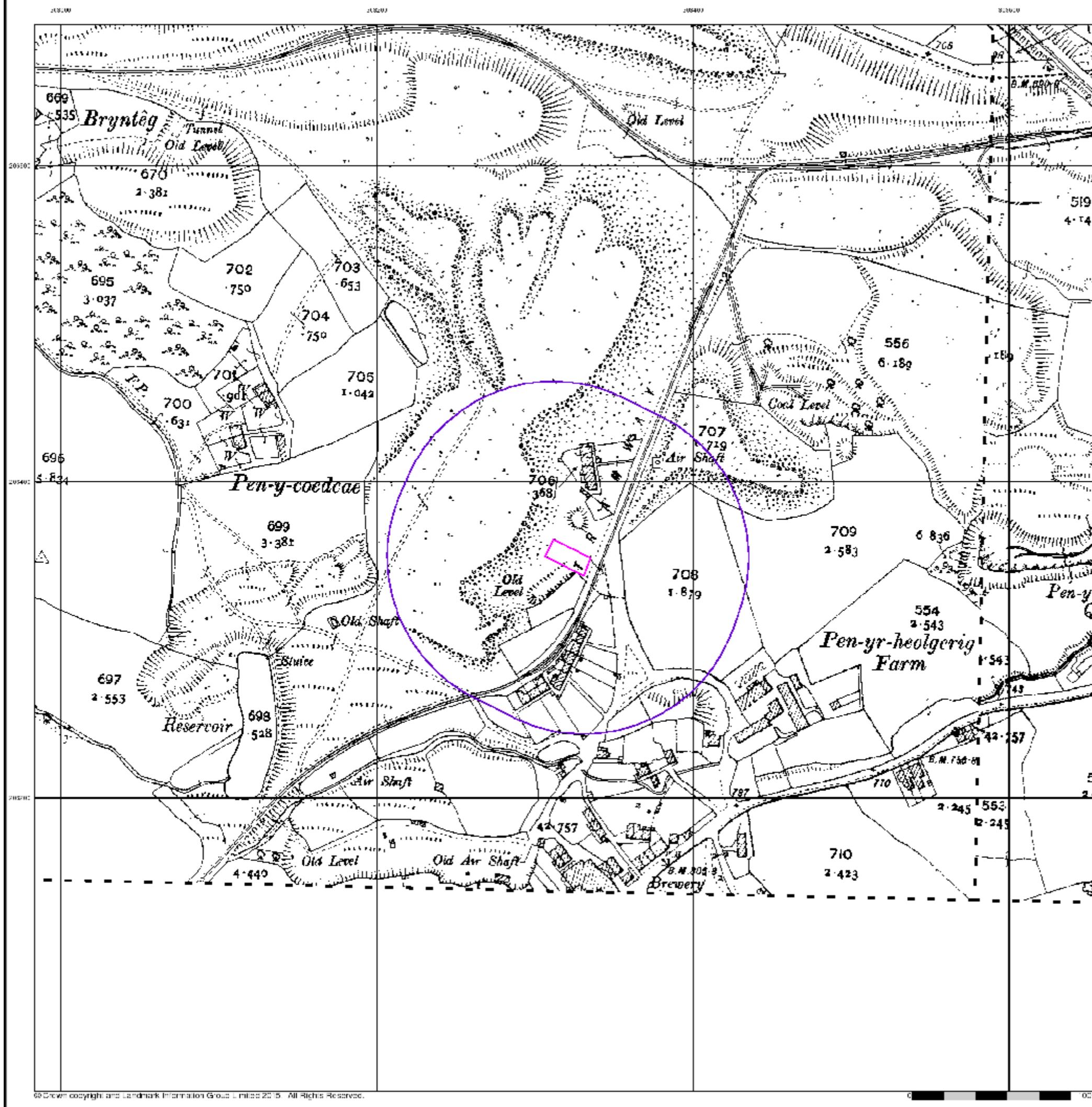
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Site Details

Site at 303250, 206350



Brecknockshire

Published 1919

Source map scale - 1:2,500

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Historical Map - Segment A13

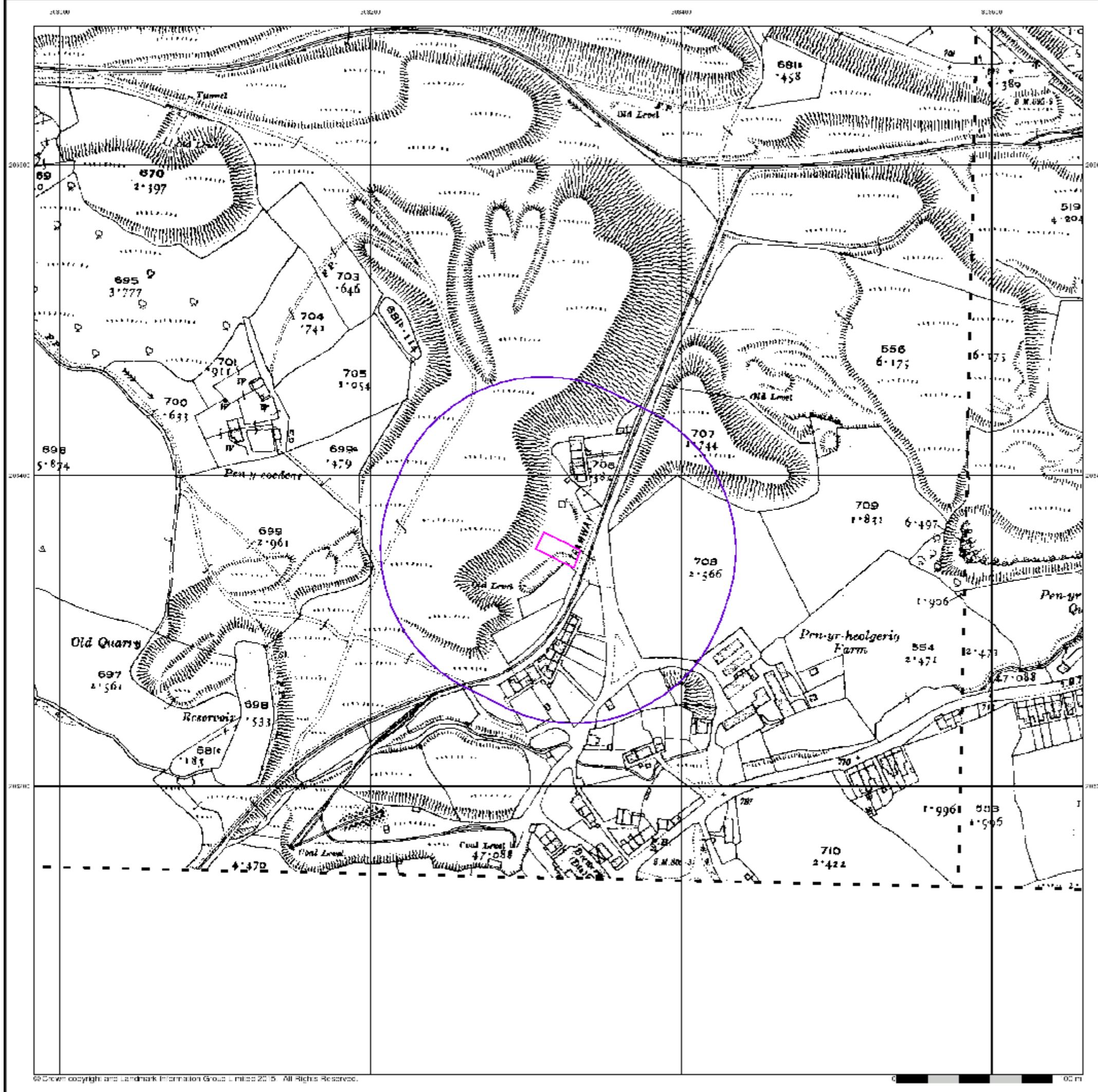
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Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

Site at 303250, 206350



Glamorganshire

Published 1919

Source map scale - 1:2,500

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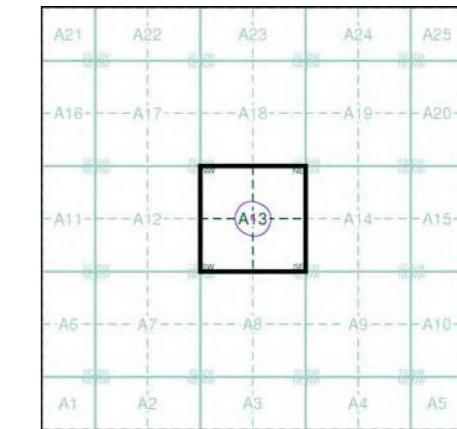
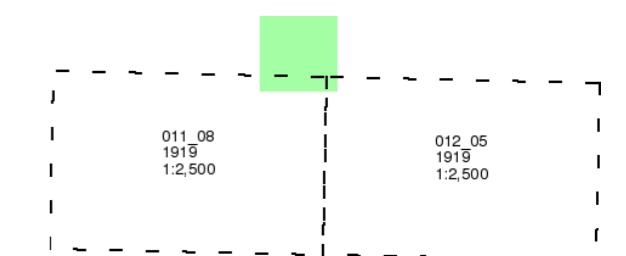
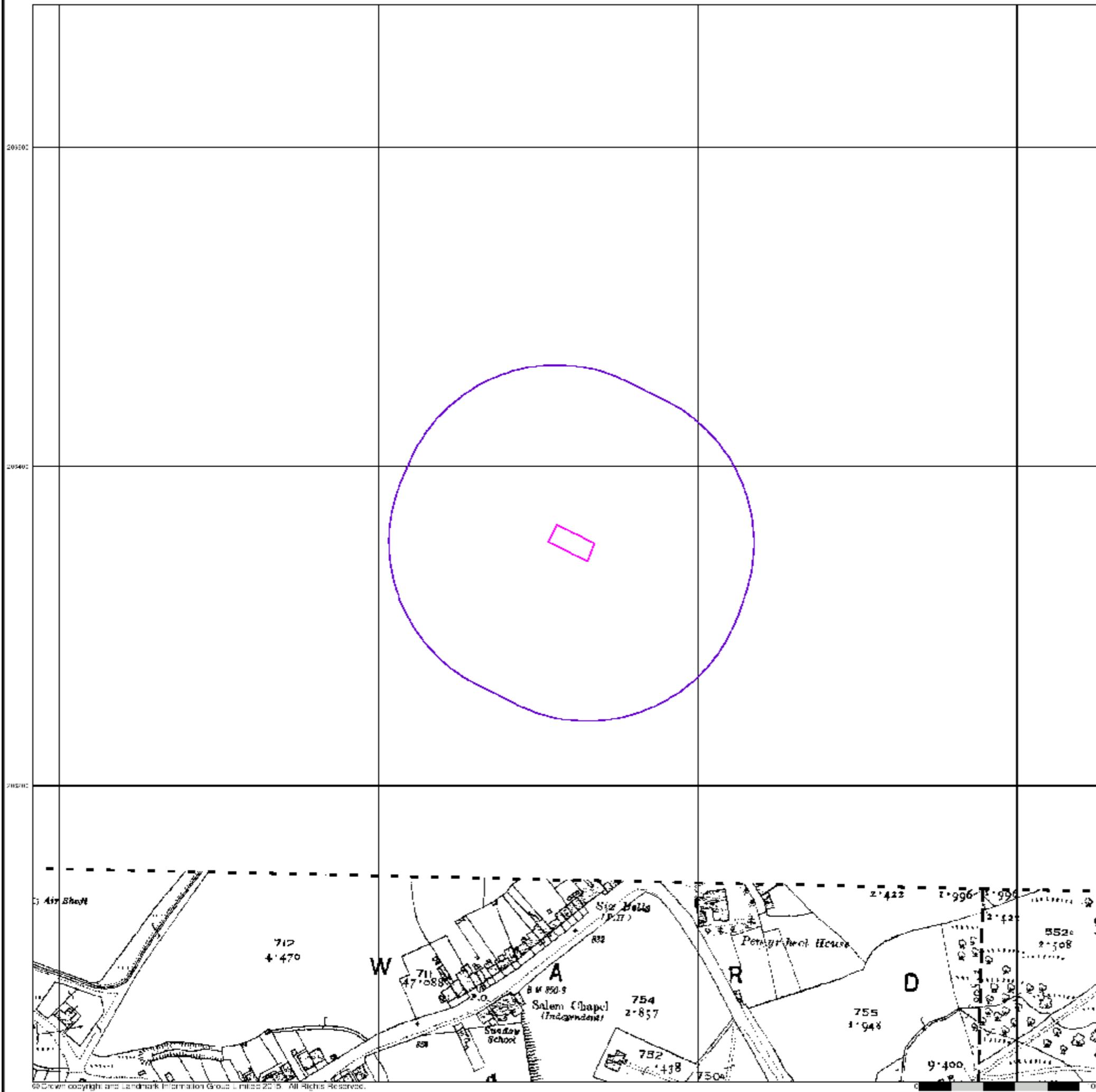
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Site Details

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**Ordnance Survey Plan
Published 1956 - 1982
Source map scale - 1:1,250**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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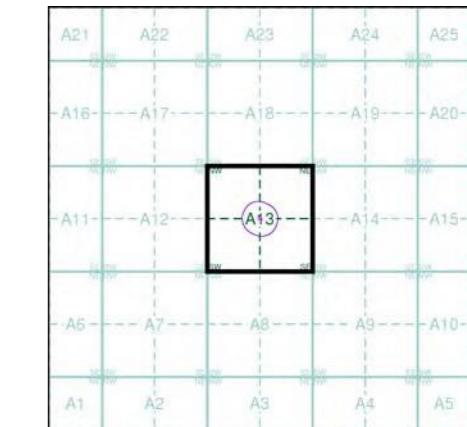
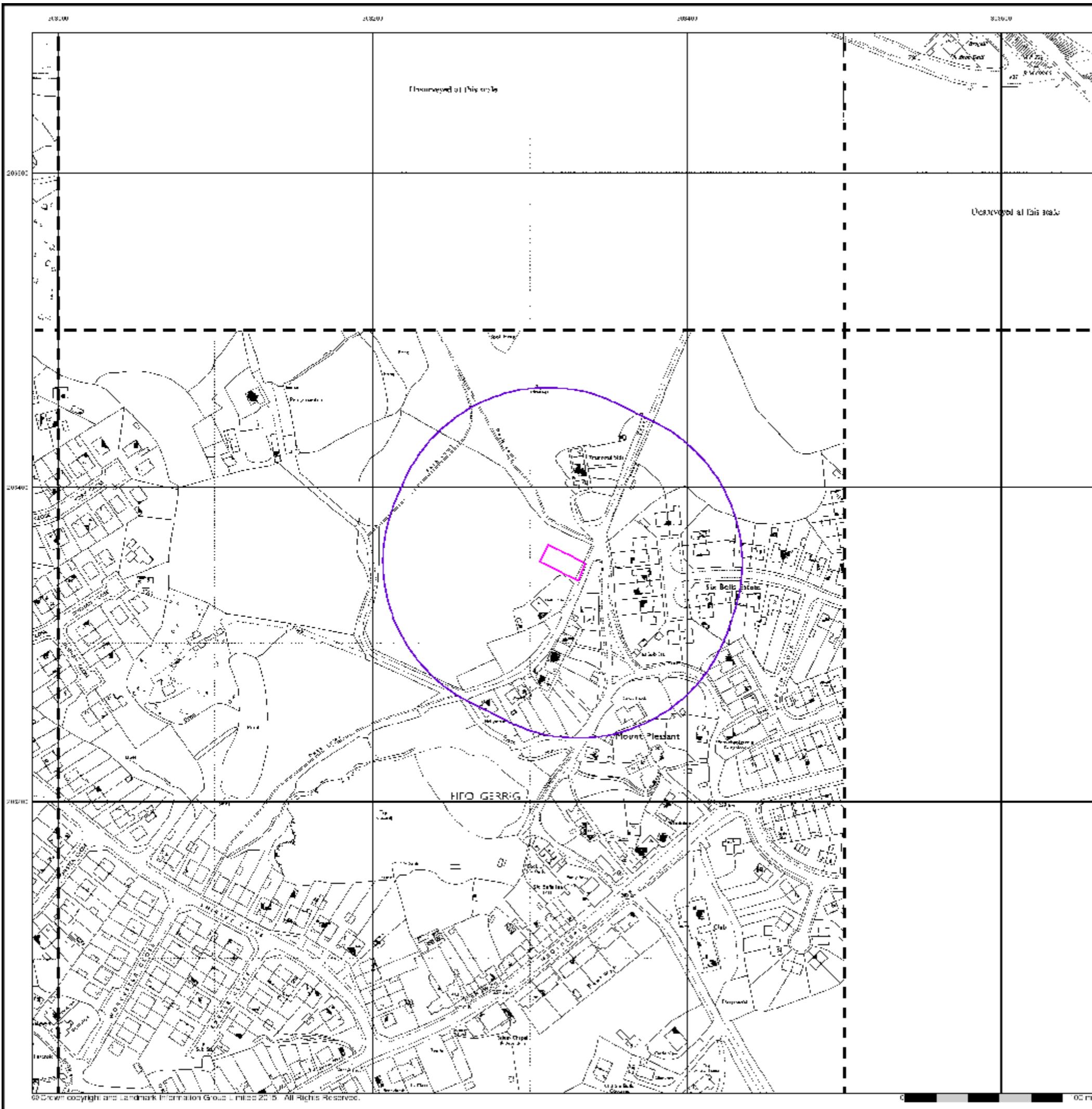
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Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

