

DESKTOP STUDY AND PRELIMINARY RISK ASSESSMENT

Pentir Energy Storage

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EXECUTIVE SUMMARY

Section	Summary
Background	RPS Consulting Services Ltd (RPS) was commissioned by Lightsource bp to undertake a Phase 1 Geo-Environmental Desk Study and Preliminary Environmental Risk Assessment of land to the west of Pentir Sub-station for a proposed Battery Energy Storage System. This report was commissioned prior to the construction of the Proposed Development.
Site Details	<p>Site area: 2.57 hectares</p> <p>National Grid Reference: 255560 E , 367949 N</p> <p>Current site use: The Site currently comprises undeveloped heath and rough grassland.</p> <p>Proposed site use: The Proposed Development comprises a Battery Energy Storage System (BESS) with associated infrastructure.</p> <p>Surrounding land use: The Site is located approximately 200 m to the west of Pentir Sub-station, and is surrounded by undeveloped agricultural land alongside isolated residential / farm properties.</p>
Site Inspection	A site inspection was undertaken on 26 th October 2023. No visual evidence of contamination was identified at the time of the walkover.
Site History	<p>A review of historical maps indicates that the Site has remained undeveloped since at least 1888, with Pentir Sub-station built to the east by 1970.</p> <p>Historical mapping indicates above ground tanks located to the west associated with Home Farm and a number of disused quarries and limekilns to the east and south.</p>
Environmental Setting	<p>The Site is indicated to be underlain by a Secondary A Aquifer relating to Alluvium, the Minffordd Formation and Padarn Tuff Formation. The Site is not indicated to be located in a groundwater Source Protection Zone (SPZ) and there are no sensitive groundwater abstractions in the vicinity of the Site.</p> <p>The nearest surface water feature follows the southern border of the Site and runs along the boundary between Fields 2 and 3.</p> <p>Natural Resources Wales (NRW) data indicates there are 22 no. ecologically sensitive sites within 500 m of the Site, relating to Designated Ancient Woodland. The closest to the Site is indicated to be Plantation on Ancient Woodland, immediately to the east.</p>
Preliminary Risk Assessment	<p>An outline conceptual site model (CSM) has been derived on the basis of the desktop study and site reconnaissance. Due to part-time occupancy of the Site and the nature of the development, risk to human health and controlled waters are considered minimal.</p> <p>Ground gas risk has been discounted as significant as there are no planned occupied structures, the linkage can be considered inactive.</p>
Conclusions and Recommendations	Based on the Preliminary Risk Assessment and anticipated nature of the development, there is not anticipated to be any additional requirements for further geo-environmental investigation, although geotechnical testing for foundation design purposes and concrete classification is recommended.

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1 INTRODUCTION

1.1 Preamble

- 1.1.1 RPS Consulting Services Ltd (RPS) was commissioned by Lightsource bp (herein referred to as the applicant) to undertake a Phase 1 Geo-Environmental Desktop Study (DTS) and Preliminary Risk Assessment (PRA) for a parcel of land to the west of Pentir Substation, Rhyd-y-Groes, Pentir, Gwynedd, Wales, LL56 4QE (herein referred to as the 'Site'). A redline boundary plan is presented in Drawing 1 (ref. GBR_Pentir_Indicative BESS Layout_05) and included within Figure 1 below.



Figure 1 – Site Redline Boundary Plan

- 1.1.2 It is understood that the Site is to be developed in relation to a energy storage facility. This report has been commissioned to support the planning application of the Proposed Development at the Site.
- 1.1.3 The Desk Study assessment is based upon a review of published information available from local, regional and national agencies. The desk study information is derived from Insights Reports provided by Groundsure, Ref. GS-MJF-TTR-Y1M-IKO and GS-KPM-C95-5VB-32Z (2023), which are presented as Appendix B. Please note the terms and conditions attached to the supply of data from Groundsure. It should be noted that at the time of the purchase of the Groundsure Report, the Site boundary was larger and included additional areas, however the boundary has since been reduced and excludes areas that are not presented in Figure 1 above. Although the Groundsure Report presents data for the larger area, only information relevant to the site boundary outlined in Figure 1 is summarised in this report.

1.2 Proposed Development

- 1.2.1 The Proposed Development is understood to comprise an Energy Storage System (ESS) facility and associated infrastructure including a sub-station, battery blocks, monitoring house and generator. A concept masterplan for the energy storage system has been made available by the applicant and is presented as Drawing 1 (ref. GBR_Pentir_Indicative BESS Layout_05).

1.3 Objectives

- 1.3.1 The principal objectives of this assessment were as follows:

-
- To assess potential sources of contamination at the site, associated with historical and current land uses both on site and in the surrounding area;
 - To review the environmental setting to assess the sensitivity of the surrounding area to contamination/pollution;
 - To produce an outline Conceptual Site Model (CSM) detailing how any contamination may impact the identified receptors via pollutant linkages; and
 - To conclude on the likely requirement for further assessment and investigation in support of planning.

1.4 Legislation and Guidance

1.4.1 The assessment has been undertaken in general accordance with British Standard BS EN ISO 21365:2020 and is considered suitable to meet the initial requirements of planning as outlined within the Planning Policy Wales (2021) guidelines. The assessment also reflects the recommendations of Environment Agency guidance, Land Contamination: Risk Management, (LCRM 2020).

1.4.2 This report has been produced in general accordance with:

- Contaminated Land (Wales) Regulations 2006 (as amended);
- DEFRA Environmental Protection Act 1990: Part 2A – *Contaminated Land Statutory Guidance* (2012);
- Environment Agency (2020) Land Contamination: Risk Management (LCRM, 2020);
- Planning Policy Wales (2021);
- CIRIA Document C665: Assessing Risks Posed by Hazardous Ground Gases to Buildings; and
- British Standard Requirements for the '*Investigation of potentially contaminated sites – Code of Practice*' (Ref. BS10175:2011+A1:2017).

1.4.3 Details of the limitations of this type of assessment are described in Appendix A.

2 SITE DESCRIPTION AND DESK STUDY

2.1 Site Description

- 2.1.1 This section of the report is based on observations made during a targeted site inspection of fields 2 and 3 (main proposed BESS location), and 4, 5 and 6 (proposed site access route, including the southern portion of Field 7) carried out on 26th October 2023. Selected photographs are shown in Appendix C.
- 2.1.2 A plan detailing the location of each field is presented below in Figure 2.



Figure 2 - Field References

The Site

Table 2-1 – Summary of on-site activities

Section	Description
Background:	The Site is located at National Grid Reference (NGR) 255560 E, 367949 N and comprises a rectangular parcel of undeveloped land occupying an approximate area of 2.57 ha. The topography of the Site is generally flat.
Site Layout:	<p>Fields 2 and 3: Fields two and three were approximately rectangular in shape comprising grassland. Field 2 was enclosed in the east by dense mature woodland and Fields 2 and 3 by dense woodland in the south. The northern boundary of the fields were denoted by hedgerows, and vegetation in the west.</p> <p>Fields 4 and 5: Undeveloped grassland.</p> <p>Field 6: Field six was approximately rectangular in shape and comprised recently cut grass, and at the time of inspection, horses were present in this field.</p> <p>Field 7: Field seven was rectangular in shape comprising mature trees and vegetation in the east, areas of standing water due to high rainfall, and undeveloped rough grassland.</p>
Activity / Operations:	All fields were indicated to be undeveloped agricultural / grazing land.
Building Structure(s):	<p>Field 3: A dilapidated metal and wood building (likely to be a former shed or barn) was present along the north-west boundary. No foundation/slabs were identified.</p> <p>Field 4: Whilst not included in the targeted scope of inspection, a horse barn was observed along the southern site boundary.</p>
Surface Cover:	Field 7: Two mounds, approximately 1 m high, were identified in the north of the field comprising soil, loose gravel and cobbles covered by a thin layer of vegetation.
Drainage:	<p>Field 2/3: A water-bearing drainage ditch was present through the centre of the fields, with overfall towards the east. This was observed to flow through the centre of field seven into the boundary ditch between these two fields.</p> <p>Field 7: A drainage ditch was identified connected to the drainage ditch running southward towards Fields two and three. The south of the field has a drainage ditch running eastwards, also containing water. A third drainage ditch was identified along the western field boundary, running southerly. This contained approximately 5 cm of water with vegetation lining the sides of the ditch.</p>
Bulk Storage / Tanks:	Field 7: An underground SewPac pump was identified in the north of the field with the cover identifiable at ground level.
Waste:	Field 7: Plastic bags were identified on the ground surface.
Electricity Sub-Stations /Transformers:	None identified
Visual Evidence of Contamination:	Field 1: A burnt area of ground was identified, including evidence of burnt plastic bottles and bags.
Statutory Nuisance:	None identified
Other Geo-Environmental Issues:	Localised areas of flooding were noted in Fields 2, 3 and 7 associated with high water levels within drainage ditches due to heavy rainfall.

The Surrounding Area

2.1.3 The Site is located in an area of predominantly rural land use. At the time of the site inspection, neighbouring land within close proximity consisted of the following:

Table 2-2 – Neighbouring Land Uses

Direction	Description
North:	Unnamed track off Fodolydd Lane and mature woodland immediately beyond, agricultural land and isolated dwellings.
East:	Mature woodland and Pentir Sub-station, with agricultural land beyond
South:	Mature woodland, agricultural land and Tyddyn Forgan farm
West:	Predominantly agricultural land with a number of dwellings and farms

2.2 Site History

Historical Map Review

2.2.1 The following review is based on past editions of readily available Ordnance Survey (OS) maps obtained from Groundsure. These include scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560 dated 1888 to 2023. The historical maps reviewed are provided in Appendix B.

Table 2-3 – Historical Site Uses

On-site Land Use and Features	Dates
Undeveloped rough grassland and furze with a number of drainage ditches. A spring runs immediately parallel with the southern boundary of the Site.	1888 – Present

2.2.2 The historical maps have also been reviewed to consider potential historical neighbouring site uses that may pose a source of potential contamination to the Site. The table below sets out the potentially contaminative historical off-site land uses within 250 m of the Site.

Table 2-4 – Historical Neighbouring Site Uses

Surrounding Land Uses (250 m radius)	Orientation	Distance (from site boundary)	Dates	
			From	To
Tank at Tyddyn Forgan Farm	SW	165 m	1888	Present
Area of tipped/quarried material (later colonised by bush vegetation)	W	175 m	1889	1914
Pentir Sub-station and associated tanks	E	200 m	1970	Present

Site Planning History

2.2.3 There are a number of relevant and readily available planning records for the area surrounding the site, as obtained from Gwynedd Council planning website, and are summarised below.

- Planning Reference: C96A/0094/25/CL was approved with conditions in 1996 for the tipping of **inert** material to improve agricultural land, at Rhos Fawr Lon Ty'n Llwyn in Pentir. The parcel of land subject to the tipping is approximately within 330 m of the Site. Available documentation confirms the material to be tipped would be "inert non-putrescible" material and was granted subject to conditions. Condition 3 relates specifically to the material and states:

"The proposal hereby approved shall only relate to the tipping of the following waste materials: topsoil, subsoil, hard-core, brickwork, stone, set concrete, clay, sands, silica

(excluding finely powdered waste), glass, soil or granular dry materials free from any noxious poison or polluting substance which does not decompose in water or for which the environmental impact of decomposition is less than or comparable with that of topsoil and is virtually insoluble in water”.

- No further documents have been provided to confirm that the application was progressed. It is assumed that if they did proceed, the works were likely to be regulated by waste management licencing.
- Planning Reference: C98A/0411/25/LL was approved with conditions in 1998, for an extension to the earlier application (with reference to C96A/0094/25/CL) as ‘tipping of inert material to improve agricultural land (part retrospective application). The extension site is approximately 310 m north-east of the Site. Documentation confirmed approximately 2,500 tonnes of inert material would be placed at the extension site and spread by bulldozer. Condition 3 of the above planning application was also stipulated to this application as well as Condition 4 stating:

“Any discharge of polluted surface water runoff shall be intercepted by a surface water drainage system installed to the satisfaction of the waste planning authority which shall direct surface water runoff to properly constructed settlement/treatment lagoons prior to discharge to the existing surface water drainage system”.

- Figure 3 below indicates the extension site for inert waste tipping (red line) and the original field that has been subject to tipping (shaded yellow).

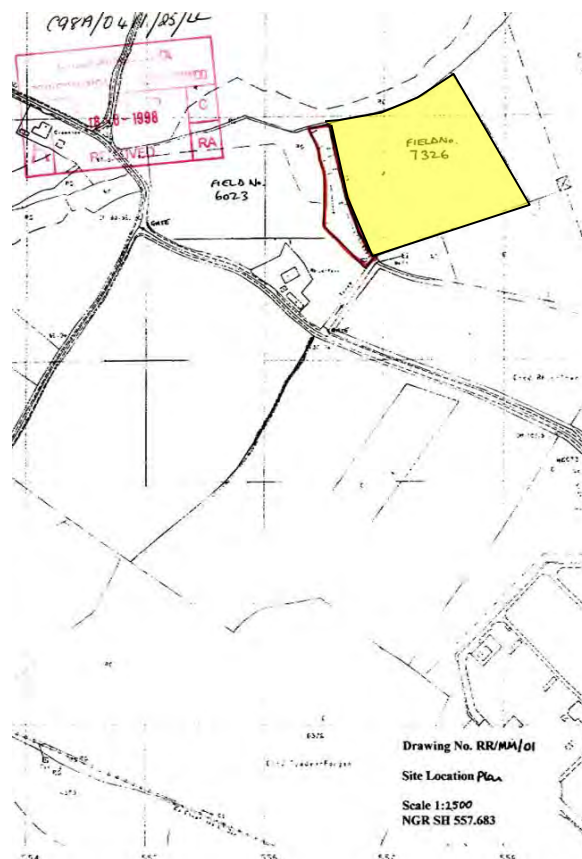


Figure 3 – Inert Waste Tipping Planning Applications within Proximity of Site

2.2.4 There is no evidence from the Groundsure waste management data to confirm that this application was progressed under licensed waste activities. It is indicated that the application was for surface

spreading of inert, non-putrescible material which would indicate negligible ground gas generation potential.

2.3 Previous Reports

2.3.1 At the time of writing, RPS has not been provided with any previous reports for the Site for review.

2.4 Environmental Setting

Geology

2.4.1 Based on British Geological Survey (BGS) mapping (1:50,000-scale) and the Natural Resources Wales (NRW) Groundwater Vulnerability mapping (1:100,000-scale), the stratigraphic sequence and aquifer classifications beneath the Site are indicated to be as follows:

Table 2-5 – Descriptions of Geological Strata

Stratum	Strata	Description & approximate thickness	Aquifer Classification
Superficial	Alluvium (Localised to the eastern boundary and southern tip of Field 3)	Typically comprises unconsolidated clay, silt, sand and gravel. Approx Thickness: None recorded	Secondary A
	Glacial Till – Diamicton (underlies majority of Site)	Typically comprises poorly sorted sand and gravel within a clay/silt matrix. Approx Thickness: None recorded	Secondary Undifferentiated
Bedrock	Minffordd Formation – Sandstone and Conglomerate, Interbedded (underlies the eastern half of Field 2)	Typically comprises coarse to fine epiclastic rocks intercalated with pyroclastic and mixed pyroclastic and epiclastic rocks, comprising laminated siltstones, felsic air-fall tuffs and tuffites, volcanogenic sandstones and conglomerates and thin ash-flow tuffs. Approx Thickness: 1600 m	Secondary A
	Padarn Tuff Formation – Tuff, Felsic (underlies the majority of the Site)	Typically comprises strongly welded rhyolitic ash-flow tuffs with abundant phenocrysts of quartz and sodic plagioclase, subordinate air-fall tuffs and rhyolite lavas. Approx Thickness: 800 – 2000 m	Secondary A

2.4.2 There are nine BGS borehole records between 12 m and 160 m of the Site, however they are confidential and not made available for public use and are associated with Pentir Sub-station.

2.4.3 Made Ground is unlikely to be present across the Site given the absence of historical development.

2.4.4 There is also potential for localised areas of peat beneath the Site, likely to be within the alluvial soils, with significant areas of peat mapped immediately beyond the Site boundary.

Hydrogeology

- 2.4.5 The Site is indicated to be underlain by a Secondary A Aquifer relating to the Alluvium deposits, Minffordd Formation and Padarn Tuff Formation, and a Secondary Undifferentiated Aquifer relating to Glacial Till deposits.
- Secondary A Aquifer: These formations are formed of permeable layers capable of supporting water supplies at a local scale, in some cases forming an important source of base flow to rivers.
 - Secondary Undifferentiated Aquifer: These formations have varying characteristics in different locations.
- 2.4.6 According to NRW, the Site is not indicated to be located in a groundwater Source Protection Zone (SPZ).
- 2.4.7 Under the Water Framework Directive, Natural Resources Wales classify the Llyn and Eryri groundwater body beneath the Site to be of 'poor' overall quality (as of 2017).
- 2.4.8 Information provided by the EA and NRW indicates that there are no available records of active licensed groundwater abstractions within 2 km of the Site.

Surface Water

- 2.4.9 There are no watercourses within 1 km of the Site which are classified within a River Basin Management Plan published by the EA under the European Water Framework Directive (2000). There are however a number of surface water features not classified under the scheme both on the Site and within 250 m. Drainage ditches were observed during the site inspection to traverse the Site and a spring has been identified along the southern boundary.
- 2.4.10 Information provided by the EA and NRW indicates that there are no active surface water abstractions within 500 m of the Site.

Ecologically Sensitive Sites

- 2.4.11 Natural Resources Wales data indicates that there are 22 no. ecologically sensitive sites, which constitute environmental receptors as defined within Table 1 of the DEFRA Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance (2012), located within a 500 m radius of the Site. Each record relates to either a:
- Plantation on Ancient Woodland Site;
 - Ancient Woodland Site of Unknown Category; or
 - Restored Ancient Woodland Site.
- 2.4.12 The closest records are indicated to be Plantation on Ancient Woodland Sites to the immediate east of the Site.

Radon

- 2.4.13 According to the online Indicative Atlas of Radon in England and Wales published by the UK Health Security Agency (UKHSA) and BGS, the Site lie within a kilometre grid square with maximum radon potential of between 3 % and 5 %. The Indicative Atlas is based upon Radon Potential Data and classifies areas based upon the likelihood of a property having a radon action level at or above the Action Level of 200 Bq m³ based upon a dataset of over 500,000 records provided by the UKHSA and geology provided by the BGS. The Radon Potential is calculated from

statistics (geometric mean and geometric standard deviation) of indoor radon measurements collected over each geological unit.

- 2.4.14 The higher resolution Radon Potential dataset, as included within the Groundsure GeolInsight report, provides a more accurate assessment of the level of risk and the requirements for inclusion of preventative measures during construction based upon BGS Geology (1:50,000 scale) geological map data. The Site has a maximum potential between 1 % and 3 %.

Coal Authority

- 2.4.15 The Interactive Map Viewer on the Coal Authority website indicates that the Site is not located in a coal mining reporting area.

Non-Coal Mining

- 2.4.16 The eastern half of Field 2 is indicated by BGS to be in area of potential localised small scale underground non-coal mining. Additional information made available within the Groundsure Insights report indicates that 'underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered'.

BGS Ground Stability Hazard Ratings

- 2.4.17 British Geological Survey Ground Stability Hazard ratings for the Site are summarised as follows:

Table 2-6 – BGS Ground Stability Hazard Ratings

Ground Stability Hazard	BGS Risk rating
Collapsible ground	Very Low - majority of Site Negligible - associated with Alluvium mapped extents
Compressible ground	Negligible – majority of Site Moderate - associated with Alluvium mapped extents
Ground dissolution	Negligible – whole Site
Landslide	Very Low – whole Site
Running sand	Very Low – majority of Site Low - associated with Alluvium mapped extents
Shrinking or swelling clay	Negligible – majority of Site Very Low - associated with Alluvium mapped extents

2.5 Authorised Processes and Pollution Incidents

Landfills and Waste Sites

- 2.5.1 Data provided by the NRW, Local Authority and BGS indicates that there are no recorded licensed or known historical landfill sites located within 250 m of the Site.

Environmental Permits

- 2.5.2 EA and Local Authority data indicates that there are no known processes regulated by an Environmental Permit (under the Environmental Permitting Regulations 2010) within 500 m of the Site.

Waste Exemptions

- 2.5.3 NRW indicates that there are 14 no. waste exemptions within 250 m of the Site. The closest record is approximately 22 m to the west and is related to Garth Farm for use of waste in construction.

COMAH Sites

- 2.5.4 There are no records of any operations under the Control of Major Accident Hazards (COMAH) Regulations 1999, located within 500 m of the Site.

Pollution Incidents

- 2.5.5 Environment Agency data indicates that there are no records of 'major' or 'significant' pollution incidents within 250 m of the Site.

2.6 Unexploded Ordnance

- 2.6.1 CIRIA Report C681 (Stone et al, 2009) outlines recommendations for dealing with the potential risk associated with the legacy of Unexploded Ordnance Risk, largely relating to WWII bombing and military sites.
- 2.6.2 Reference to the Zetica Unexploded Bomb Risk mapping indicates that the Site is in an area of low potential risk from Unexploded Bombs. As the Site is not within an area of known military history, in general accordance with CIRIA Report C681 no further consideration of Unexploded Ordnance is considered necessary.

3 OUTLINE CONCEPTUAL SITE MODEL

3.1 Background

3.1.1 An outline conceptual site model (CSM) consists of an appraisal of the *source-pathway-receptor* 'contaminant linkages' which is central to the approach used to determine the existence of 'contaminated land' according to the definition set out under Part 2A of the Environmental Protection Act 1990. For a risk to exist (under Part 2A), all three of the following components must be present to facilitate a potential 'pollutant linkage'.

- **Source** referring to the source of contamination (Hazard).
- **Pathway** for the contaminant to move/migrate to receptor(s).
- **Receptor** (Target) that could be affected by the contaminant(s).

3.1.2 Receptors include human beings, controlled waters and buildings / structures. The Planning Policy Wales, used to address contaminated land through the planning process, follows the same principles as those set out under Part 2A.

3.1.3 As part of the assessment the potential risks to receptors for potential source is given one of the following classifications:

- **Low risk** - it is considered unlikely that issues within the category will give rise to significant harm to identified receptors;
- **Moderate risk** - it is possible, but not certain that issues within the category will give rise to significant harm to receptors; and
- **High risk** - there is a high potential that issues within the category will give rise to significant harm to identified receptors.

3.2 Potential Pollutant Linkages

3.2.1 Each stage of the potential pollutant linkage sequence has been assessed individually on the basis of information obtained during the site reconnaissance and desk study exercise and are discussed in the following section. The proposed layout plan provided indicates that post development there will not be any buildings likely to have regular occupation and it is likely that site workers will be present infrequently for routine maintenance and inspection activities for a short period of time.

Potential Contaminant Sources

On Site – Current

3.2.2 No current on site potentially contaminative land uses have been identified.

On Site – Historical

3.2.3 No historical on site potentially contaminative land uses have been identified.

Off-site – Current

3.2.4 Pentir Sub-station is present approximately 200 m to the east of the Site and dates back to at least 1970 and therefore is considered to be present a potential source of contaminants including Polychlorinated Biphenyls (PCBs) used in dielectric fluids/oils.

Off-Site – Historical

- 3.2.5 A suspected fuel tank associated with Tyddyn Forgan Farm south-west of the Site which may represent a localised source of hydrocarbon contamination.
- 3.2.6 A localised area of possible quarrying some 175 m west potentially represents a source of ground gas following infilling however given the age that this occurred, lack of confirmation on infill and distance involved, the potential for ground gas generation and impact on the Site is minimal.

Potential Pathways

- 3.2.7 The inhalation pathway in outdoor and indoor areas (if applicable) is not likely to be a viable pathway resultant from construction of the Proposed Development given the absence of former site development, low risk off-site gas source potential and absence of any proposed occupied buildings. The inhalation of fugitive dust by off-site occupants/land users to the north-east and north is viable during construction although is assumed to be mitigated by use of appropriate construction best practice mitigation measures and can be discounted as a viable pathway post development. On the assumption that there will be no occupation of the site post development and that only short term exposure of maintenance workers to residual soils would be applicable other human health exposure pathways are not considered viable.
- 3.2.8 The Site is indicated to be underlain by predominantly cohesive superficial Alluvium and Glacial Till which may inhibit the lateral and vertical migration of contaminants of concern (if present) via groundwater. The underlying bedrock is considered to be of relatively low permeability and is likely to enhance lateral groundwater flow, where present, between superficial soils and bedrock.
- 3.2.9 Chemical attack on concrete / utilities via direct contact with soils/groundwater containing elevated sulphate concentrations, volatile contaminants or acidic groundwater.

Potential Receptors

- 3.2.10 Potential post development human receptors include facility maintenance engineers. It is assumed from the absence of proposed buildings on the layout provided that there will not be any full-time occupancy of the facility once construction is complete, however should this not be the case then this CSM should be reassessed accordingly. The rest of the Site is assumed to comprise associated infrastructure and storage facilities.
- 3.2.11 Off-site receptors include residents of farms and dwellings to the north-east and north of the Site as well as employees of the neighbouring Pentir Sub-station.
- 3.2.12 A designated plantation on Ancient Woodland Site is located immediately to east of the Site and is therefore considered to represent sensitive receptors. Given the nature of the Proposed Development, it is not anticipated that the designated site would be adversely impacted post-development.
- 3.2.13 The Secondary A aquifers relating to the Alluvium beneath the Site and bedrock of the Minffordd and Padarn Tuff Formations represents potentially sensitive receptors however their WFD classification is 'poor'. However, given the absence of confirmed contamination sources identified on the Site and the Site not being located within a SPZ, nor any groundwater abstractions within 2 km, groundwater is discounted as a significant receptor.
- 3.2.14 The nearest surface watercourses are drainage ditches that flow through and border the Site and a spring immediately to the south-west.
- 3.2.15 Another potential receptor are utilities and foundations likely to be placed within the shallow soils. The risk of chemical attack on concrete from elevated sulphate levels or degradation of utilities

from volatile organic compounds or acidic ground conditions is considered to be unlikely given the DTS findings and is discounted from further assessment.

- 3.2.16 The assessment does not consider the risk to construction workers during redevelopment. These risks will be managed through appropriate Health & Safety legislation include Health & Safety At Work Act (1974) and Construction Design and Management regulations (2015).

3.3 Outline Conceptual Site Model

- 3.3.1 An outline CSM has been developed on the basis of the site reconnaissance and desk study. The CSM is used to identify potential sources, pathways and receptors (i.e. potential pollutant linkages) on site post development and is summarised in the table below.
- 3.3.2 Where potential sources, receptors and pathways have been discounted in the previous sections, they have been excluded from the table.

Table 3-1 – Outline Conceptual Site Model

Potential Source	Contaminants of Concern	Via	Potential Pathways	Linkage Potentially Active?	Receptors	Qualitative Risk Rating	Notes
Off-site historical: Former quarry/tipped material	Carbon dioxide and methane	Ground Gas	Inhalation of ground gas/explosive risk	*	Future site users and structures	-	If there is no future occupation of the site and structures within it, the linkage can be considered inactive and discounted from this PRA.
Off-site – current: Pentir Sub-station, tanks,	Polychlorinated biphenyls (PCBs), hydrocarbons	Groundwater	Inhalation of volatiles	*	Future Site Users	-	Typically low permeability Glacial deposits and limited shallow groundwater potential and limited period of exposure to residual soils/groundwater by maintenance workers would lead to conclusion that the linkage can be considered inactive and discounted from this PRA.

Note * The Qualitative Risk Rating does not consider the potential for the pathway to be active. In the event that a Moderate or High Qualitative Risk Rating is identified further assessment is recommended.

