

12690/JJ

05 August 2020

Persimmon Homes,
Llantrisant Business Park,
Heol-Y-Sarn,
Llantrisant,
Pontyclun CF72 8YP

For the attention of Mr Matthew Smith

Dear Sirs,

Mine Entries Risk Assessment - Technical Note – Land at Twynyrodyn, Merthyr Tydfil

Intégral Géotechnique (Wales) Limited have been appointed by our Client, Persimmon Homes East Wales Limited, to produce a 'Mine Entries Risk Assessment – Technical Note' for the proposed residential development at Land at Twynyrodyn, Merthyr Tydfil.

The location of the site is shown on Figure 1. The proposed Development Layout is shown on Figure 2.

A previous Site Investigation was undertaken at the site by Intégral Géotechnique (Wales) Limited in 2008 on behalf of Merthyr Tydfil County Borough Council. Reference should be made to Site Investigation Report, ref: 9913/GNS/08 dated August 2008 for further details.

The purpose of this supplemental report is to address concerns raised by the Coal Authority regarding the definition of development 'no build' zones around the recorded mine entries on site (and within 20m of the site boundary).

Following an extensive data review and a thorough georeferencing exercise using various source plans; the 'best fit' plotting locations for the recorded mine entries on site (and within 20m of the site boundary) have been determined.

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Recorded Mine Entries Appraisal – Detail Data Review and Georeferencing Exercise

A ‘Shaft Plan and Data Sheets’ report has been obtained from the Coal Authority, a copy is presented in Appendix A.

A summary of the Coal Authority recorded mine entries on site (and within 20m of the site boundary) is provided below in Table 1.

Table 1: Coal Authority Data Sheets Recorded Mine Entry Locations								
Reference	Shaft/ Adit	CA Primary Source	Depth of Shaft (m)	Assumed Diameter of Shaft / Adit (m)	Probable Adit Azimuth	CA Data Sheet Listed Location (Easting, Northing)	CA Assigned Departure Distance (m)	Development Area
305205-053	Adit	Ab plan 5196	n/a	3	66	305944, 205823	8m	Footpath (north)
305205-021	Adit	1900 OS Map	n/a	3	58	305953, 205788	5m	Plots 9 and 10
305205-031	Shaft	1919 OS Map	Unknown	Unknown	n/a	305986, 205522	5m	POS / attenuation area (south)
306205-035	Adit	Ab plan SWR3152	n/a	3	129	306029, 205557	8m	Off site
306205-034	Adit	Ab plans SWR3152	n/a	3	110	306034, 205613	8m	Plots 50 and 51
306205-045	Adit	Ab plan SWR3192	n/a	3	14	306025, 205607	8m	Plots 50 and 51
306205-005	Adit	1919 OS Map	n/a	3	96	306036, 205563	5m	Off site
306205-057	Adit	Ab plan SWR3152	n/a	3	65	306043, 205556	8m	Off site

In order to corroborate the locations of the recorded mine entries as detailed on the Coal Authority data sheets, a thorough data review and georeferencing exercise has been undertaken using numerous source plans.

The purpose of the data review and georeferencing exercise was to determine the ‘best-fit’ plotting coordinates for the recorded mine entries and to confirm if any further mine entries exist on the source plans which the Coal Authority have not reported on.

The following source plans were utilised as part of the data review and georeferencing exercise:

- Historical OS Maps (1/2500 O.S Sheet Glam 12:5 1900 1920 Ed)
- Ab plans 5196, SWR3152, SWR3187, SWR3192
- Geological Sheet Glam 12:NW

Copies of the historical OS Maps covering the site are presented in Appendix B. Copies of the georeferenced source plans used to determine the best-fit plotting coordinates are presented in Figures 3 to 7.

The best-fit mine entry plotting coordinates determined as a result of the data review and georeferencing exercise are detailed below in Table 2.

Table 2: Summary of IG Determined ‘Best-Fit’ Mine Entry Locations								
Reference	Shaft/ Adit	CA Primary Source	Depth of Shaft (m)	Assumed Diameter of Shaft / Adit (m)	Probable Adit Azimuth	IG Plotting Location (Easting, Northing)	CA Assigned Departure Distance (m)	Development Area
305205-053	Adit	Ab plan 5196	n/a	3	83	305960, 205825	8m	Plots 4 and 5
305205-021	Adit	1900 OS Map	n/a	3	83	305976, 205799	5m	Access Road (north)
305205-031 – entry deleted by CA	Shaft	n/a	n/a	n/a	n/a	n/a	n/a	n/a
306205-035	Adit	Ab plan SWR3152	n/a	3	129	306039, 205548	8m	Off site
306205-034	Adit	Ab plans SWR3152	n/a	3	83	306052, 205605	8m	Attenuation pond (east)
306205-045	Adit	Ab plan SWR3192	n/a	3	17	306040, 205624	8m	Attenuation pond (east)
306205-005	Adit	1919 OS Map	n/a	3	54	306047, 205562	5m	Off site
306205-057	Adit	Ab plan SWR3152	n/a	3	54	306050, 205560	8m	Off site

The determined best-fit mine entry locations (together with the original locations provided by the Coal Authority) have been overlain onto the proposed development layout, see Figure 8. The results indicate a number of deviations from the coordinates provided by the Coal Authority.

Note that following discussions with the Coal Authority, Shaft 305205-031 has been deleted from their records and no longer needs to be considered (see correspondence in Appendix C).

The best-fit mine entry coordinates detailed in Table 2 should be agreed by and confirmed with the Coal Authority, and intrusive ground investigation should be undertaken to further assess the locations of the mine entries on site prior to fixing development layouts.

Preliminary Worst-Case Development No Build Zones Methodology

Until the recorded mine entries on site have been accurately located and remediated, a series of preliminary ‘worst-case’ development no build zones have been determined around each of the best-fit mine entry coordinates.

The no build zone radii account for an assumed 3m adit width and the Coal Authority assigned potential lateral departure distances.

The preliminary worst-case development no build zones are shown on Figure 8. Note that all development no build zones will need to be reviewed and potentially revised following confirmation of the final plotting coordinates from the Coal Authority (following their review of this report and following the findings of intrusive ground investigation).

It is recommended that the final plotting coordinates are agreed and confirmed with the Coal Authority prior to finalisation of the proposed development layout.

Risk from Recorded Mine Entries

The risk to the proposed development from each of the recorded mine entries on site (and within 20m of the site boundary) has been considered on an individual basis below.

Adit 305205-053

The best-fit coordinate for Adit 305205-053 is considered to be: 305960, 205825. A probable adit azimuth of 83 degrees has been determined. This adit is plotted beneath the proposed footprints of Plots 4 and 5 in the northern part of the site and is indicated to be trending eastwards.

Should this adit be present, there would be a potential risk to the proposed development and perceived blight to properties constructed over the adit.

Based on an assumed adit diameter of 3m, and accounting for the Coal Authority assigned 8.0m potential departure distance (from the IG plotted adit location), a worst-case 9.5m radius no build zone has been determined.

It is recommended that intrusive ground investigation is undertaken in order to accurately locate Adit 305205-053 and inform the best course of remediation (i.e. either bulk excavation, sealing by brick/block construction, drilling and grouting stabilization or combination of these techniques).

Following appropriate remediation, it is considered that the development exclusion zone can be reduced or removed. However, in order to avoid a case of potential future blight of sale associated with any plot placed at the final Coal Authority agreed adit entry indicator, at this stage it is recommended that no buildings should be planned or constructed within the preliminary development no build zone indicated on Figure 8.

Adit 305205-21

The best-fit coordinate for Adit 305205-21 is considered to be: 305976, 205799. A probable adit azimuth of 83 degrees has been determined. This adit is recorded within the proposed access road adjacent to the eastern site boundary, approximately 12m to the east of the nearest proposed properties (i.e. plots 8 and 9). The adit is indicated to be trending away from the proposed development.

Should this adit be present, there would be a potential risk to the proposed residential development.

Based on an assumed adit diameter of 3m, and accounting for the Coal Authority assigned 5.0m potential departure distance, a worst-case 6.5m radius no build zone has been determined.

It is recommended that intrusive ground investigation is undertaken in order to accurately locate Adit 305205-21 and inform the best course of remediation (i.e. either bulk excavation, sealing by brick/block construction, drilling and grouting stabilization or combination of these techniques).

Following appropriate remediation, it is considered that the development exclusion zone can be reduced or removed. However, in order to avoid a case of potential future blight of sale associated with any plot placed at the final Coal Authority agreed adit entry indicator, at this stage it is recommended that no buildings should be planned or constructed within the preliminary development no build zone indicated on Figure 8.

Adit 306205-045 and Adit 306205-034

The best-fit coordinates for Adit 306205-045 and Adit 306205-034 are considered to be: 306040, 205624 and 306052, 205605, respectively. Probable adit azimuths of 17 and 83 degrees have been determined.

These adit entries are recorded within an area of proposed surface water attenuation adjacent to the eastern site boundary, approximately 10m to the east of the nearest proposed properties (i.e. plots 50 and 10). The adits are indicated to be trending away from the proposed development.

Should these adits be present, there would be a potential risk to the proposed residential development.

Based on assumed adit diameters of 3m, and accounting for the Coal Authority assigned 8.0m potential departure distances, worst-case 9.5m radii no build zones have been determined.

It is recommended that intrusive ground investigation is undertaken in order to accurately locate Adit 306205-045 and Adit 306205-034 and inform the best course of remediation (i.e. either bulk excavation, sealing by brick/block construction, drilling and grouting stabilization or combination of these techniques).

Following appropriate remediation, it is considered that the development exclusion zone can be reduced or removed. However, in order to avoid a case of potential future blight of sale associated with any plots placed at the final Coal Authority agreed adit entry indicators, at this stage it is recommended that no buildings should be planned or constructed within the preliminary development no build zones indicated on Figure 8.

Adit 306205-005, Adit 306205-035 and Adit 306205-057

The best-fit coordinates for Adit 306205-005, Adit 306205-035 and Adit 306205-057 indicate that all three recorded mine entries are situated off site (to the southeast), approximately 30m to the nearest proposed plots. The determined azimuths indicate all three adits are trending away from the proposed development.

Based on assumed adit diameters of 3m, and accounting for the Coal Authority assigned potential departure distances, preliminary worst-case no build zones have been determined and are shown on Figure 8.

The worst case no build zones do not encroach upon the site boundary. As such, Adit 306205-005, Adit 306205-035 and Adit 306205-057 are not considered to pose a risk to the proposed development. For this reason, these adit entries have not been considered any further.

Shaft 305205-031

Following discussion with the Coal Authority, it has been concluded that Shaft 305205-031 was added to their records as a consequence of an annotation 'Old Coal Level' indicated on the 1919 historical OS map covering the site.

There is no definitive feature (certainly no shaft) that can be attributed to this annotation, and with no other available source plan, the Coal Authority have confirmed they have deleted Shaft 305205-031 from their records. See correspondence in Appendix C.

For this reason, Shaft 306205-034 has not been considered any further. A development no build zone will not apply to this deleted mine entry record.