Site at 303250, 206350



Ordnance Survey Plan

Published 1964

Source map scale - 1:2,500

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Map Name(s) and Date(s)

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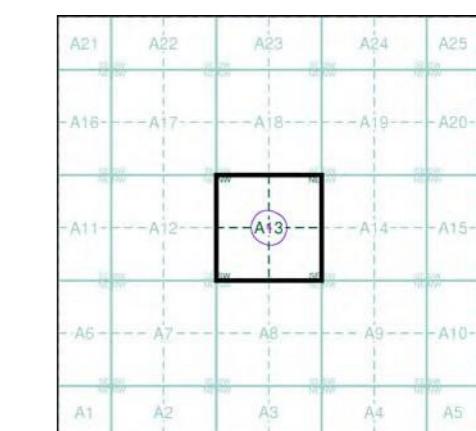
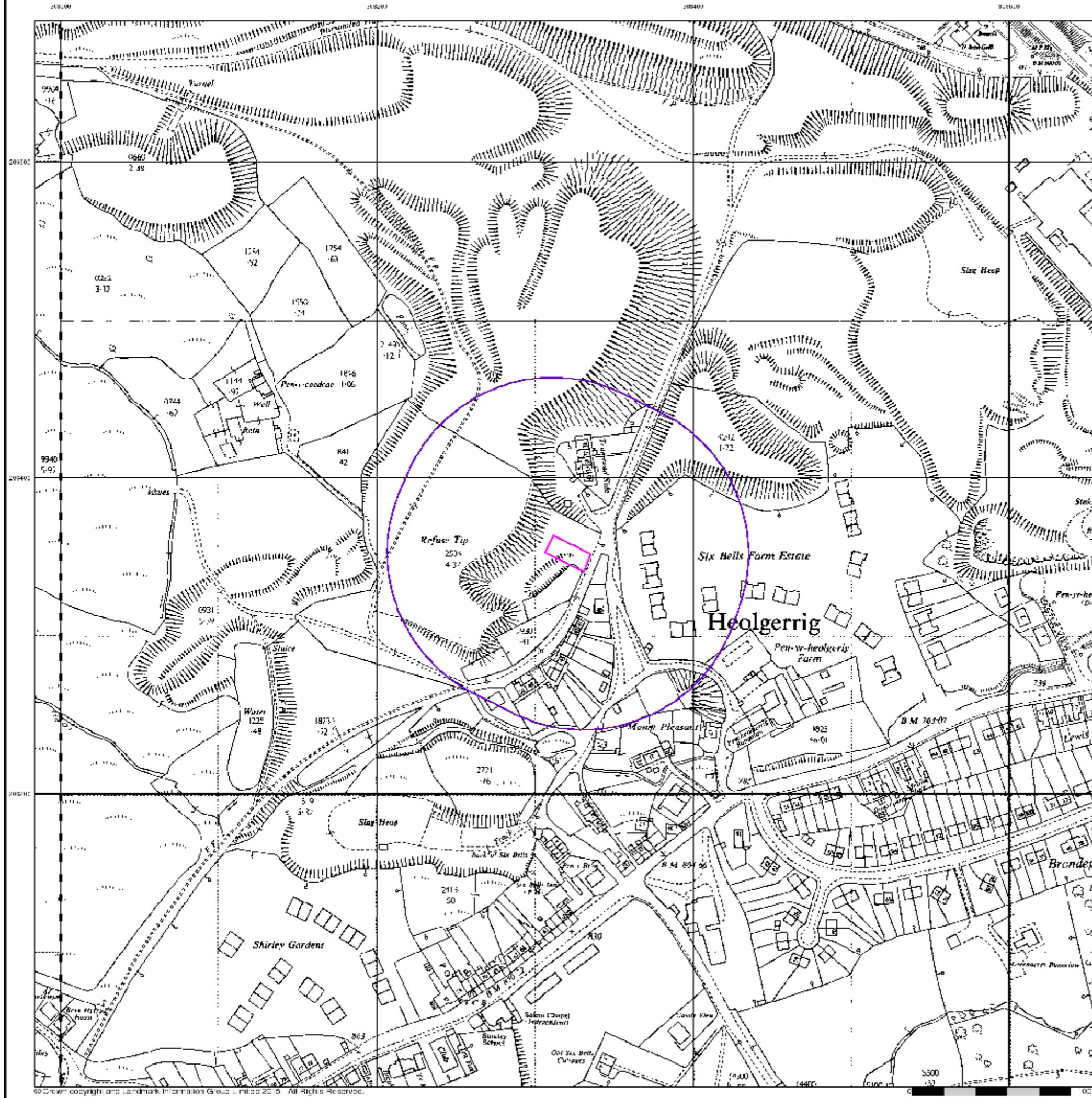
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Search Buffer (m): 100

Site Details

Site at 303250, 206350



Ordnance Survey Plan

Published 1975

Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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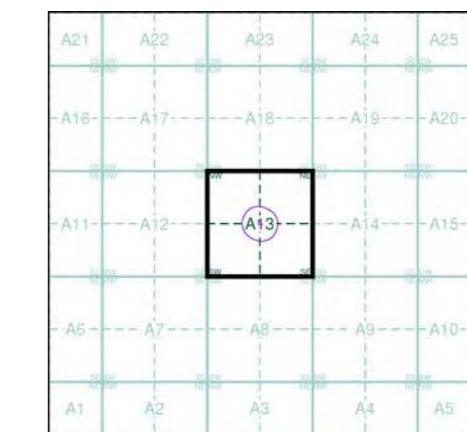
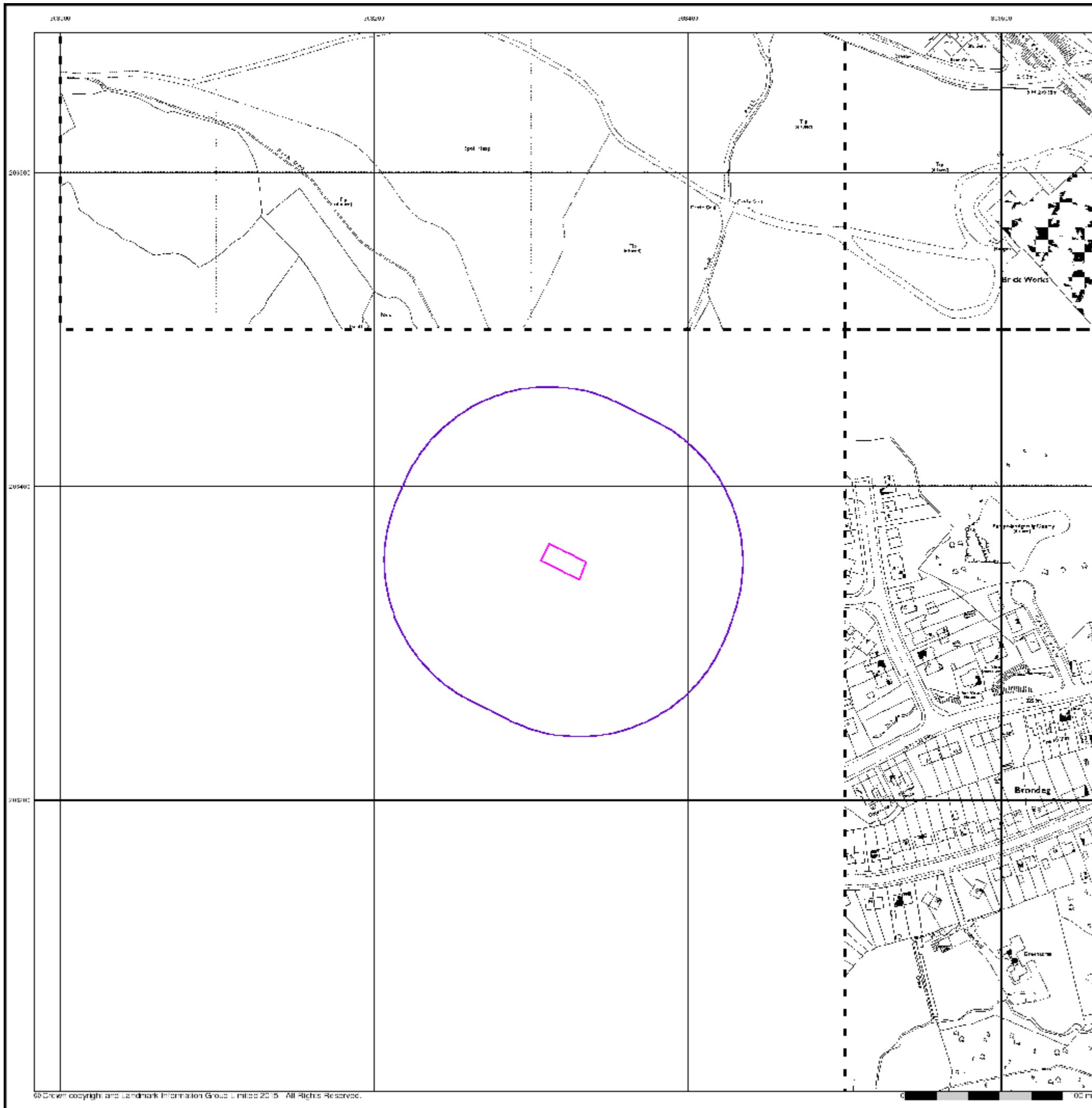
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Site Details

Site at 303250, 206350



Additional SIMs

Published 1984 - 1990

Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13

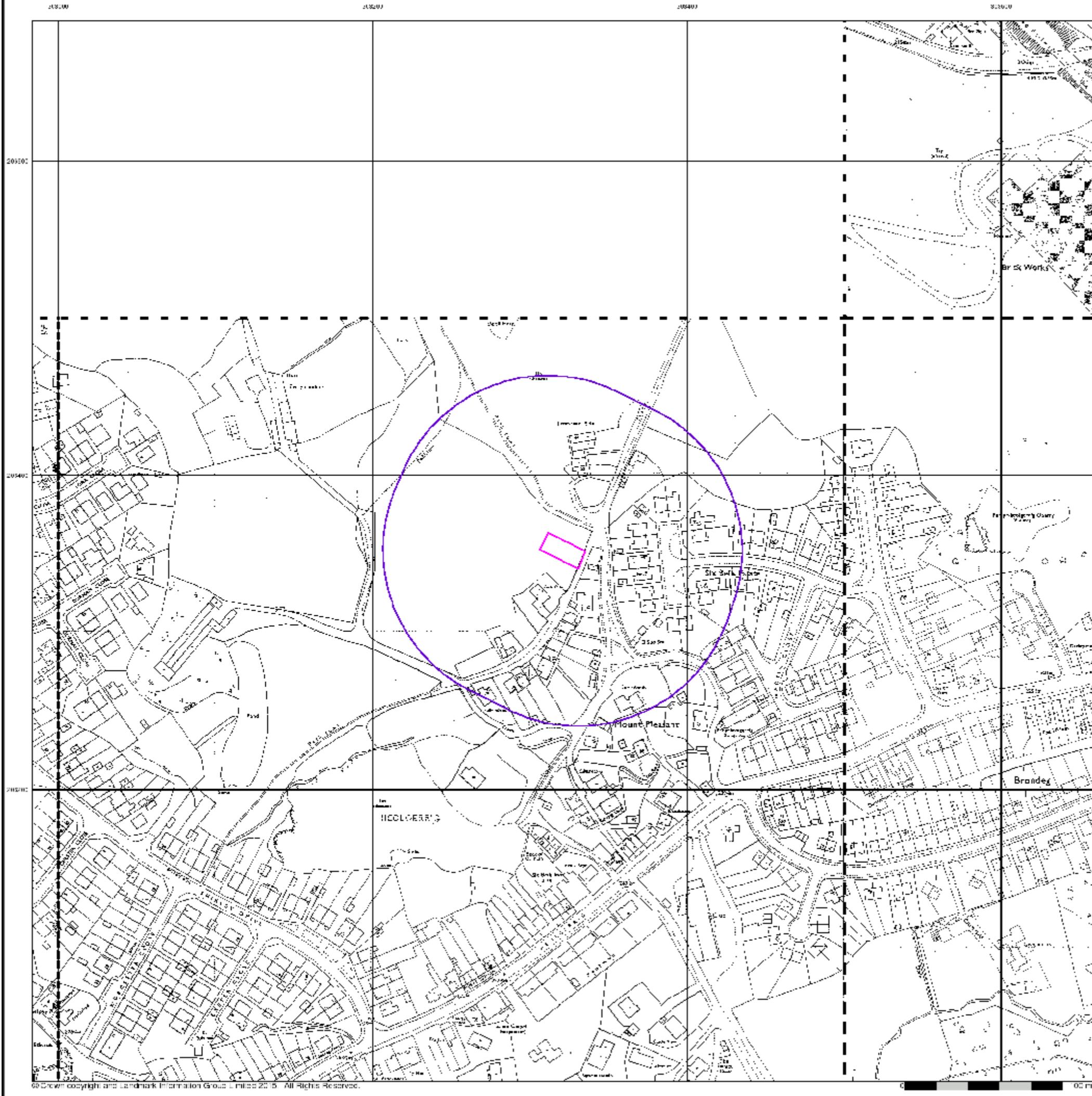
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Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