3.3.3 Based on the identified potential sources and the site setting there is not considered to be a significant risk to ecological receptors, crops/vegetation or archaeological receptors.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

4.1.1 Based on known current / historical use of the Site, no confirmed significant sources of contamination have been identified, the only identified potential contamination risks are from offsite sources. From the outline CSM produced upon completion of the desk study assessment, risks to human health for future site users can be discounted if there is to be no site occupation. Should development proposals include for this then the CSM will need to be reassessed and revised accordingly. The risks presented to water quality of controlled waters are considered to be negligible given the absence of identified sources.

4.2 Recommendations

4.2.1 No further geo-environmental assessment is considered necessary for the Site based on the data review undertaken and that no permanent structures with regular occupation are proposed. Geotechnical testing for foundation design purposes and concrete classification is however recommended.

4.2.2 If unexpected sources of contamination are discovered upon the redevelopment of the Site, it is recommended that construction works are stopped, and a suitably qualified and experienced geo-environmental consultant is appointed for further technical advice on how to proceed.

REFERENCES

BGS. British Geological Survey Onshore GeoIndex. [online] Available at: <http://www.bgs.ac.uk/geoindex/> [Accessed 27/10/23].

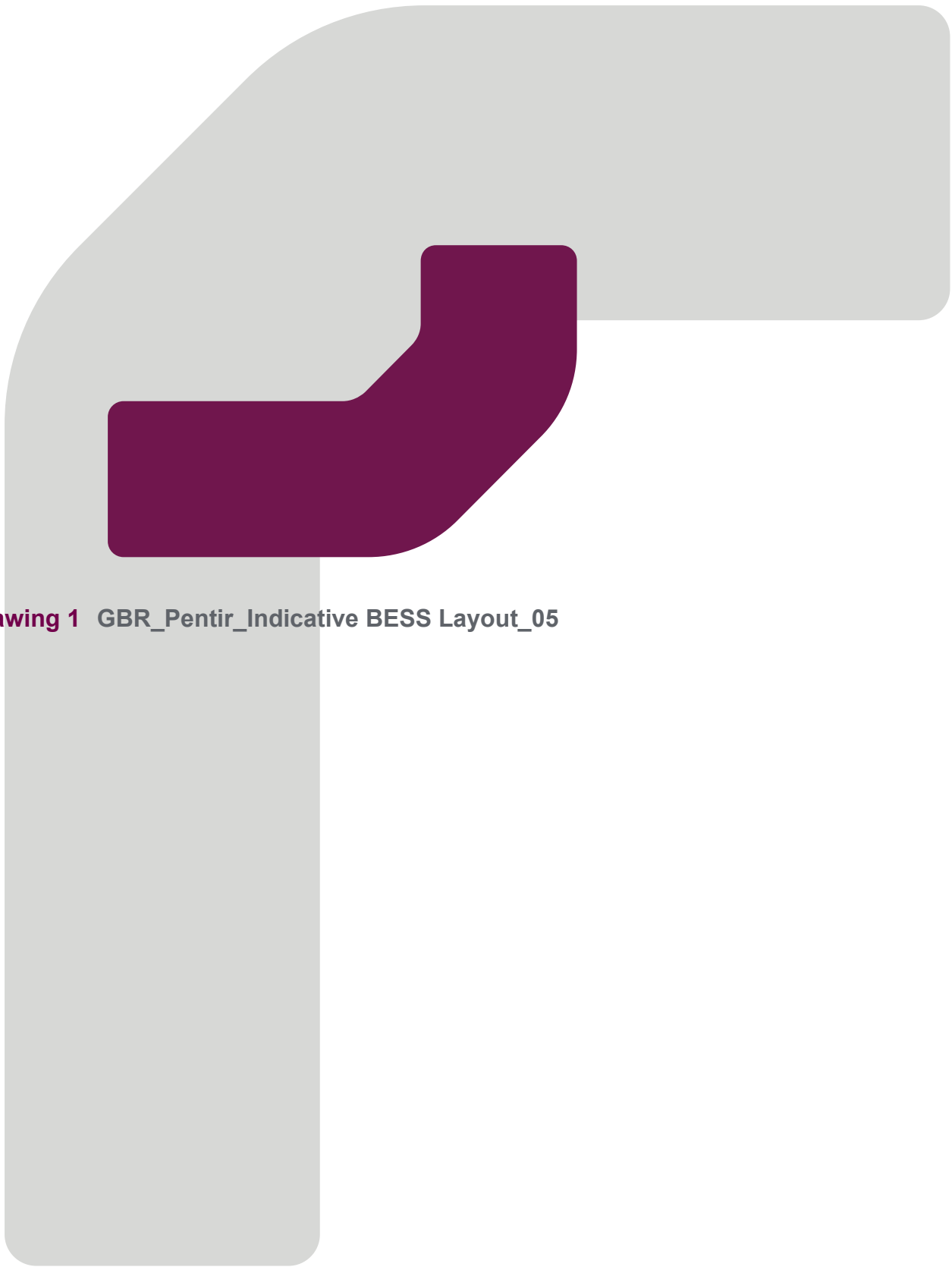
Building Research Establishment (2008): Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D Publication 66.

British Standards Institution (2019): Soil quality — Conceptual site models for potentially contaminated sites. BS EN ISO 21365:2019.

Environment Agency (2020): Land Contamination: Risk Management (LCRM 2020).

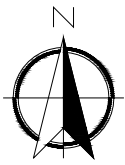
<https://magic.defra.gov.uk/>

<https://zeticauxo.com/downloads-and-resources/risk-maps/>



Drawing 1 GBR_Pentir_Indicative BESS Layout_05

Area 25,735 m2 (6.36 acres)



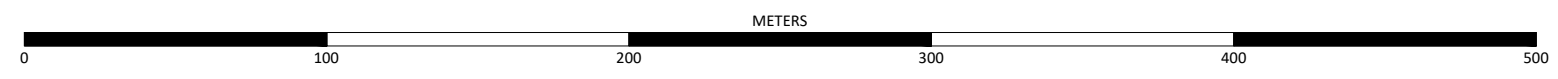
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	Acoustic Fence
	Site Access
	BESS Enclosure x 4
	Twin MV Skid
	Single MV Skid
	Backup Generator
	BESS Monitoring House
	BESS Intake Substation
	GRP
	Storage
	Spares Container
	Spares Container
	Access Road
	Toilet
	Acoustic Access Gate
	CCTV
	BESS Lighting
	Existing Tree
	Proposed Planting
	Proposed Tree Planting
	Proposed hedge removal

Site Access

Scale 1:12500



ISO full bleed A3 (420.00 x 297.00 MM)



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Appendix A

PRA METHODOLOGY

General Notes

RPS Consulting Services Ltd

Phase 1 - Environmental Risk Assessment / Desk Study Environmental Review

1. A "desk study" means that no site visits have been carried out as any part thereof, unless otherwise specified.
1. This report provides available factual data for the site obtained only from the sources described in the text and related to the site on the basis of the location information provided by the Client.
2. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources.
3. The accuracy of maps cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.
4. No sampling or analysis has been undertaken in relation to this desk study.
5. Any borehole data from British Geological Survey sources is included on the basis that: "The British Geological Survey accept no responsibility for omissions or misinterpretation of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation".
6. Where any data supplied by the Client or from other sources, including that from previous site investigations, have been used it has been assumed that the information is correct. No responsibility can be accepted by RPS for inaccuracies in the data supplied by any other party.
7. This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission.
8. The copyright in the written materials shall remain the property of the RPS Company but with a royalty-free perpetual licence to the Client deemed to be granted on payment in full to the RPS Company by the Client of the outstanding amounts.
9. The report is provided for sole use by the Client and is confidential to them, their professional advisors, no responsibility whatsoever for the contents of the report will be accepted to any person other than the Client. [Unless otherwise agreed]
10. These terms apply in addition to the RPS "Standard Terms & Conditions" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms & Conditions the said Standard Terms & Conditions shall prevail.) In the absence of such a written contract the Standard Terms & Conditions will apply.

GENERAL NOTES

INTRODUCTION

This report provides available factual data for the site obtained only from the sources described below and related to the site on the basis of the location provided by the client. The desk study information is not necessarily exhaustive and further information relevant to the site may be available from other sources. No responsibility can be accepted by RPS for inaccuracies in the data supplied by any other party.

This report is written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information and changes in legislation may necessitate a re-interpretation of the report in whole or in part after its original submission. The report is provided for sole use by the client and is confidential to them and their professional advisors. No reliance whatsoever is provided to any party other than the client unless otherwise agreed.

INFORMATION SOURCES

Current and Historical Land Use

This section establishes the former and current uses of the site, which could have caused contamination. Details of the site location, the current and proposed site uses have been provided by the client.

Information about the history of the site has been obtained through an inspection of historical maps at 1:10,000, 1:2,500 and 1:1,250 scales and historical aerial photographs (where available). The accuracy of maps cannot be guaranteed, and it should be recognised that different conditions on-site may have existed between, and subsequent to, the map survey dates.

Regulatory Records

Regulatory records including landfills, pollution incidents ('major' and 'significant' only), industry authorisations and licensed water abstractions are derived from information purchased from Groundsure Insights.

Environmental Setting

The geological sequence underlying the site and the approximate depths of strata are provided by maps published by the British Geological Survey (BGS) 1:50,000 scale and available borehole records held by the BGS.

The hydrogeological classification is obtained from Groundwater Vulnerability mapping by the Environment Agency (EA). The vulnerability of groundwater is determined from this mapping and geological information.

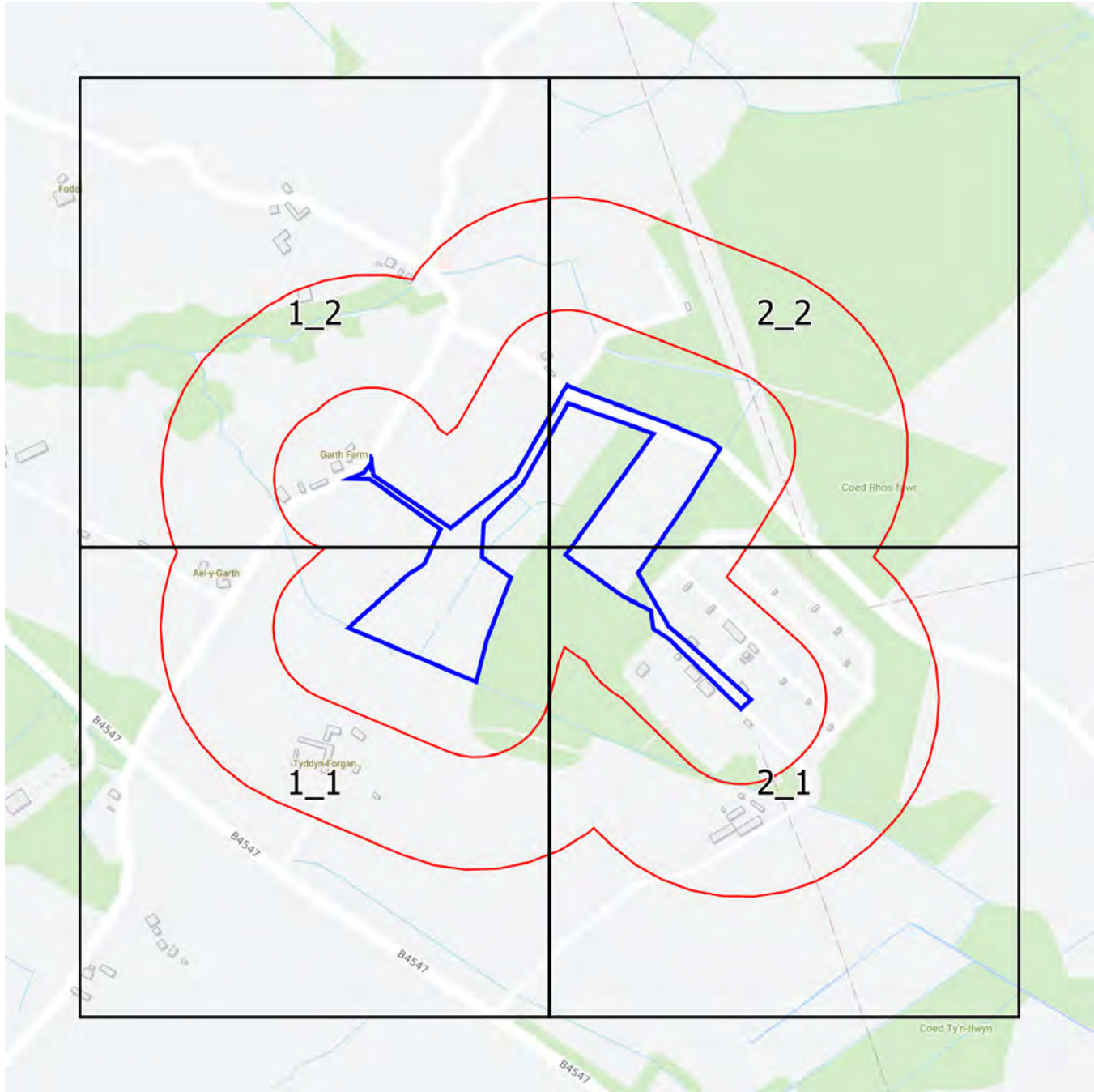
The location of surface watercourses is obtained from an inspection of current OS maps. Flood risk details and information on groundwater Source Protection Zones are obtained from readily available EA information published on-line and supplied by Groundsure Insights.

Details of sensitive ecosystems/habitats and coal mining areas are supplied by EA and the Coal Authority respectively via Groundsure Insights and inspection of EA interactive mapping and the MAGIC website.

Radon is a radioactive gas produced naturally by certain types of geology. This report uses the Indicative Atlas of Radon in England and Wales (2007) produced by the Health Protection Agency (HPA) and the British Geological Survey (BGS) to determine whether the site is located in an area at risk from radon gas. Where potential issues are identified, a site-specific radon report is obtained from the HPA and BGS to provide a more accurate estimate of the probability of the site being affected by radon gas ingress.

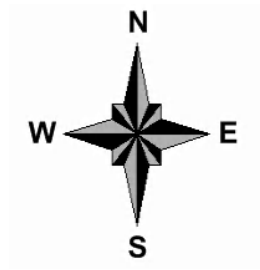


Appendix B
GROUNDSURE REPORTS



Groundsure
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1:2,500 Scale Grid Index



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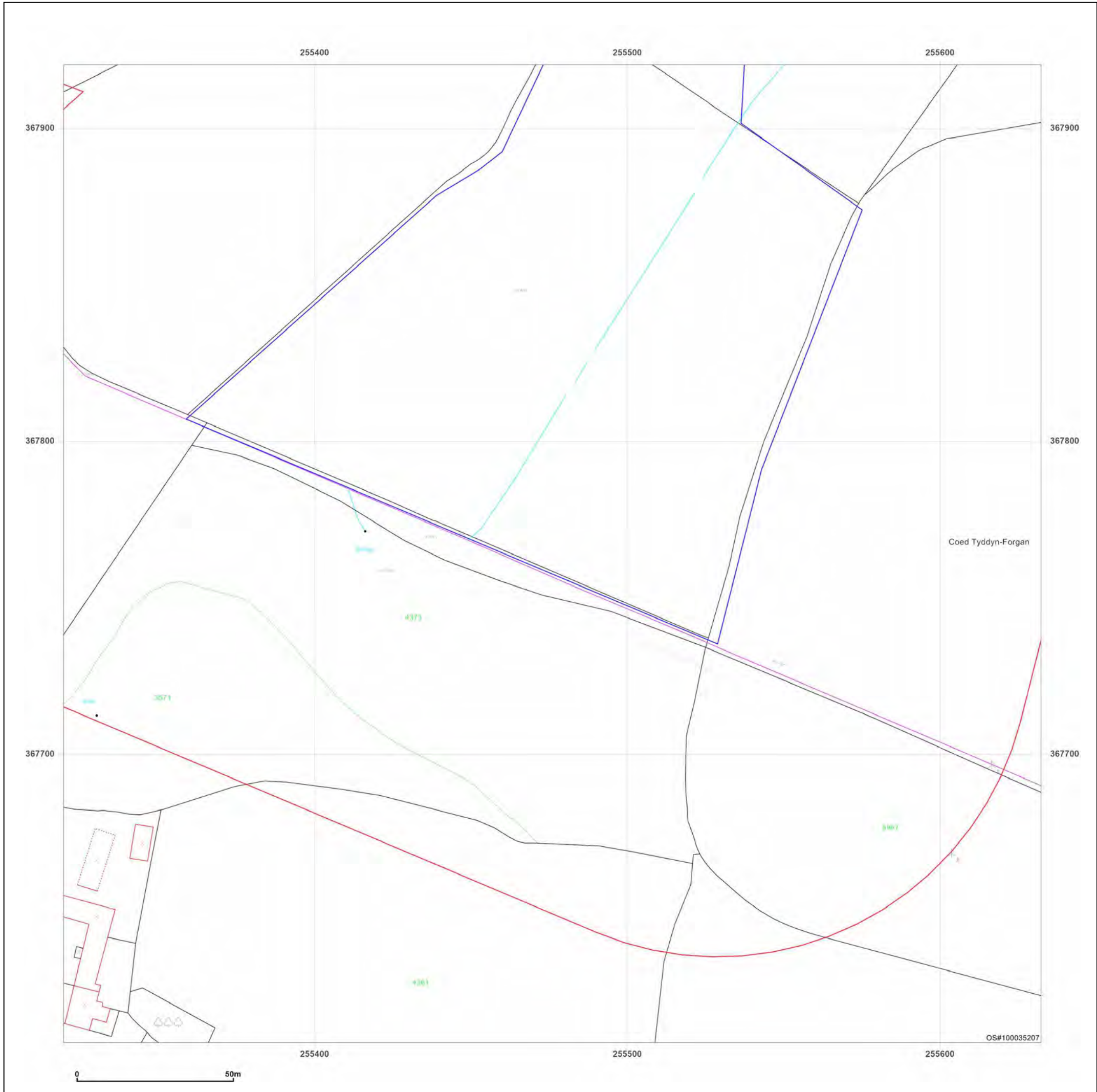
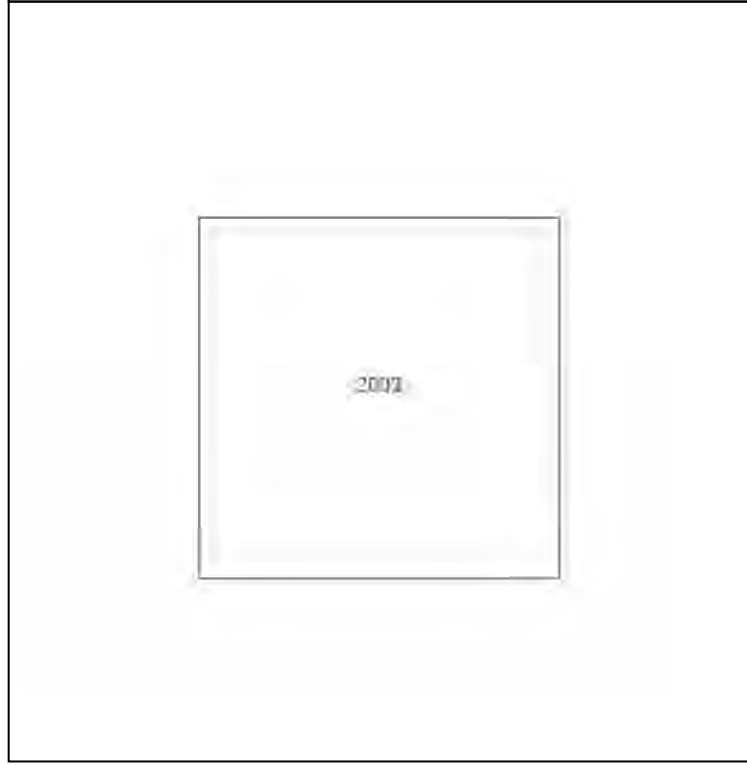
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Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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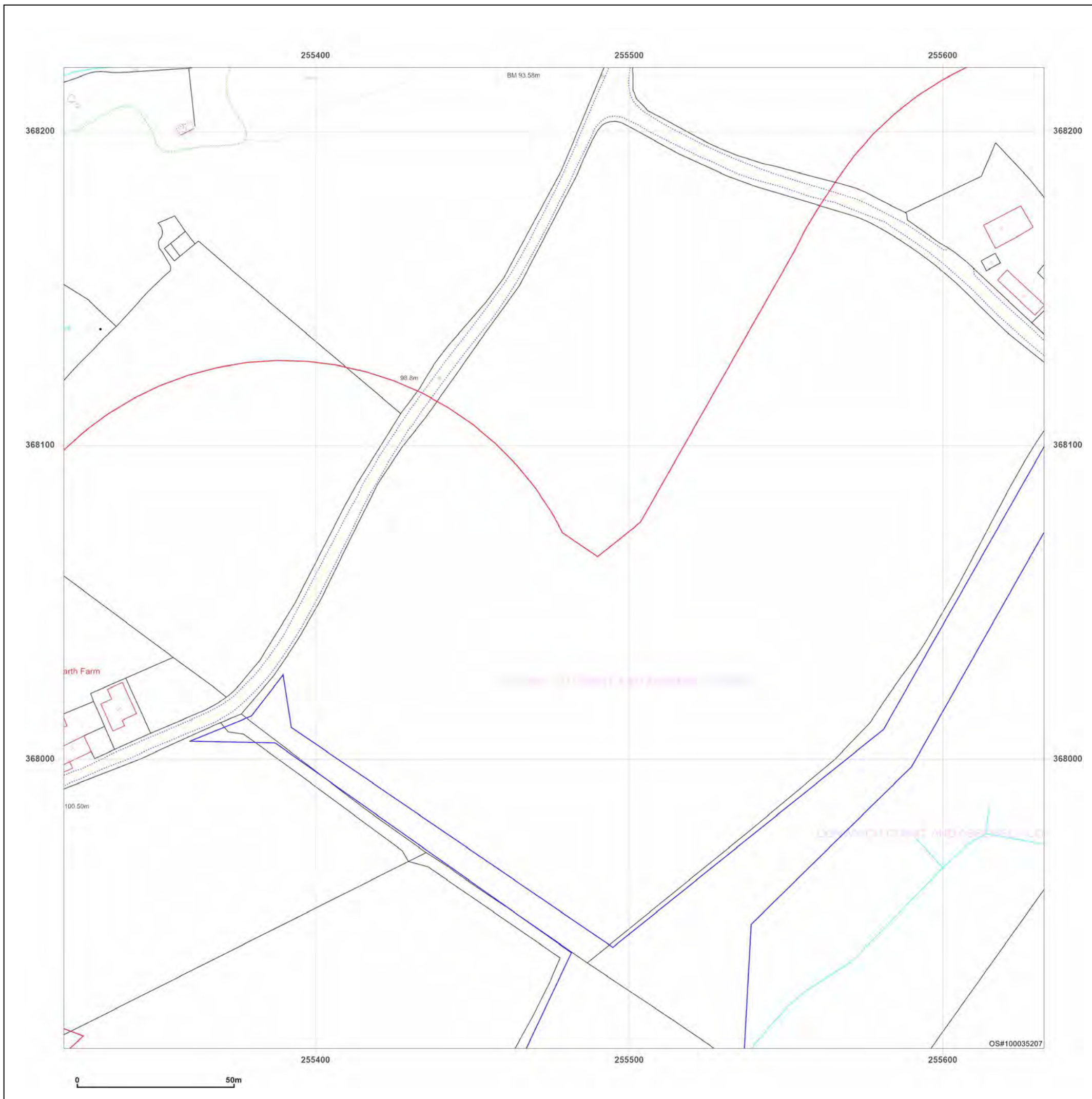
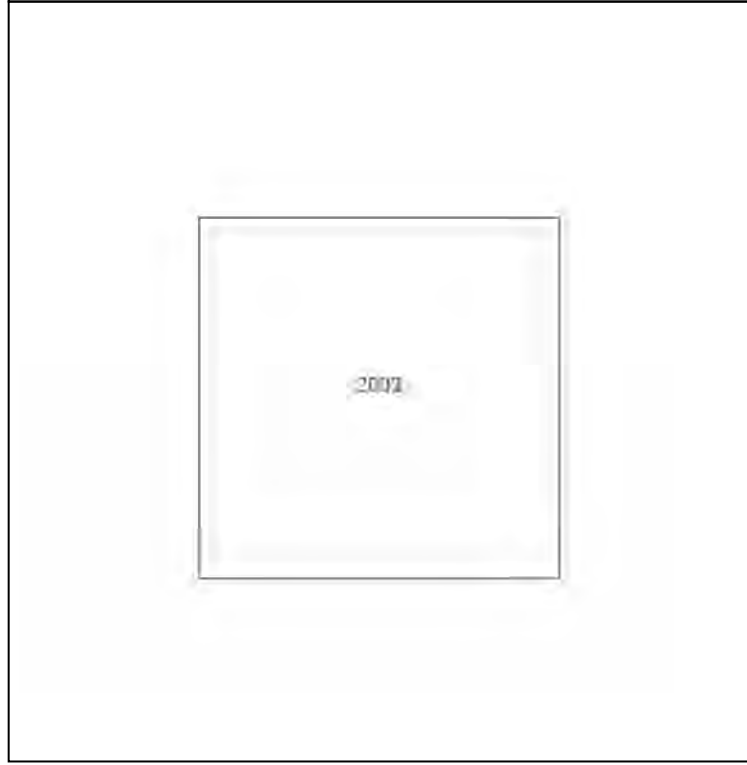
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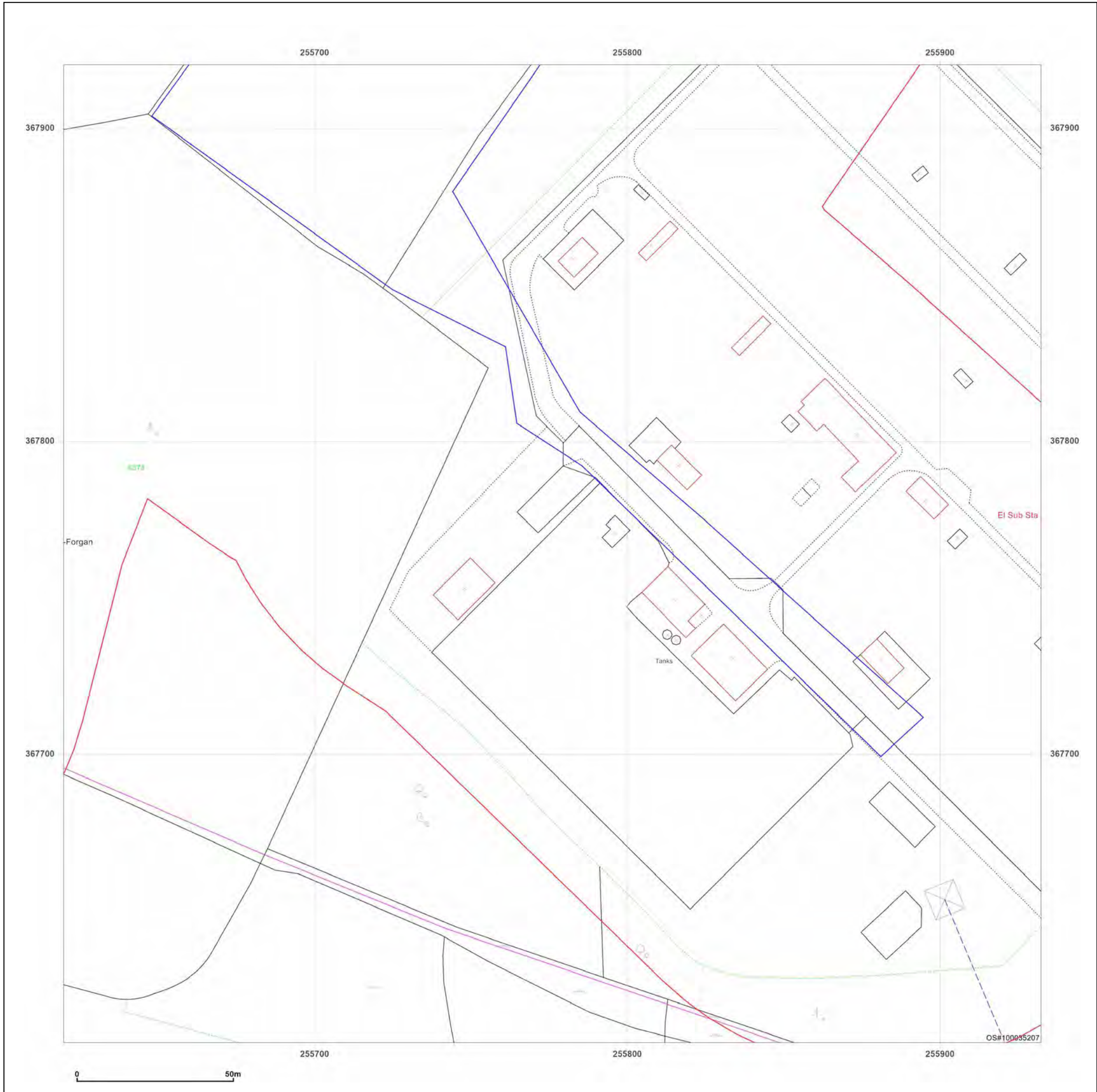
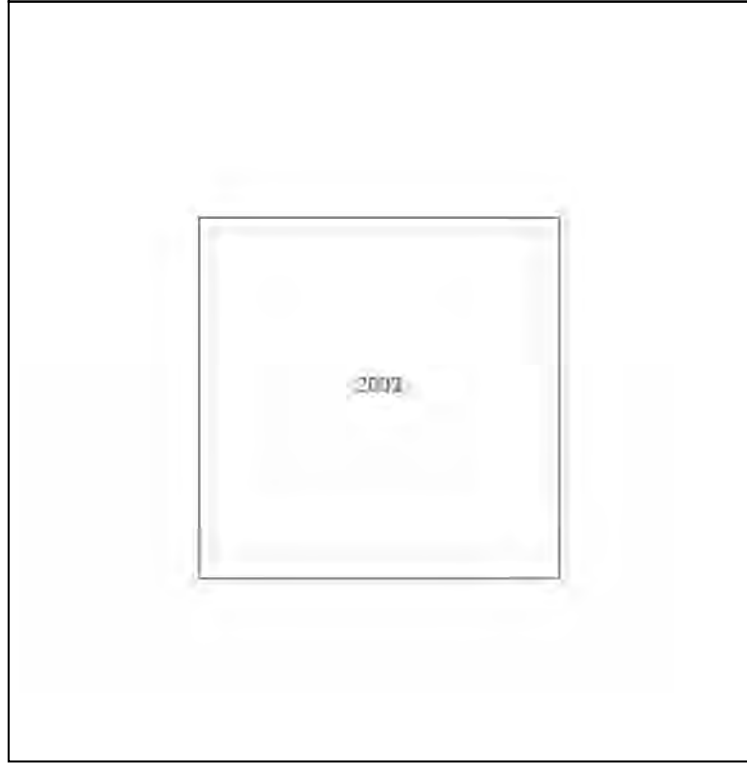
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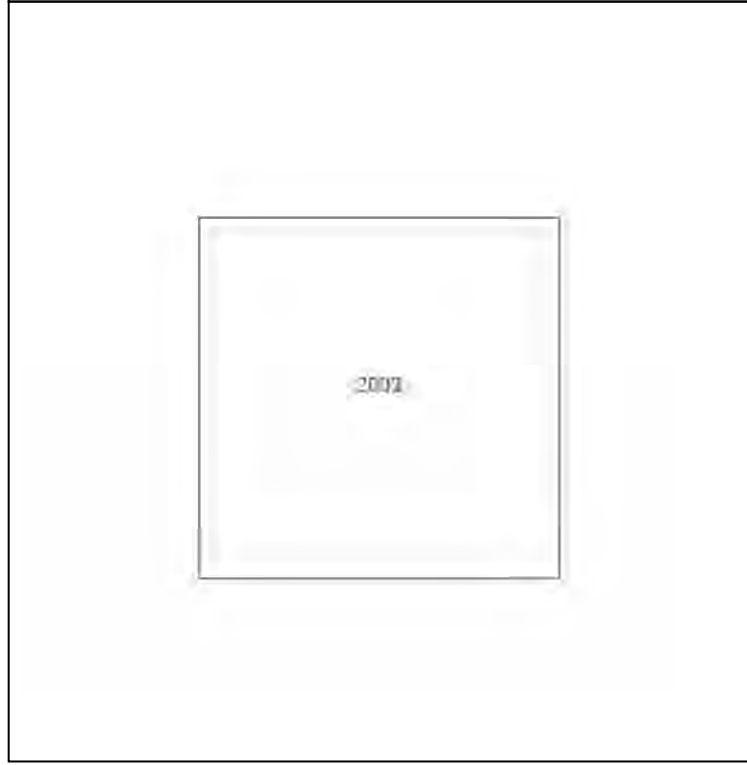
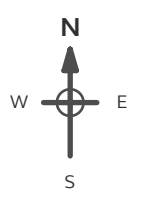
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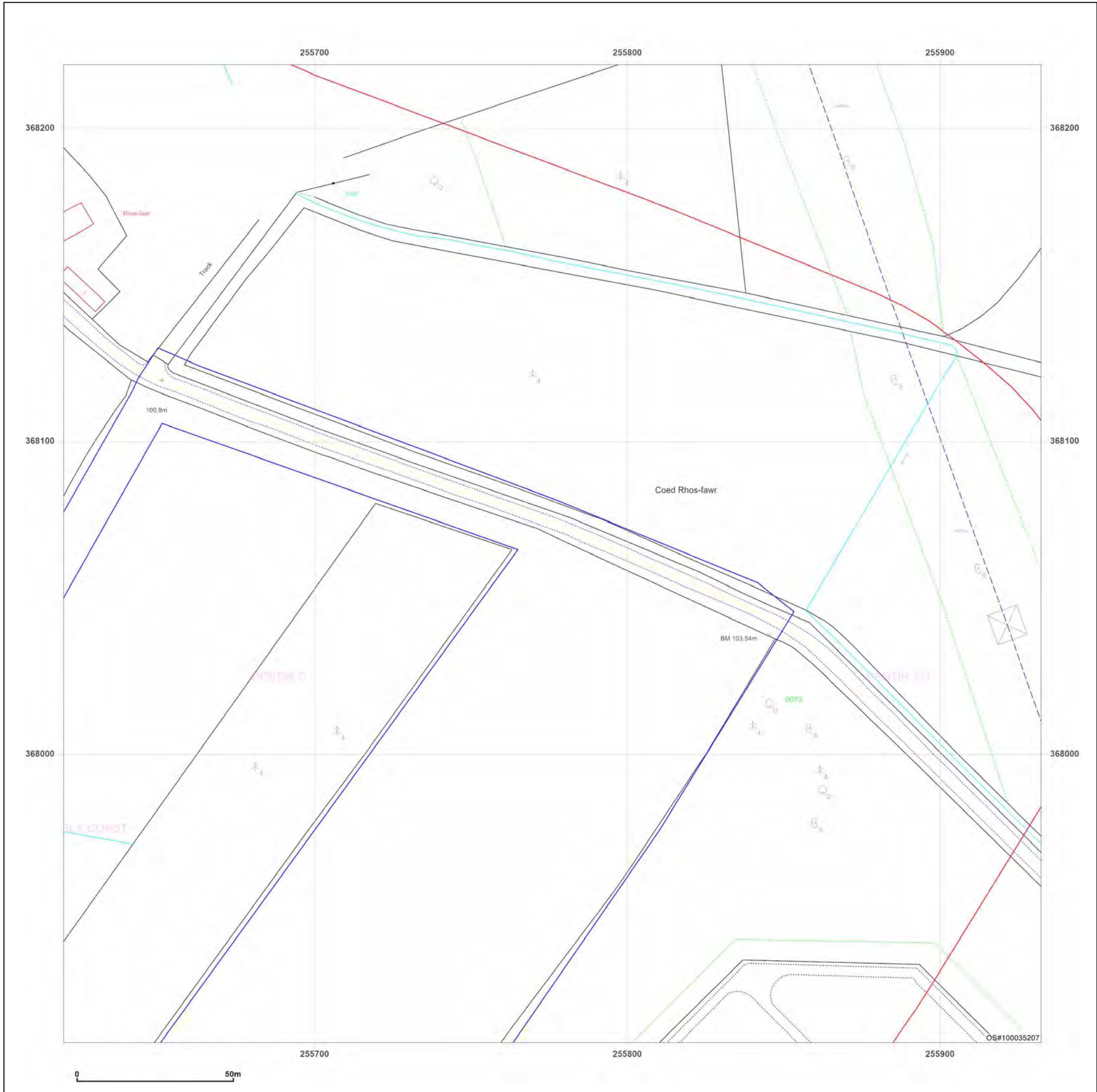
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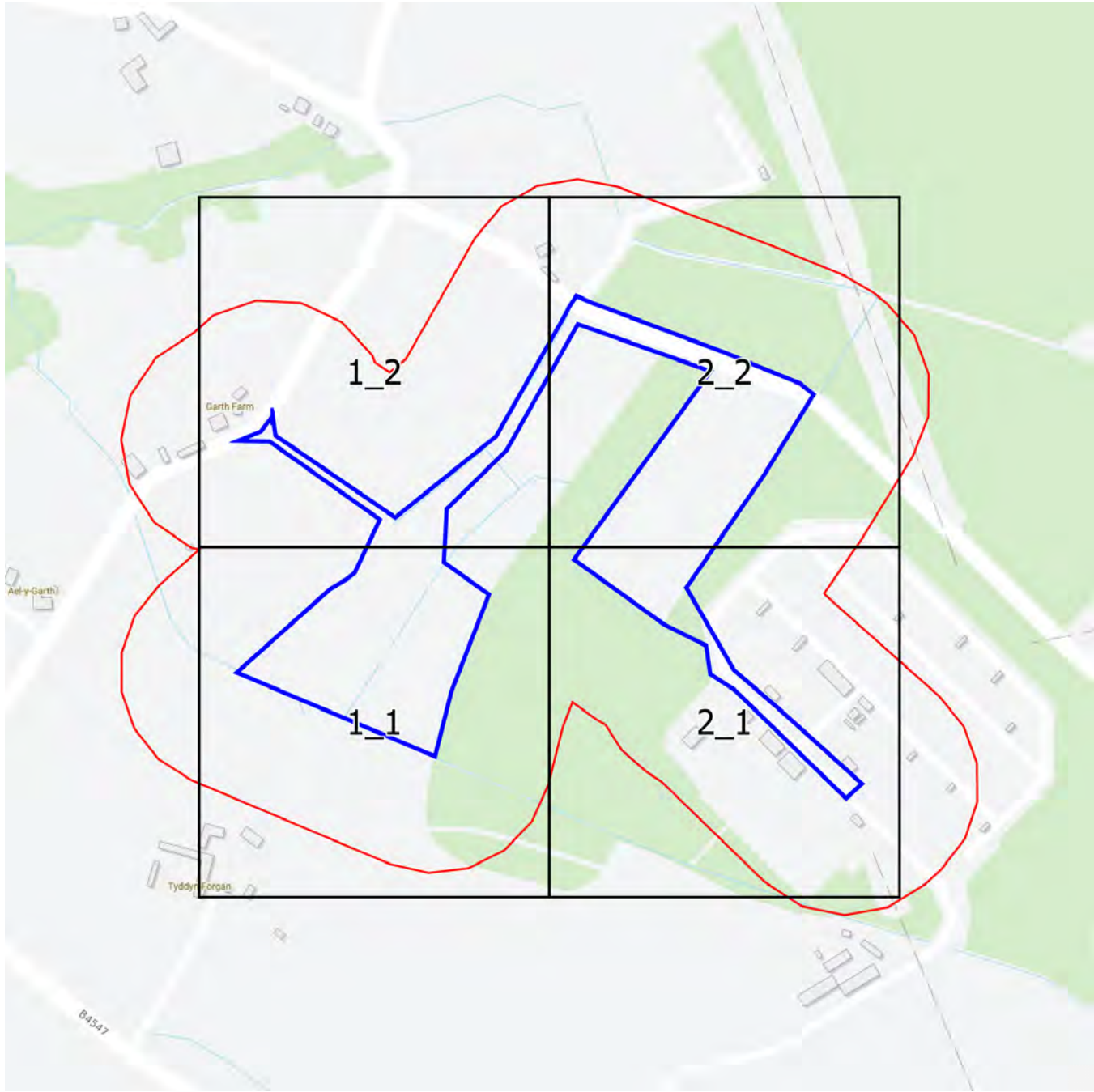
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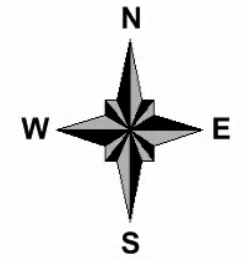
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Groundsure
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Landline Scale Grid Index