Risk from Shallow Coal Workings

A risk from shallow underground coal workings has been identified at the site, as detailed in our previous Site Investigation Report, ref: 9913/GNS/08, dated August 2008, prepared on behalf of Merthyr Tydfil County Borough Council.

As detailed in the previous Site Investigation Report, it is recommended that a programme of proof drilling is undertaken across the site in order to further assess the shallow mining risk, and to inform the extent of potential drilling and grouting ground stabilisation works. Drilling and grouting ground stabilisation will be required across any identified areas where shallow workings with insufficient safe rock cover thicknesses are encountered.

Recommended Intrusive Site Investigation Works

Intrusive site investigation works are recommended in order to further investigate the recorded mine adits on site. A series of supplementary trial trenches and targeted rotary boreholes should be excavated/drilled along the alignment of the mine adit locations on site.

As detailed in the previous Site Investigation Report (ref: 9913/GNS/08), it is recommended that a programme of proof drilling is undertaken across the site in order to further assess the shallow mining risk, and to inform the extent of potential drilling and grouting ground stabilisation works.

We trust the above and enclosed are to your satisfaction. However, if you have any queries or require any further information, please do not hesitate to contact us.

Yours faithfully,



Jack Jones BSc (Hons), MSc, FGS, ARSM
For
Intégral Géotechnique (Wales) Limited

Encl.

Appendix A – Coal Authority Mine Entry Data Sheets

Appendix B – Historical OS Maps

Appendix C – Correspondence with the Coal Authority

Figure 1 – Site Location

Figure 2 – Proposed Development Layout

Figure 3 – 1900 OS Map (showing Adit 305205-021)

Figure 4 – 1919 OS Map (showing Adit 306205-005)

Figure 5 – Ab Plan 5196 Georeferenced

Figure 6 – Ab Plan SWR3152 Georeferenced

Figure 7 – Ab Plan SWR3195 Georeferenced

Figure 8 – Development Layout with Revised Mine Entry Locations

APPENDIX A

COAL AUTHORITY MINE ENTRY DATA SHEETS

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

**INTEGRAL GEOTECHNIQUE (WALES)
LTD.
INTEGRAL HOUSE
7 BEDDAU WAY
CAERPHILLY
MID GLAMORGAN
CF83 2AX**

Our reference:	51002289764002
Your reference:	12690/JJ
Date of your enquiry:	15 July 2020
Date we received your enquiry:	15 July 2020
Date of issue:	24 July 2020

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

Shaft Plan and Data Sheets

LAND AT TWYNYRODWYN, MERTHYR TYDFIL, MERTHYR TYDFIL

I refer to the enquiry dated 15 July 2020, received 15 July 2020, in connection with the above.

As requested I enclose the mine entry data sheet(s) held for the mine entry/entries referred to.

Mine Entry Data

Shaft/adit:	Adit
Reference:	305205-053
Source:	Ab plans 5196 SWR3152 Other: Source Plan 33X (Pigeon hole in Ystrad Fawr Plan Room)
Colliery name:	Unknown
Entry name:	Simons Level
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	66
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	305944
Northing:	205823
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Adit
Reference:	305205-021
Source:	1/2500 O.S Sheet Glam 12:5 1900 Ed
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	58
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	305953
Northing:	205788
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Shaft
Reference:	305205-031
Source:	1/2500 O.S Sheet Glam 12:6 1920 Ed
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	305986
Northing:	205522
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Adit
Reference:	306205-035
Source:	Ab plans SWR3152 SWR3187 Geological Sheet Glam 12: NW 1920 Ed - Site of Other: Source Plan 33X (Pigeon hole in Ystrad Fawr Plan Room) 48Q 55N 61F
Colliery name:	Unknown
Entry name:	No 3 Trebeddau Level
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	129
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	306029
Northing:	205557
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Adit
Reference:	306205-034
Source:	Ab plans SWR3152 SWR3187 Other: Source Plan 33X (Pigeon hole in Ystrad Fawr Plan Room) 55N 61F
Colliery name:	Unknown
Entry name:	No 2 Trebeddau Level
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	110
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	306034
Northing:	205613
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Adit
Reference:	306205-045
Source:	Ab plan SWR3192
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	14
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	306025
Northing:	205607
Other information:	None

Mine Entry Data (continued)

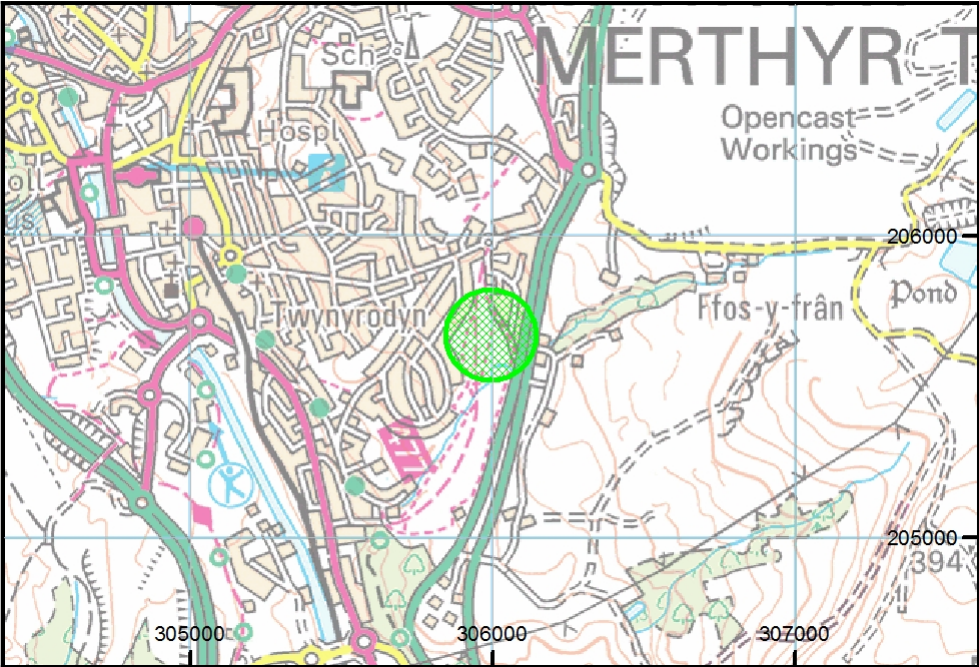
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Reference:	306205-005
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Colliery name:	Unknown
Entry name:	No.1 Trebeddau Level
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	96
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	306036
Northing:	205563
Other information:	None

Mine Entry Data (continued)

Shaft/adit:	Adit
Reference:	306205-057
Source:	Ab plan SWR3152
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	65
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	306043
Northing:	205556
Other information:	None

Location map

Approximate position of enquiry



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Ordnance Survey Licence number: 100020315

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.

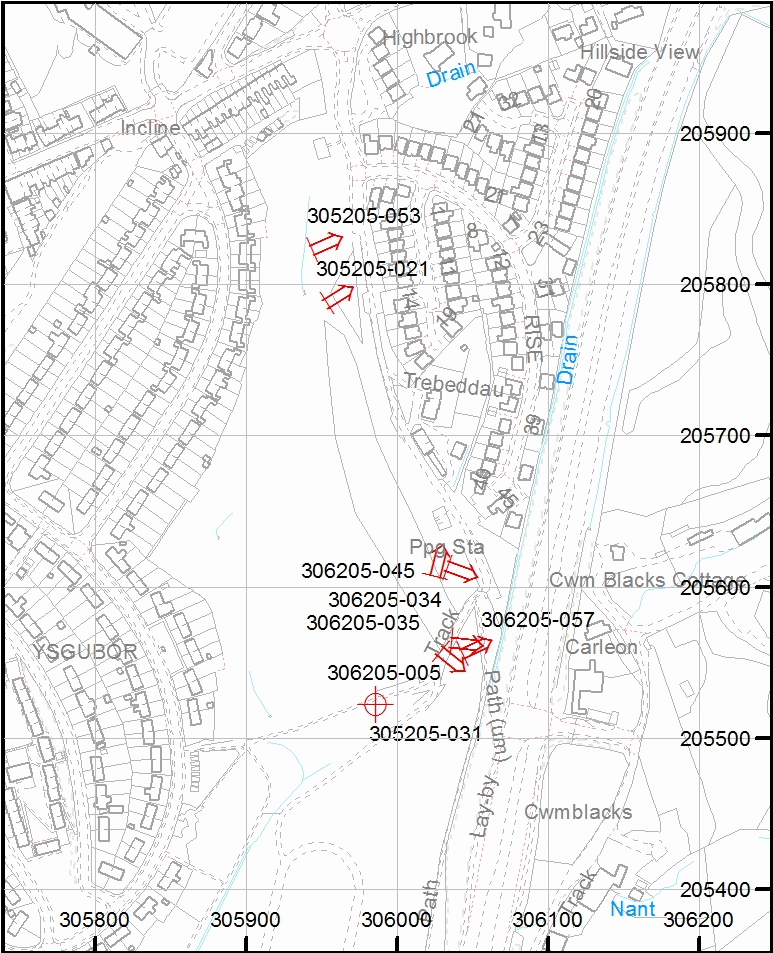
If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wish to examine the source plans from which the information has been taken, these are available to view, free of charge, 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.