Site at 303250, 206350



Additional SIMs

Published 1988

Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13

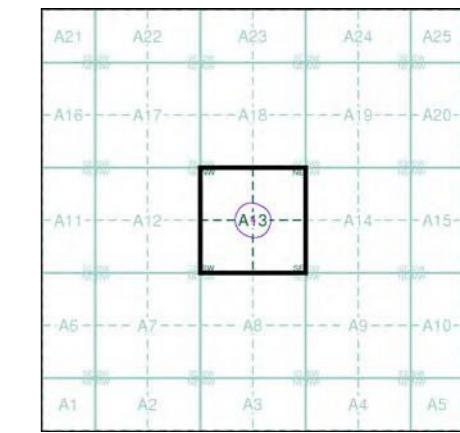
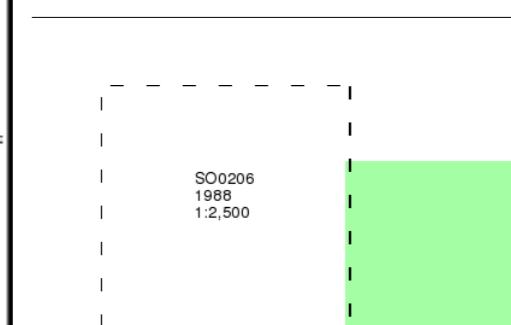
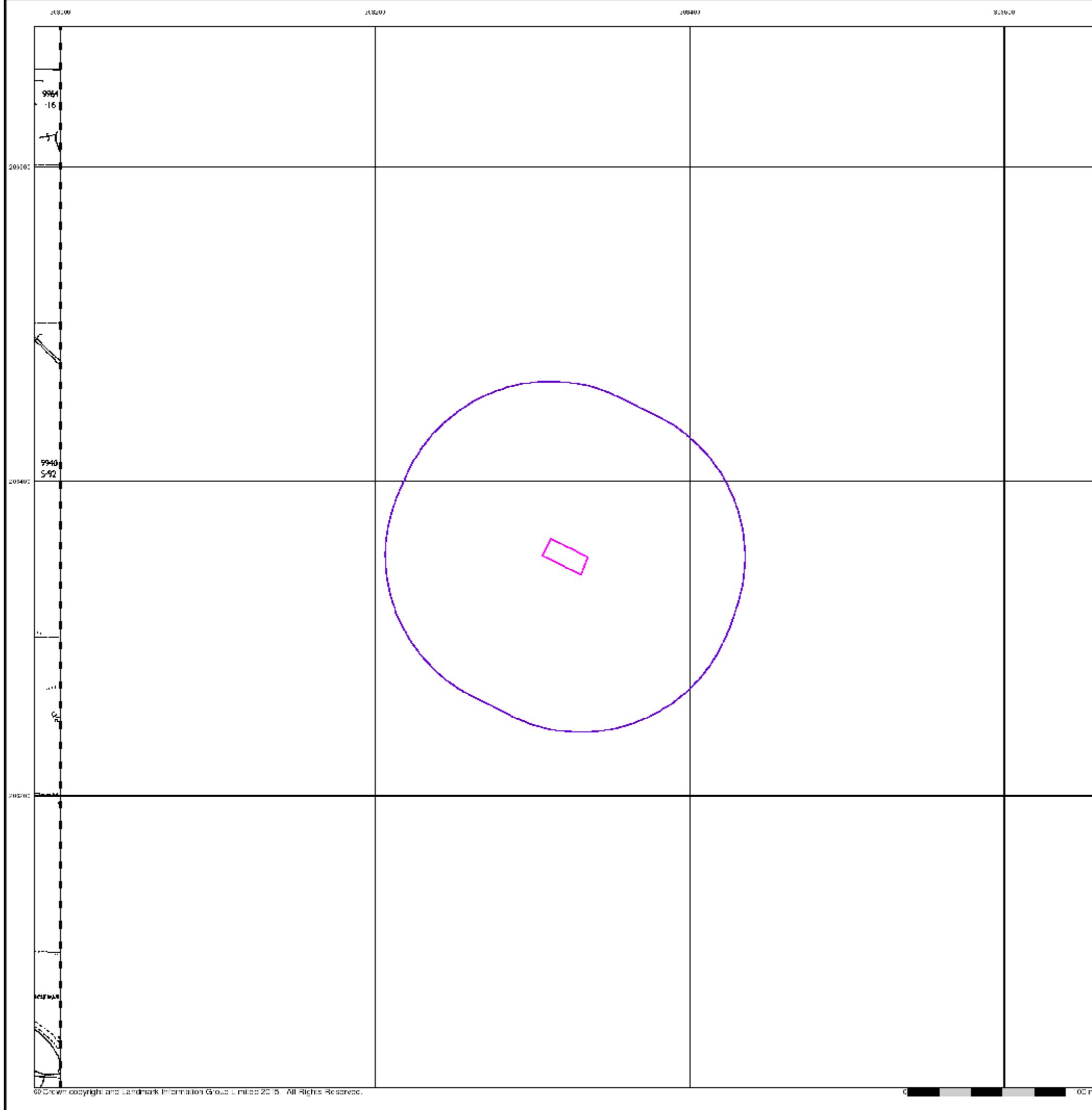
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Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

Site at 303250, 206350



Large-Scale National Grid Data

Published 1993

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13

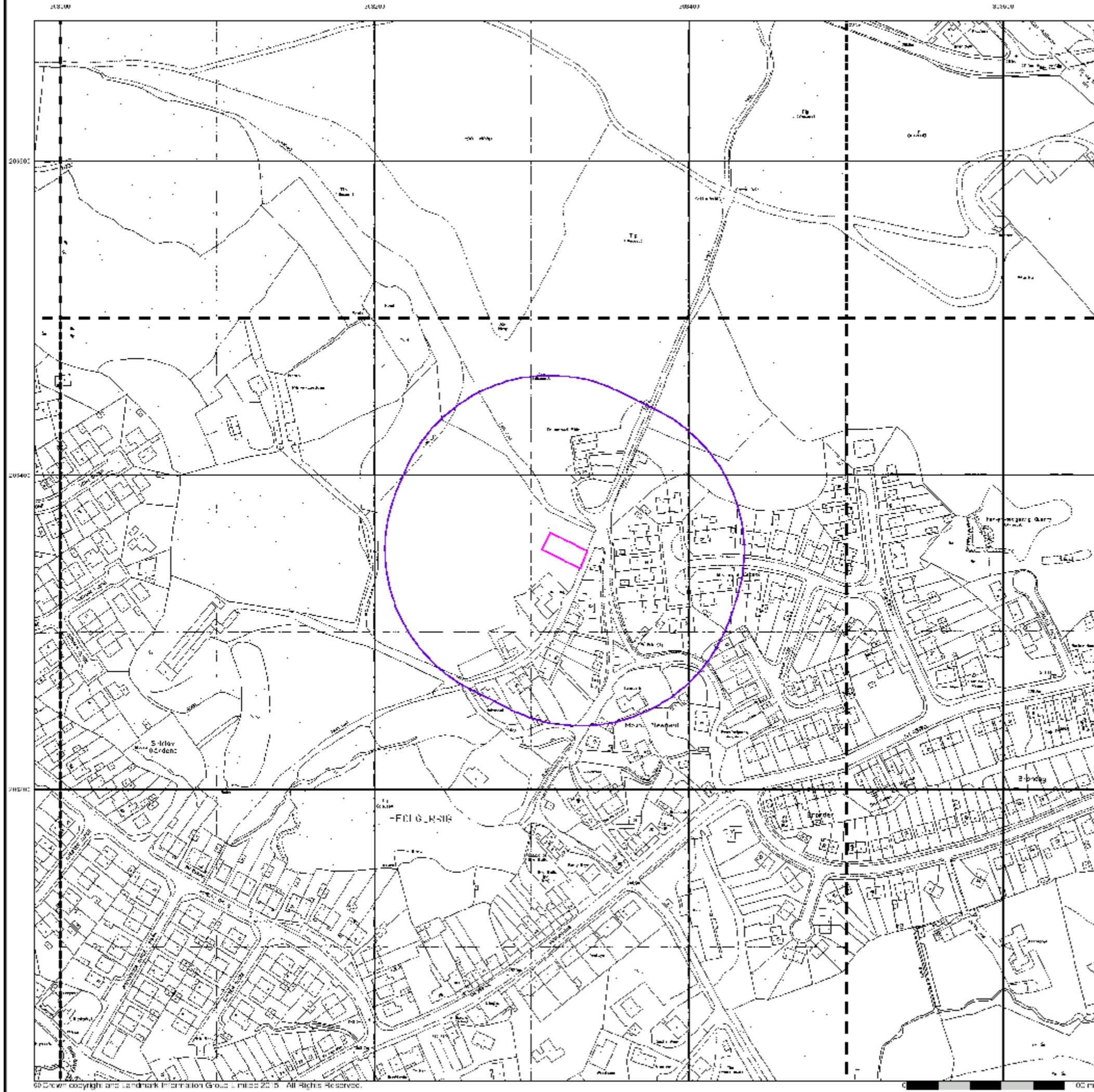
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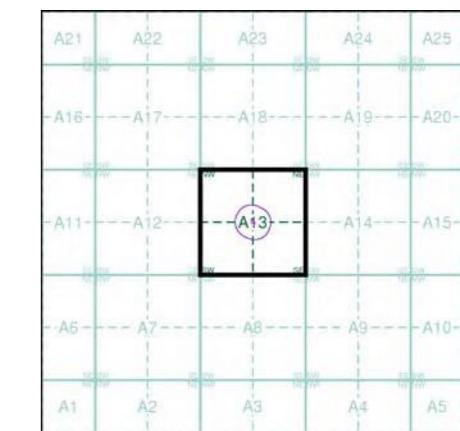
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Site Area (Ha): 0.04
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Site Details

Site at 303250, 206350



SO0206NE 1993 1:1,250	SO0306NW 1993 1:1,250	SO0306NE 1993 1:1,250
SO0206SE 1993 1:1,250	SO0306SW 1993 1:1,250	SO0306SE 1993 1:1,250



Large-Scale National Grid Data

Published 1994 - 1995

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13

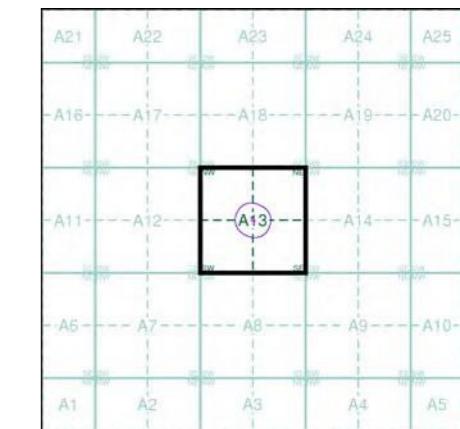
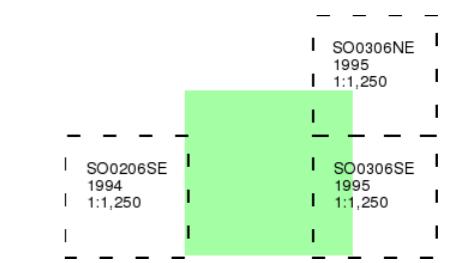
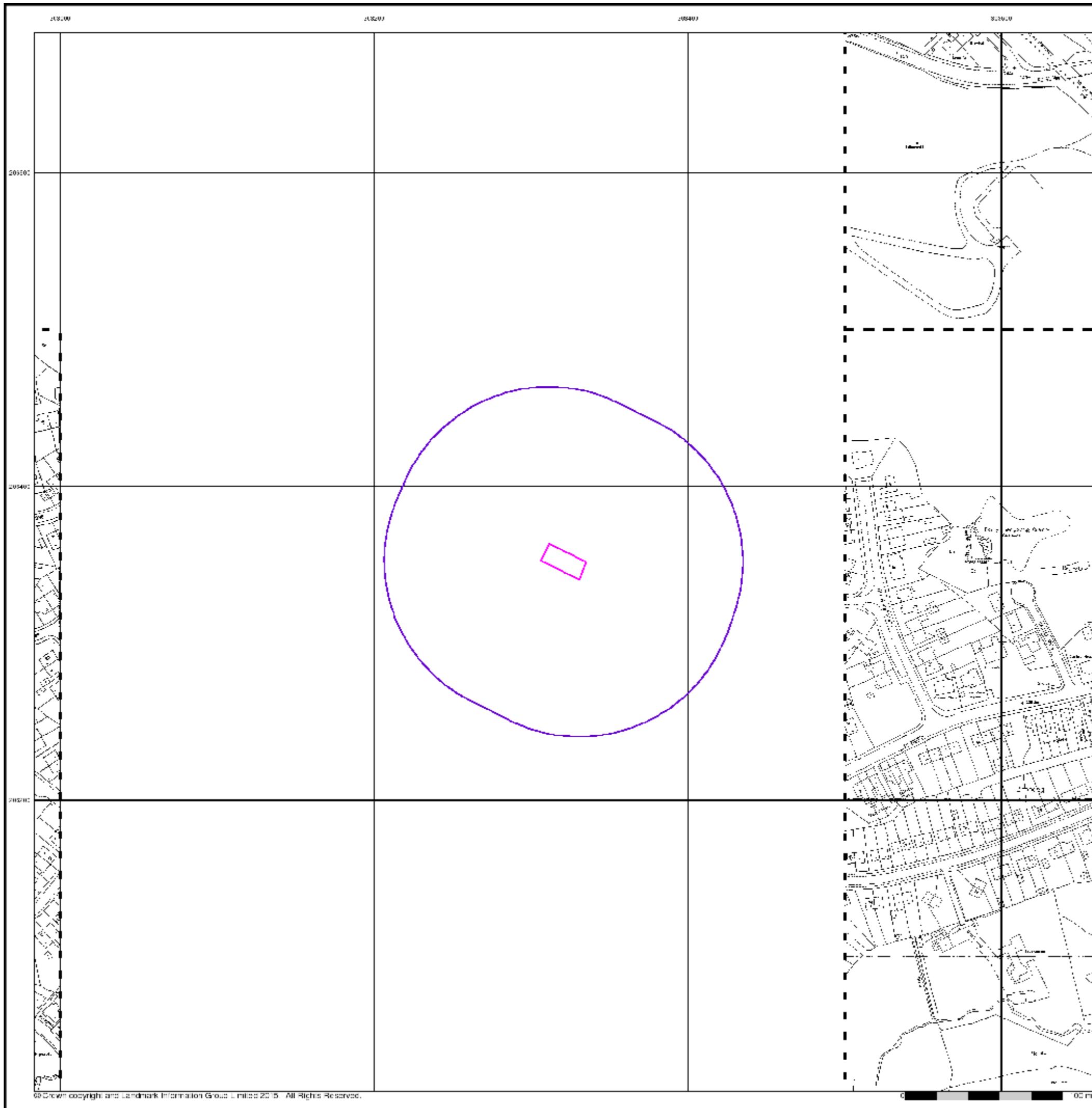
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 100

Site Details

Site at 303250, 206350



Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Ordnance Survey Plan 1:10,000

1:10,000 Raster Mapping

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Brecknockshire	1:10,560	1884	2
Glamorganshire	1:10,560	1885	3
Glamorganshire	1:10,560	1901	4
Brecknockshire	1:10,560	1905	5
Brecknockshire	1:10,560	1921 - 1922	6
Brecknockshire	1:10,560	1938 - 1951	7
Historical Aerial Photography	1:10,560	1945	8
Brecknockshire	1:10,560	1951	9
Ordnance Survey Plan	1:10,000	1965	10
Ordnance Survey Plan	1:10,000	1979	11
Ordnance Survey Plan	1:10,000	1992	12
10K Raster Mapping	1:10,000	1999	13
Historical Aerial Photography	1:10,000	2000	14
10K Raster Mapping	1:10,000	2006	15
VectorMap Local	1:10,000	2016	16