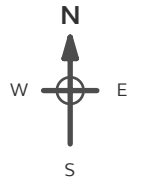


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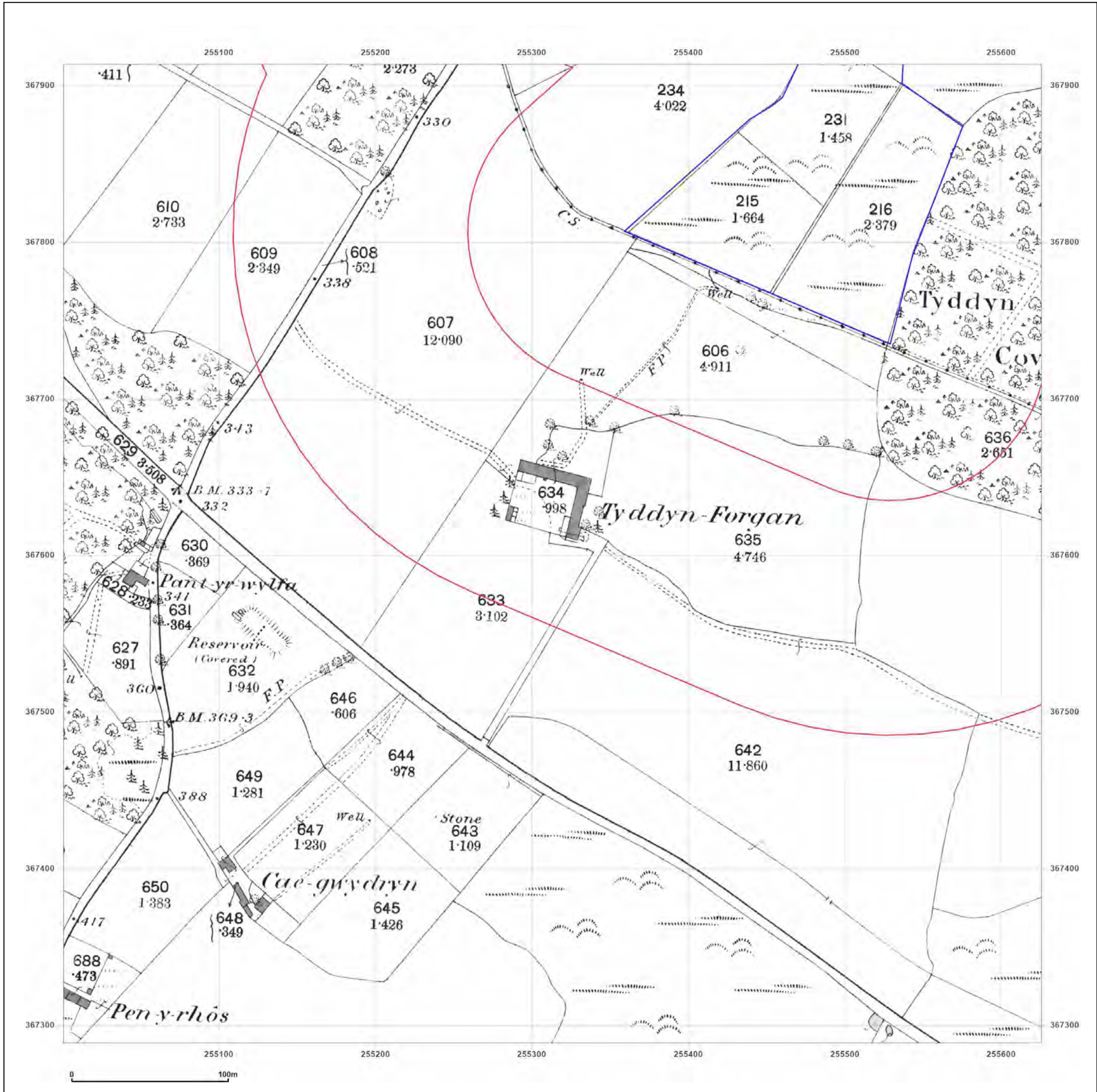


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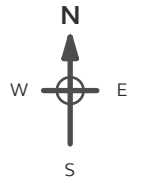


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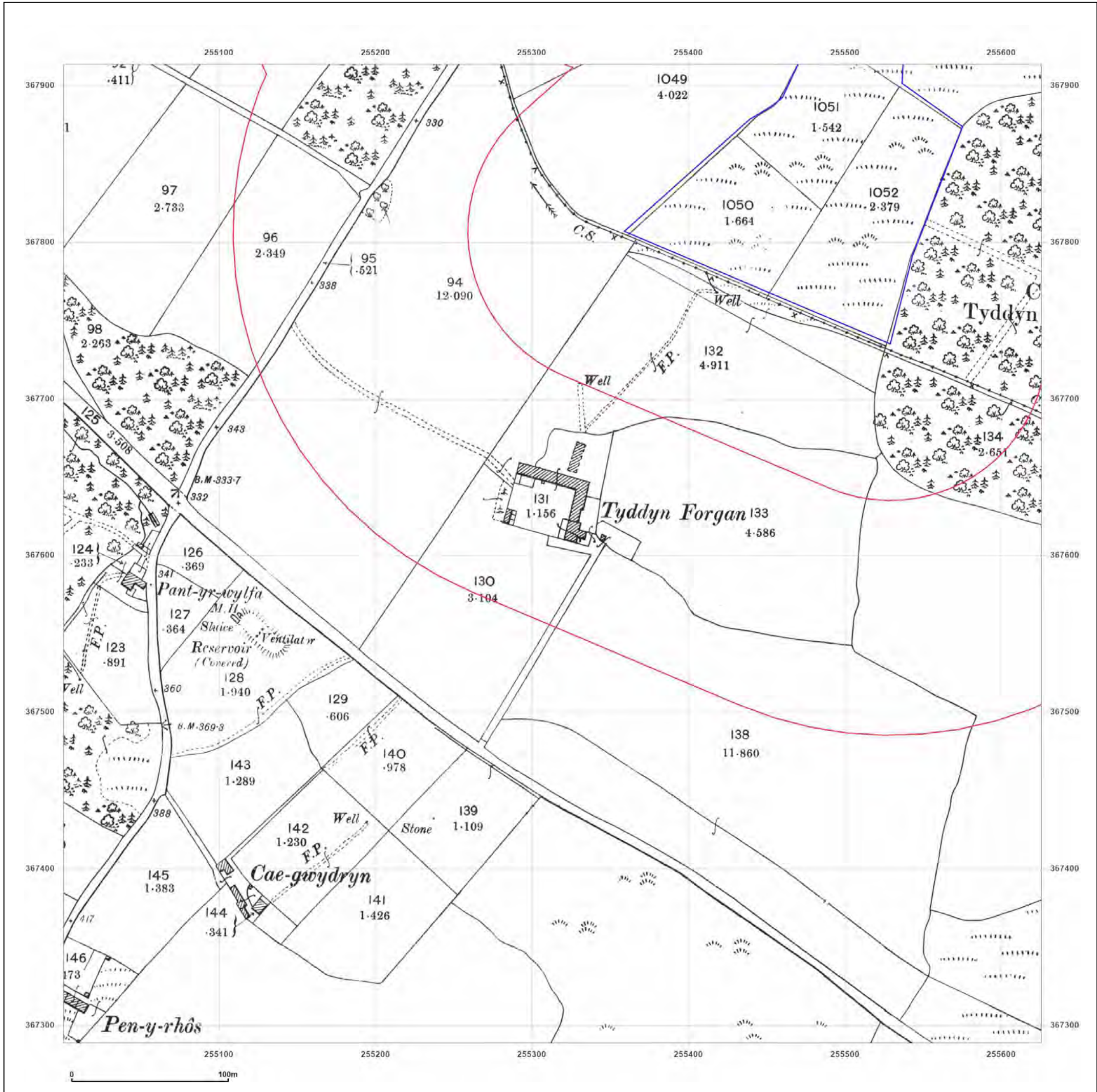


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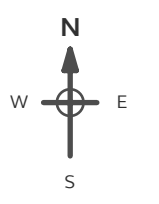


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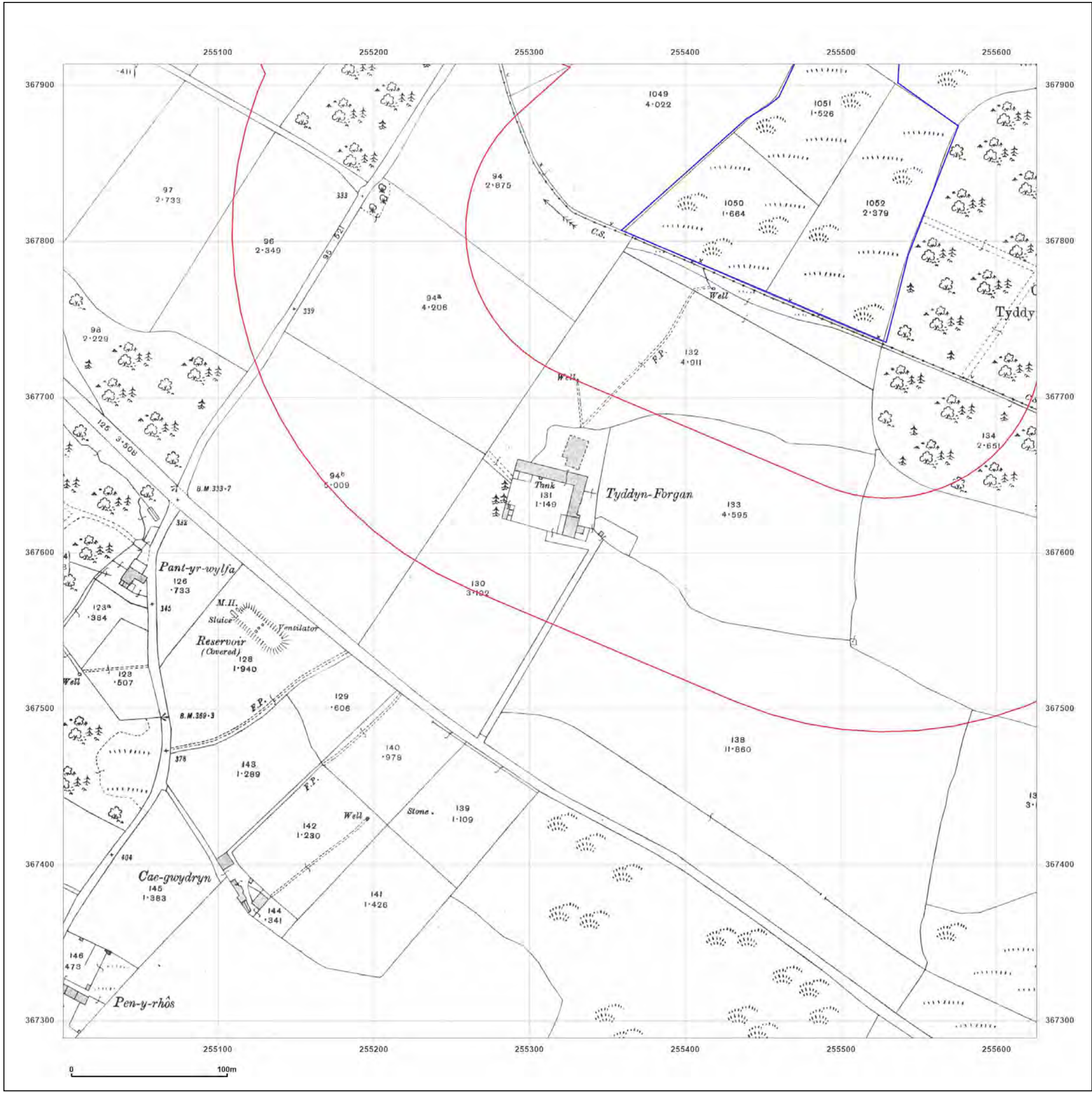


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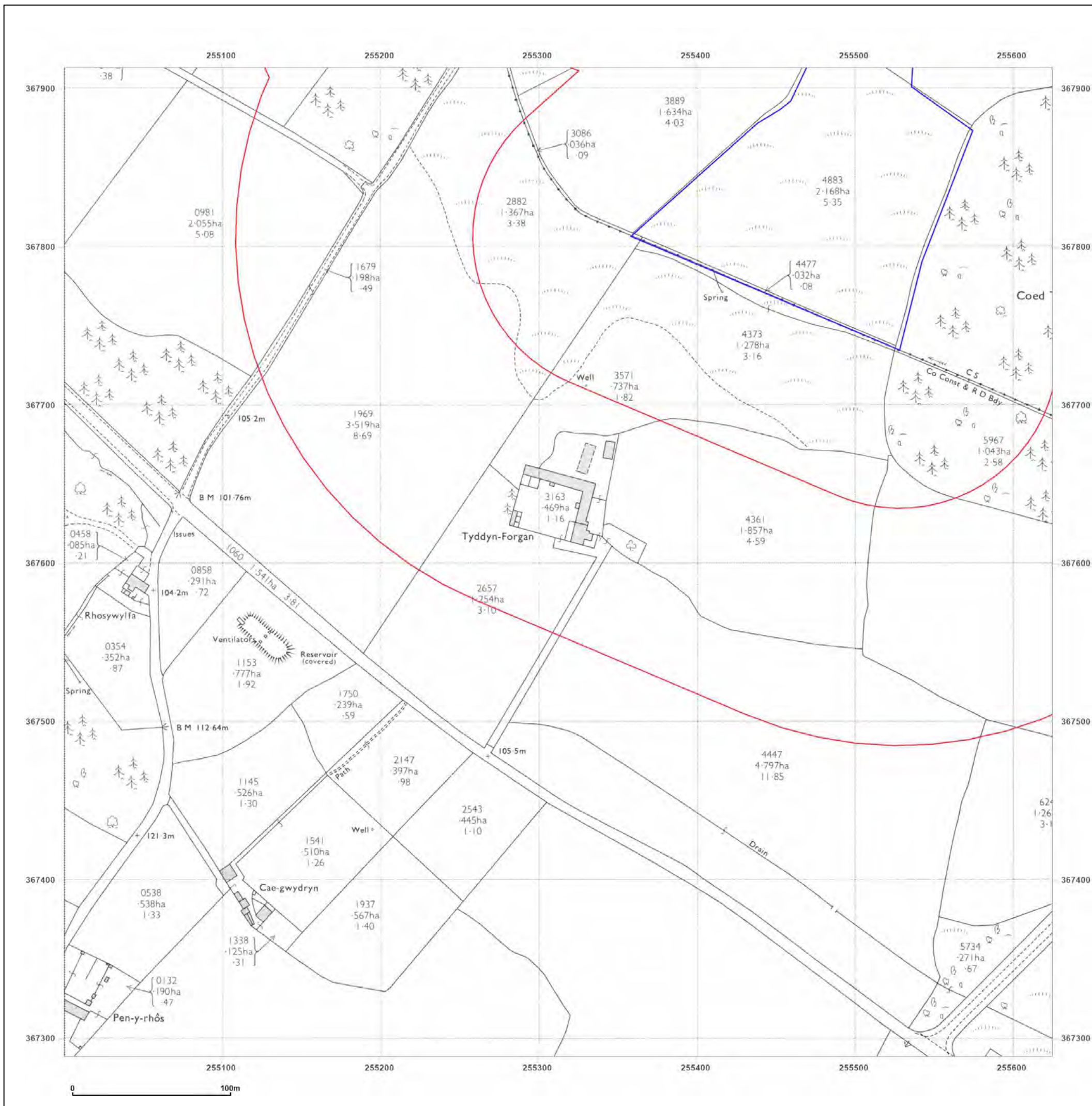