Key

Disused Adit or Mineshaft

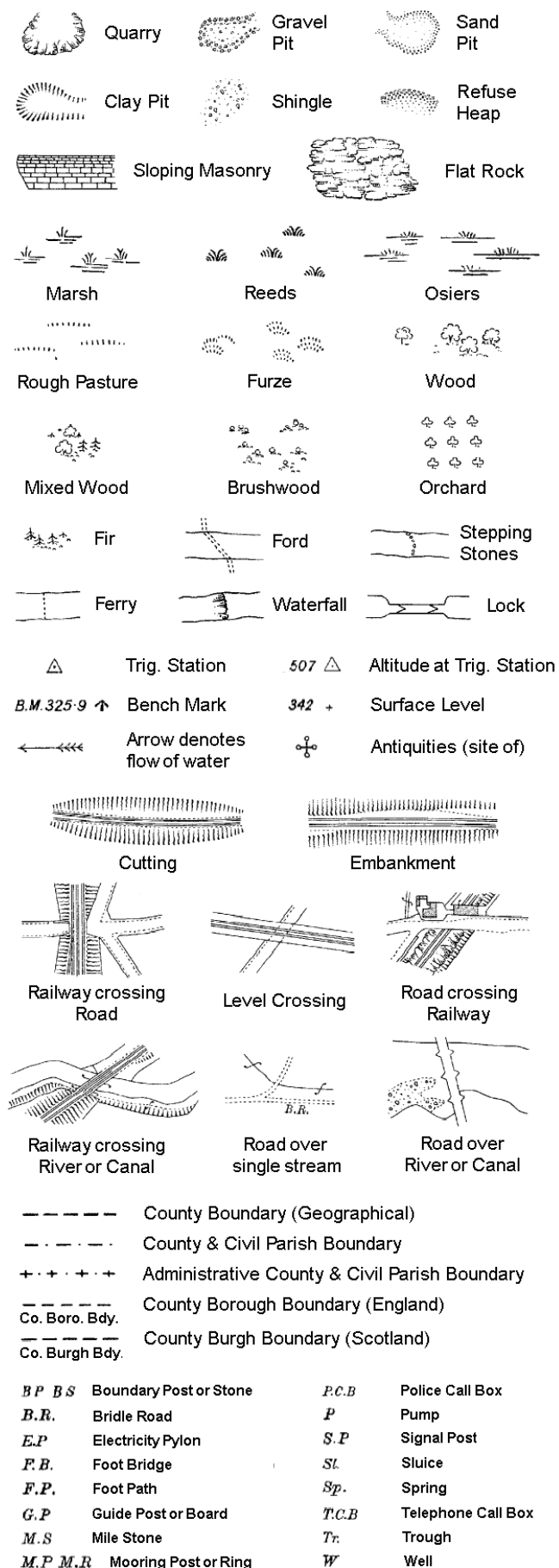


APPENDIX B

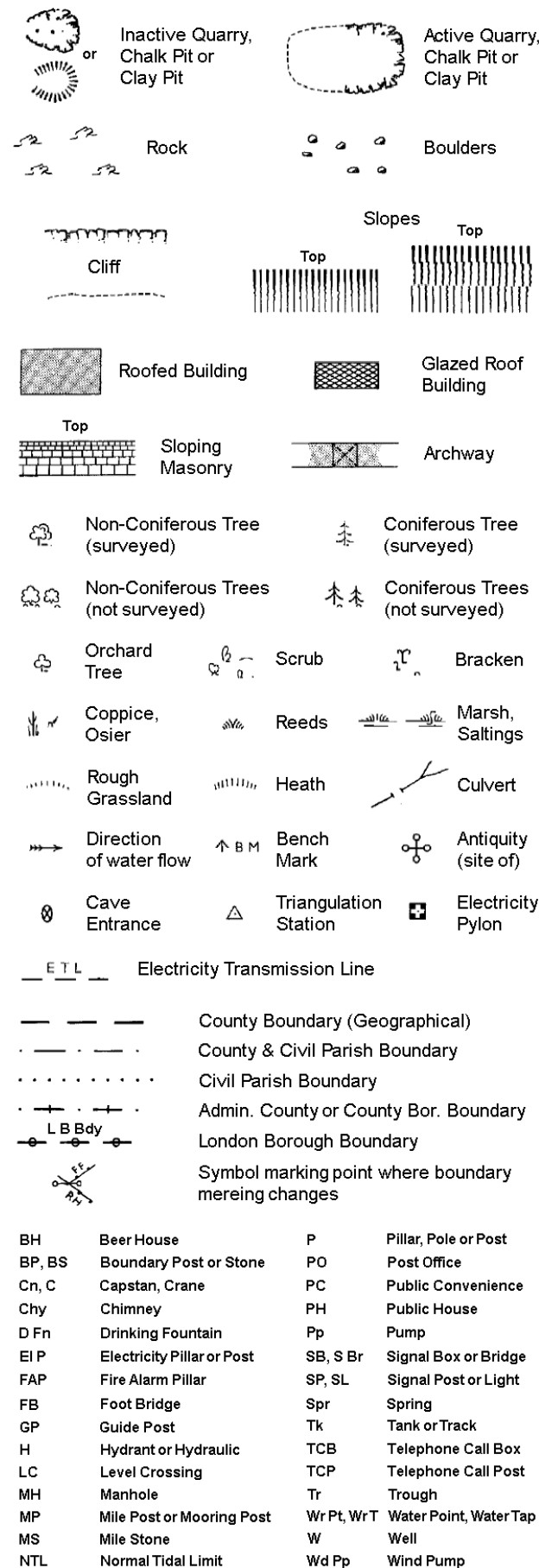
HISTORICAL OS MAPS

Historical Mapping Legends

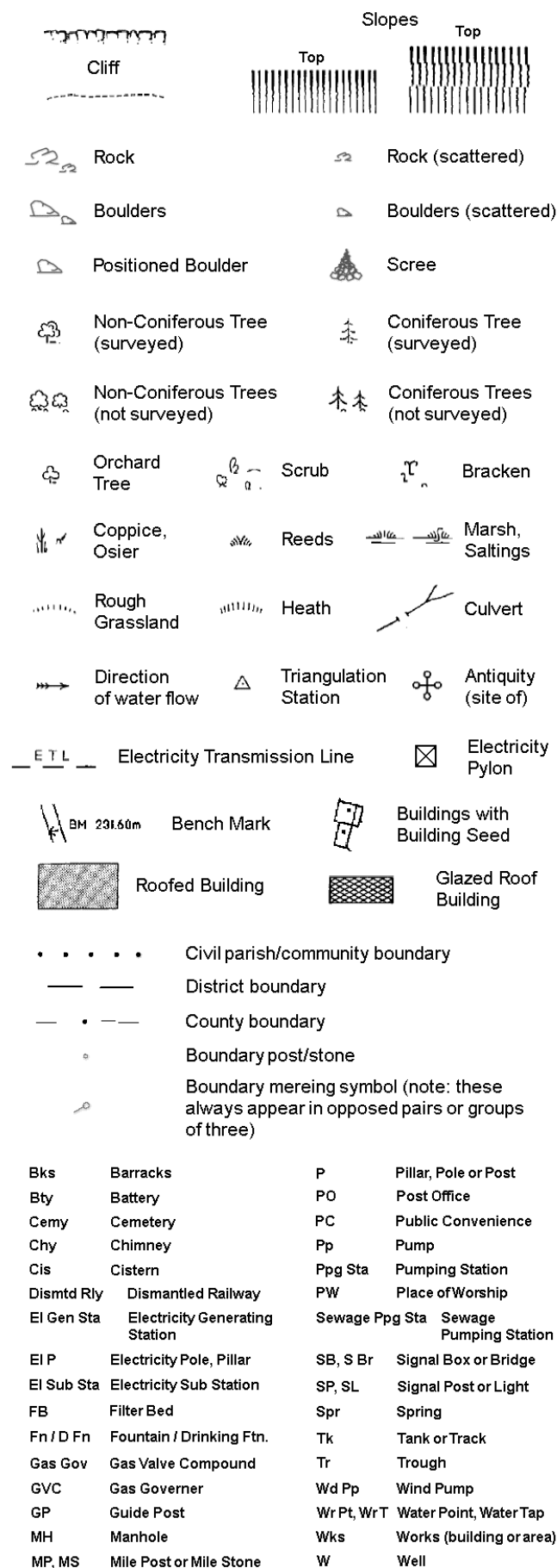
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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

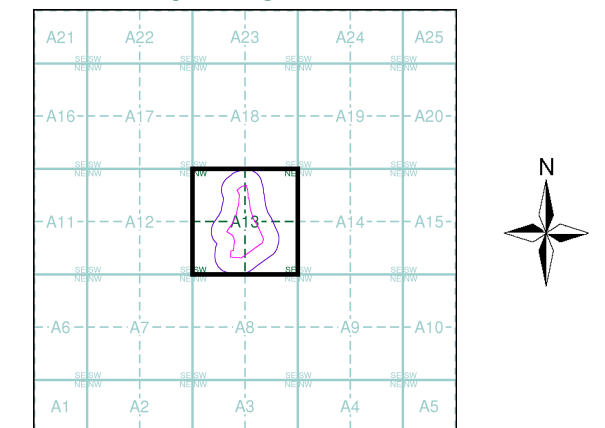


Intégral Géotechnique

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1876	2
Glamorganshire	1:2,500	1900	3
Glamorganshire	1:2,500	1919	4
Ordnance Survey Plan	1:1,250	1957	5
Ordnance Survey Plan	1:2,500	1958 - 1964	6
Ordnance Survey Plan	1:1,250	1969 - 1973	7
Supply of Unpublished Survey Information	1:2,500	1975	8
Supply of Unpublished Survey Information	1:1,250	1975	9
Additional SIMs	1:1,250	1981 - 1989	10
Ordnance Survey Plan	1:1,250	1984	11
Additional SIMs	1:2,500	1988	12
Additional SIMs	1:2,500	1992	13
Additional SIMs	1:1,250	1992	14
Large-Scale National Grid Data	1:2,500	1993	15
Large-Scale National Grid Data	1:1,250	1993	16
Large-Scale National Grid Data	1:2,500	1993	17
Large-Scale National Grid Data	1:1,250	1994 - 1995	18
Historical Aerial Photography	1:2,500	2000	19

Historical Map - Segment A13



Order Details

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National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

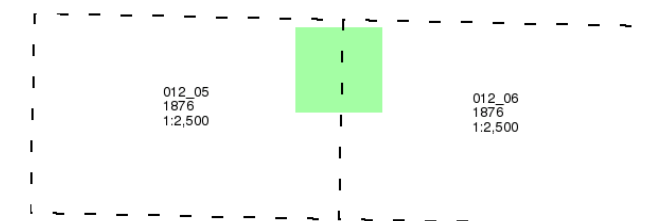
Land at Twynydrodyn, MERTHYR TYDFIL

Landmark
INFORMATION GROUP

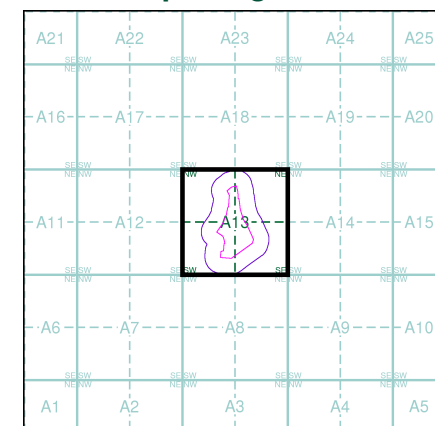
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

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



Order Details

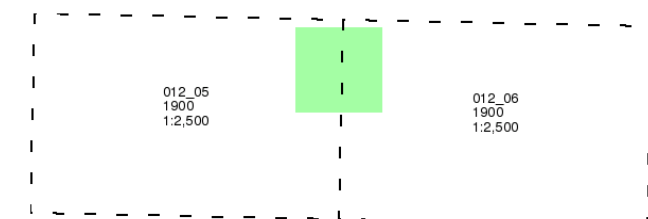
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Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
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Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