Historical Map - Slice A

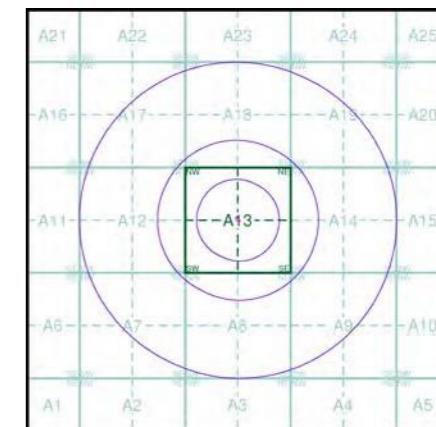
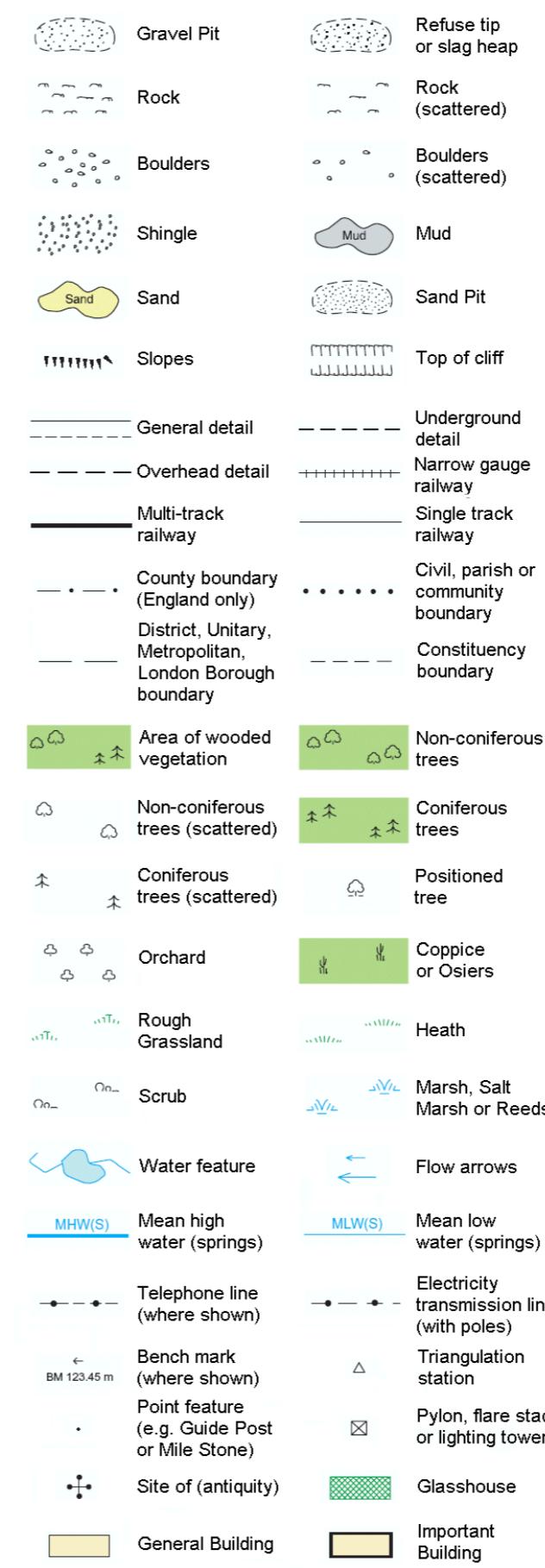
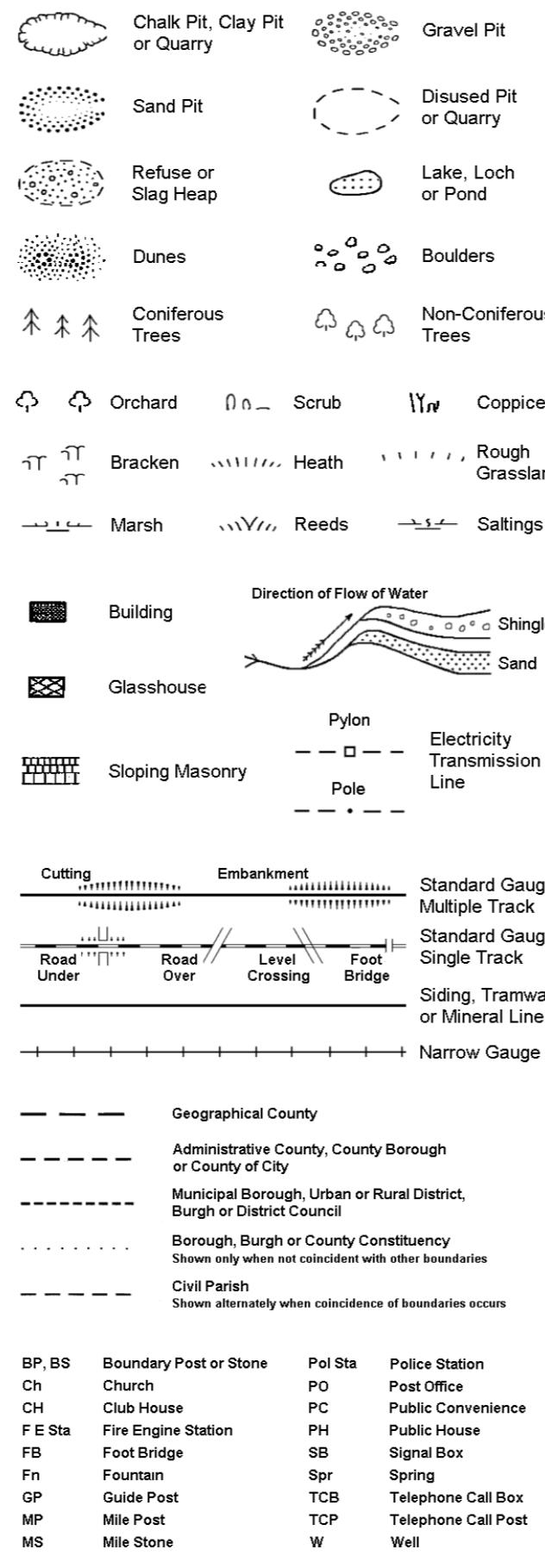
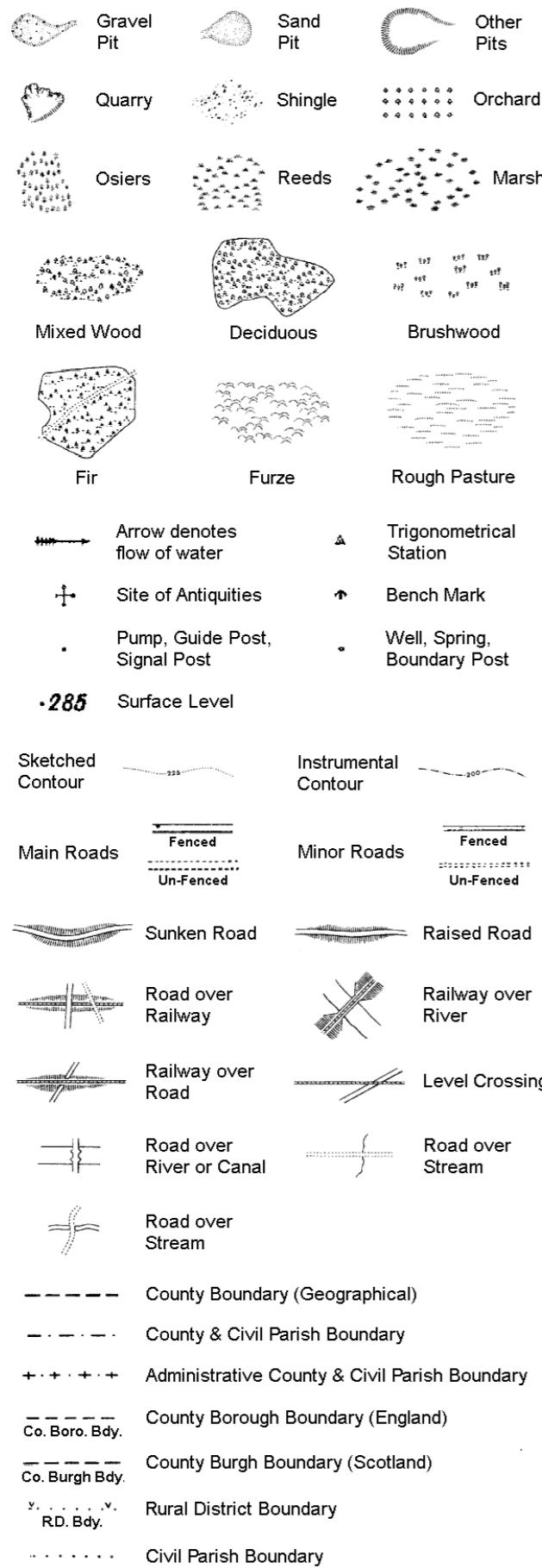
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Brecknockshire

Published 1884

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

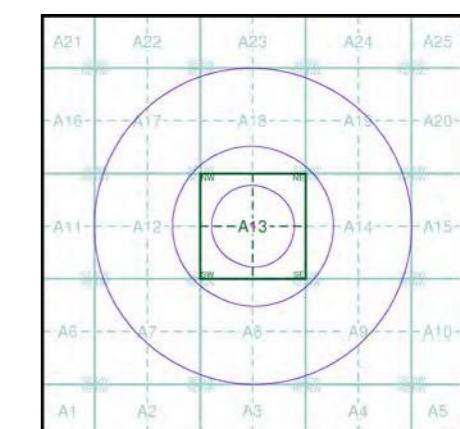
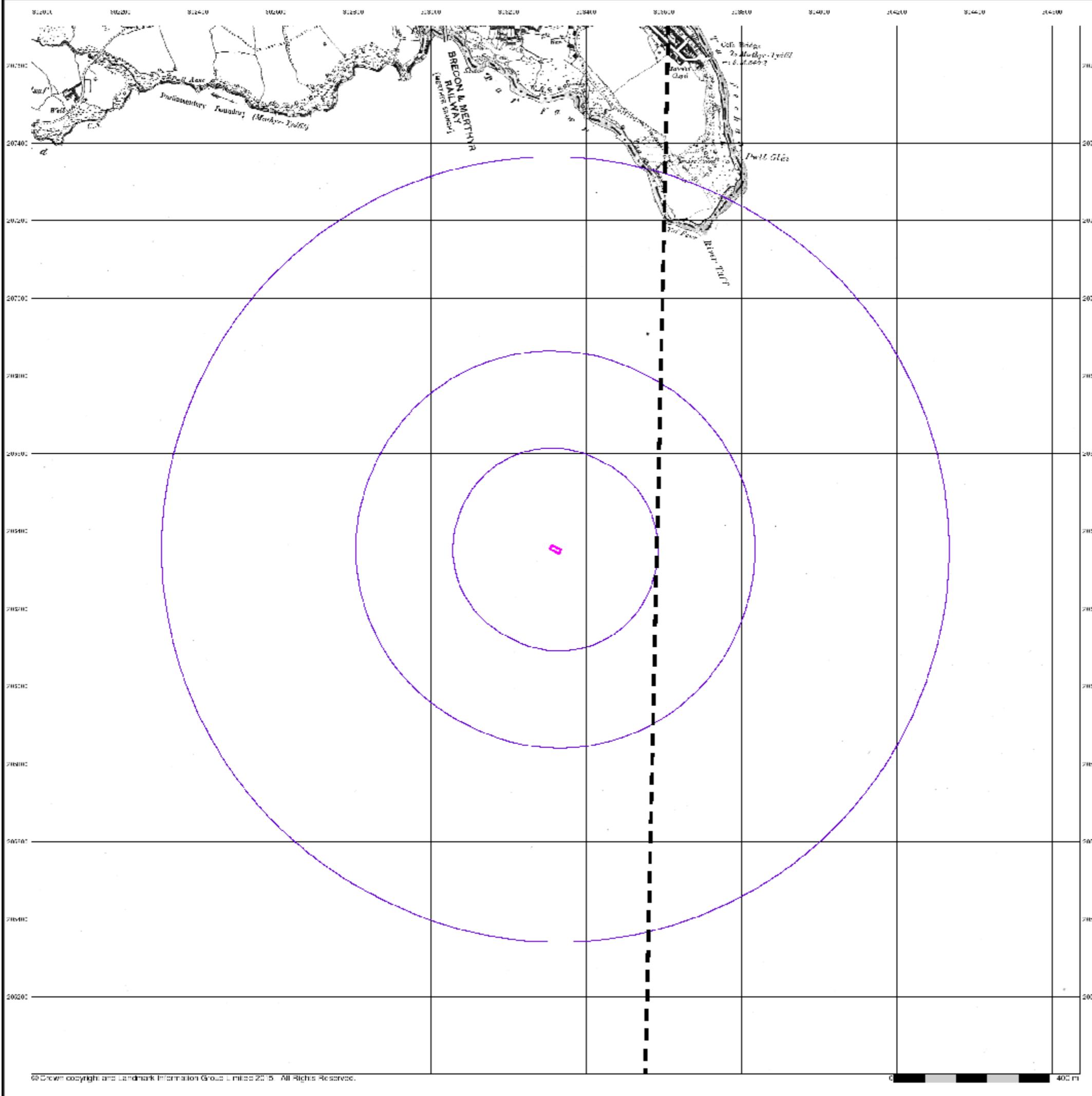
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Glamorganshire

Published 1885

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

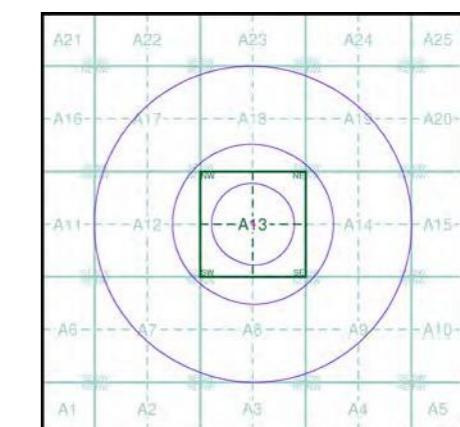
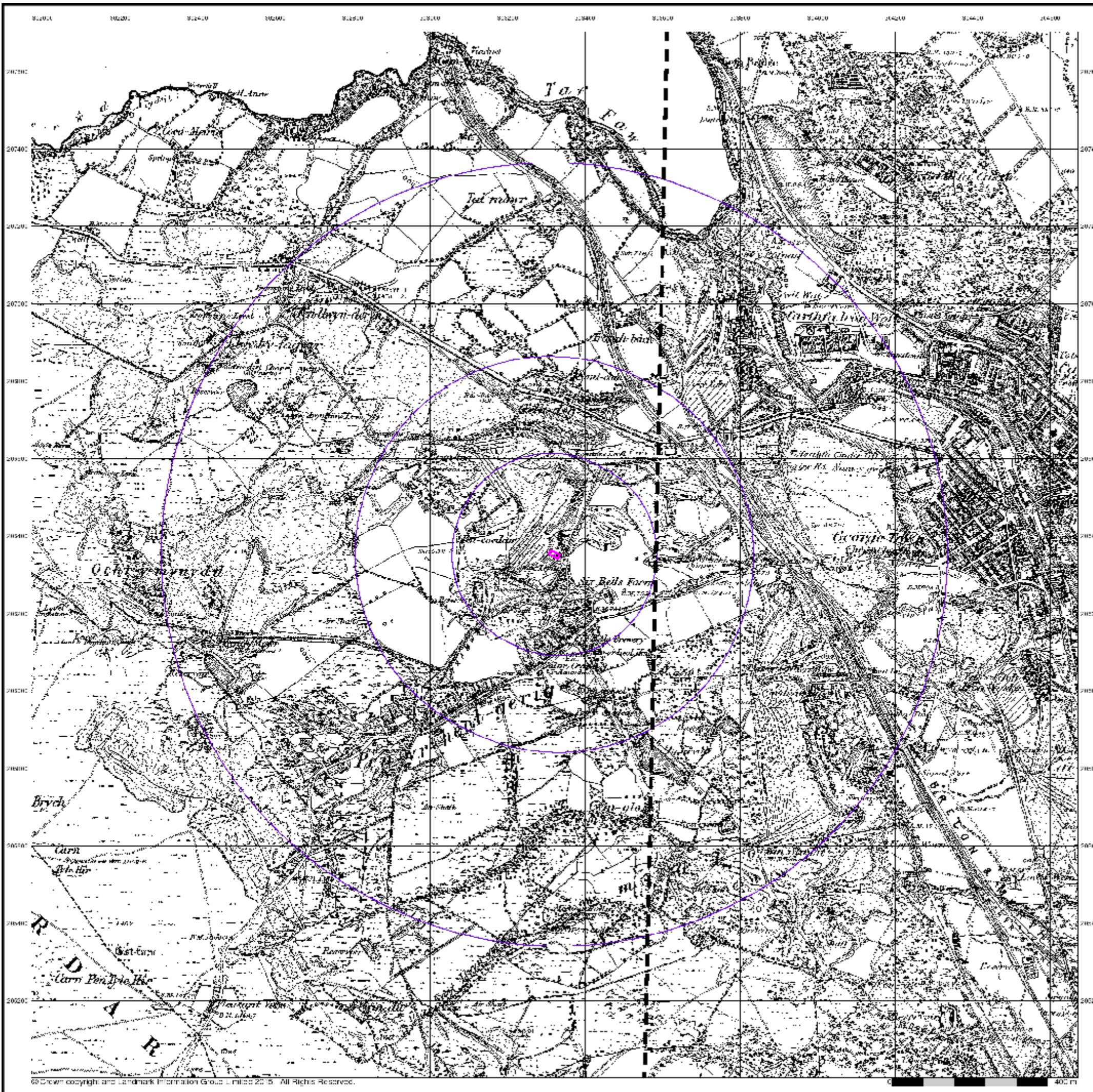
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Glamorganshire