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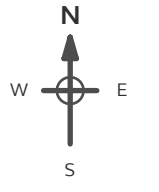


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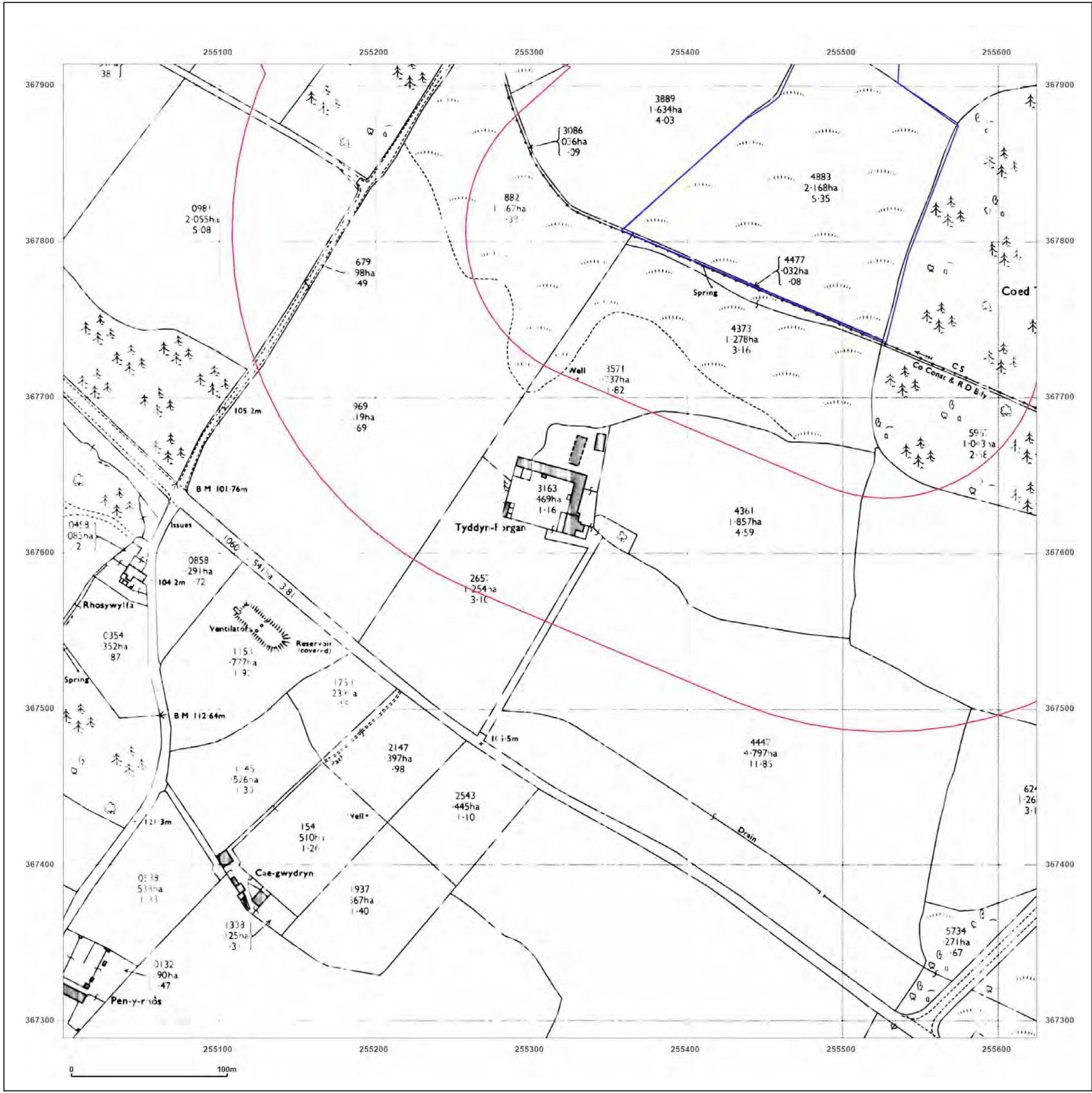


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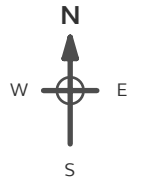


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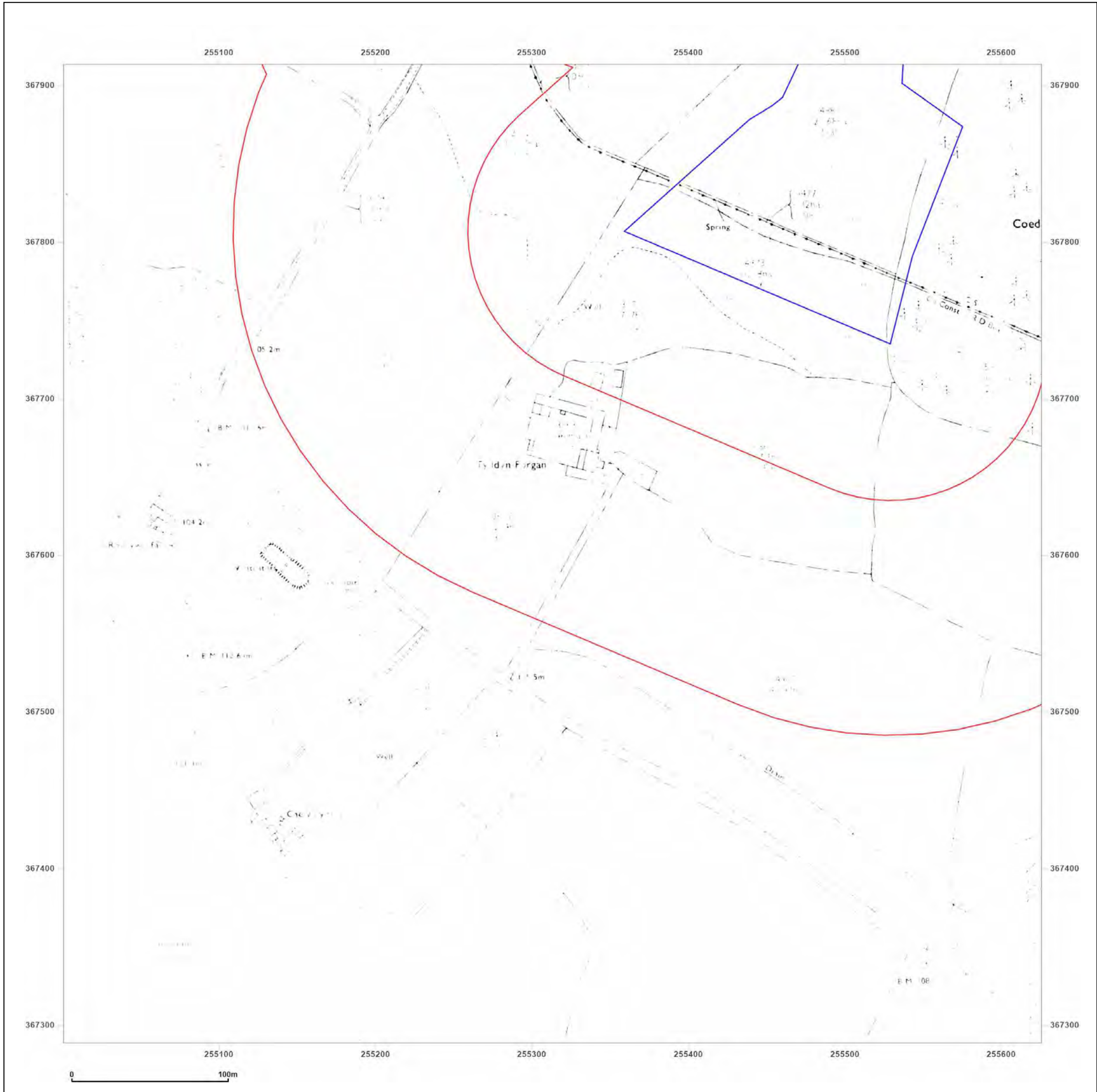


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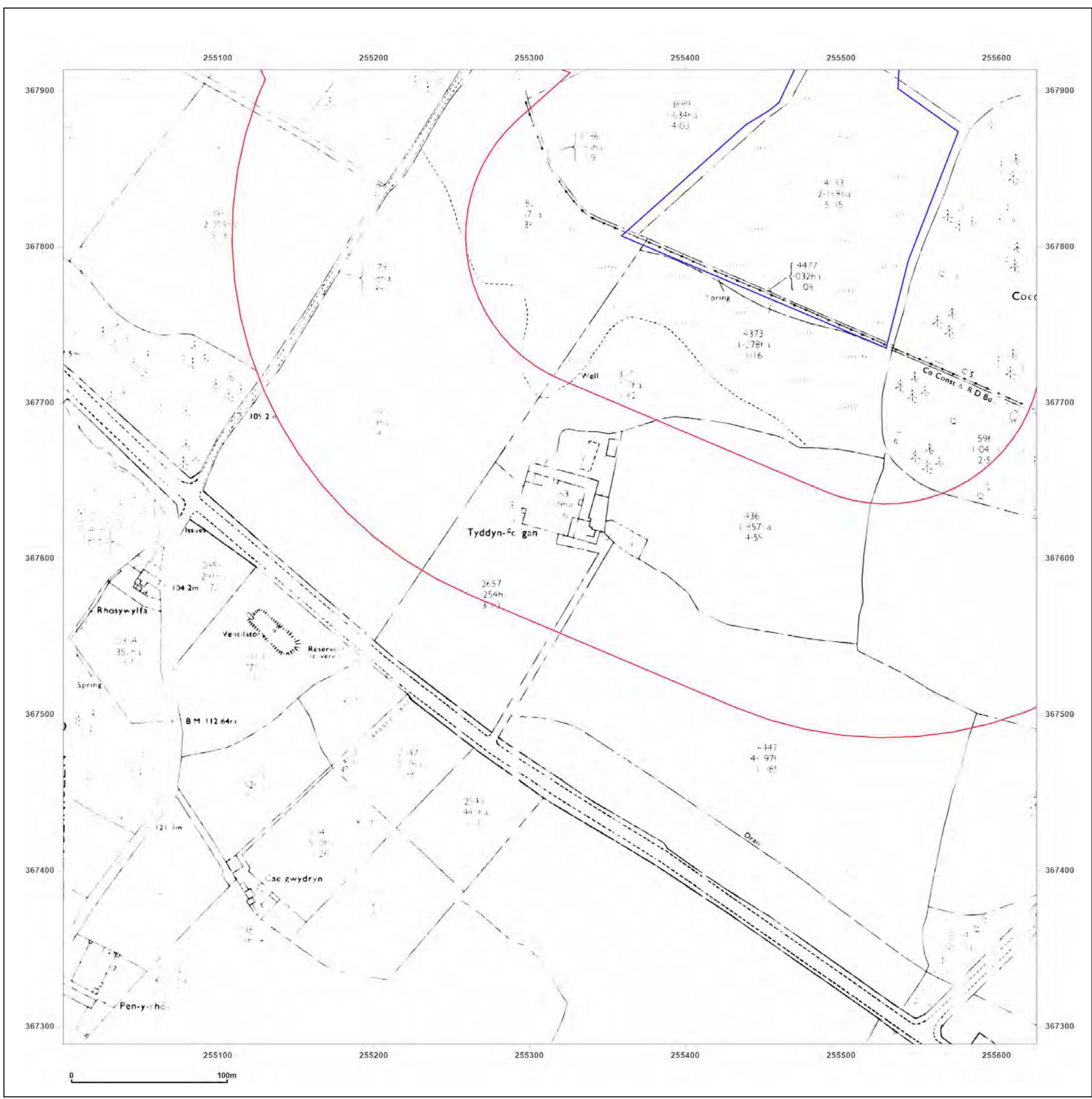


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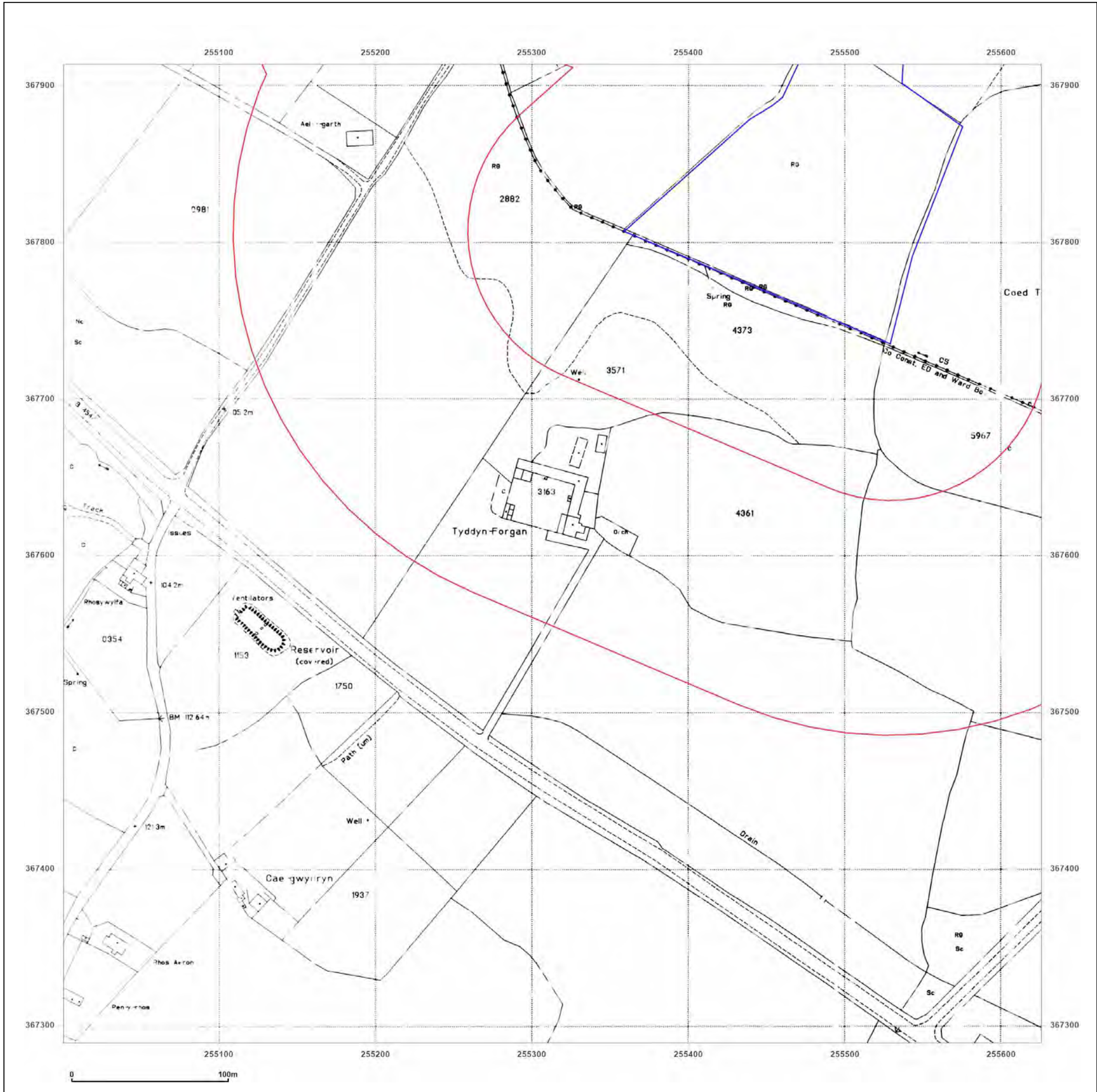


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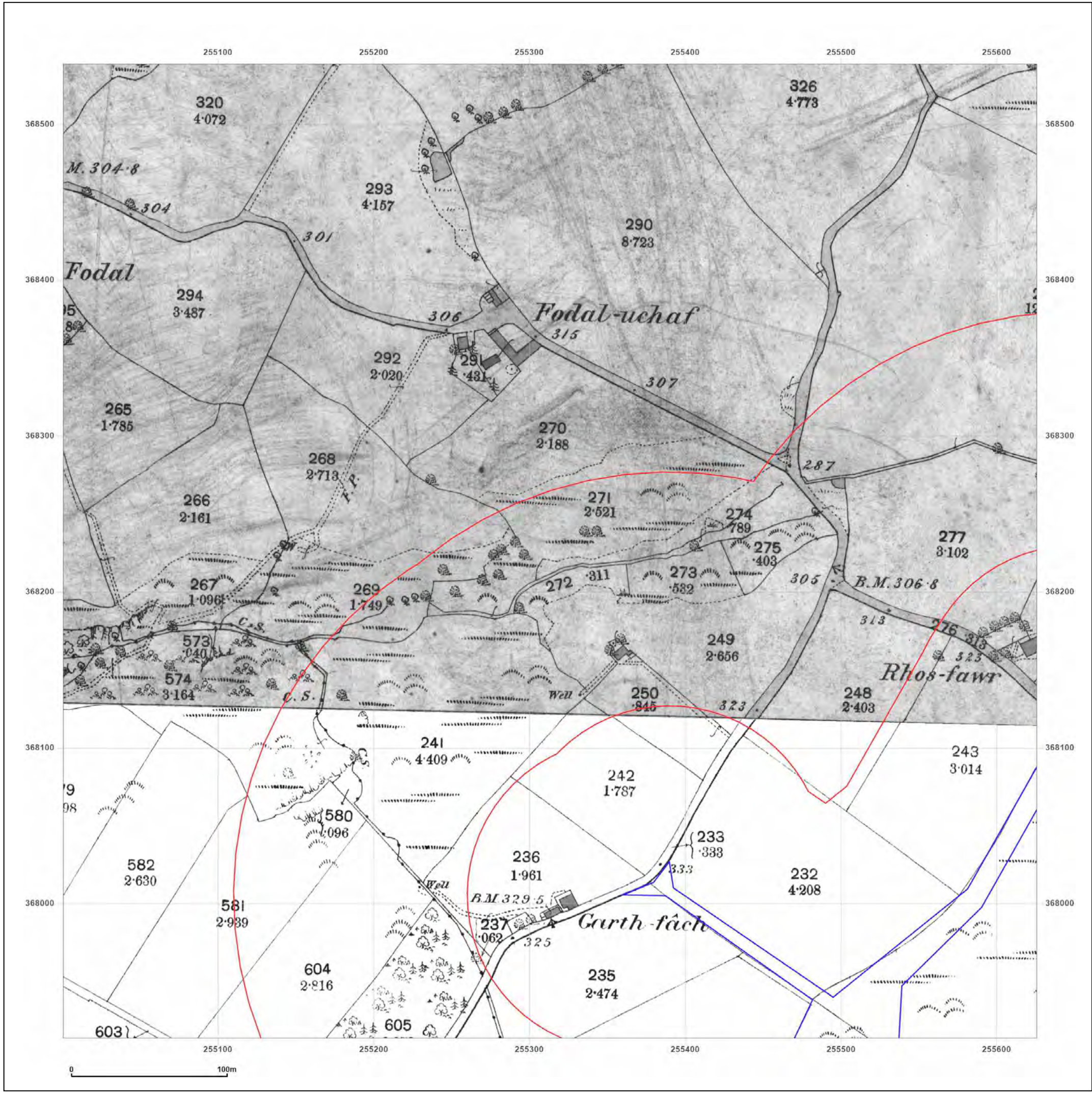
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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_1_2
Grid Ref: 255313, 368226

Map Name: County Series

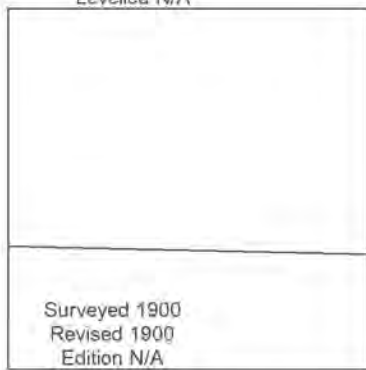
Map date: 1900

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1900
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1900
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

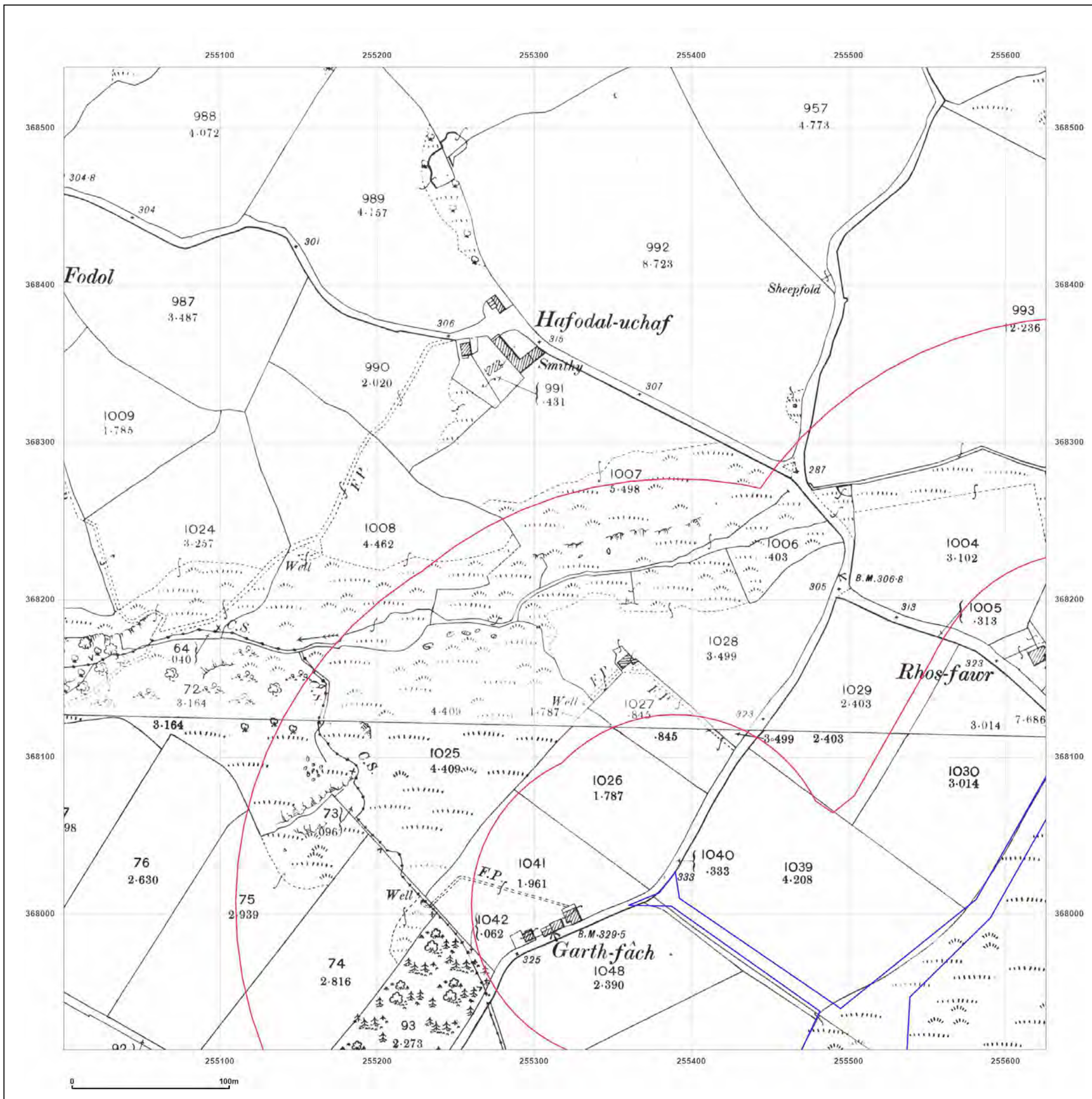


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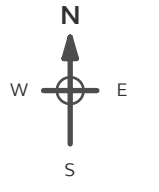
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Report Ref: GS-KPM-C95-5VB-32Z_LS_1_2
Grid Ref: 255313, 368226

Map Name: County Series

Map date: 1914

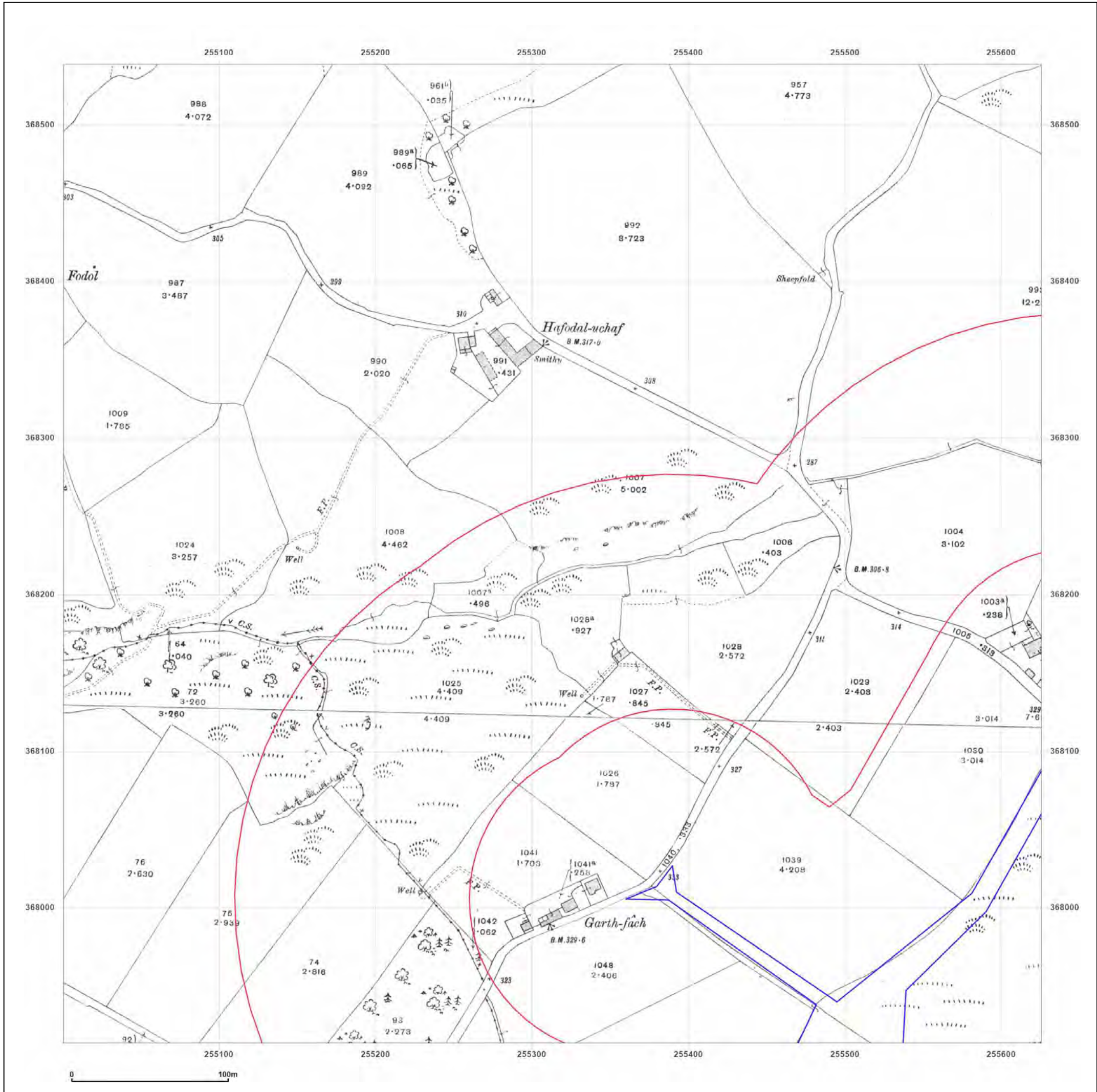
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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_1_2
Grid Ref: 255313, 368226