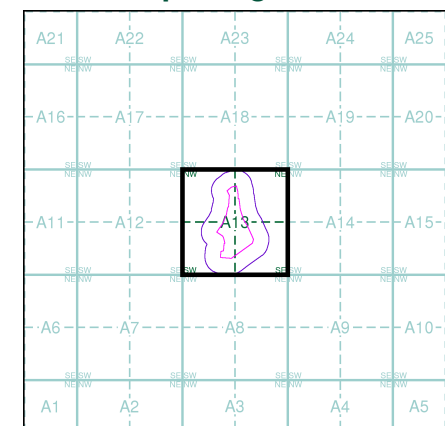
Land at Twynydrodyn, MERTHYR TYDFIL

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



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL

Intégral Géotechnique

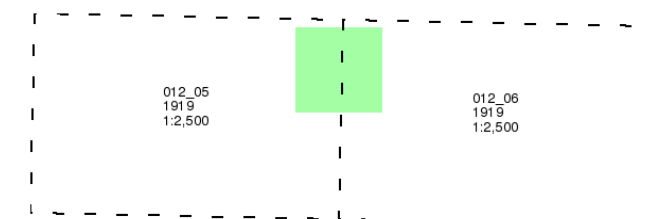
Glamorganshire

Published 1919

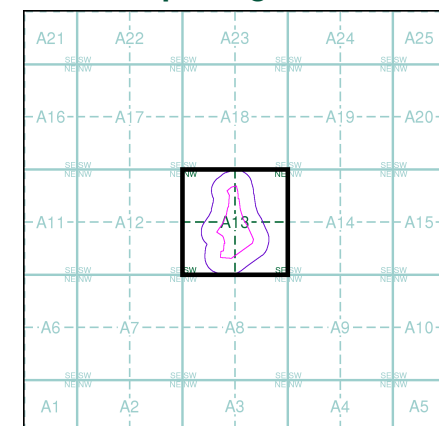
Source map scale - 1:2,500

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



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



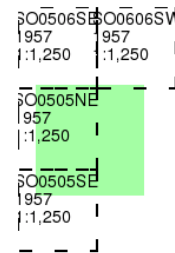
Ordinance Survey Plan

Published 1957

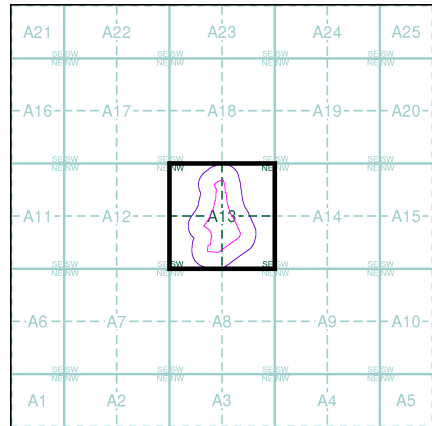
Source map scale - 1:1,250

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.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Ordinance Survey Plan

Published 1958 - 1964

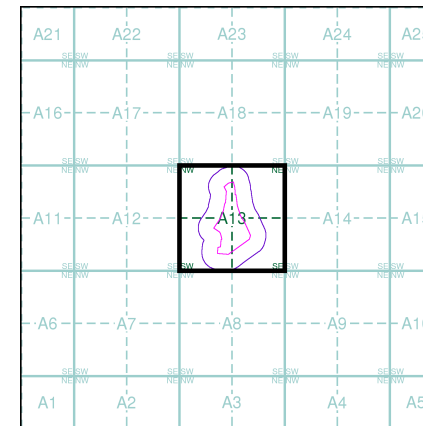
Source map scale - 1:2,500

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)

SO0506 1958 12,500	SO0606 1963 12,500
SO0505 1958 12,500	SO0605 1964 12,500

Historical Map - Segment A13



Order Details

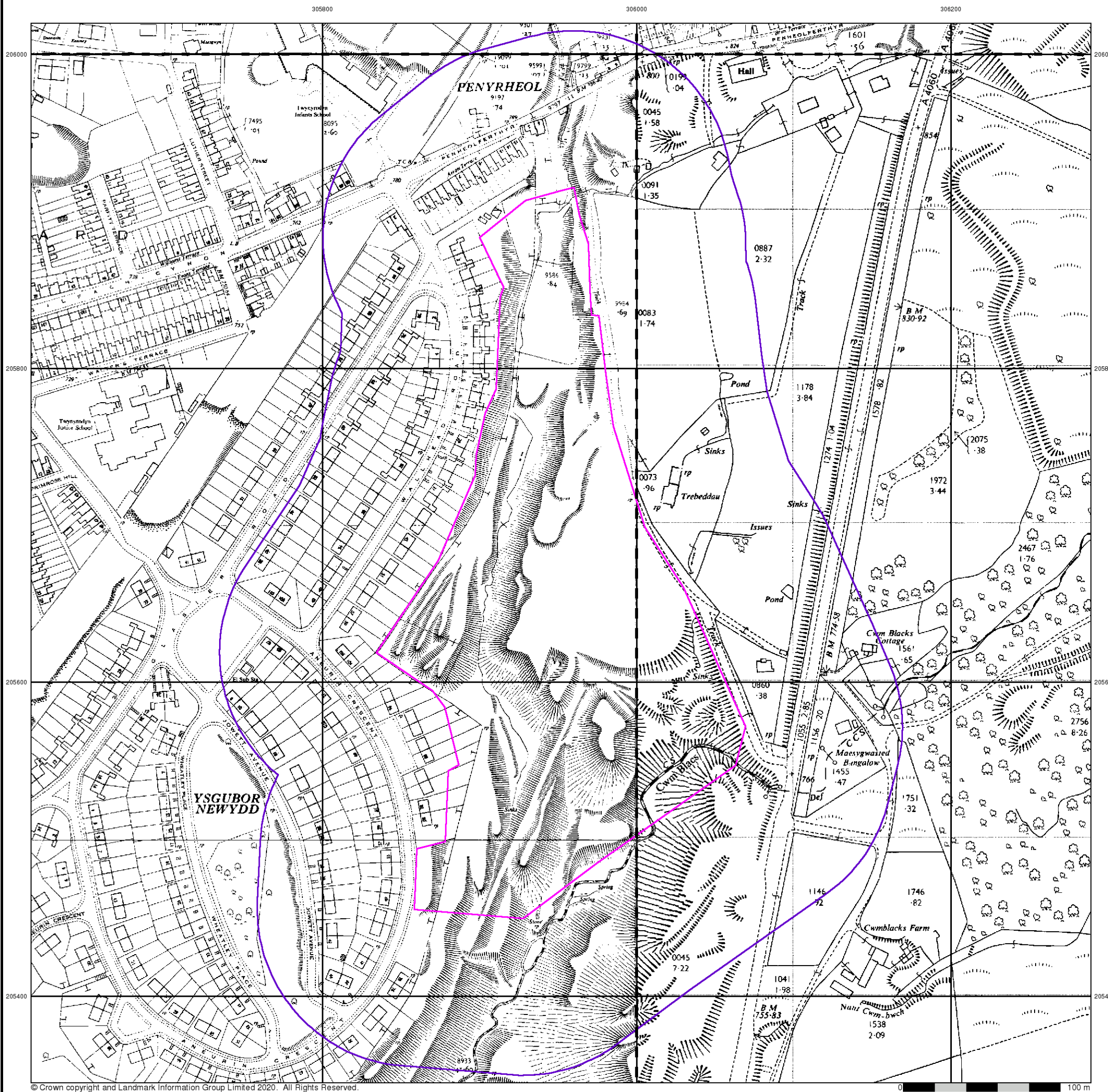
Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



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Ordinance Survey Plan

Published 1969 - 1973

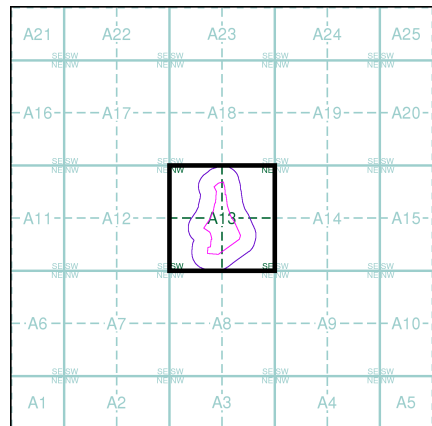
Source map scale - 1:1,250

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.

Map Name(s) and Date(s)

SO0506SE	SO0606SW
1969	1973
1:1,250	1:1,250
SO0505NE	
1973	
1:1,250	
SO0505SE	
1969	
1:1,250	

Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynyrodyn, MERTHYR TYDFIL



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

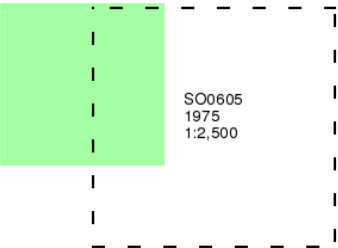
Supply of Unpublished Survey
Information

Published 1975

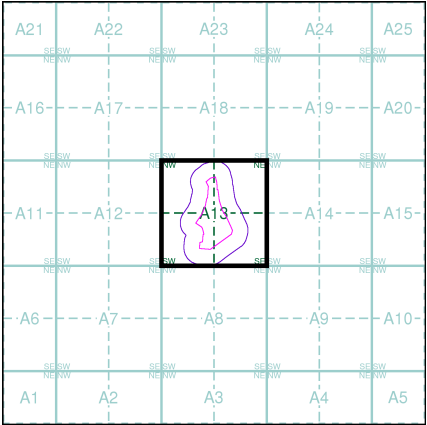
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They 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: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



Supply of Unpublished Survey Information

Published 1975

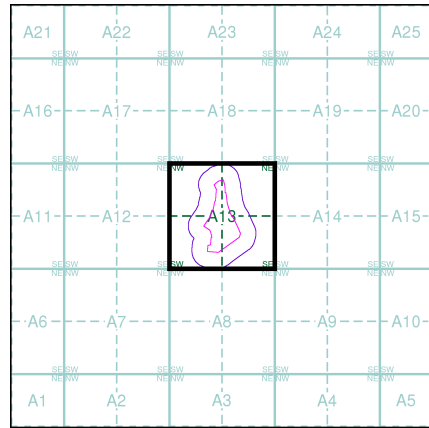
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

BO0506SW	BO0606SW
1975	1975
1:1,250	1:1,250
BO0505NE	
1975	
1:1,250	
BO0505SE	
1975	
1:1,250	

Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynyrodyn, MERTHYR TYDFIL



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Additional SIMs

Published 1981 - 1989

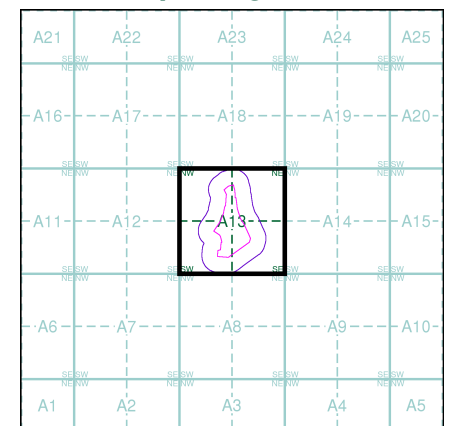
Source map scale - 1:1,250

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)

\$00606SW	1989	1:1,250
\$00505NE	1989	1:1,250
\$00505SE	1981	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynyrodyn, MERTHYR TYDFIL



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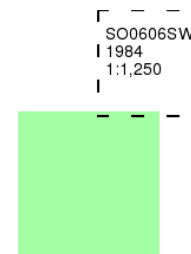
Ordnance Survey Plan

Published 1984

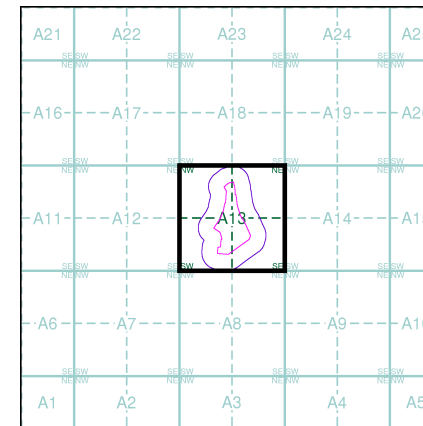
Source map scale - 1:1,250

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.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL

Additional SIMs

Published 1988

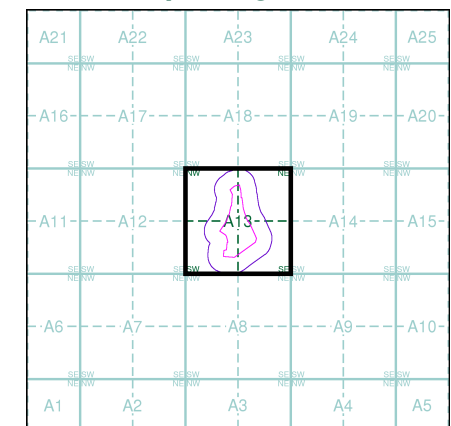
Source map scale - 1:2,500

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)

SO0606	1988	1:2,500
SO0605	1988	1:2,500

Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL

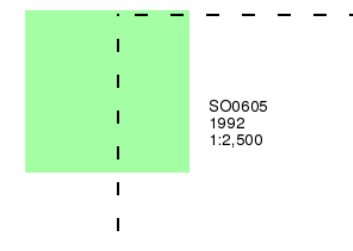
Additional SIMs

Published 1992

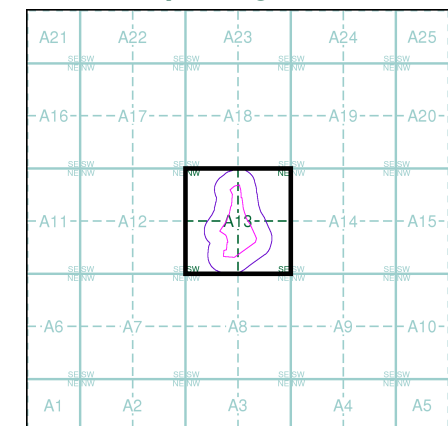
Source map scale - 1:2,500

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



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



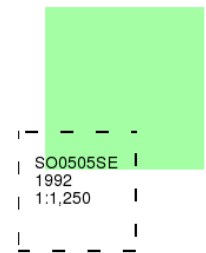
Additional SIMs

Published 1992

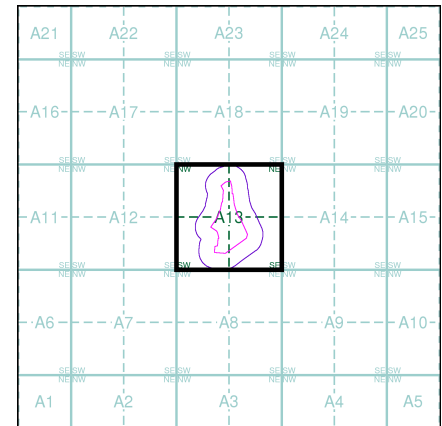
Source map scale - 1:1,250

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



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

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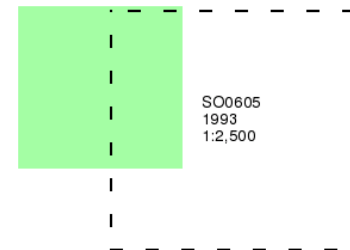
Large-Scale National Grid Data

Published 1993

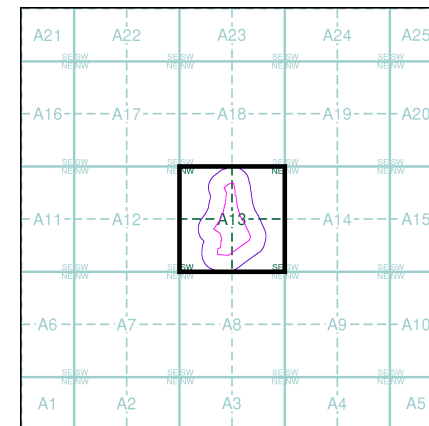
Source map scale - 1:2,500

'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: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



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Large-Scale National Grid Data

Published 1993

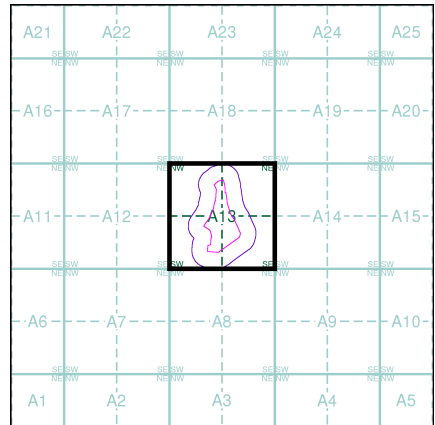
Source map scale - 1:1,250

'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)

BO0506SW	1993	1:1,250
BO0506SW	1993	1:1,250
BO0505NE	1993	1:1,250
BO0505SE	1993	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



Tel: 0844 844 9952
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Web: www.envirocheck.co.uk



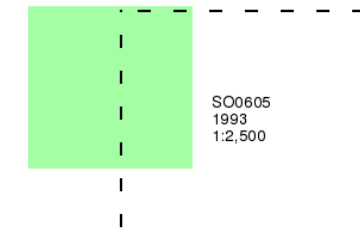
Large-Scale National Grid Data

Published 1993

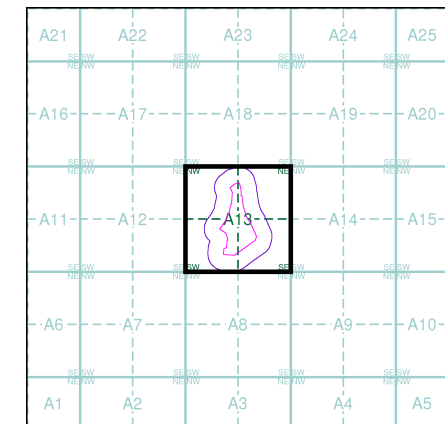
Source map scale - 1:2,500

'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: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Large-Scale National Grid Data

Published 1994 - 1995

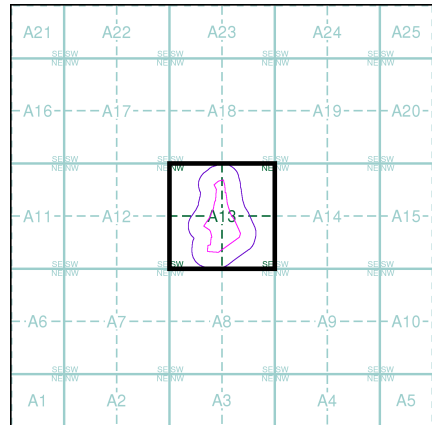
Source map scale - 1:1,250

'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)

SO0506SE	SO0606SW
1995	1995
1:1,250	1:1,250
SO0505NE	
1994	
1:1,250	

Historical Map - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



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Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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0 100 m

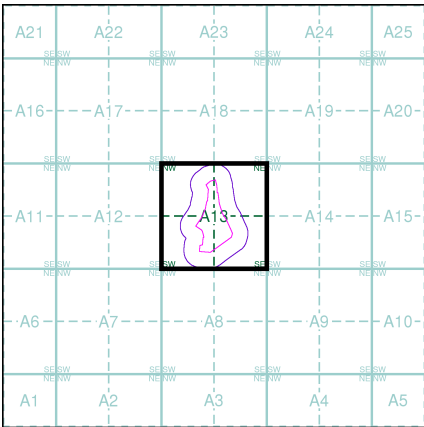


Historical Aerial Photography

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 - Segment A13



Order Details

Order Number: 249988848_1_1
Customer Ref: 12690/JJ
National Grid Reference: 305940, 205670
Slice: A
Site Area (Ha): 5.49
Search Buffer (m): 100

Site Details

Land at Twynydrodyn, MERTHYR TYDFIL



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

APPENDIX C

CORRESPONDENCE WITH THE COAL AUTHORITY

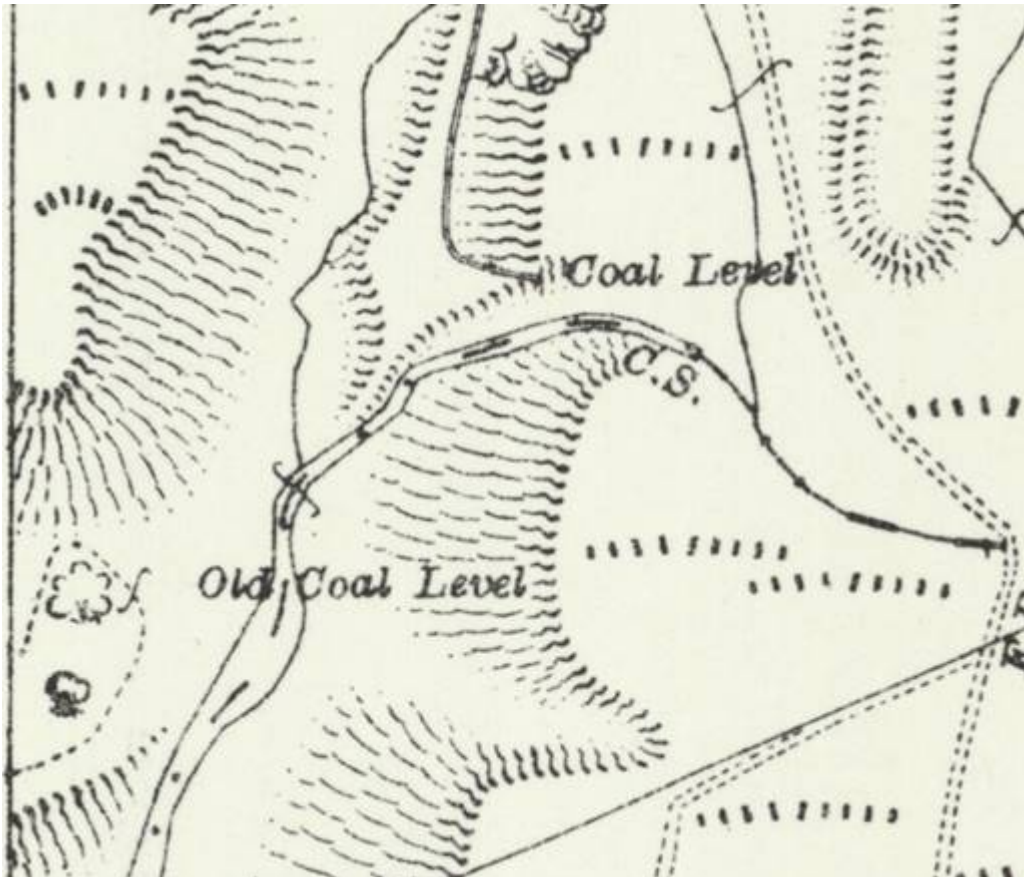
Jack Jones

From: Darren Moody <DarrenMoody@coal.gov.uk>
Sent: 29 July 2020 13:42
To: Jack Jones
Cc: Information Managers
Subject: FW: [External] Land at Twynyrodyn, Merthyr Tydril

Jack

Thank you for your email.