Published 1901

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

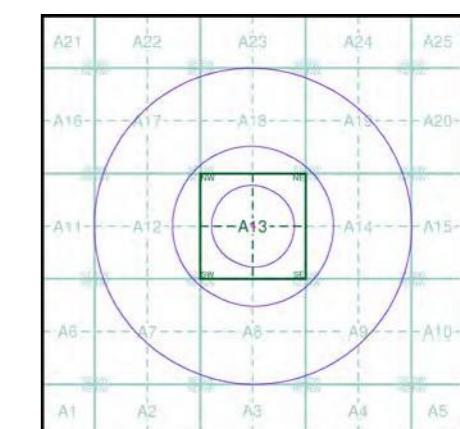
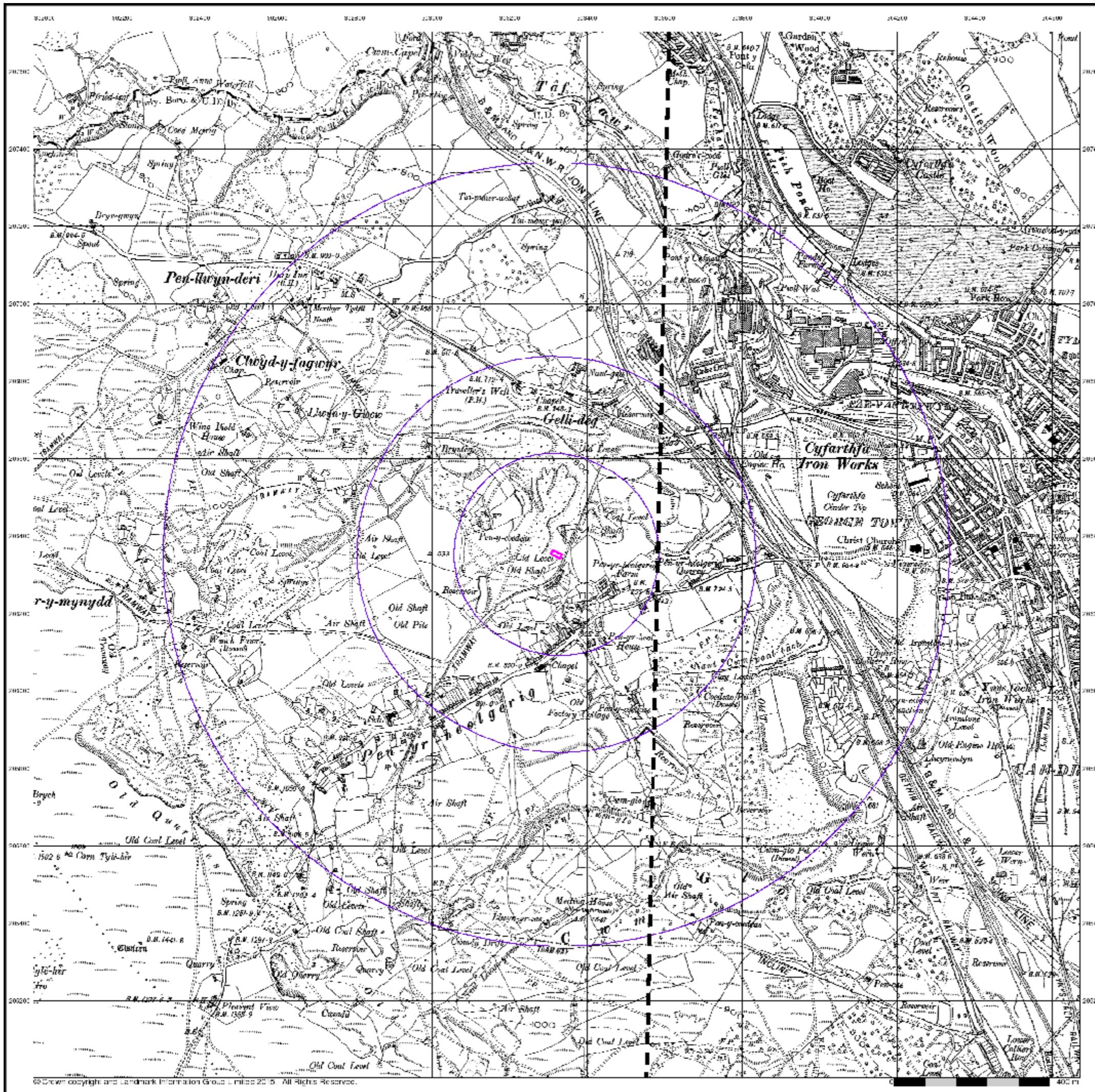
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Brecknockshire

Published 1905

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

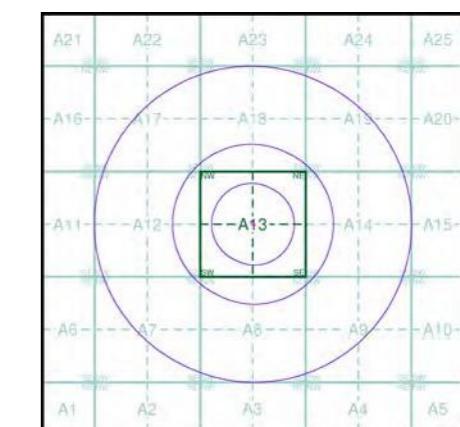
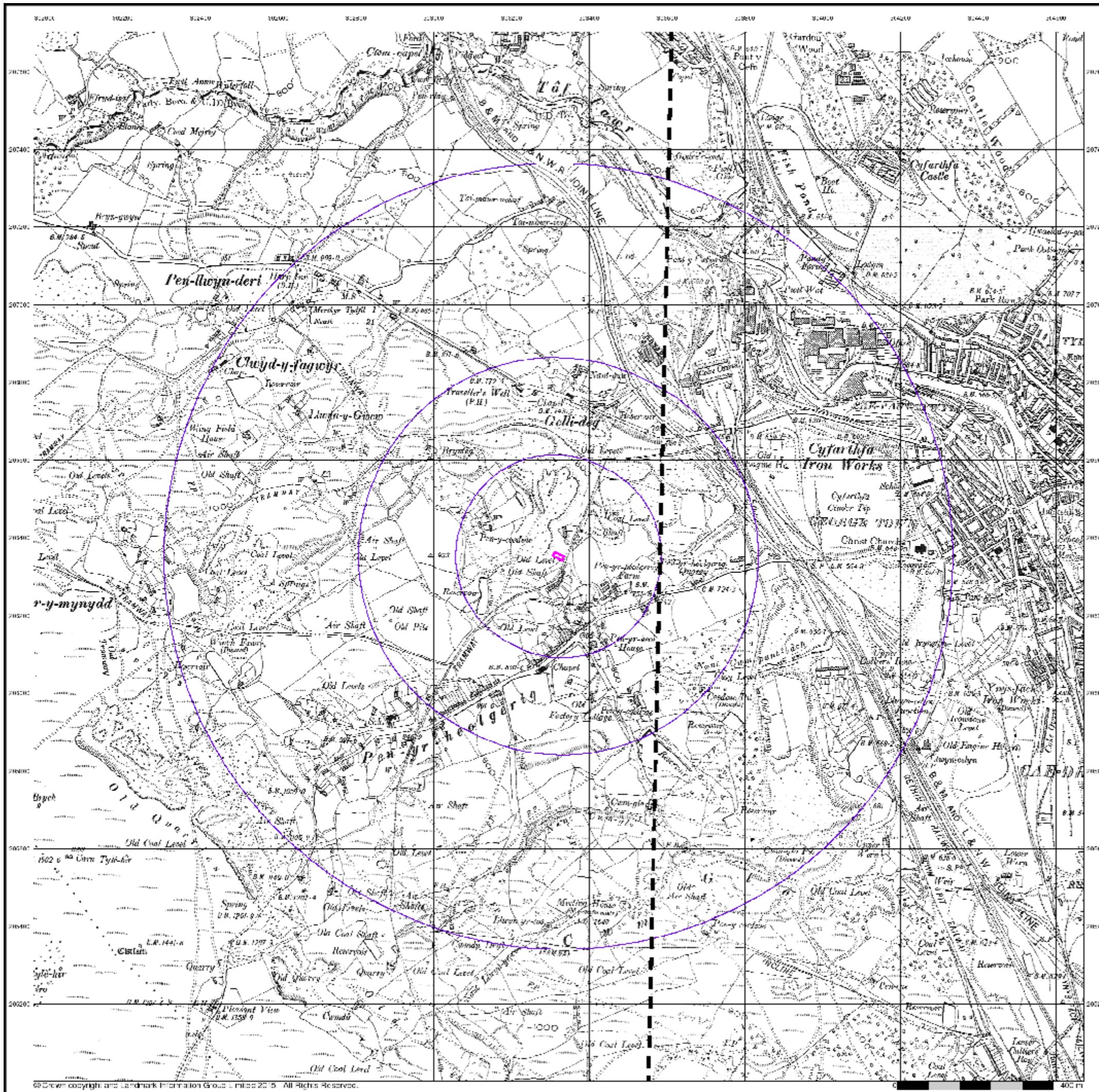
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Brecknockshire

Published 1921 - 1922

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

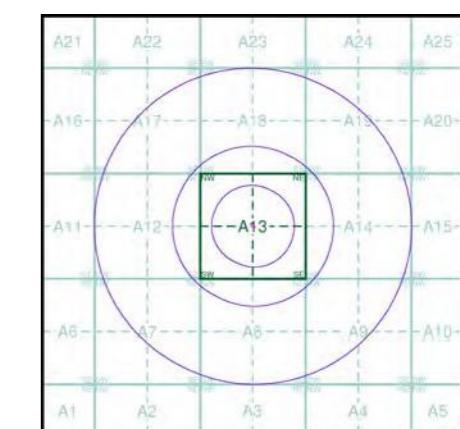
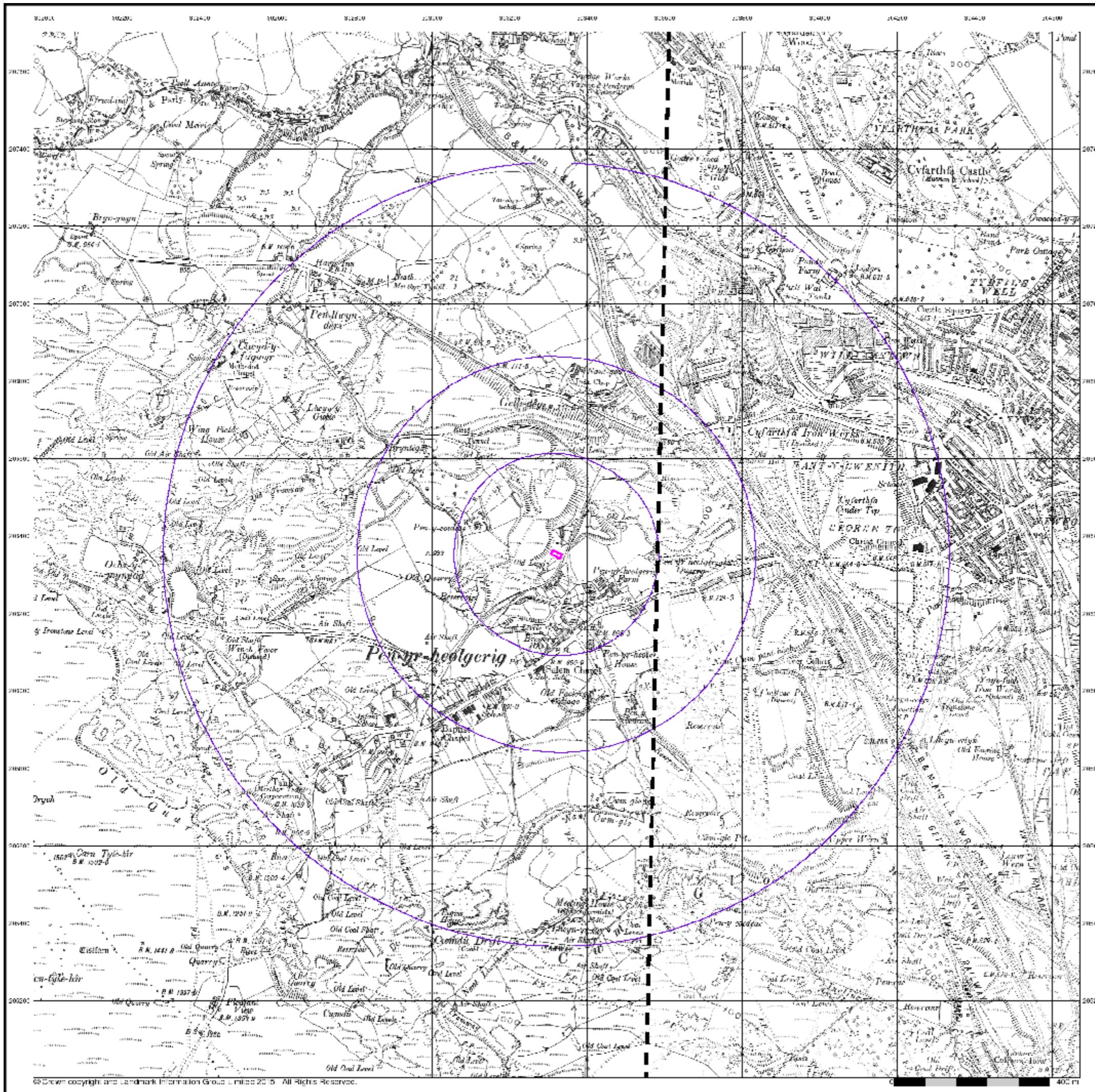
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Brecknockshire