Map Name: National Grid

Map date: 1969-1970

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1969
Edition N/A
Copyright 1970
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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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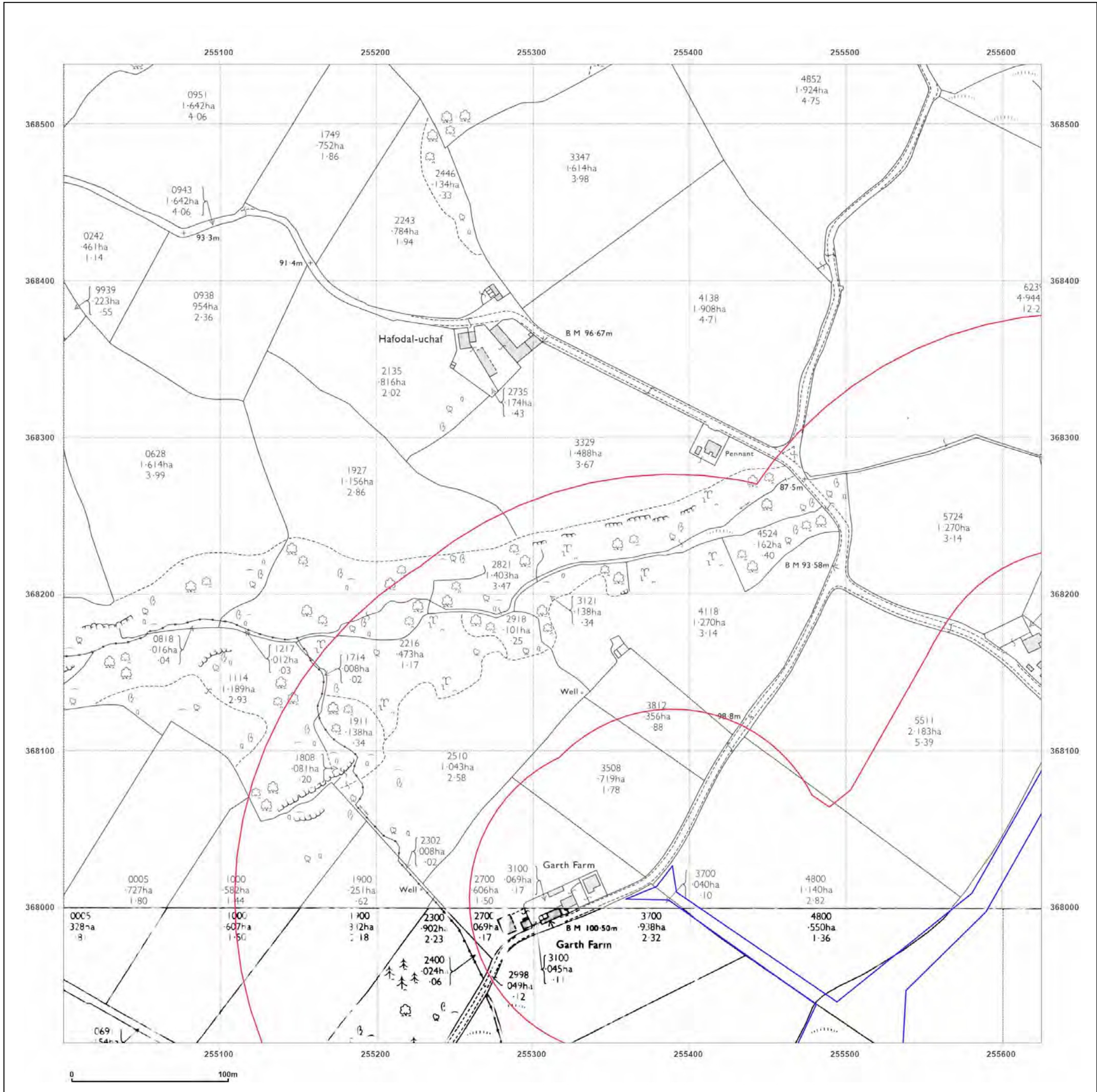


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_1_2
Grid Ref: 255313, 368226

Map Name: National Grid

Map date: 1969-1970

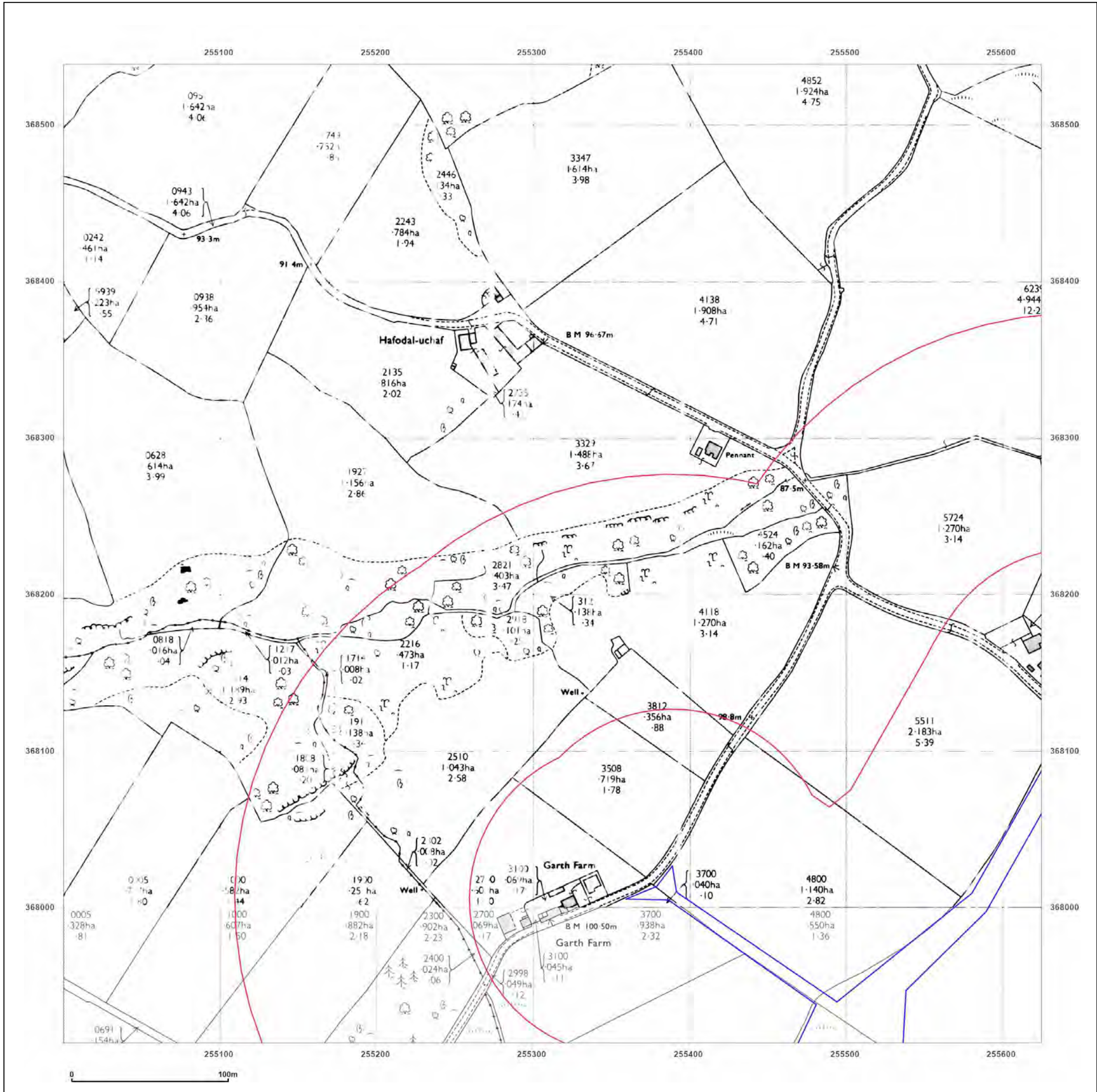
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Surveyed 1969
Revised 1969
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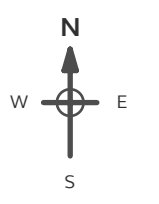
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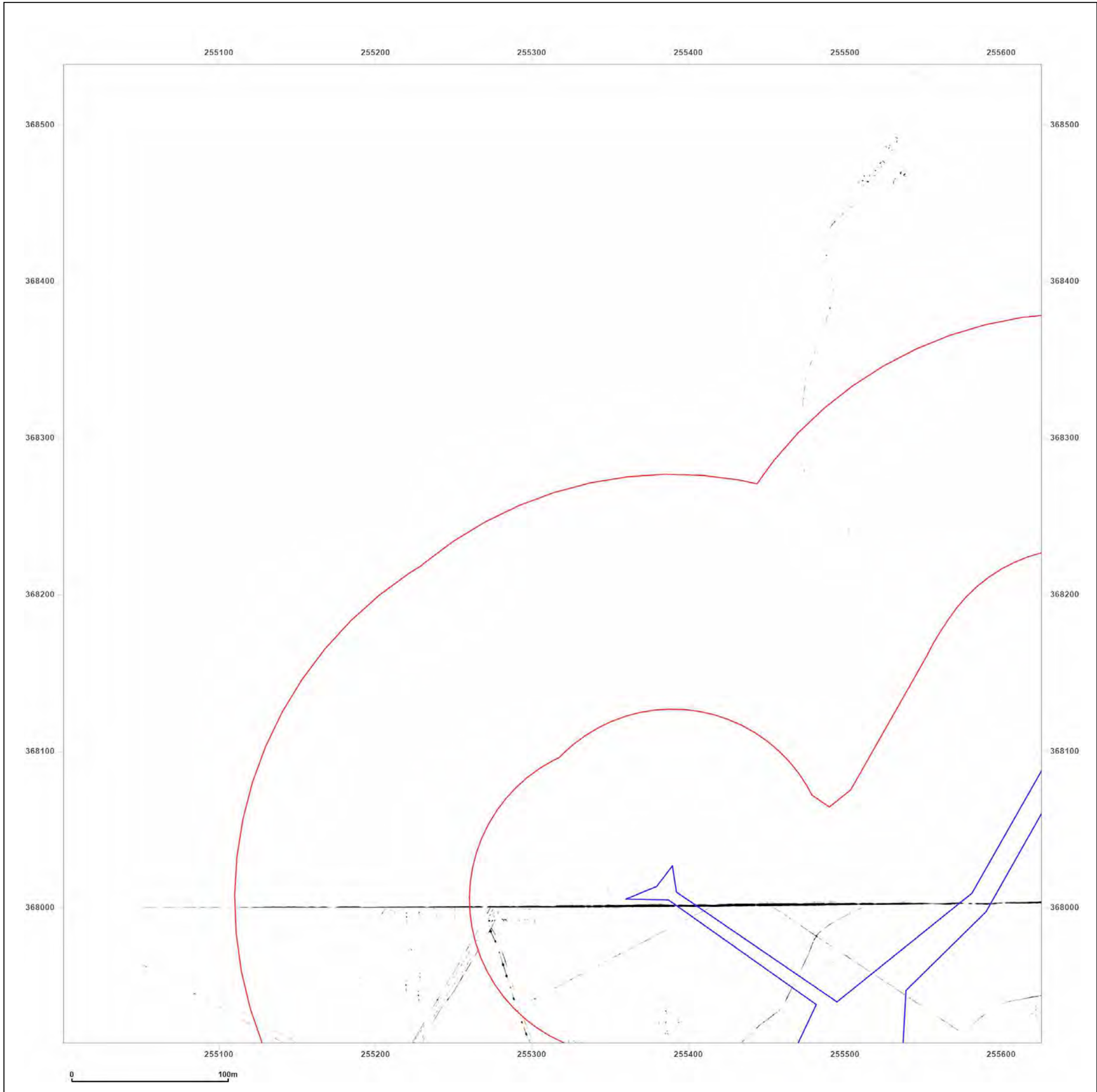
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Grid Ref: 255313, 368226

Map Name: National Grid
Map date: 1976
Scale: 1:2,500
Printed at: 1:2,500



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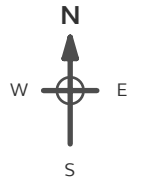
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Report Ref: GS-KPM-C95-5VB-32Z_LS_1_2
Grid Ref: 255313, 368226

Map Name: National Grid

Map date: 1995

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1995
 Levelled N/A

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 Revised N/A
 Edition N/A
 Copyright 1995
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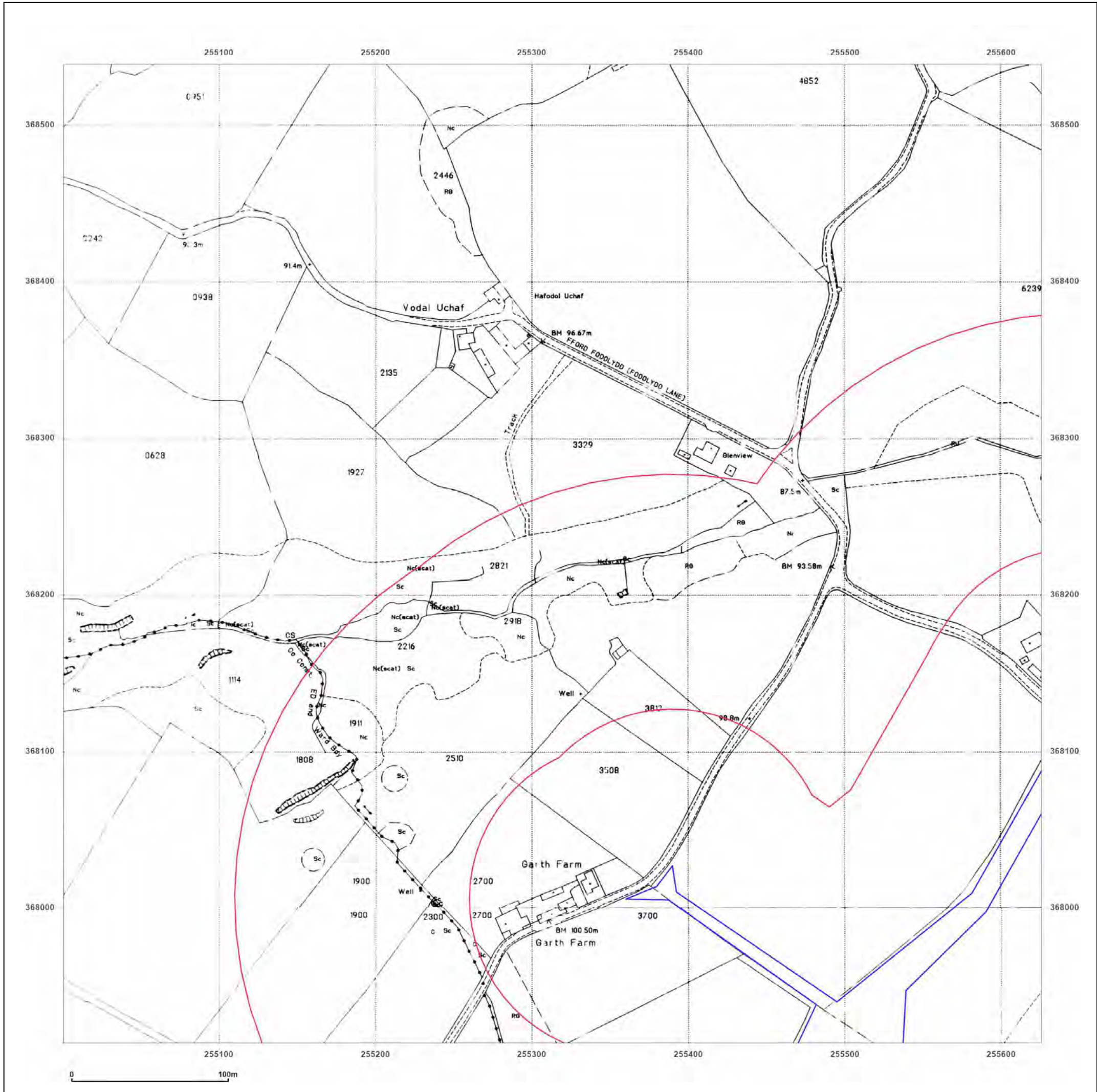


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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_1
Grid Ref: 255938, 367601

Map Name: County Series

Map date: 1889

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1889
Revised 1889
Edition N/A
Copyright N/A
Levelled N/A

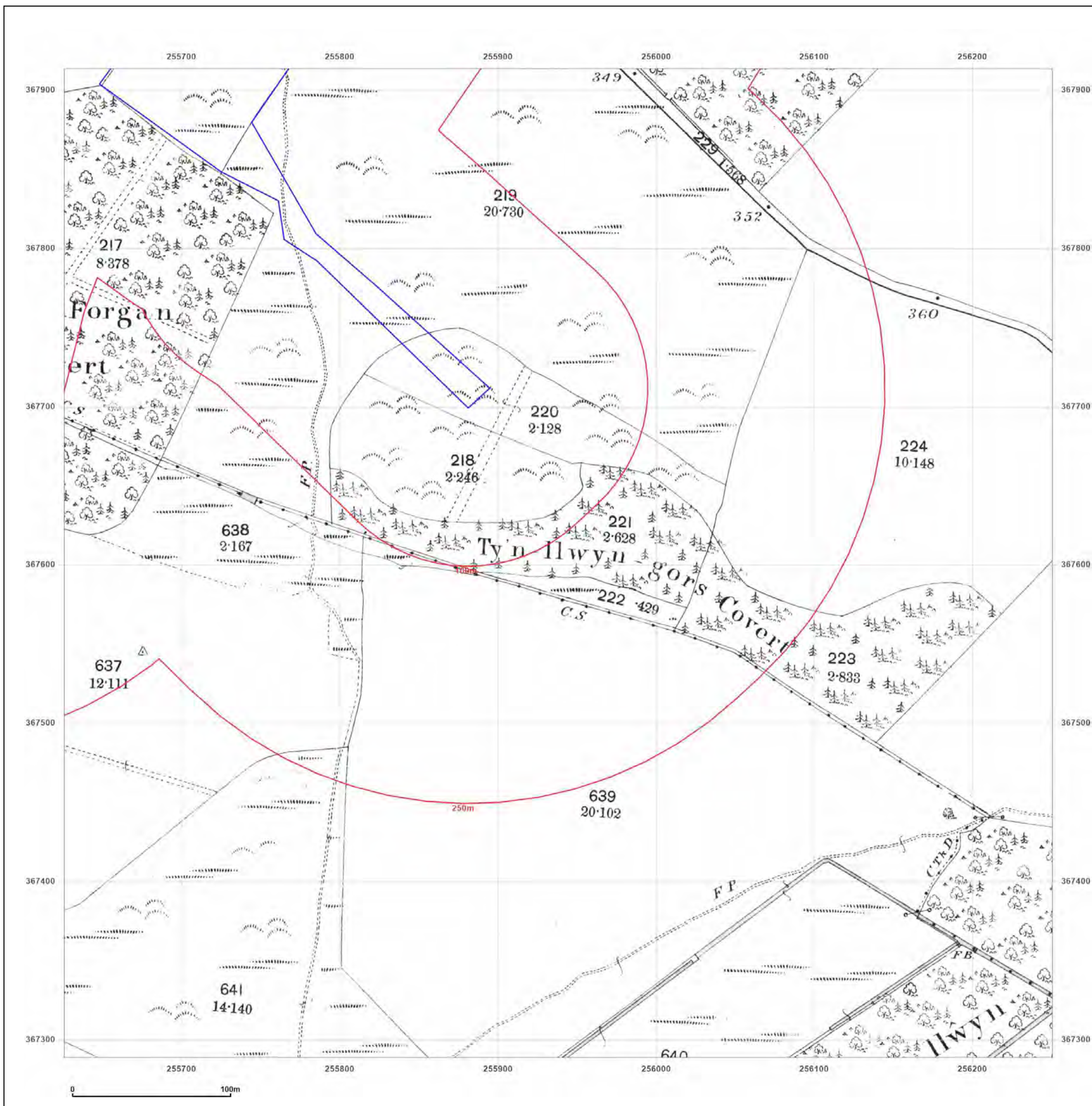


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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_1
Grid Ref: 255938, 367601

Map Name: County Series
Map date: 1900
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1900
Revised 1900
Edition N/A
Copyright N/A
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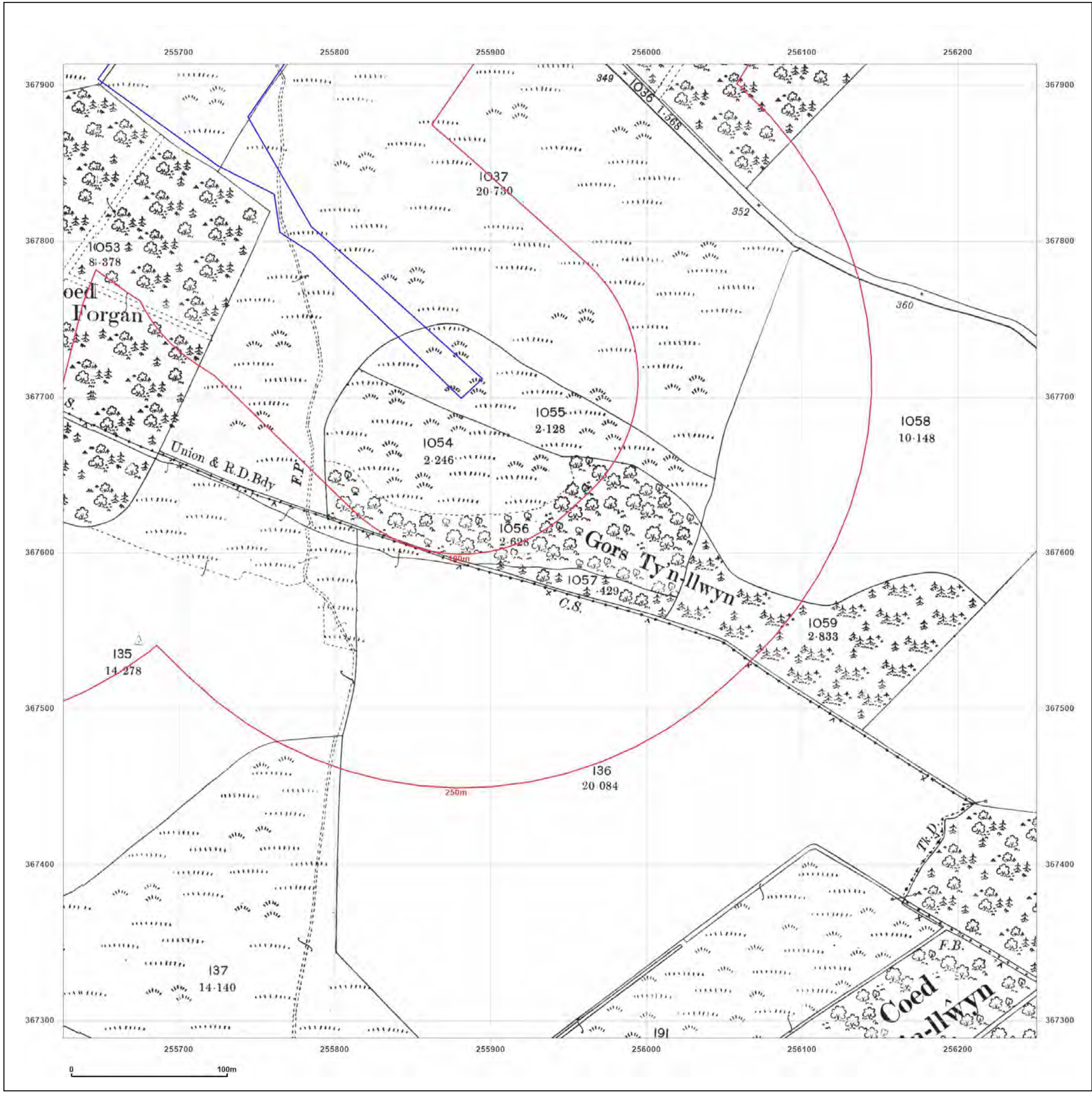


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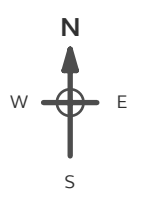


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_1
Grid Ref: 255938, 367601

Map Name: County Series
Map date: 1914
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1914
 Revised 1914
 Edition N/A
 Copyright N/A
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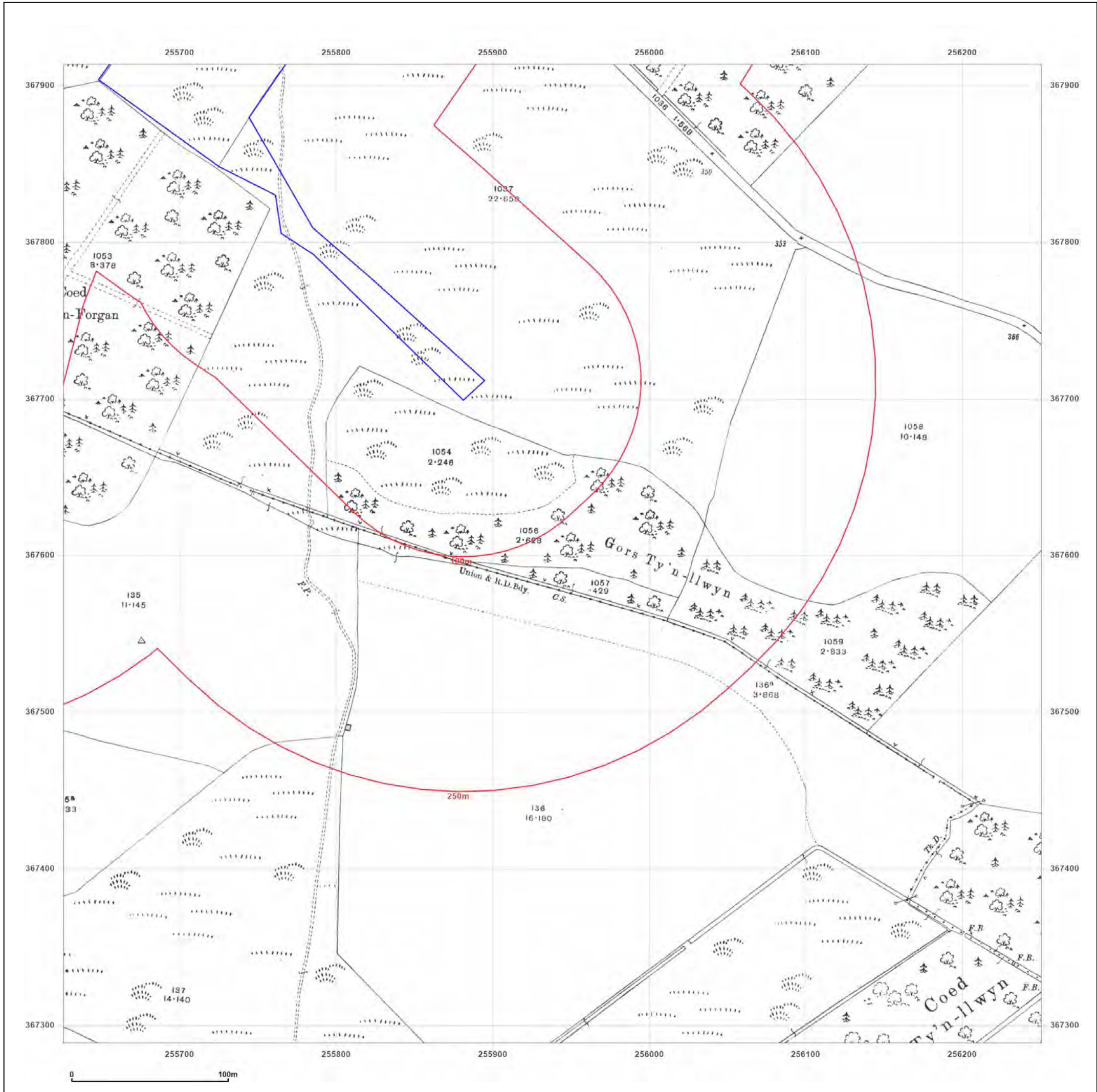