The 1920 reference is a circa date for the Third Edition. The actual published date is 1919. We do hold paper copies of the First, Second and Third Editions but are unable to provide copies. Having reviewed the Third Edition (Glamorgan 12-6) and also British Coal's rationalised shaft register it is my opinion that shaft 305205-031 was added to the records as a consequence of the annotation 'Old Coal Level'. There is no definitive feature (certainly no shaft) that can be attributed to this annotation and with no other available source record I have deleted 305205-031 from our records. You should have received a copy of the 1919 Ed. in the Envirocheck pack but if not attached is an extract obtained from the NLS website.



I hope this will be of assistance.

Kind regards

Darren

Darren Moody
Mining Consultant & Information Manager

From: Information Managers <InformationManagers@coal.gov.uk>
Sent: 28 July 2020 15:36
To: MIM Work-Tray <MIMWork-Tray@coal.gov.uk>
Subject: FW: [External] Land at Twynyrodyn, Merthyr Tydril

Hi Darren

Can you please help with this one please.

Thanks Andrea

From: Jack Jones <jack@integralgeotec.com>
Sent: 28 July 2020 14:33
To: Information Managers <InformationManagers@coal.gov.uk>
Cc: Huw Pritchard <huw@integralgeotec.com>
Subject: RE: [External] Land at Twynyrodyn, Merthyr Tydril

Hi Andrea,

The mine entry data sheets list a couple of historical OS maps are the sources plans.

We have ordered a pack of historical OS maps covering the site from Envirocheck. However, I can't seem to find a copy of the **1/2500 O.S Sheet Glam 12@6 1920 Ed** which is listed as the source plan used for Shaft 305205-031 and Adit 306205-005. Do you by any chance have a copy of this OS sheet?

Kind regards,

Jack

Jack Jones BSc (Hons), MSc, ARSM, FGS

Geotechnical Engineer

Intégral Géotechnique (Wales) Limited

Intégral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

☎ 02920 807991 📞 07850938262 ✉ jack@integralgeotec.com

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Help to save paper - Do you need to print this Email?

From: Jack Jones
Sent: 28 July 2020 12:53
To: Information Managers <InformationManagers@coal.gov.uk>
Cc: Alison Trotman <alison@integralgeotec.com>; Huw Pritchard <huw@integralgeotec.com>
Subject: RE: [External] Land at Twynyrodyn, Merthyr Tydril

Hi Andrea,

Yes please, we would like to proceed with ordering electronic copies of all these plans.

The PO number is: 12690/JJ

Kind regards,

Jack

Jack Jones BSc (Hons), MSc, ARSM, FGS

Geotechnical Engineer

Intégral Géotechnique (Wales) Limited

Intégral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

☎ 02920 807991 📠 07850938262 📧 jack@integralgeotec.com

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From: Information Managers <InformationManagers@coal.gov.uk>
Sent: 28 July 2020 12:46
To: Jack Jones <jack@integralgeotec.com>
Subject: RE: [External] Land at Twynyrodyn, Merthyr Tydril

Hello Jack

Please find attached your quote for the plans you have requested, please advise if you wish to go ahead.

Kind regards
Andrea



Andrea Holmes
Customer Service Administrator

DD: 01623 637122
T : 0345 7626 848
W : www.gov.uk/coalauthority

From: Jack Jones <jack@integralgeotec.com>
Sent: 24 July 2020 08:55
To: Information Managers <InformationManagers@coal.gov.uk>
Cc: Alison Trotman <alison@integralgeotec.com>
Subject: RE: [External] Land at Twynyrolyn, Merthyr Tydril

Hi Andrea,

Just wondering how the search is coming along and when we can expect the quote for the abandonment plans?

Kind regards,

Jack

Jack Jones BSc (Hons), MSc, ARSM, FGS

Geotechnical Engineer

Intégral Géotechnique (Wales) Limited

Intégral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

☎ 02920 807991 📱 07850938262 ✉ jack@integralgeotec.com

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From: Information Managers <InformationManagers@coal.gov.uk>
Sent: 14 July 2020 16:57
To: Jack Jones <jack@integralgeotec.com>
Subject: RE: [External] Land at Twynyrodyn, Merthyr Tydril

Hello Jack

Thank you for your request I will email the quote for the plans once it is completed, I have forwarded your enquiry for the Mining report and Mine Entry Data sheets, to our Mining reports team to help you.

Kind regards
Andrea



The Coal Authority

Andrea Holmes
Customer Service Administrator

DD: 01623 637122
T : 0345 7626 848
W : www.gov.uk/coalauthority

From: Jack Jones <jack@integralgeotec.com>
Sent: 14 July 2020 15:26
To: Andrea Holmes <AndreaHolmes@coal.gov.uk>
Cc: Alison Trotman <alison@integralgeotec.com>; Huw Pritchard <huw@integralgeotec.com>
Subject: [External] Land at Twynyrodyn, Merthyr Tydril

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Hi Andrea,

Please see attached Coal Mining Report and Mine Entries Data Sheets for our site at Twynyrodyn, Merthyr Tydfil.

I need to undertake a detailed georeferencing exercise relating to the recorded mine entries on site (and within 20m of the site).

In order to undertake the georeferencing exercise, I need to obtain copies of the mine abandonment source plans.

In the first instance, please can we obtain an updated CON29M Coal Mining Report and updated Mine Entry Data Sheets covering the site. Please use the same red line site boundary shown on the attached old reports.

Please can you then undertake a search for all the abandonment plans used to source the mine entry locations. Please can you provide a quote for the abandonment plans once the search is complete. I will likely need them in electronic format.

The job number for invoicing purposes is: 12690/JJ.

Any queries, please don't hesitate to contact me.

Kind regards,

Jack

Jack Jones BSc (Hons), MSc, ARSM, FGS

Geotechnical Engineer

Intégral Géotechnique (Wales) Limited

Intégral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX

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FIGURES

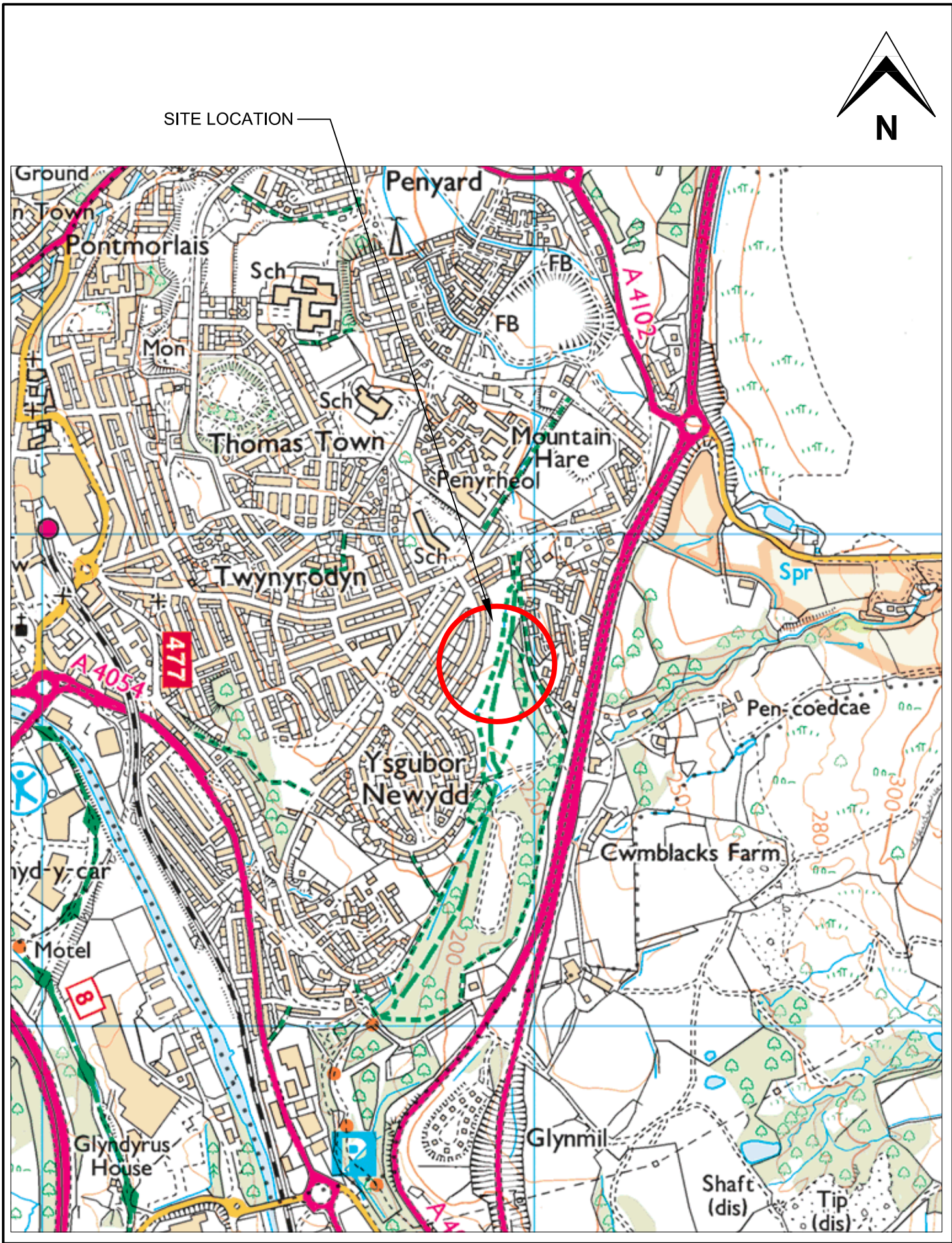
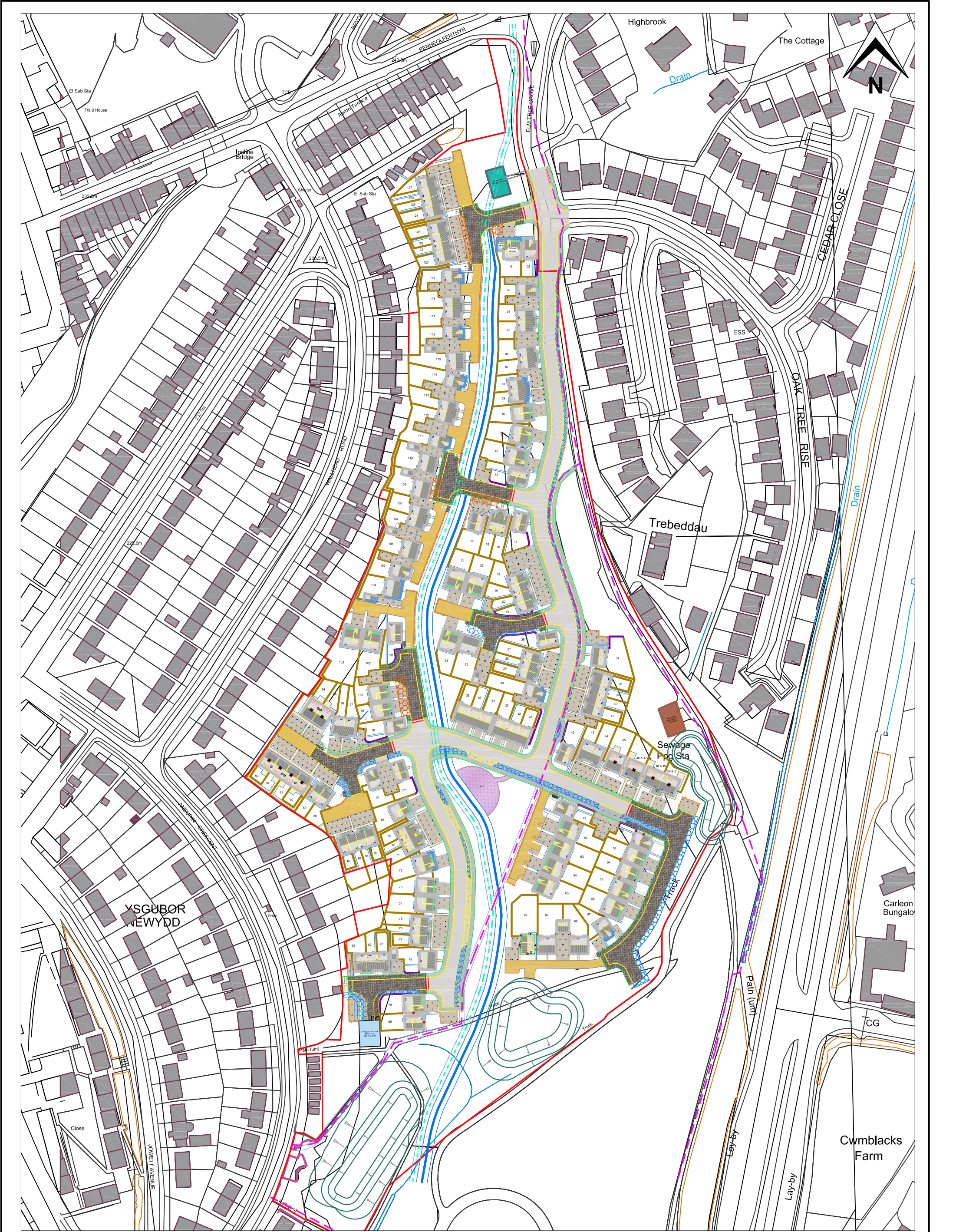