Published 1938 - 1951

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

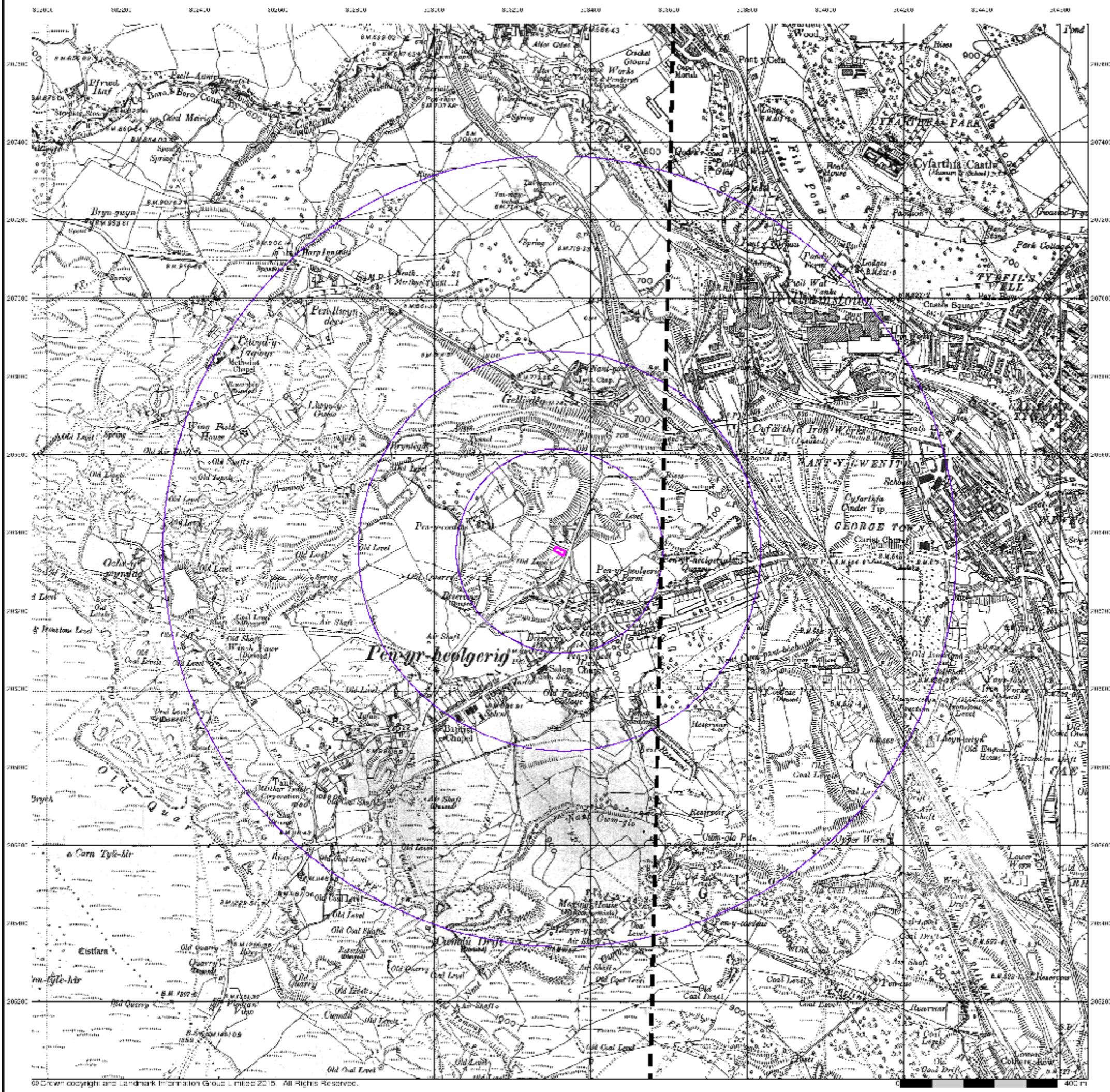
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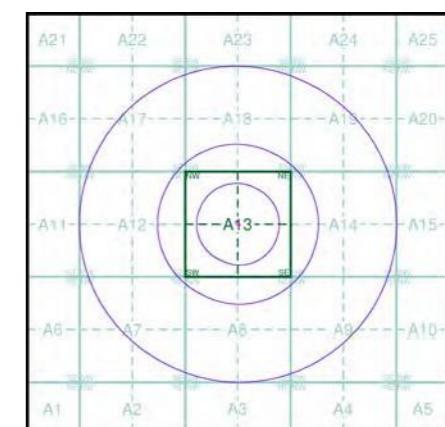
National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



051NW
 1951
 1:10,560



Historical Aerial Photography

Published 1945

Source map scale - 1:10,560

The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

© Landmark Information Group and/or Data Suppliers 2010.

Map Name(s) and Date(s)

Historical Aerial Photography - Slice A

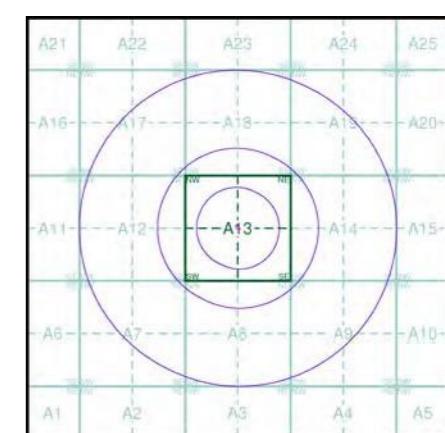
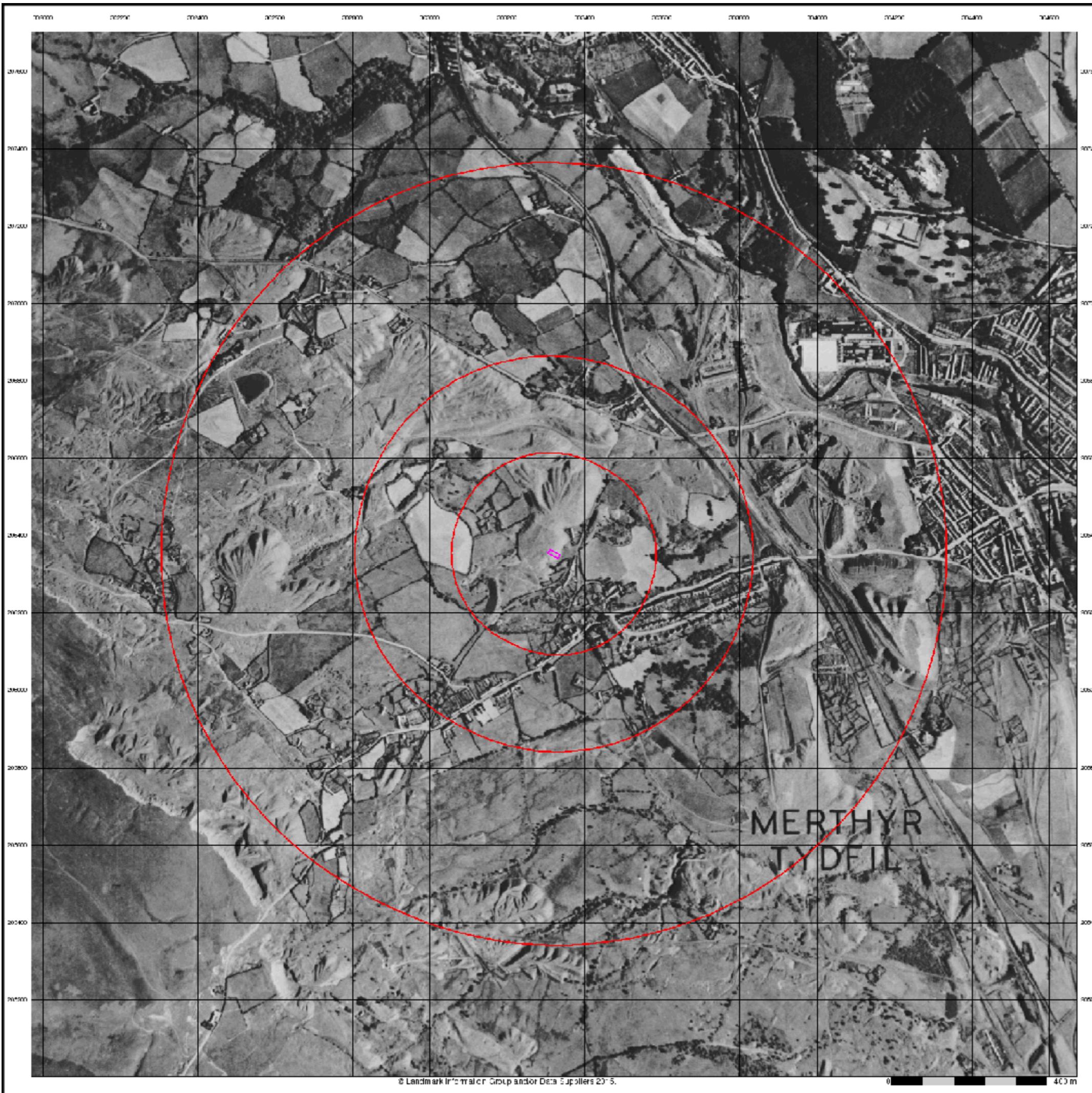
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



**BRITISH
LIBRARY**

Brecknockshire

Published 1951

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

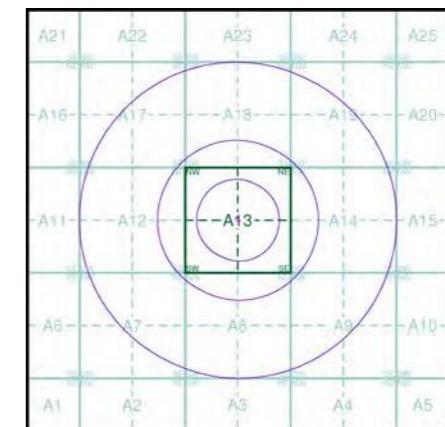
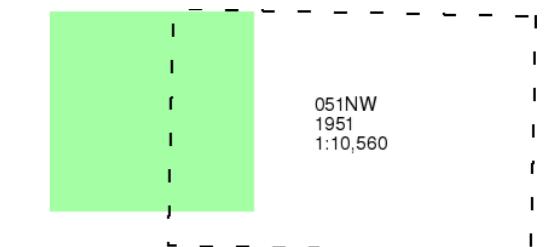
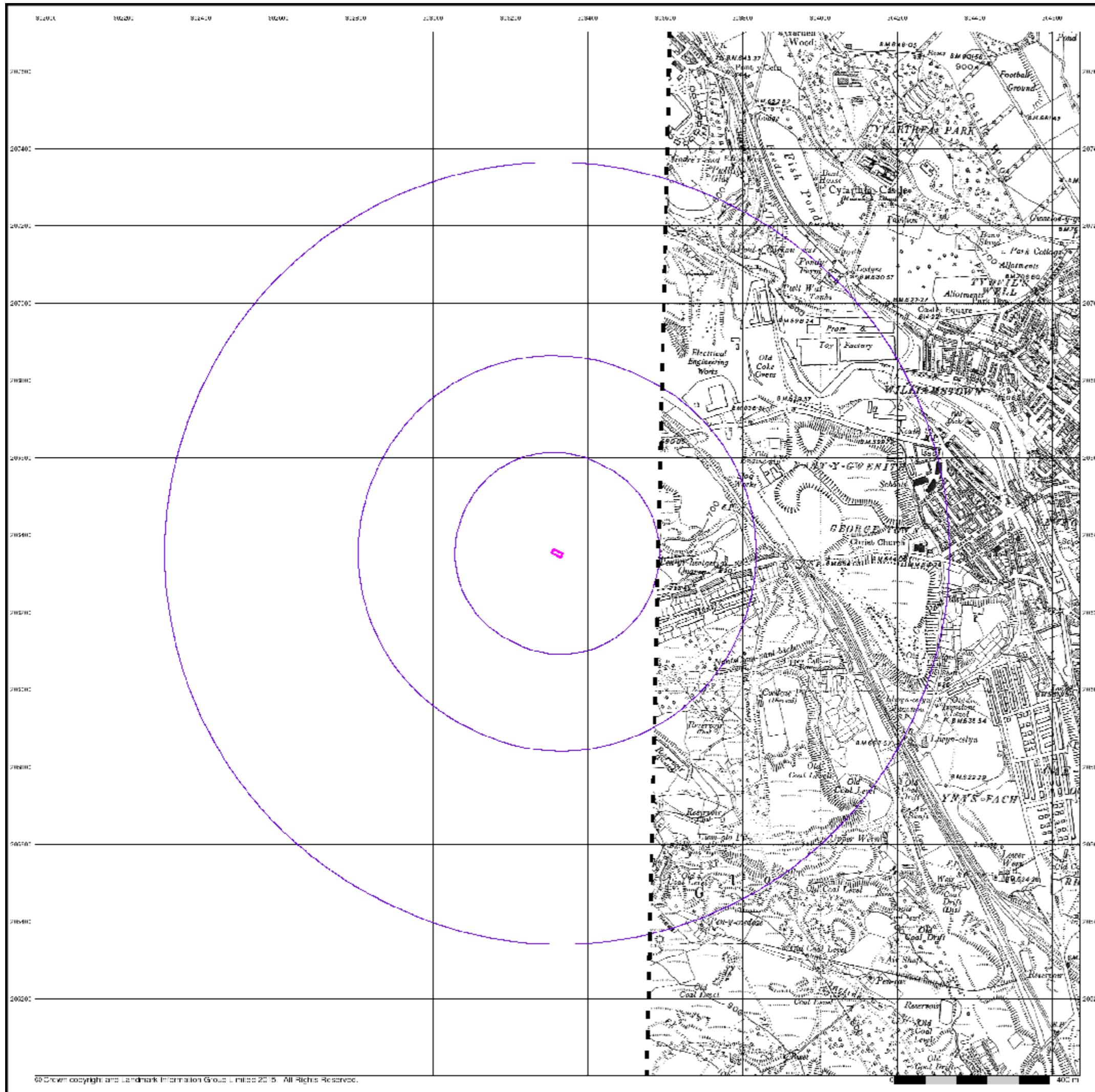
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Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Ordnance Survey Plan

Published 1965

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

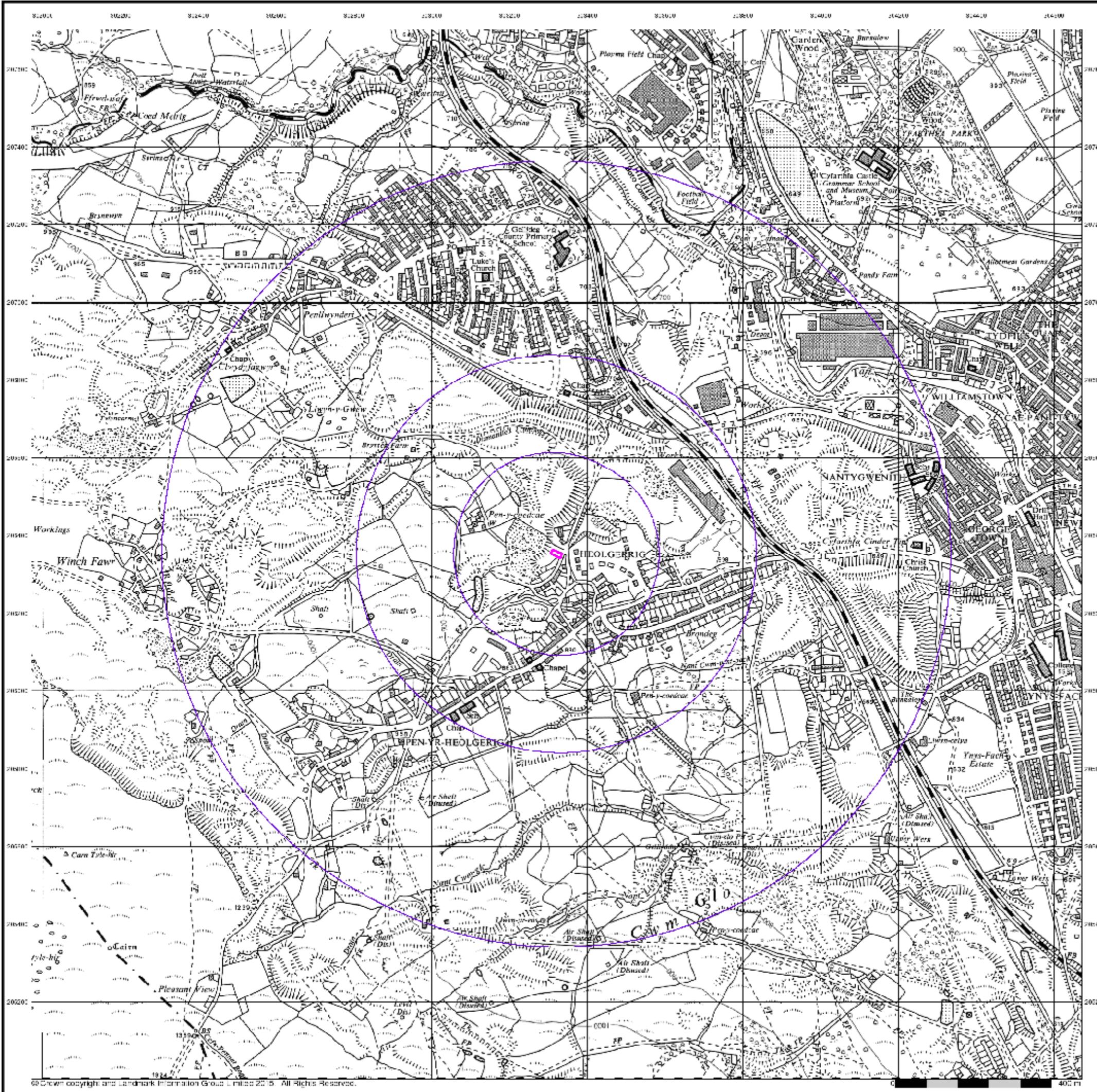
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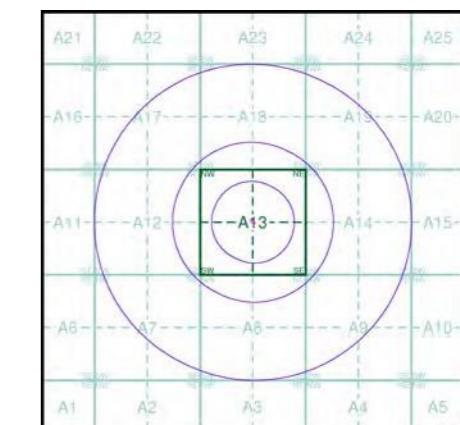
National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