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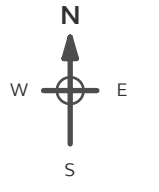
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Grid Ref: 255938, 367601

Map Name: National Grid

Map date: 1970-1971

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1971
Revised 1971
Edition N/A
Copyright 1972
Levelled 1955

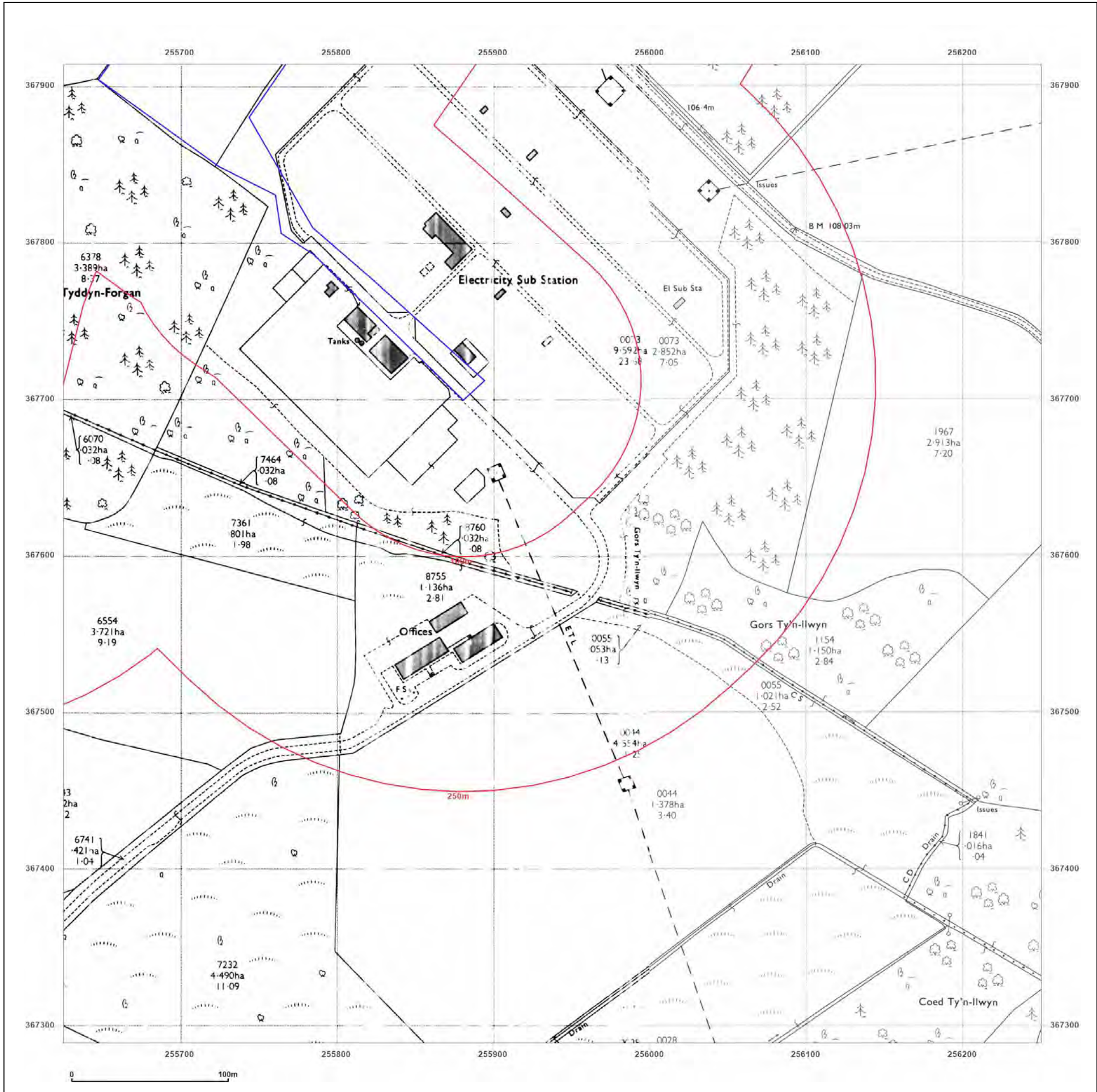


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CARFAN, PENTIR, LL55 3AW

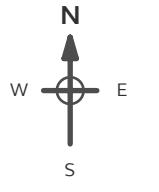
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Report Ref: GS-KPM-C95-5VB-32Z_LS_2_1
Grid Ref: 255938, 367601

Map Name: National Grid

Map date: 1969-1972

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1969
Revised 1969
Edition N/A
Copyright 1970
Levelled 1955

Surveyed N/A
Revised N/A
Edition N/A
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Levelled N/A

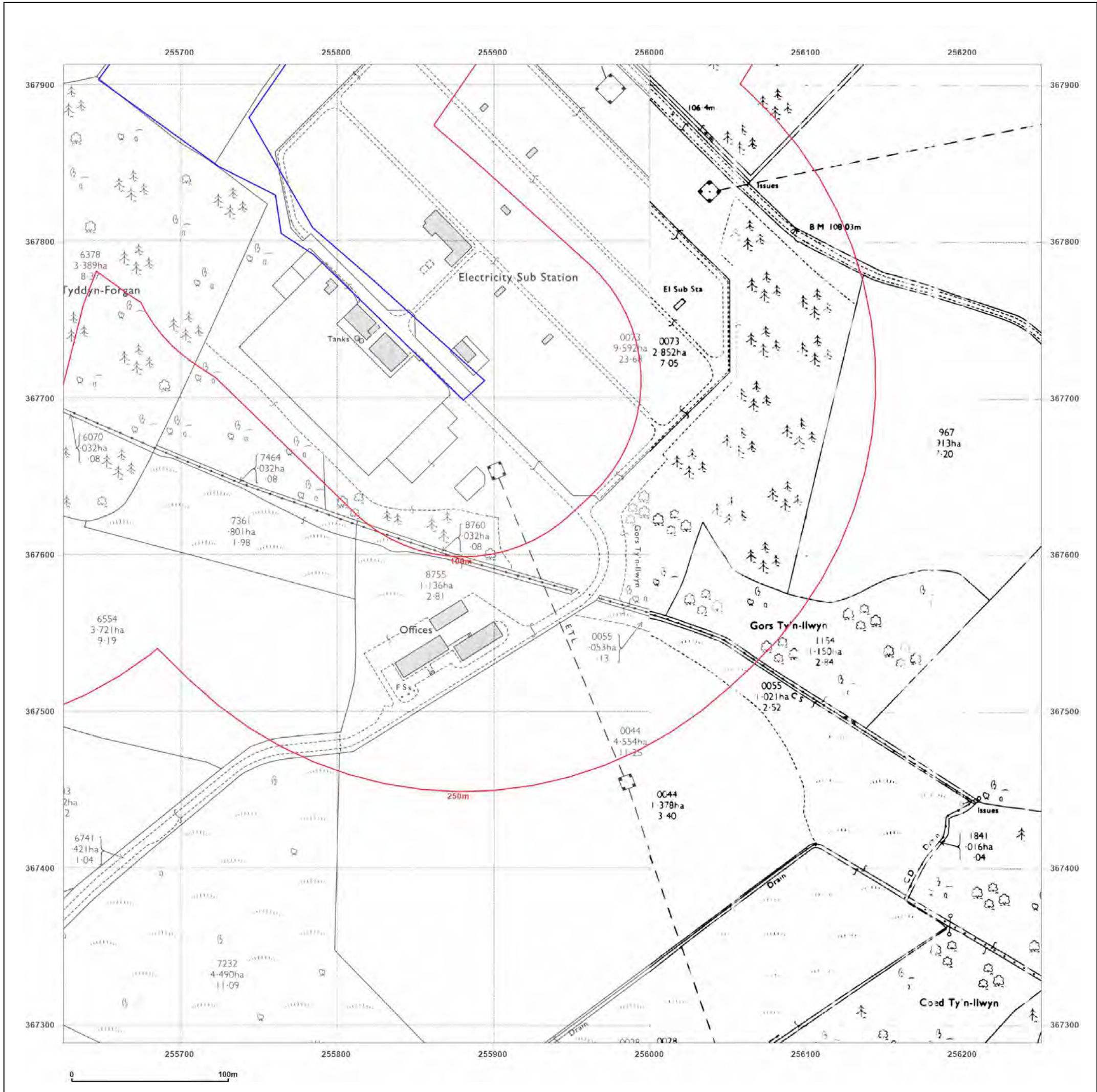


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Map Name: National Grid

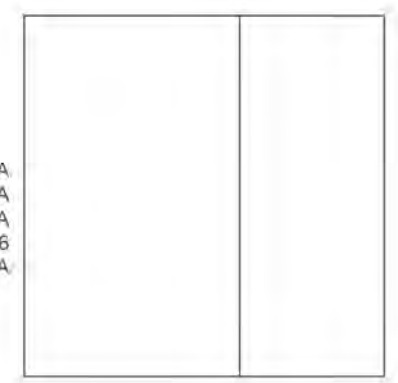
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 Edition N/A
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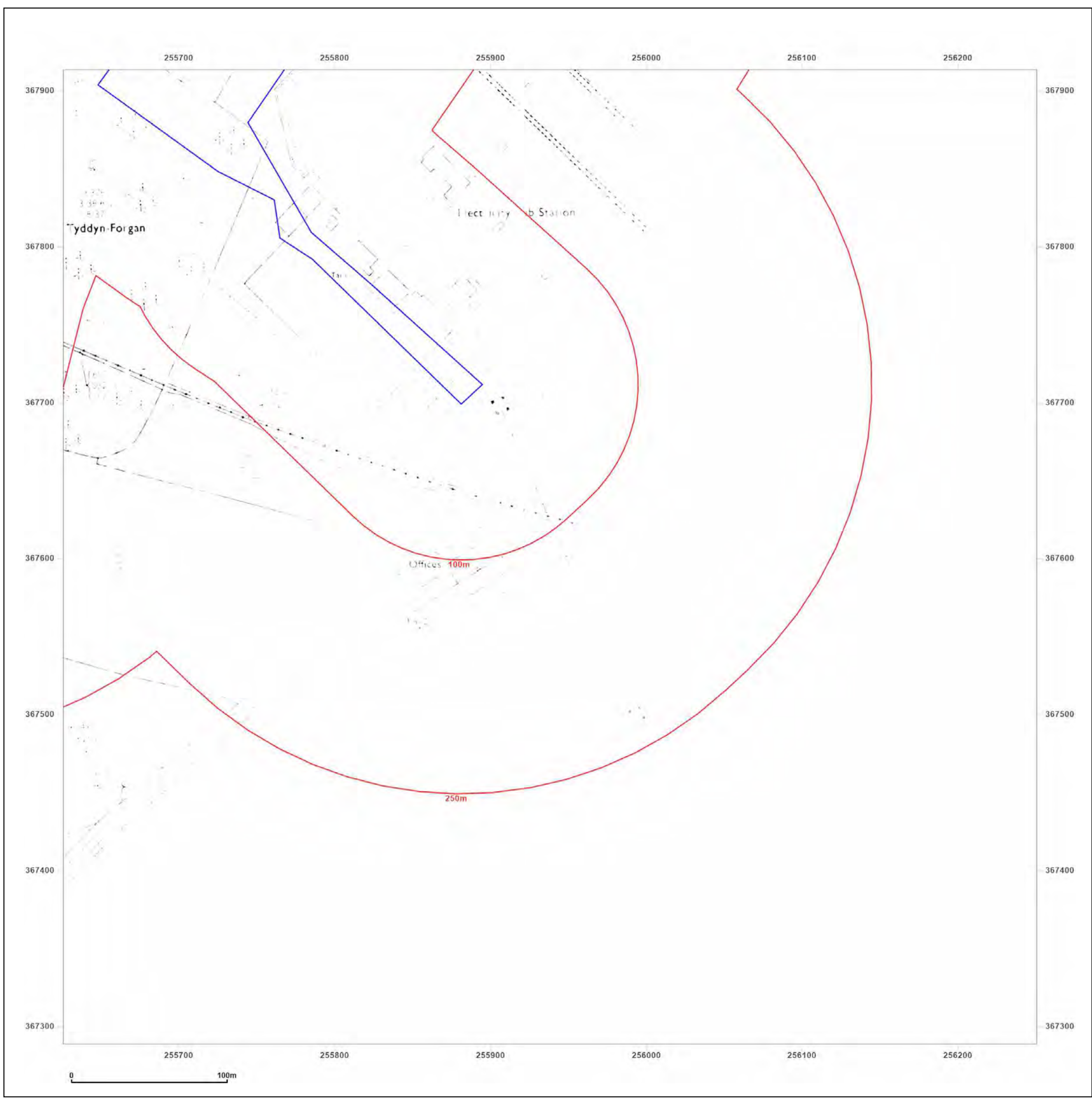


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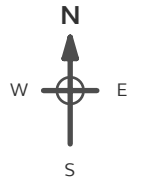


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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_1
Grid Ref: 255938, 367601

Map Name: National Grid
Map date: 1979
Scale: 1:2,500
Printed at: 1:2,500



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Revised N/A
Edition N/A
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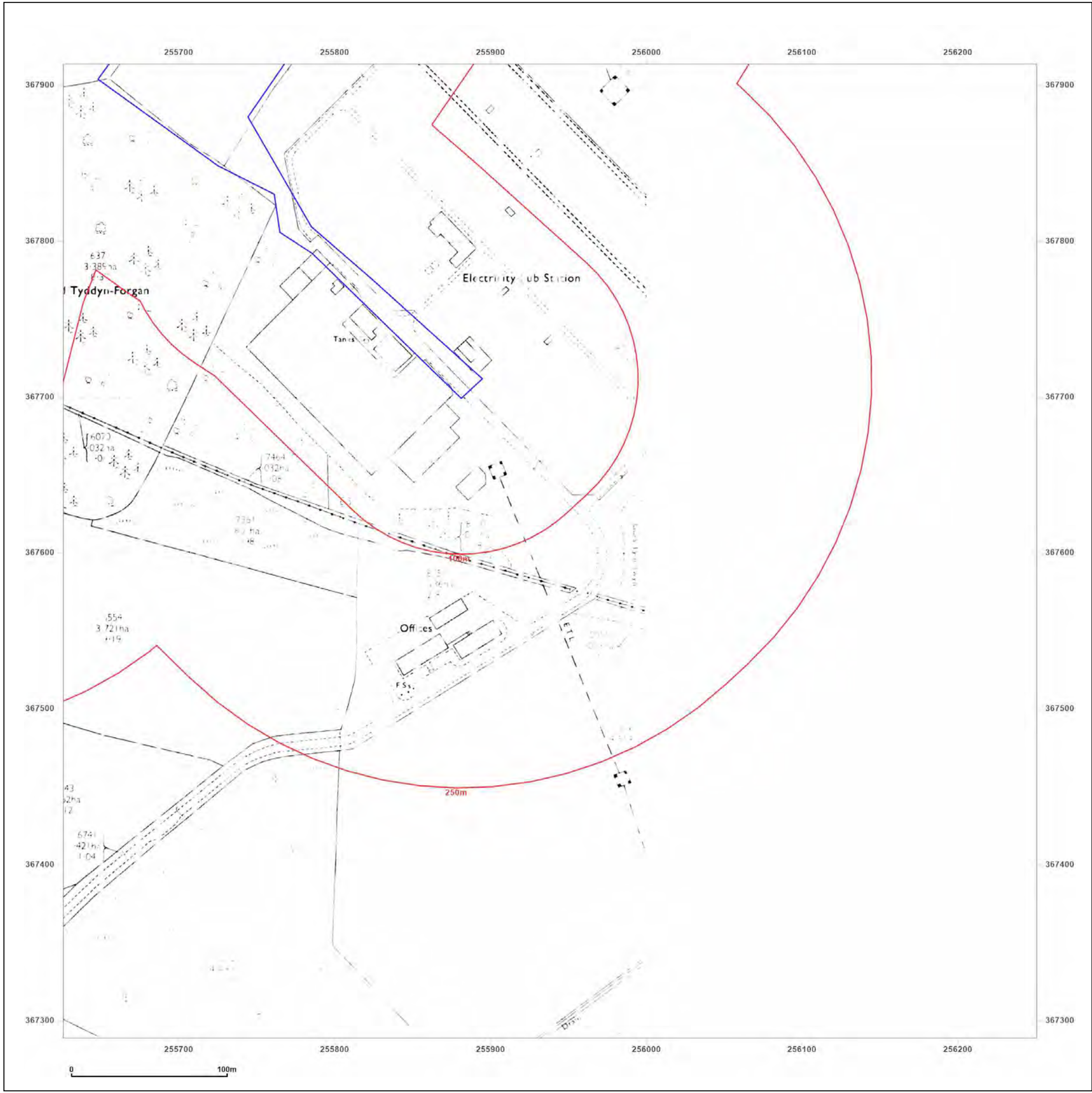


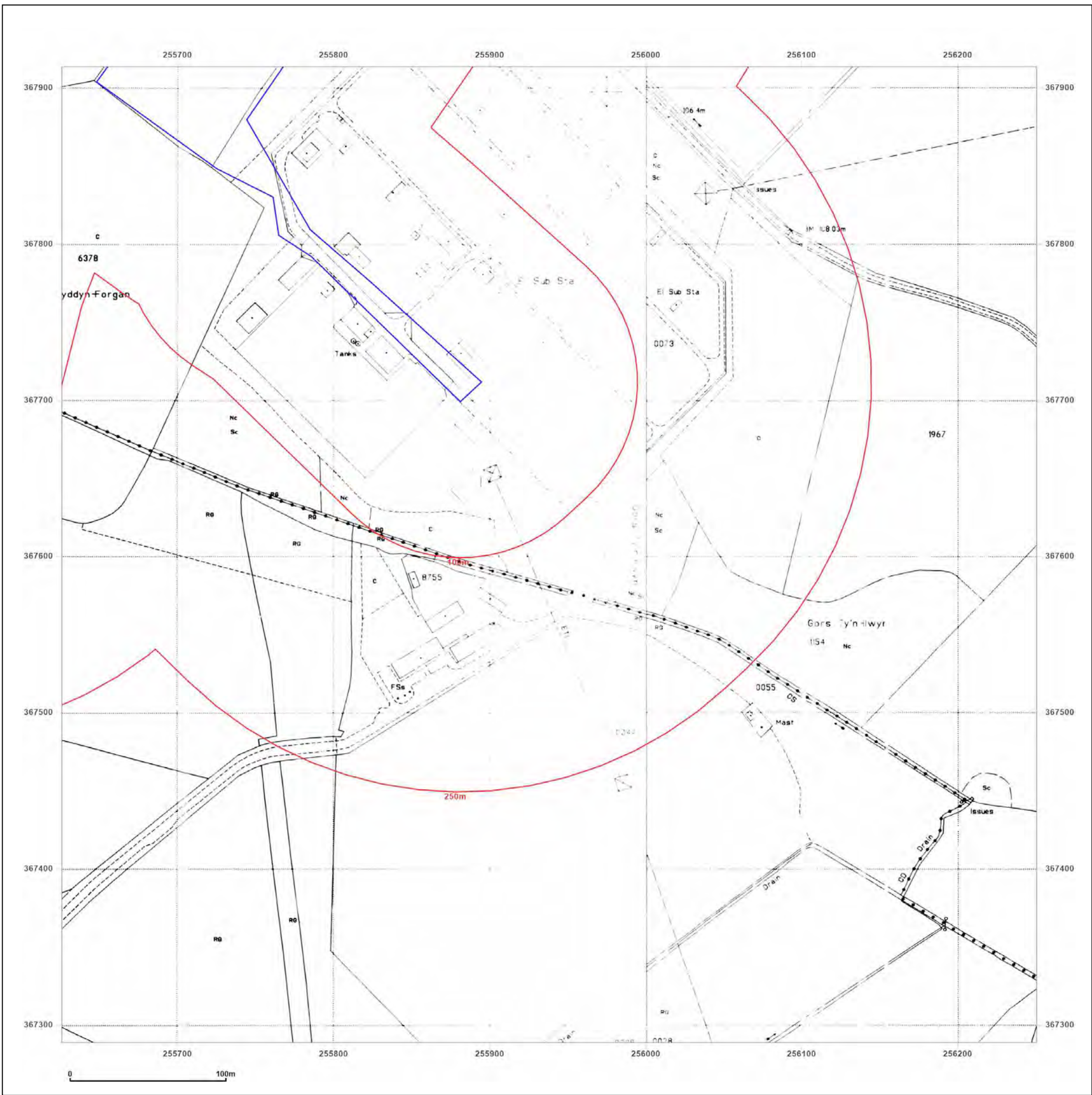
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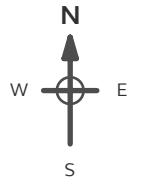




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 FFERM LLECHARIAN 63M FROM
 UNNAMED ROAD, L+ N
 CARFAN, PENTIR, LL55 3AW

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Report Ref: GS-KPM-C95-5VB-32Z_LS_2_1
Grid Ref: 255938, 367601

Map Name: National Grid
Map date: 1995
Scale: 1:2,500
Printed at: 1:2,500



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Report Ref: GS-KPM-C95-5VB-32Z_LS_2_2
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Map Name: County Series

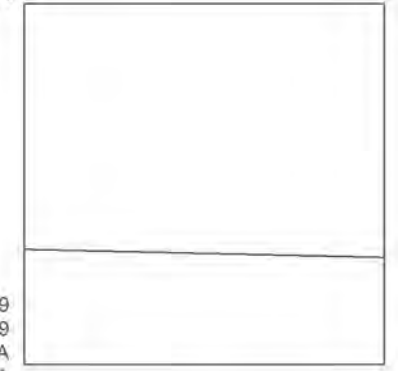
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 Edition N/A
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 Revised 1889
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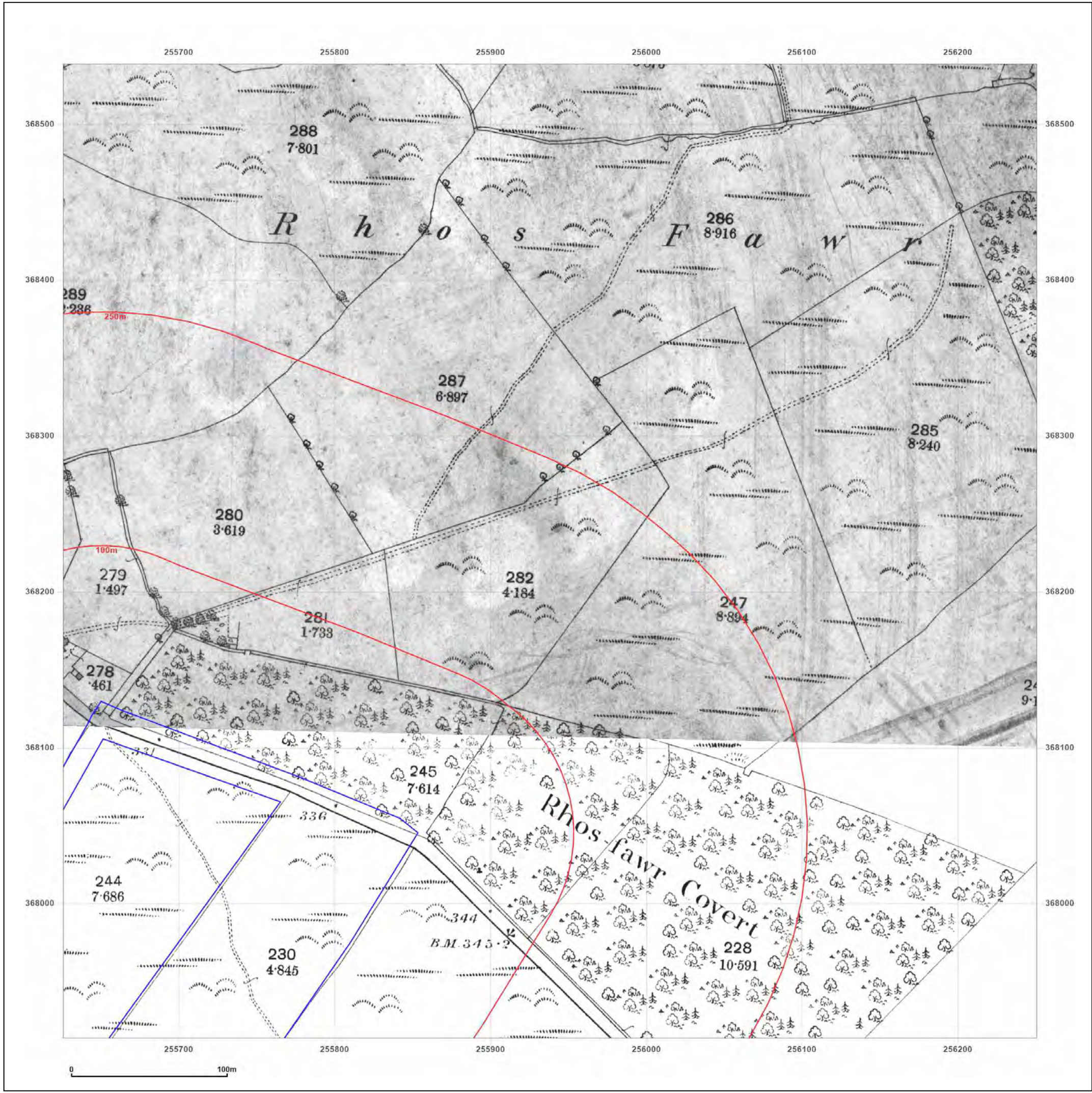


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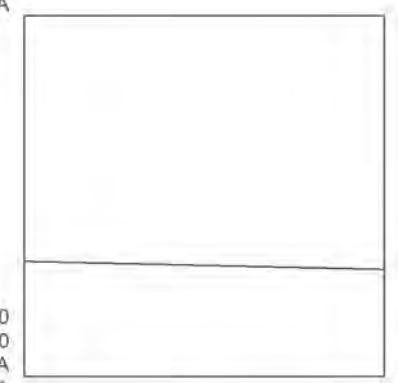
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Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Levelled N/A



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Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