Figure 1: Site Location

Project: Land at Twynnyrodyn, Merthyr Tydfil	Job no.: 12690	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Persimmon Homes East Wales	Scale: 1:10,000 at A4		



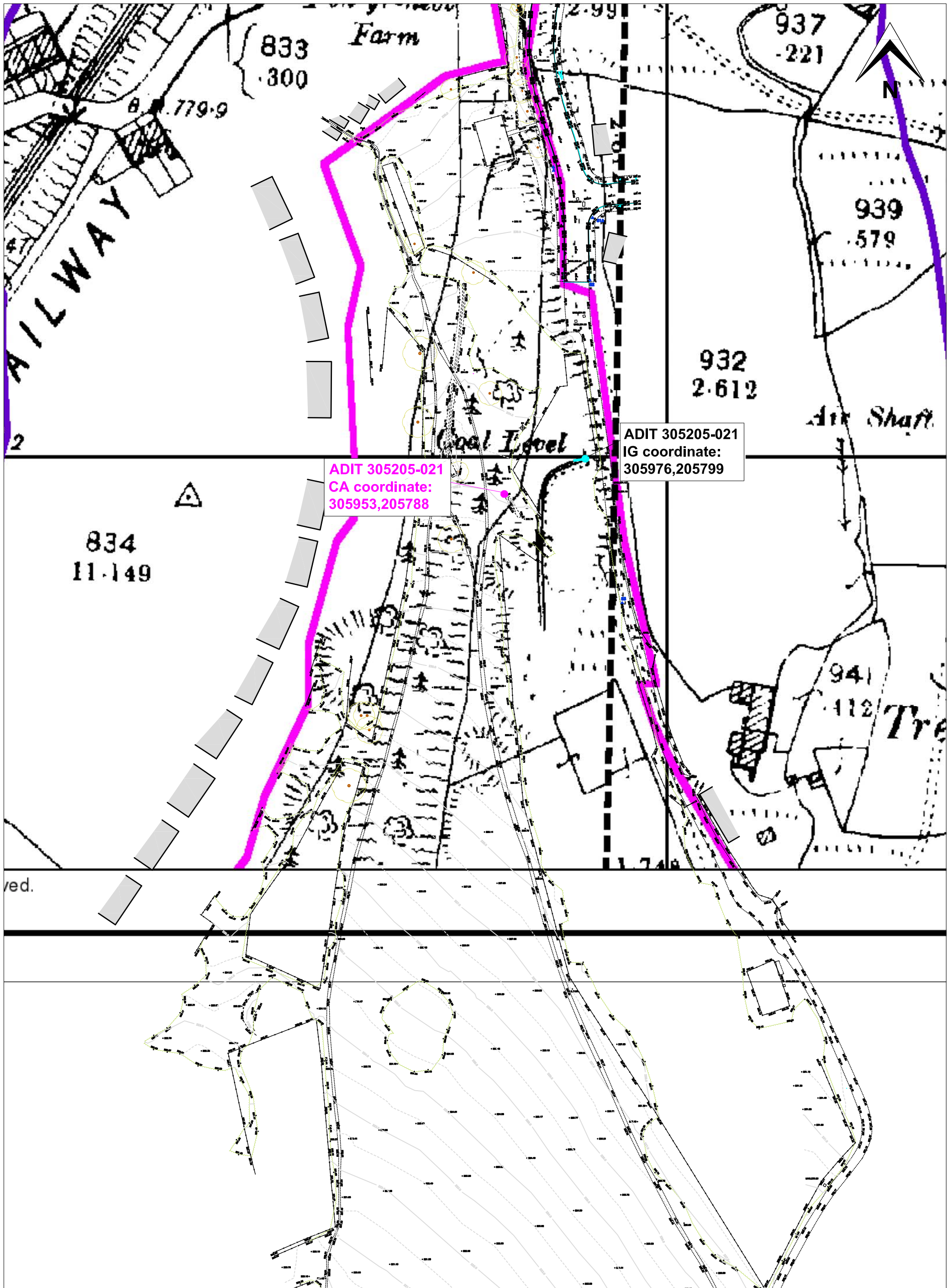


Figure 3: 1900 OS Map (showing Adit 305205-021)