SO00NW
1965
1:10,560



Ordnance Survey Plan

Published 1979

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

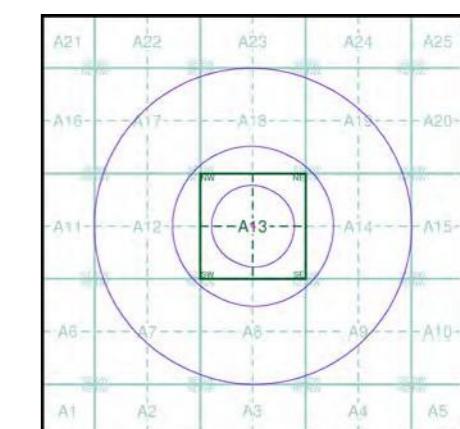
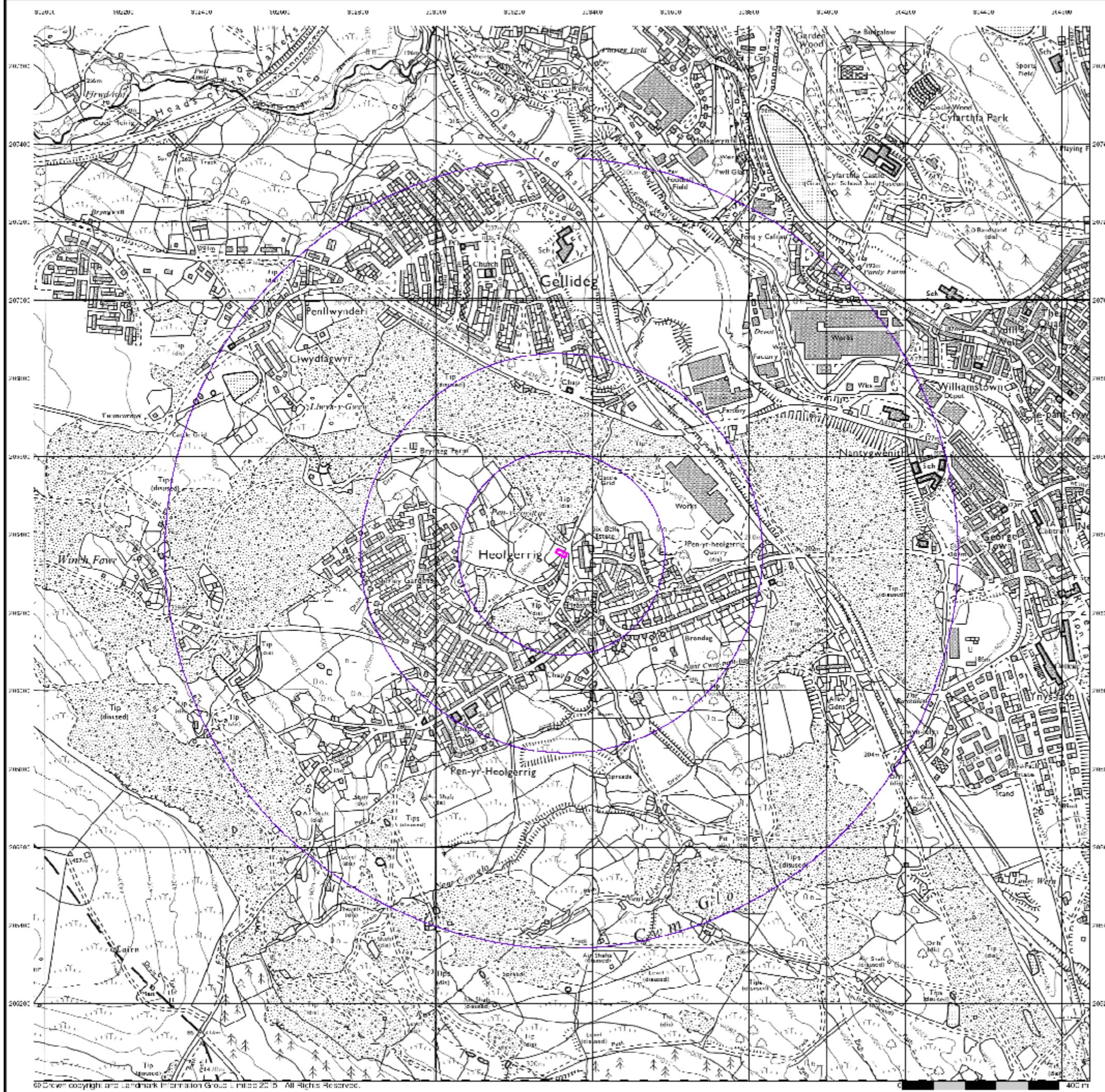
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Ordnance Survey Plan

Published 1992

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

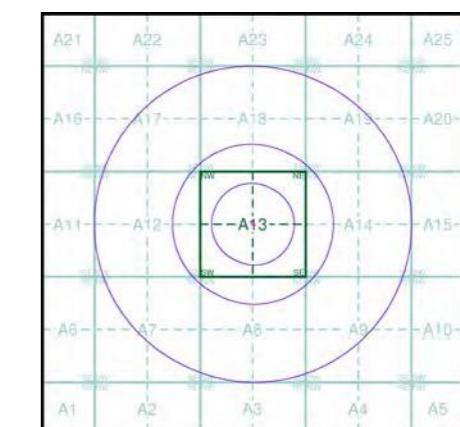
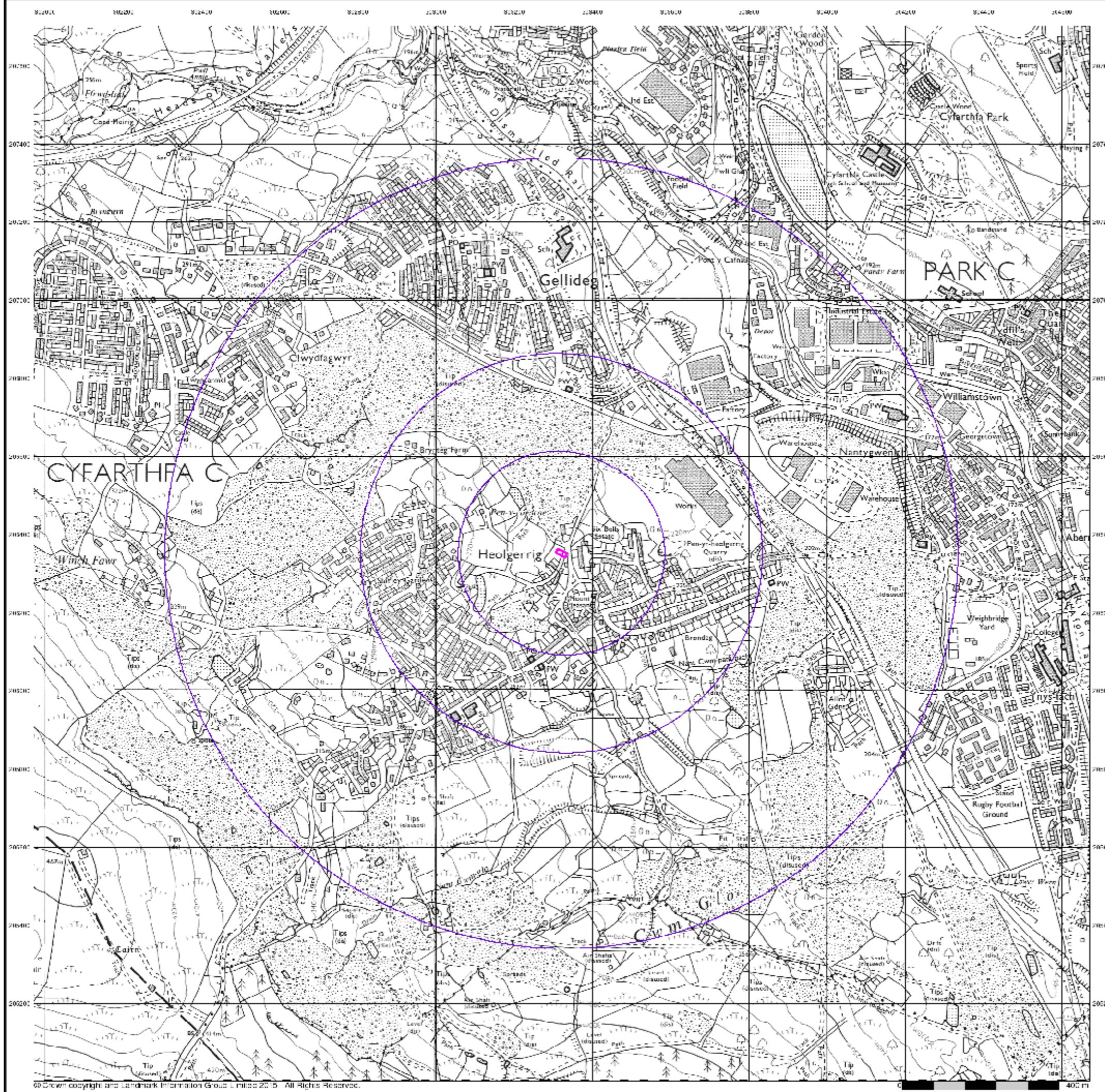
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



10k Raster Mapping

Published 1999

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

Historical Map - Slice A

Order Details

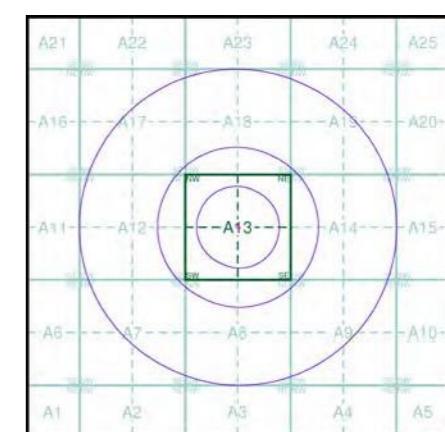
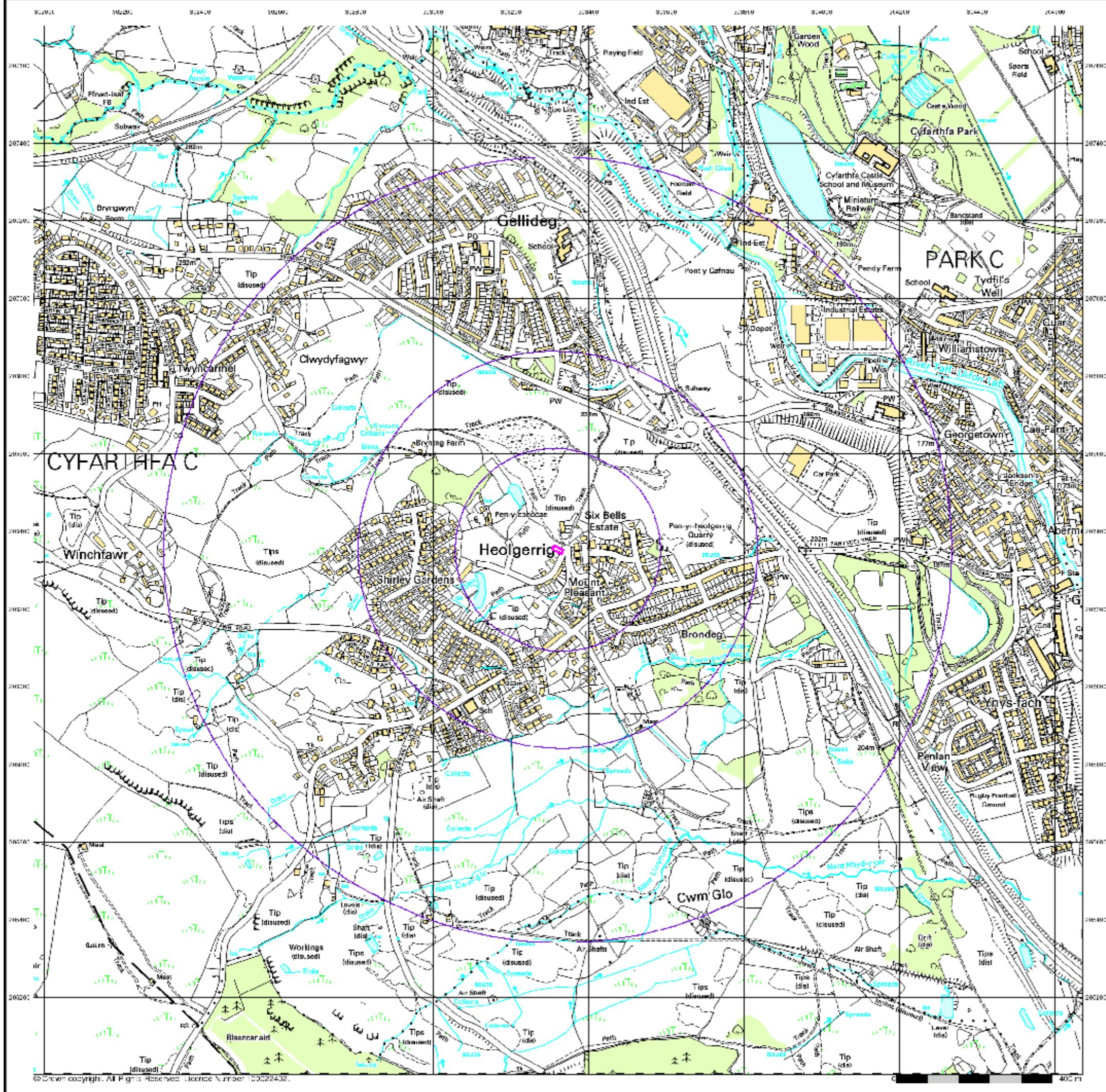
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Customer Ref: 13741

National Grid Reference: 303320, 206350

Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



Historical Aerial Photography Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Slice A

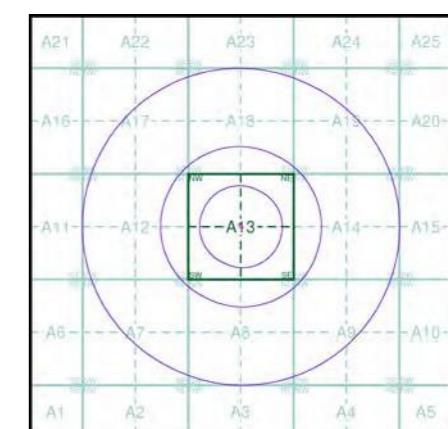
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Customer Ref: 13741

National Grid Reference: 303320, 206350
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Search Buffer (m): 1000