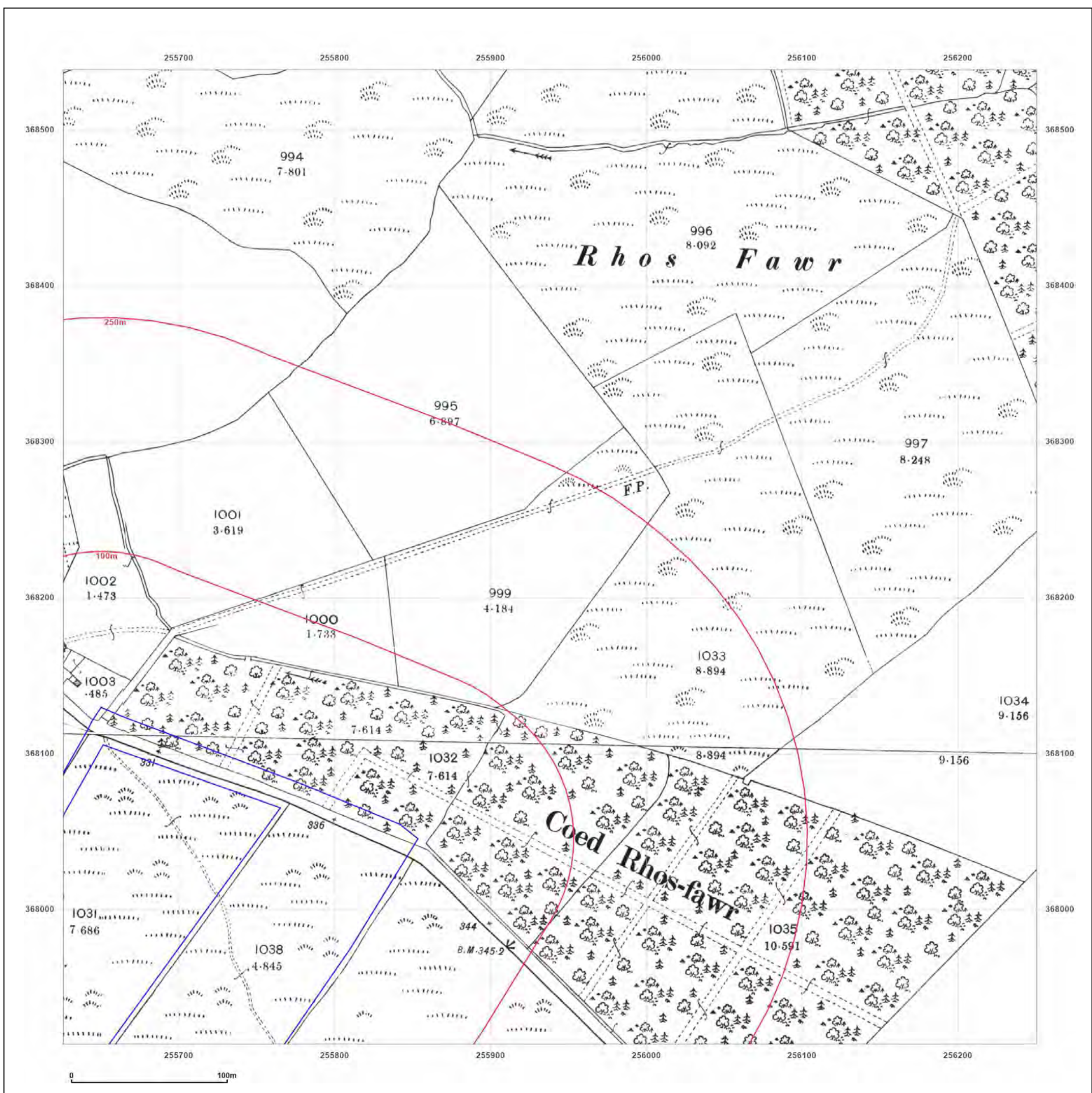


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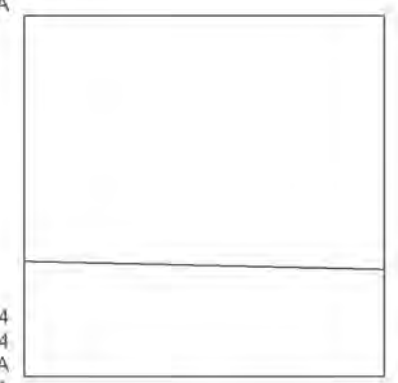
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Scale: 1:2,500

Printed at: 1:2,500



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 Edition N/A
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 Levelled N/A



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 Revised 1914
 Edition N/A
 Copyright N/A
 Levelled N/A

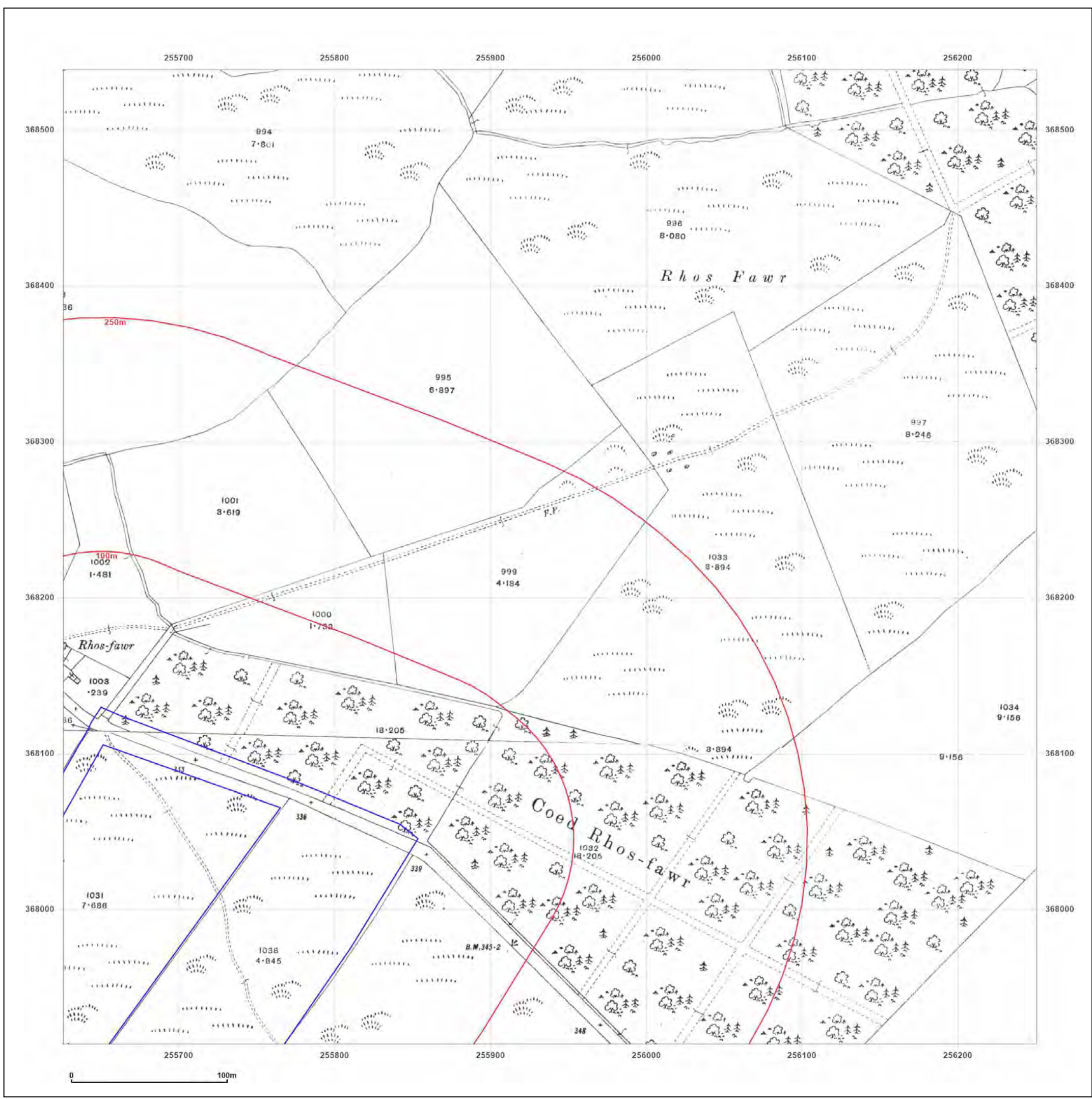


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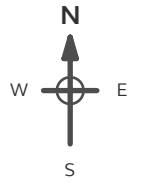


Site Details:

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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_2
Grid Ref: 255938, 368226

Map Name: National Grid
Map date: 1969-1972
Scale: 1:2,500
Printed at: 1:2,500



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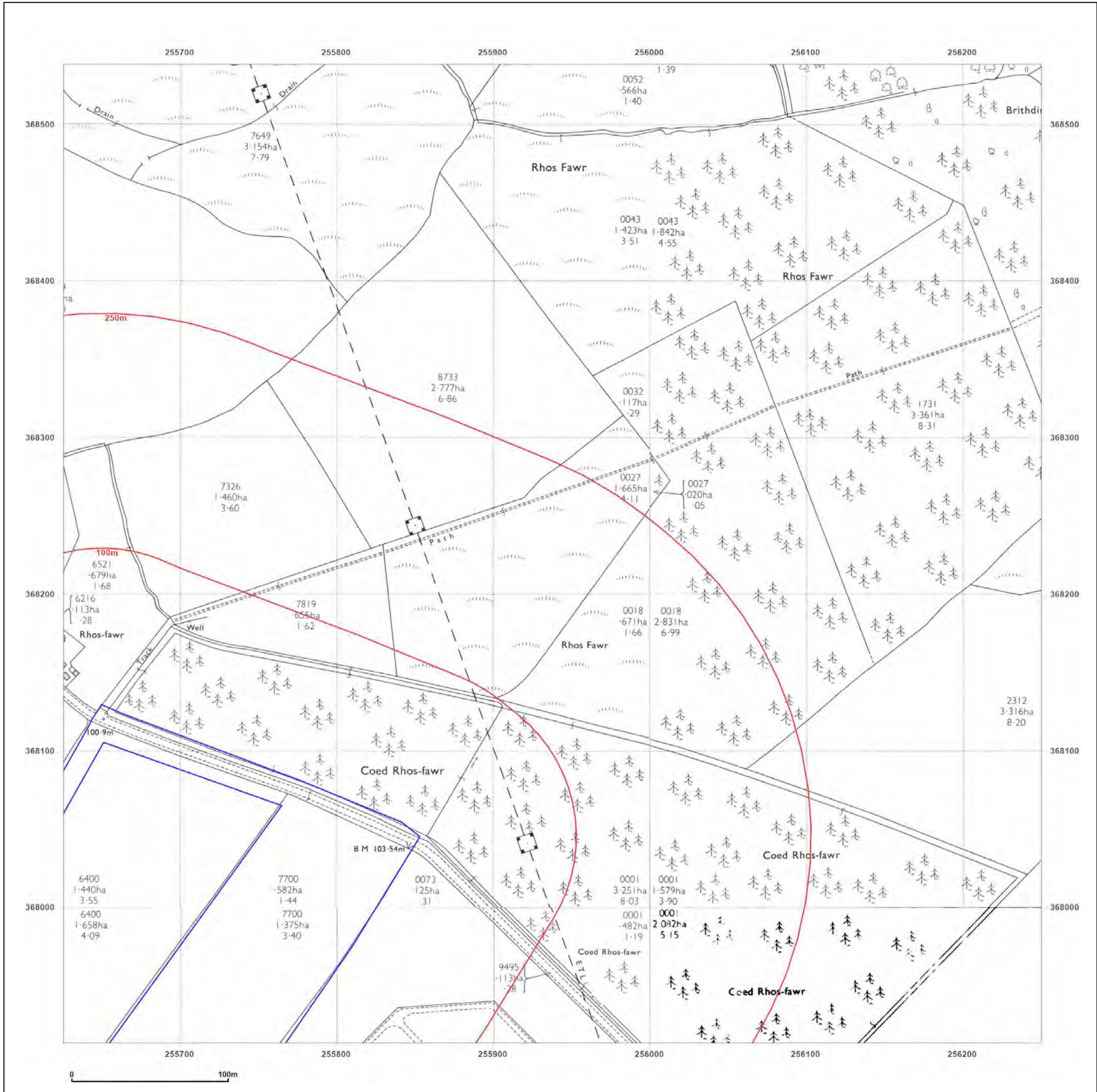


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FFERM LLECHARIAN 63M FROM
UNNAMED ROAD, L+ N
CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_2
Grid Ref: 255938, 368226

Map Name: National Grid

Map date: 1970-1972

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed 1971 Revised 1971 Edition N/A Copyright 1972 Levelled 1955

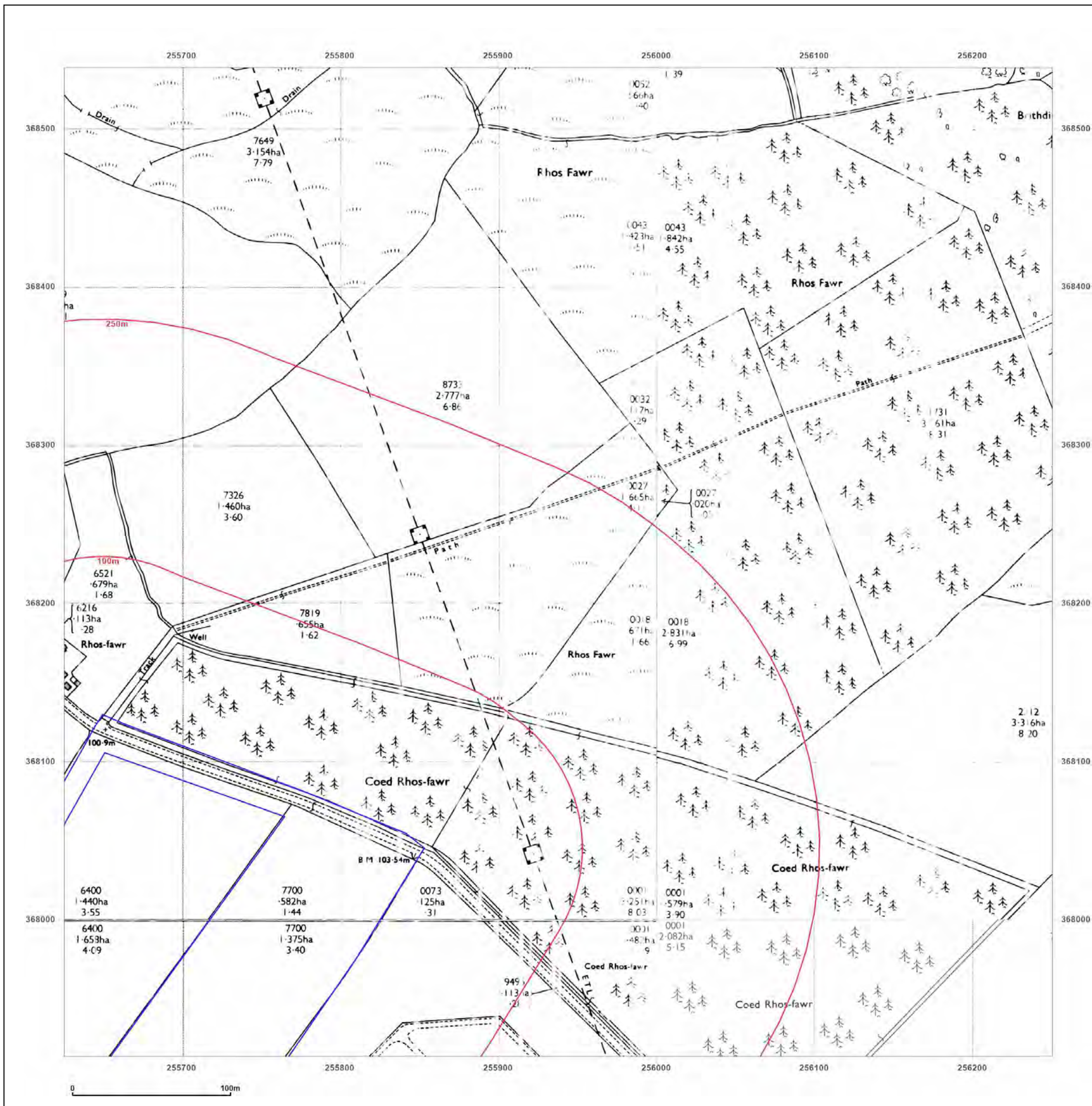


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Site Details:

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 CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_2
Grid Ref: 255938, 368226

Map Name: National Grid

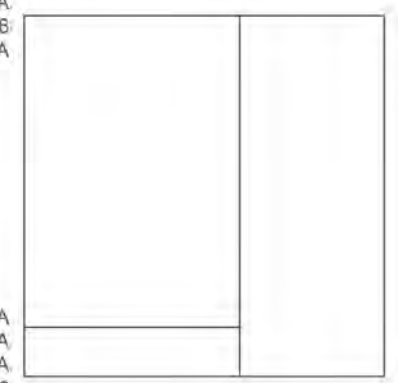
Map date: 1976

Scale: 1:2,500

Printed at: 1:2,500



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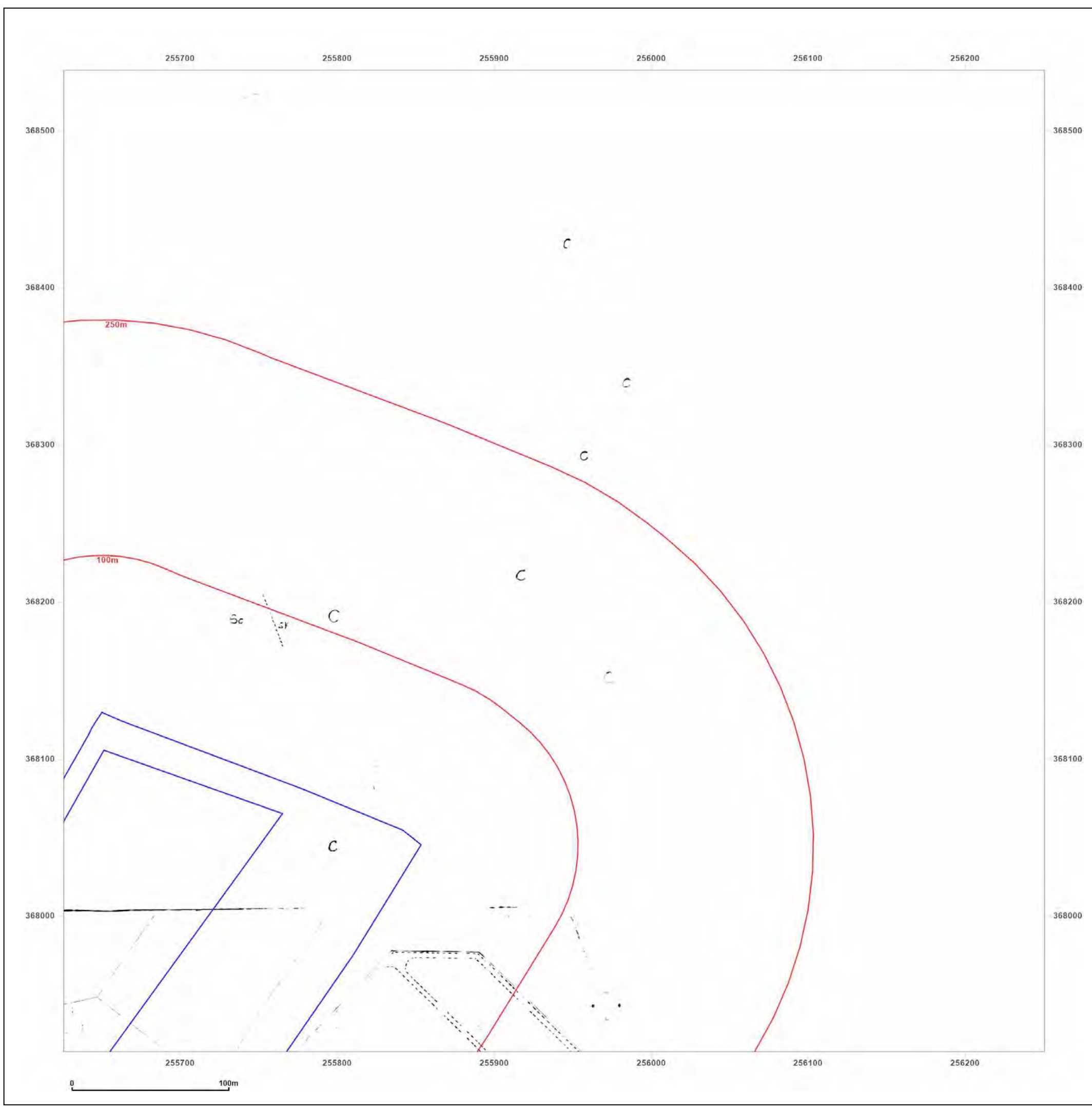


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z_LS_2_2
Grid Ref: 255938, 368226

Map Name: National Grid

Map date: 1995

Scale: 1:2,500

Printed at: 1:2,500



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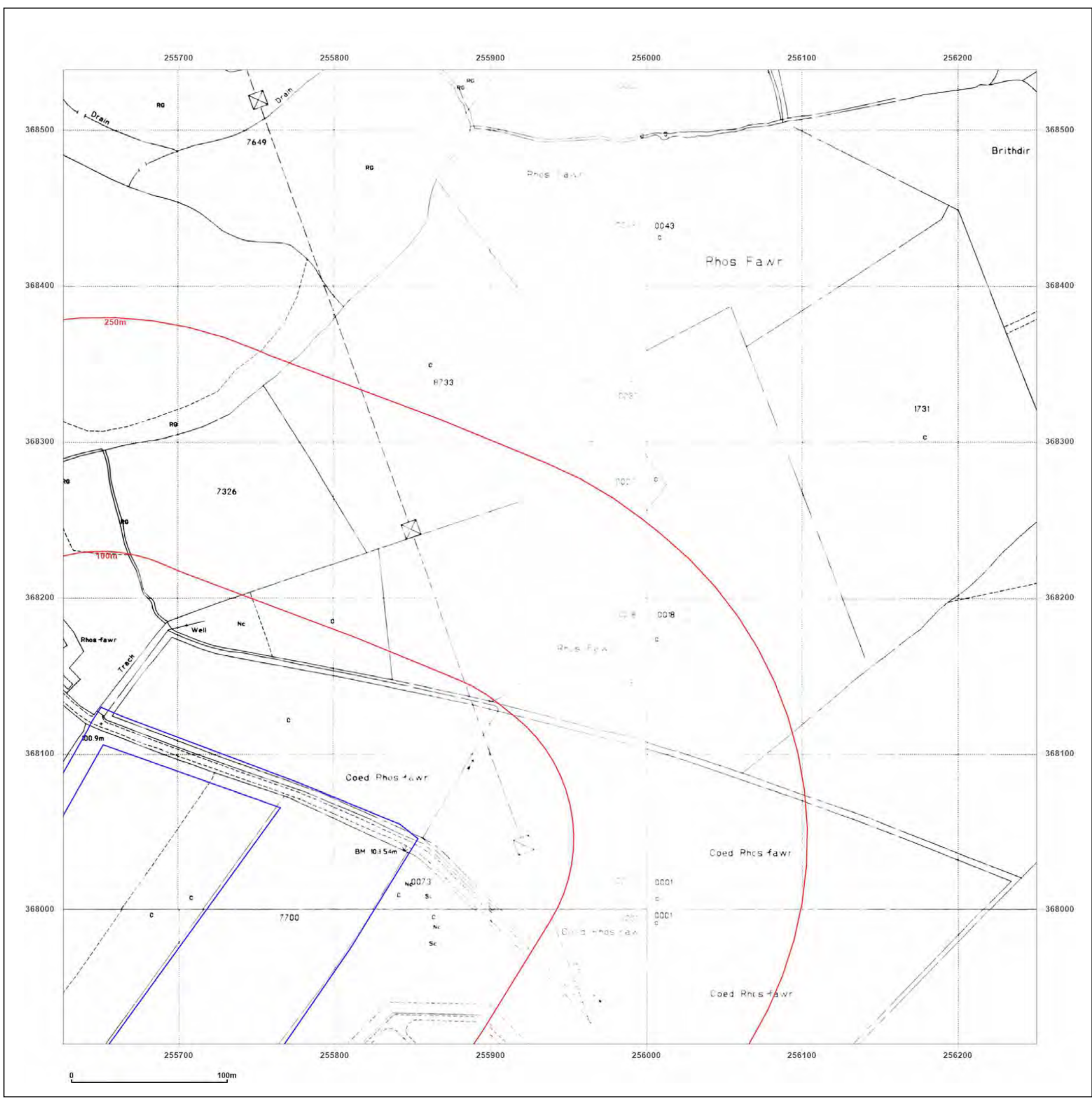


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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: County Series

Map date: 1888

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1888
Revised 1888
Edition N/A
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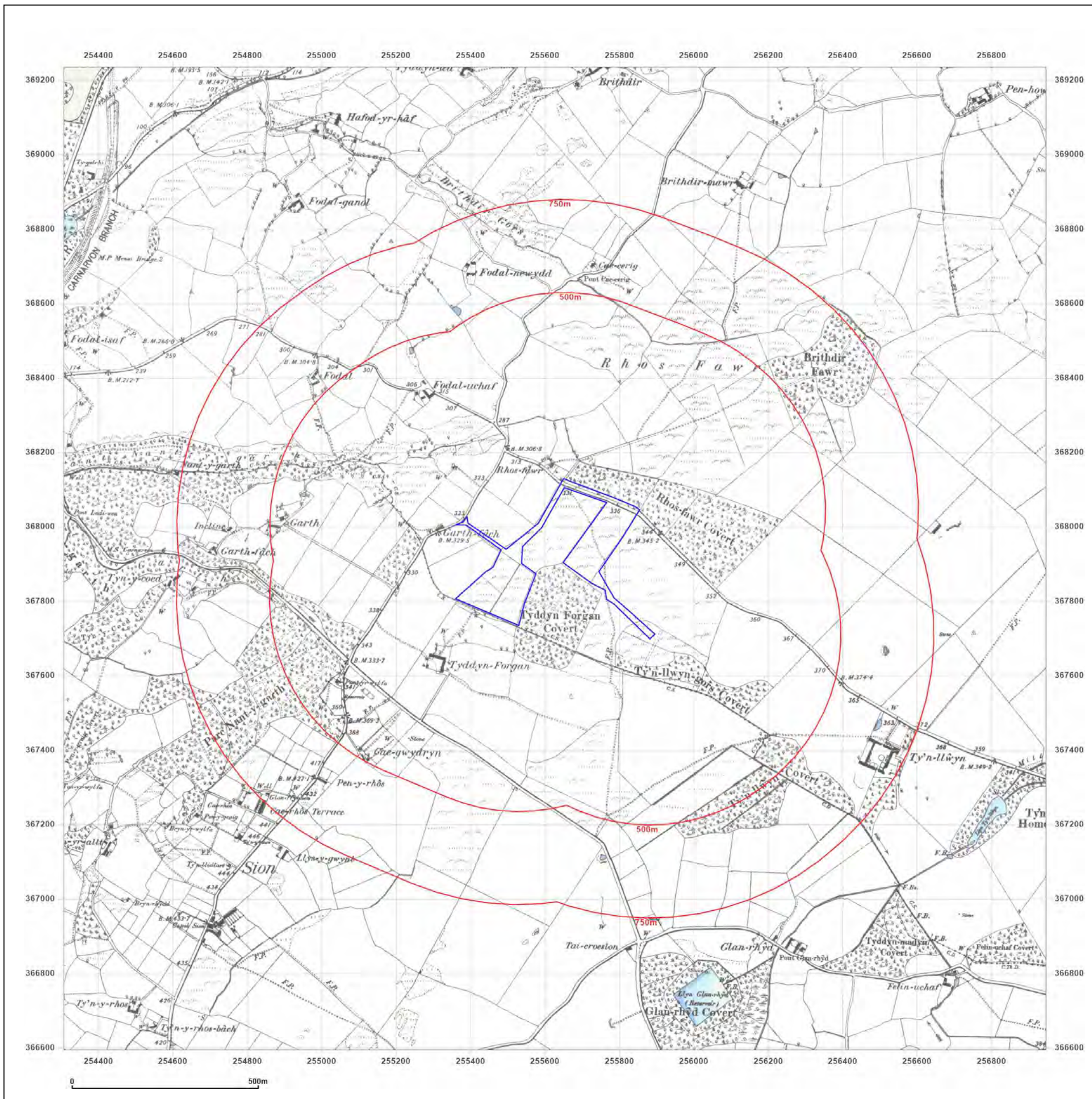


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: County Series

Map date: 1899

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1888
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