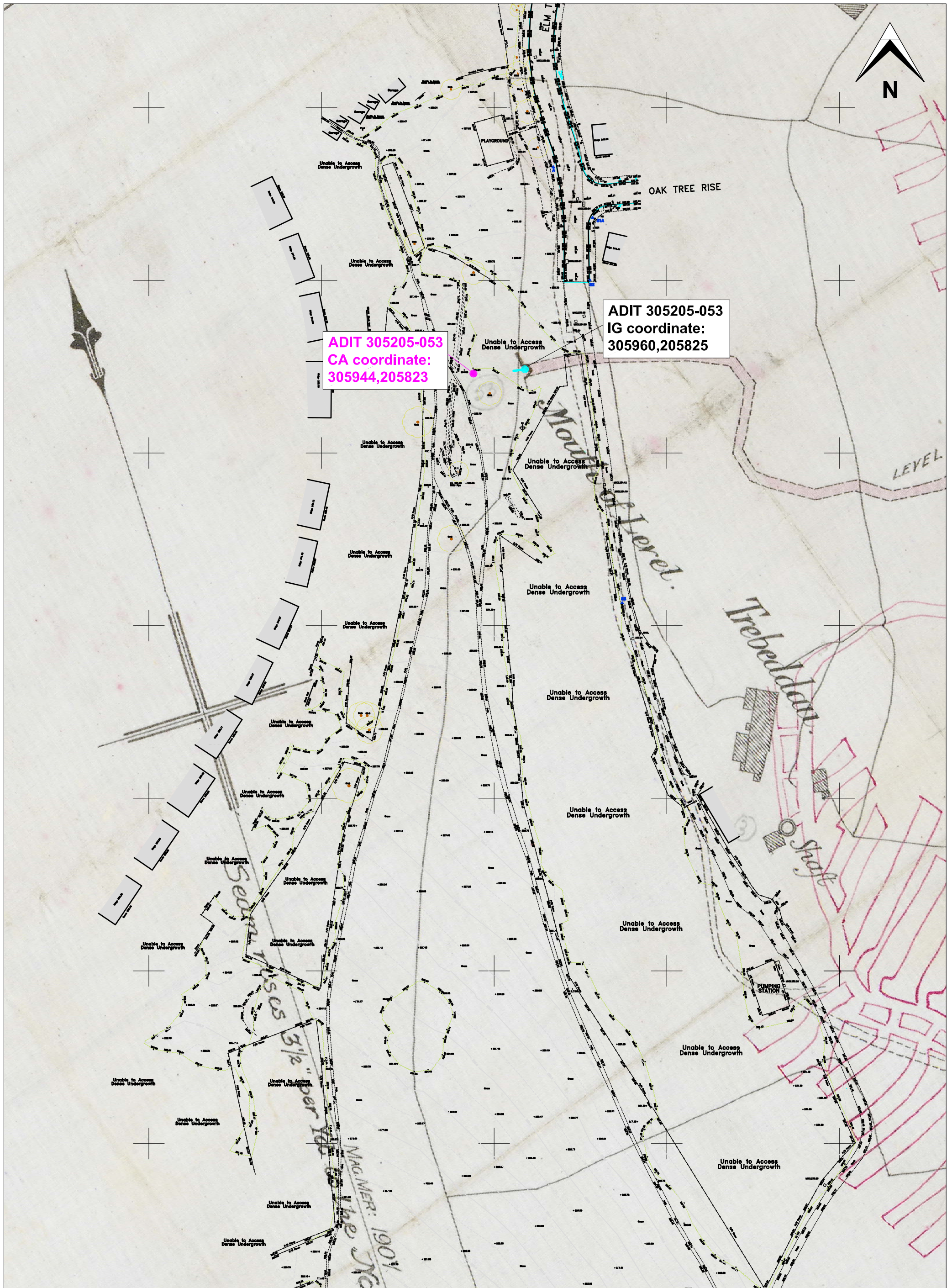


Figure 5: Ab plan 5196 Georeferenced

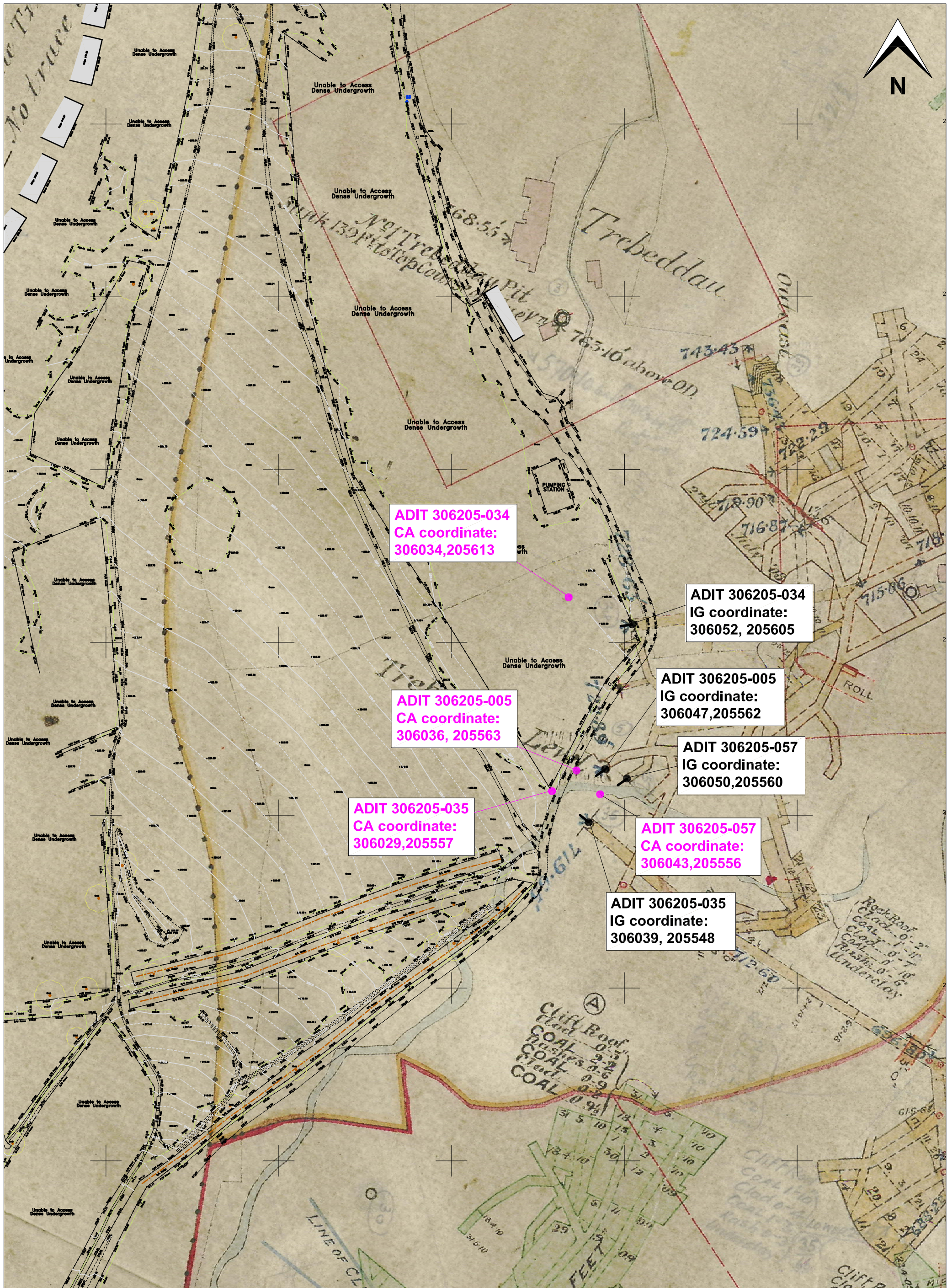


Figure 6: Ab Plan SWR3152 Georeferenced

Project: Land at Twynyrodyn, Merthyr Tydfil

Client: Persimmon Homes East Wales

Job No.: 12690

Scale: 1:1,000 at A3

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Integral House,
7 Beddau Way,
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Tel: 029 2080 7991

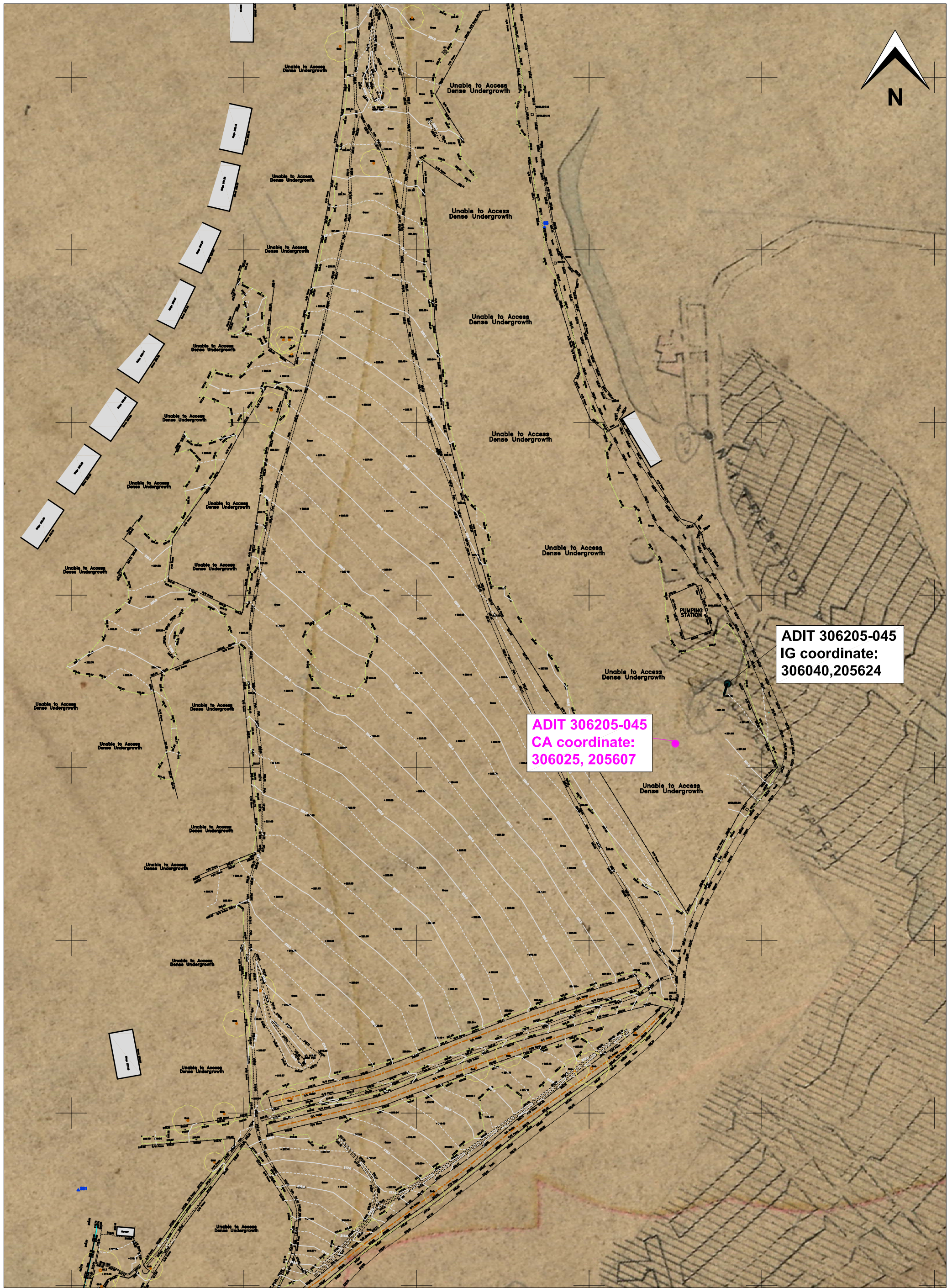


Figure 7: Ab Plan SWR3192 Georeferenced

Project: Land at Twynyrodyn, Merthyr Tydfil	Job No.: 12690	Intégral Géotechnique	Integral House, 7 Beddau Way, Castlegate Business Park, Caerphilly, CF83 2AX. Tel: 029 2080 7991
Client: Persimmon Homes East Wales	Scale: 1:1,000 at A3		

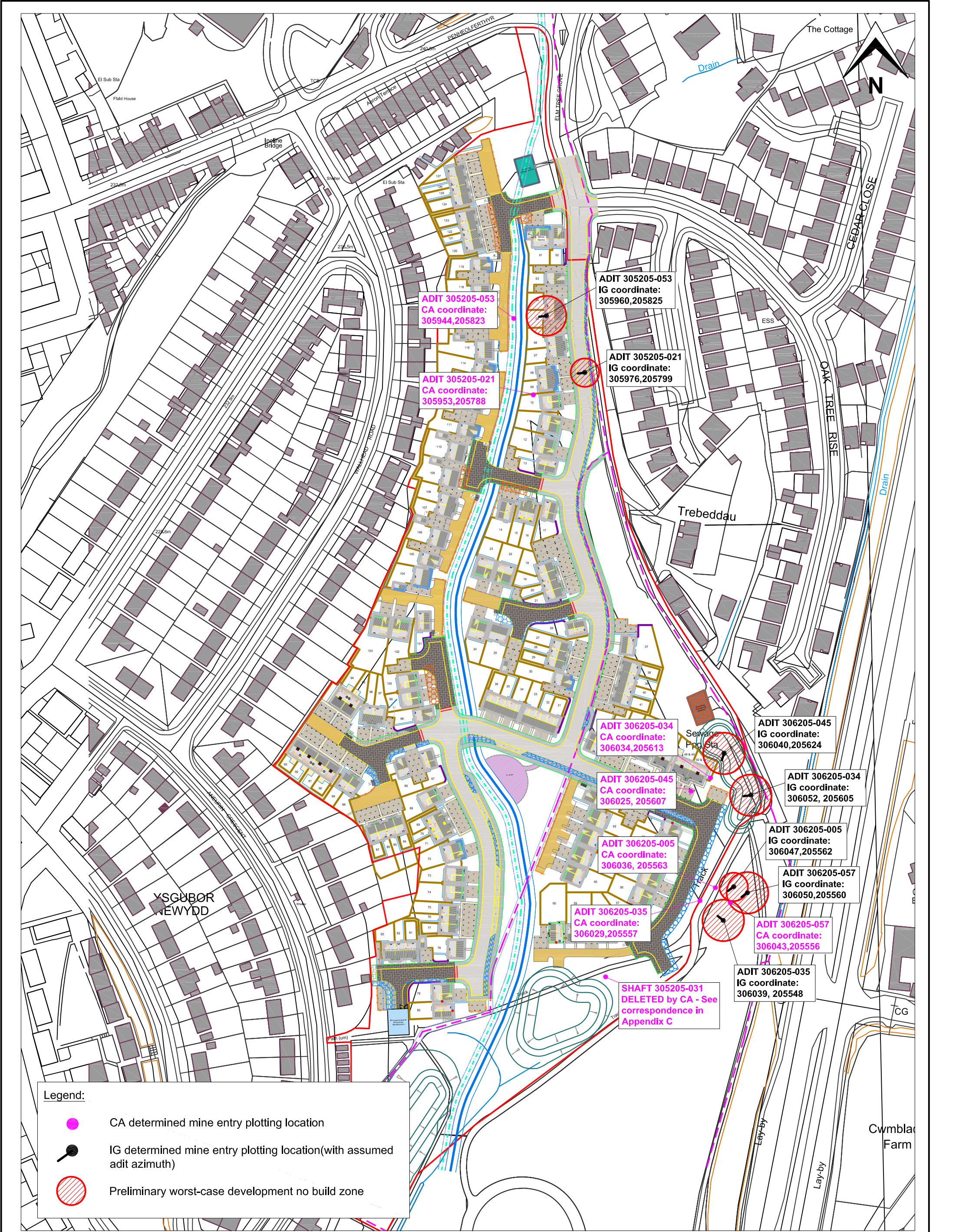


Figure 8: Summary of Mine Entry Plotting Locations