Site Details

Site at 303250, 206350



10k Raster Mapping

Published 2006

Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

Historical Map - Slice A

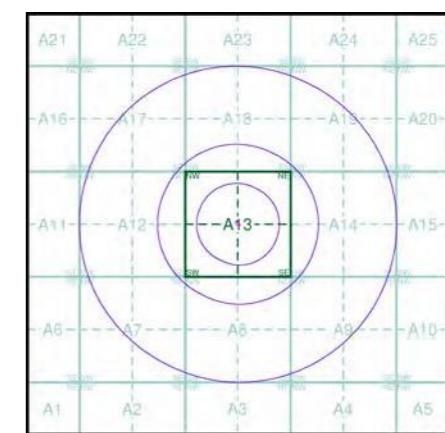
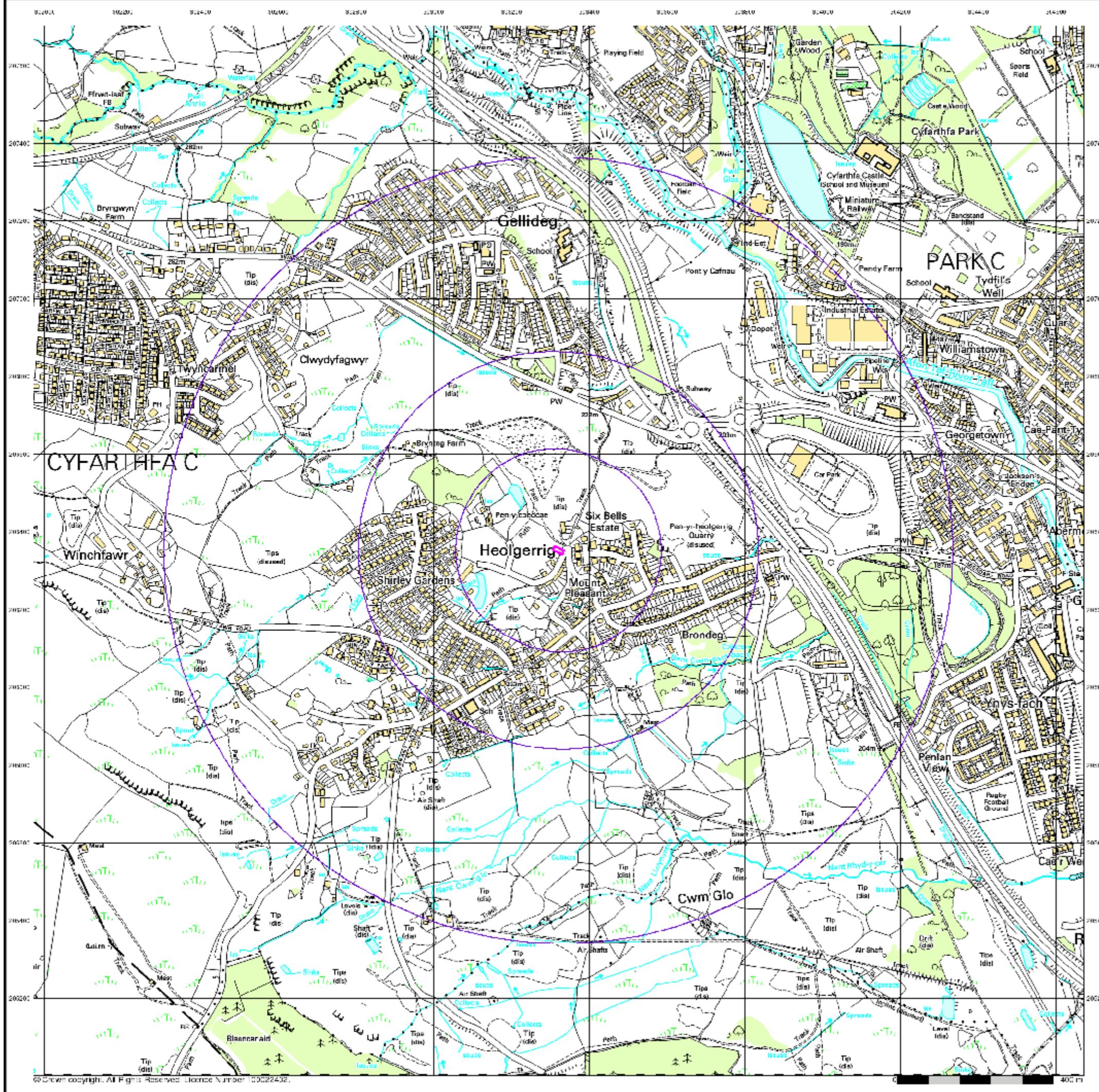
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



VectorMap Local

Published 2016

Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

Historical Map - Slice A

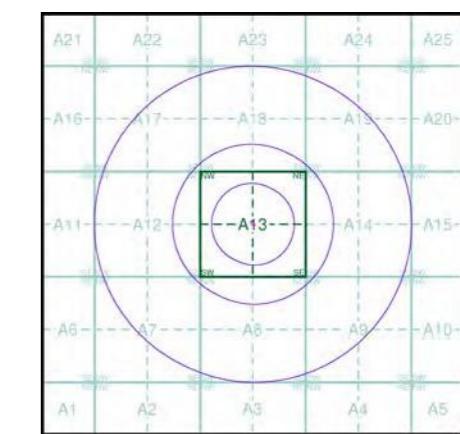
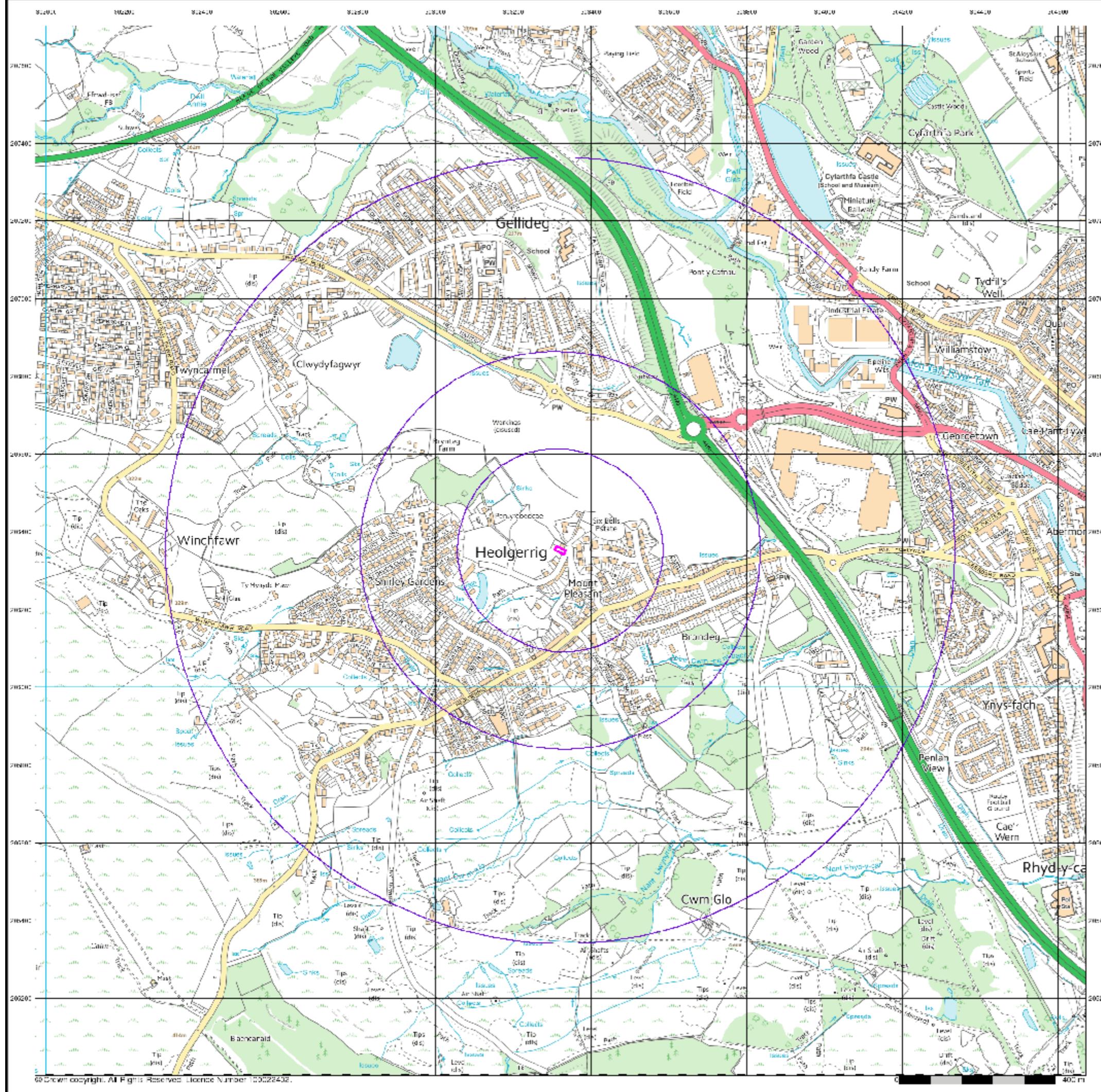
Order Details

Order Number: 88619056_1_1
Customer Ref: 13741

National Grid Reference: 303320, 206350
Slice: A
Site Area (Ha): 0.04
Search Buffer (m): 1000

Site Details

Site at 303250, 206350



**Annex B
Coal Authority Mining
Consultants Report**



The Coal Authority

Issued by:

The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG

Website: www.groundstability.com Phone: 0345 762 6848

TERRA FIRMA (WALES) LTD

5 DERYN COURT

WHARFEDALE ROAD

PENTWYN

CARDIFF

CARDIFF

CF23 7HA

Our reference:

51001182300001

Your reference:

13741

Date of your enquiry:

13 June 2016

Date we received your enquiry:

13 June 2016

Date of issue:

13 June 2016

Grid Reference

303326 206363

This report is for the property described in the address below and the attached plan.

Non-Residential Coal Mining Consultants Report

LLE HYFRYD, MOUNT PLEASANT, HEOLGERRIG, MERTHYR TYDFIL, CF48 1RY

This report is based on and limited to the records held by the Coal Authority, at the time we answer the search.

Past underground mining

COLLIERY	SEAM	MINERAL	PANEL	DEPTH (m)	DIRECTION TO WORKING	DISPOSITION	EXTRACTION THICKNESS (cm)	YEAR
unnamed	LOWER 7FT BOTTOM LEAF	Coal	4BXC	13	Beneath Property	0.0	160	1896

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Probable unrecorded shallow workings

None.

Outcrops

SEAM NAME	MINERAL	THIN INDICATOR	DISTANCE TO OUTCROP (m)	DIRECTION TO OUTCROP	BEARING OF OUTCROP
LOWER 7FT BOTTOM LEAF	Coal	False	30.7	32	122
SEVEN FOOT	Coal	False	6.4	39	129

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Future underground mining

No future mining recorded.

Licence details (AOR)

No AOR recorded.

Section 46 notices

No current notification.

Geology

No faults, fissures or breaklines recorded.

Mine entries

ENTRY TYPE	REFERENCE	GRID REFERENCE	TREATMENT DESCRIPTION	MINERAL	CONVEYANCE DETAILS
Shaft	303206-066	303376 206418		Coal	
Adit	303206-047	303282 206330		Coal	
Adit	303206-023	303303 206339		Coal	

ENTRY TYPE	REFERENCE	GRID REFERENCE	TREATMENT DESCRIPTION	MINERAL	CONVEYANCE DETAILS
Shaft	303206-040	303312 206367		Coal	

Court orders

No court orders recorded.

Worked out opencast sites

No worked out opencast site recorded.

Coal mining related hazards

No coal mining related hazard recorded.

Coal mining subsidence

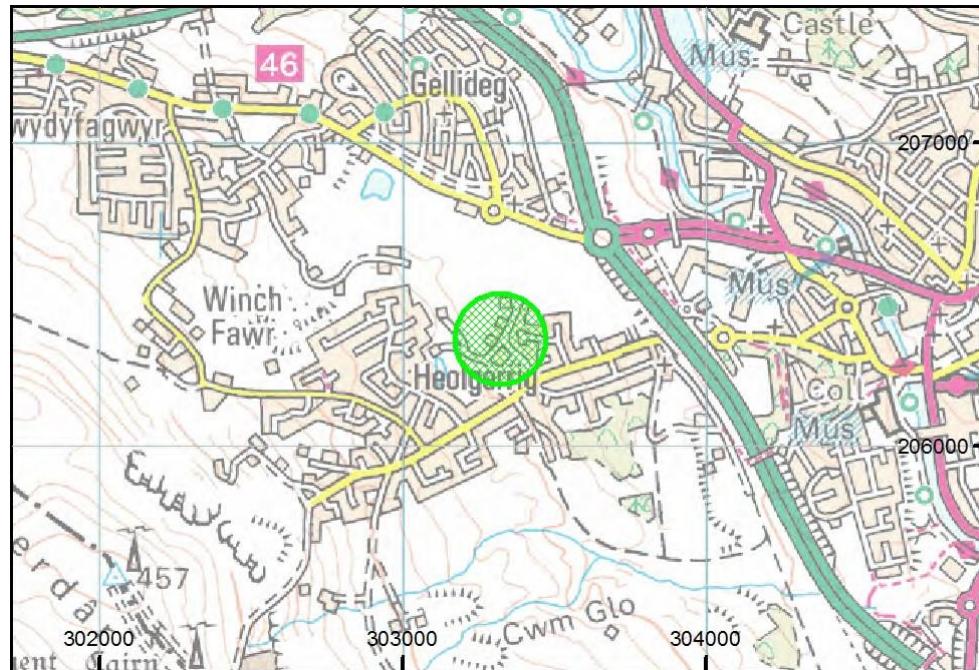
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Issued by:	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG
Tax Point Date:	13 June 2016
Issued to:	TERRA FIRMA (WALES) LTD 5 DERYN COURT WHARFEDALE ROAD PENTWYN CARDIFF CARDIFF CF23 7HA
Property Search for:	LLE HYFRYD, MOUNT PLEASANT, HEOLGERRIG, MERTHYR TYDFIL, CF48 1RY
Reference Number:	51001182300001
Date of Issue:	13 June 2016
Cost:	£100.00
VAT @ 20%:	£20.00
Total Received:	£120.00
VAT Registration	598 5850 68

Location map



Approximate position of property



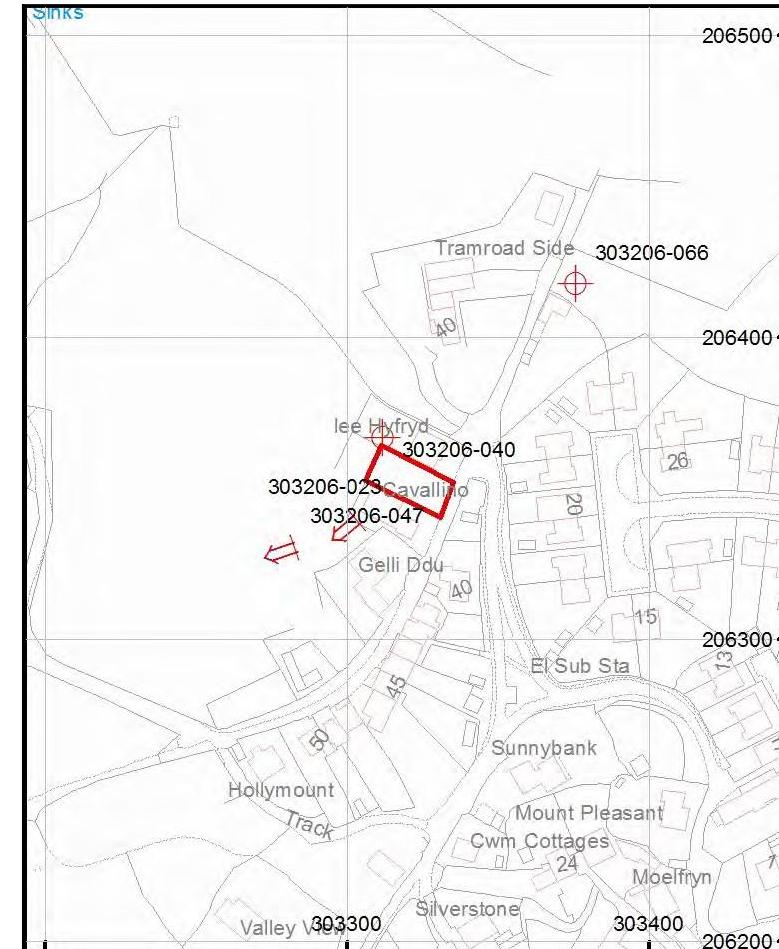
This plan shows the approximate location of the disused mine entry / entries referred to in the attached mining report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan. Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.groundstability.com.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wish to examine the source plans from which the information has been taken, these are available to view, free of charge, at our Head Office in Mansfield. To book an appointment please ring 01623 637225. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission of the owner must be sought. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries).

Our emergency telephone number is 01623 646333.

Enquiry boundary



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Approximate position of enquiry boundary shown



Disused Adit or Mineshaft