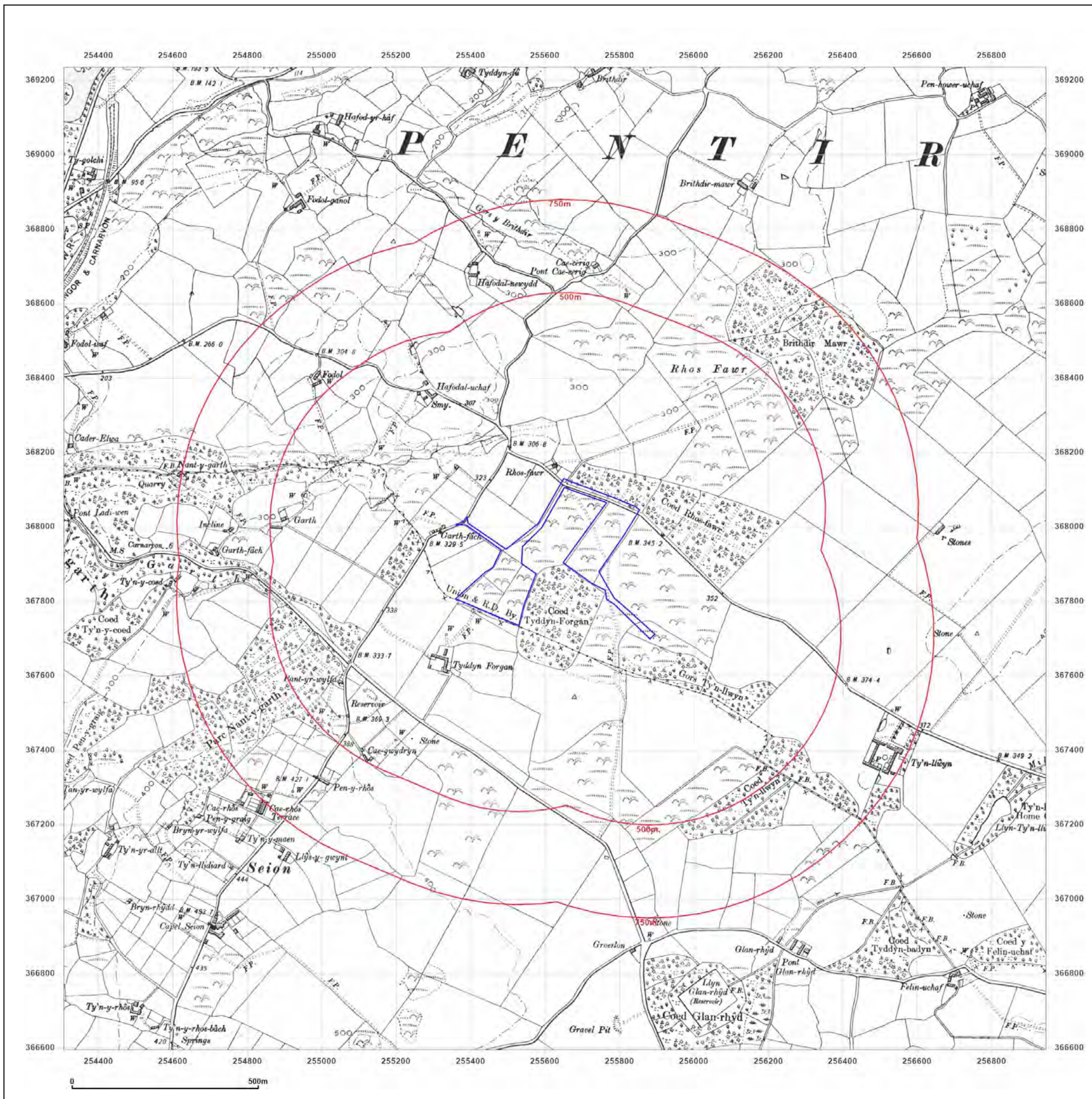


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: County Series

Map date: 1913

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised N/A
Edition N/A
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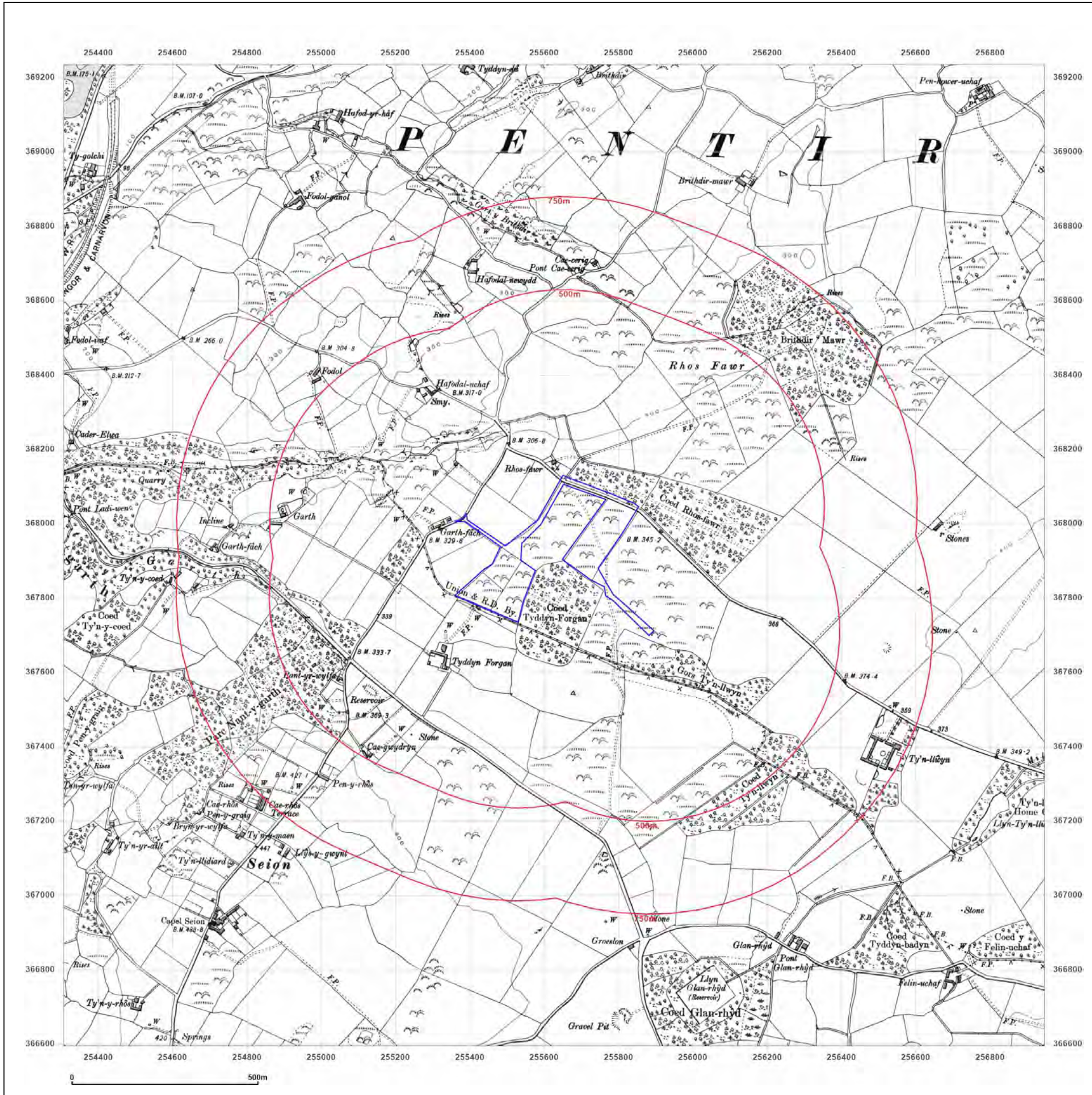


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CARFAN, PENTIR, LL55 3AW

Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: County Series

Map date: 1949

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1888
Revised 1949
Edition N/A
Copyright N/A
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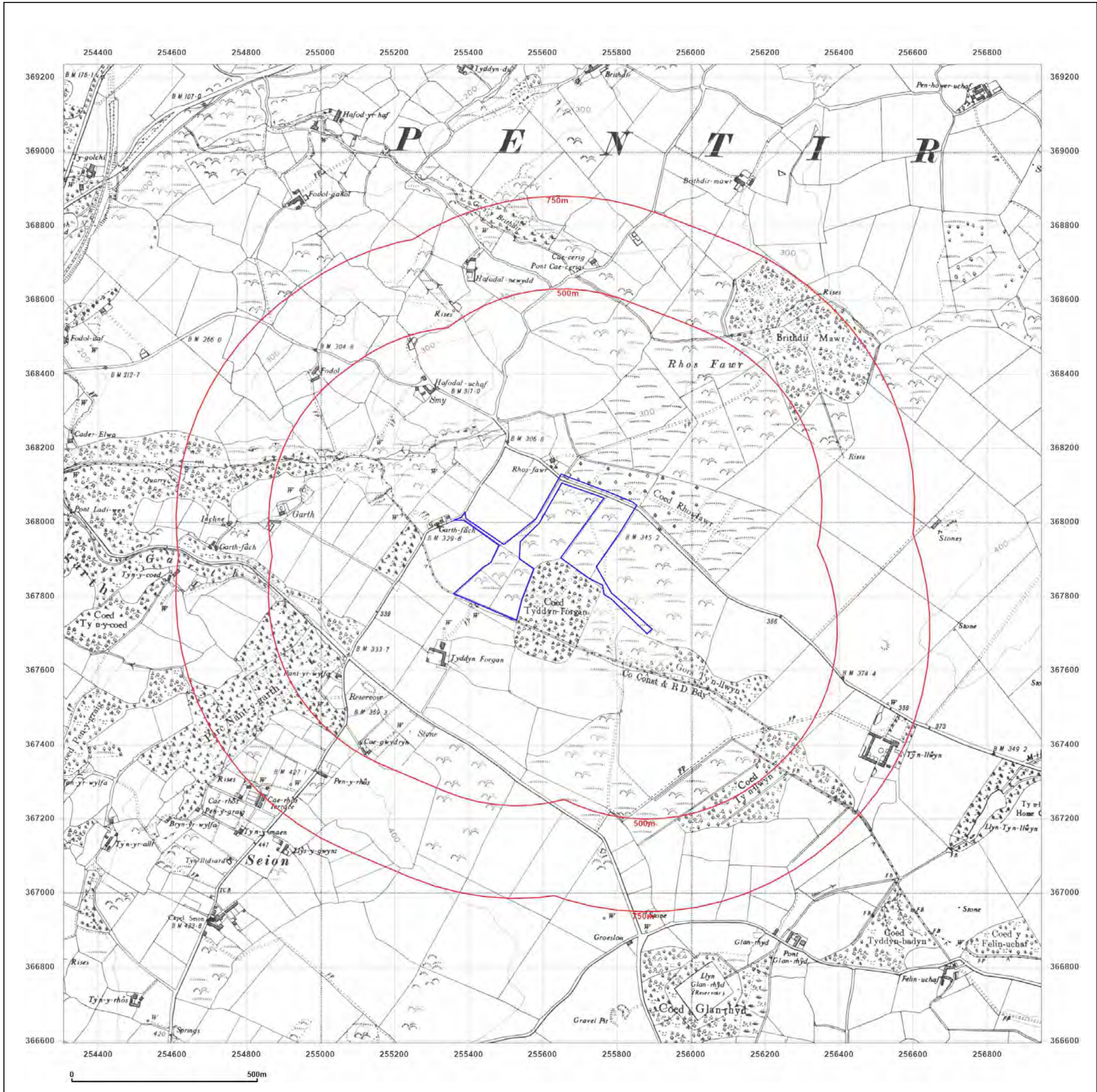


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: Provisional

Map date: 1959

Scale: 1:10,560

Printed at: 1:10,560



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Surveyed 1959
Revised 1959
Edition N/A
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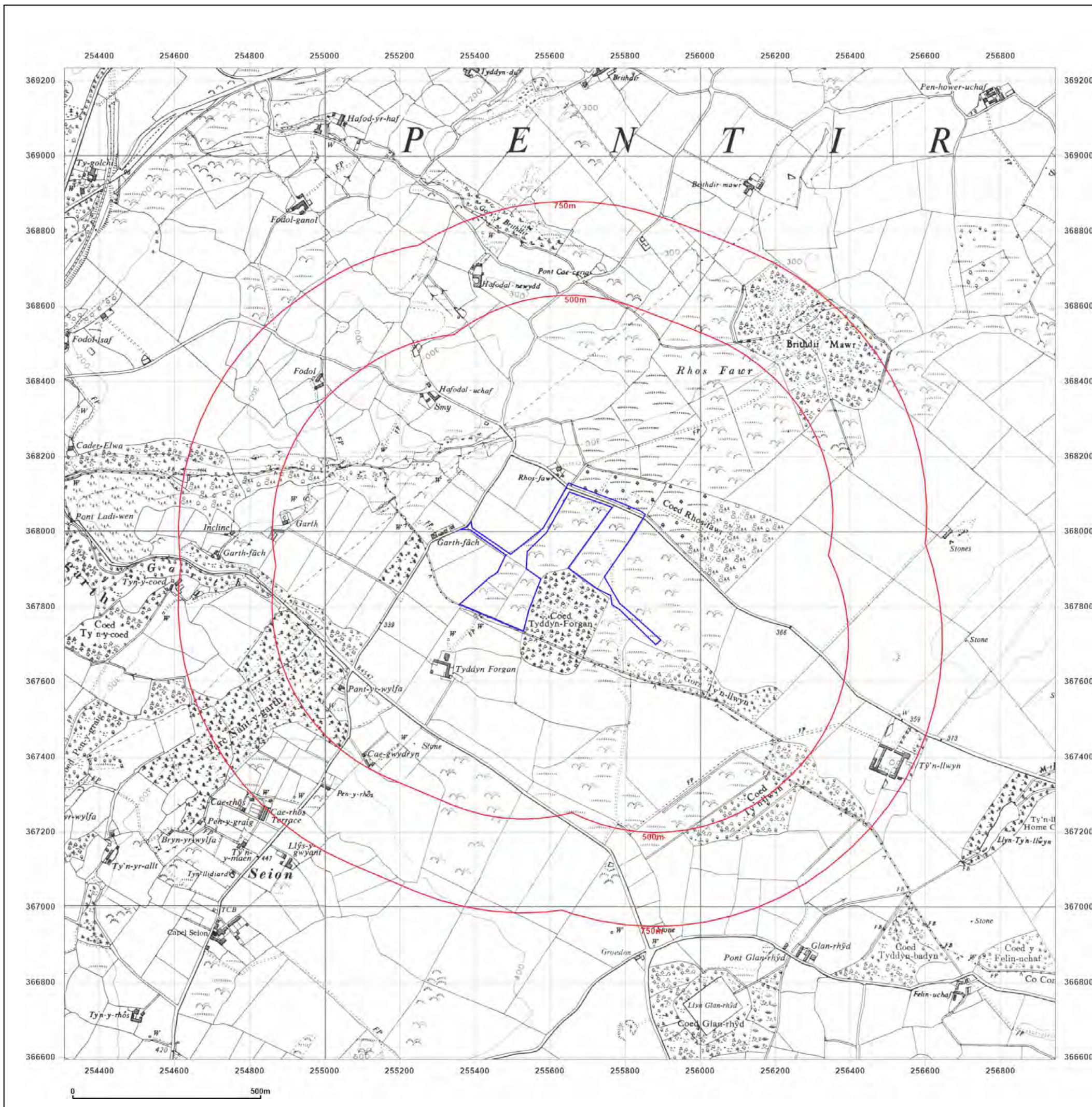


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: National Grid

Map date: 1973-1976

Scale: 1:10,000

Printed at: 1:10,000



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Edition N/A
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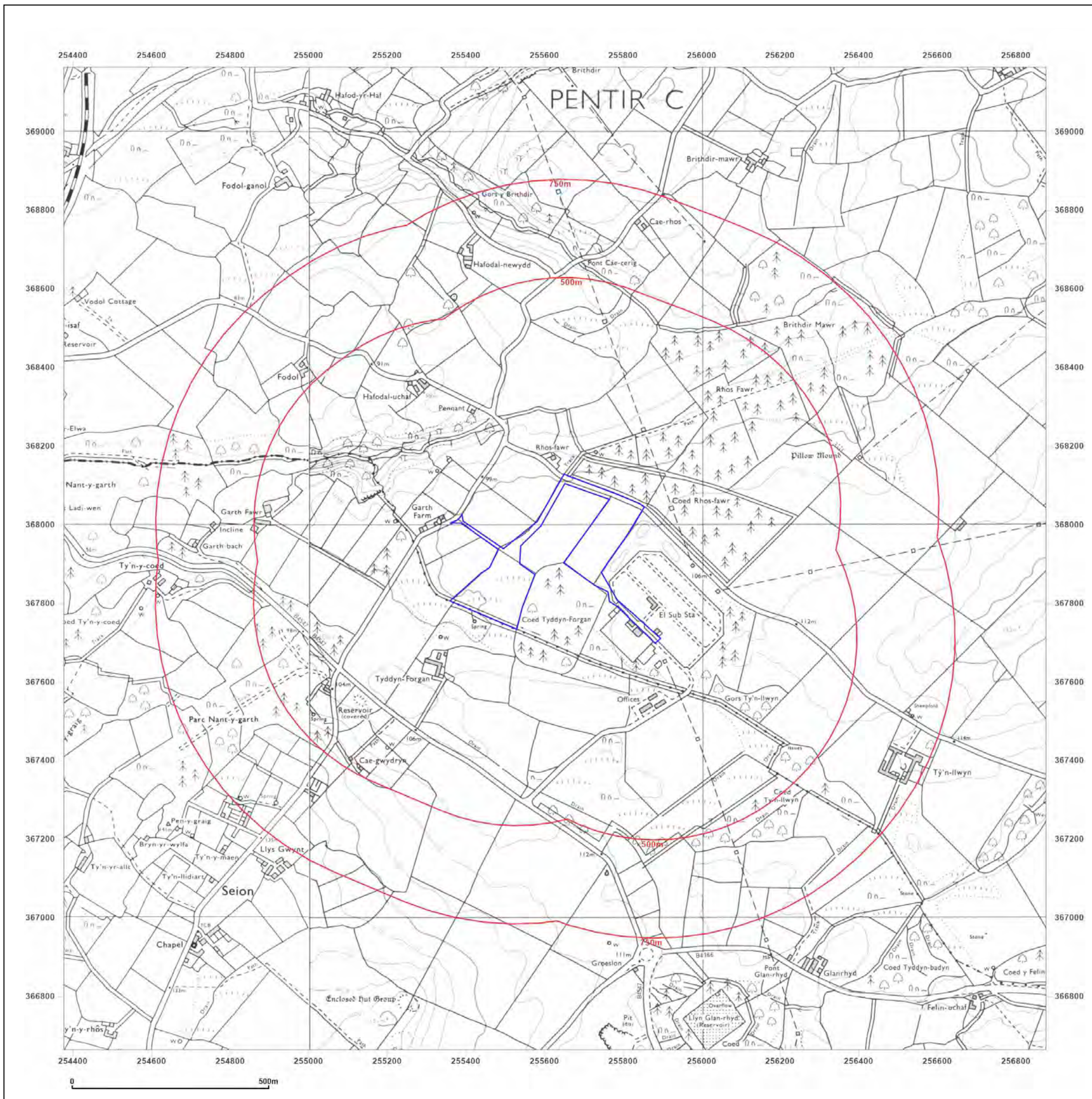


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: National Grid

Map date: 1989

Scale: 1:10,000

Printed at: 1:10,000



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Revised 1989
Edition N/A
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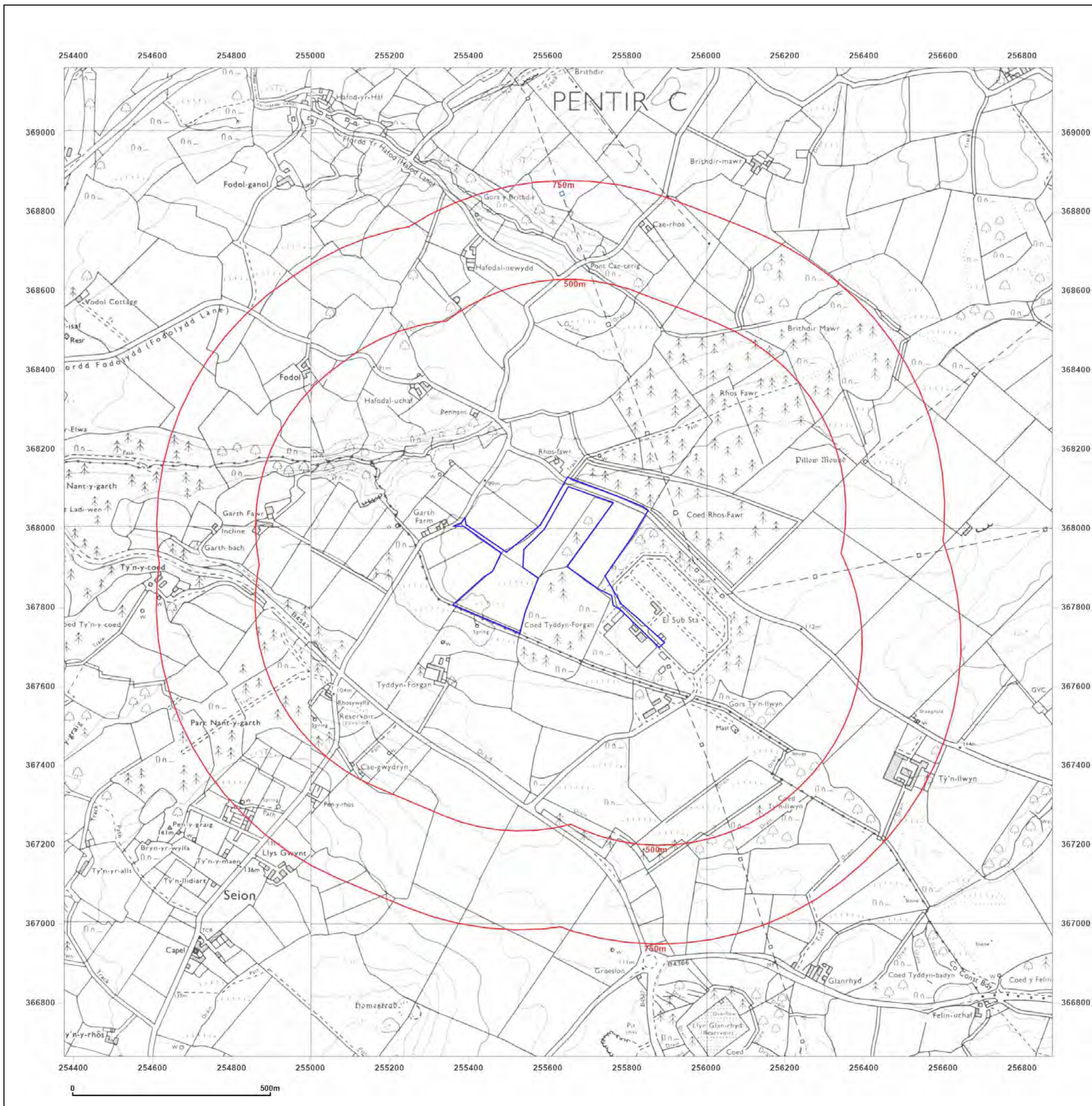


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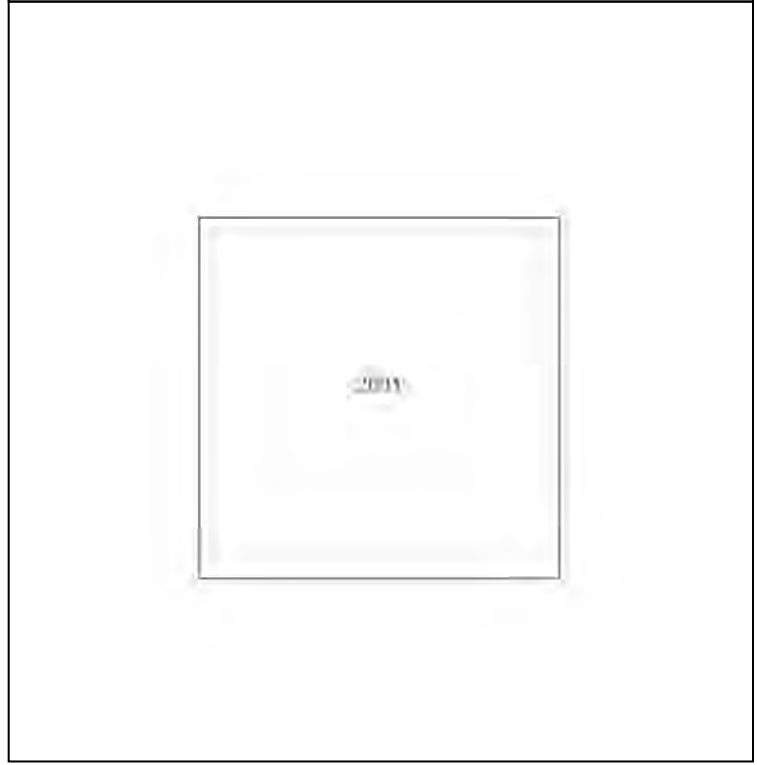
Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

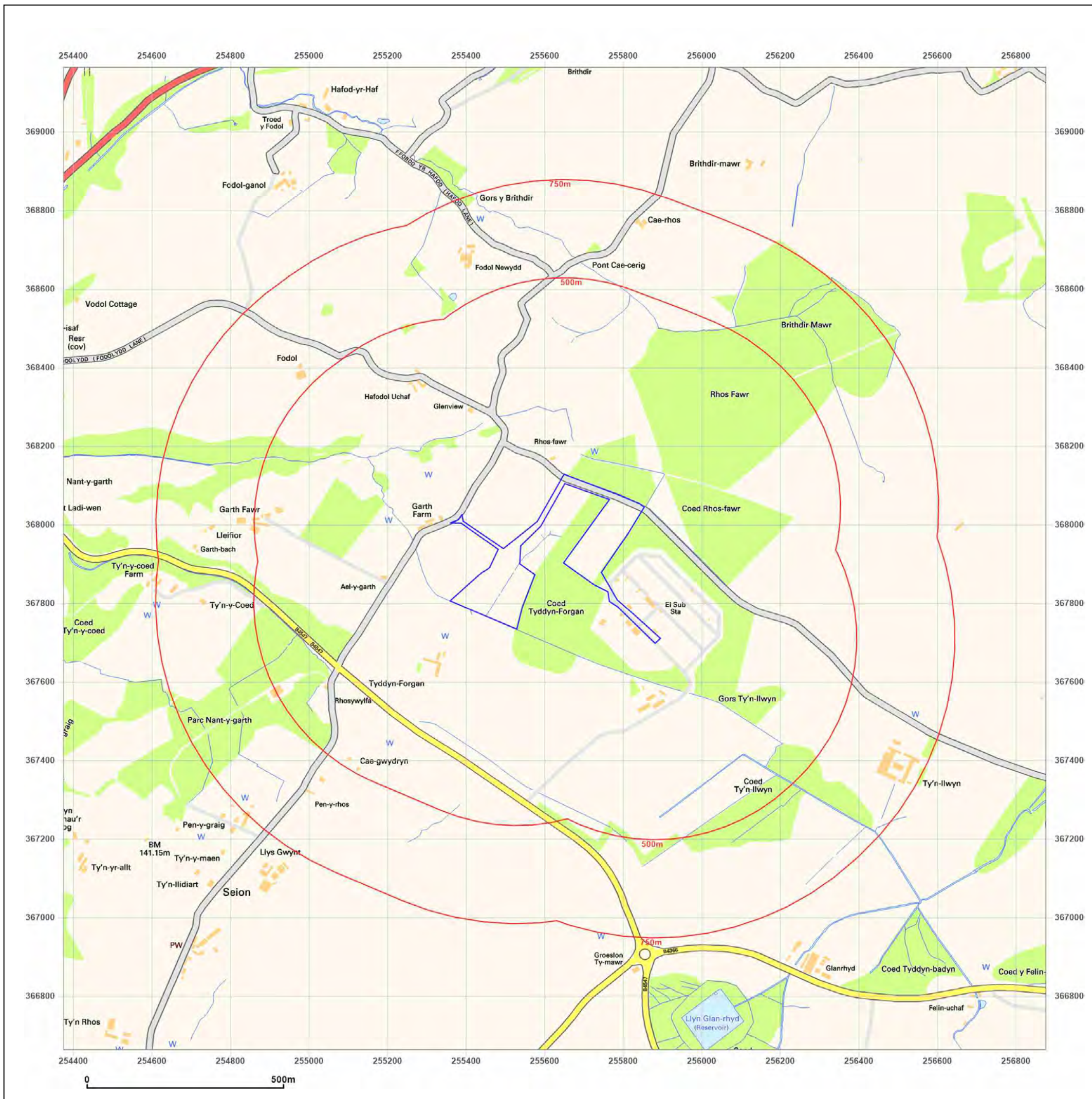


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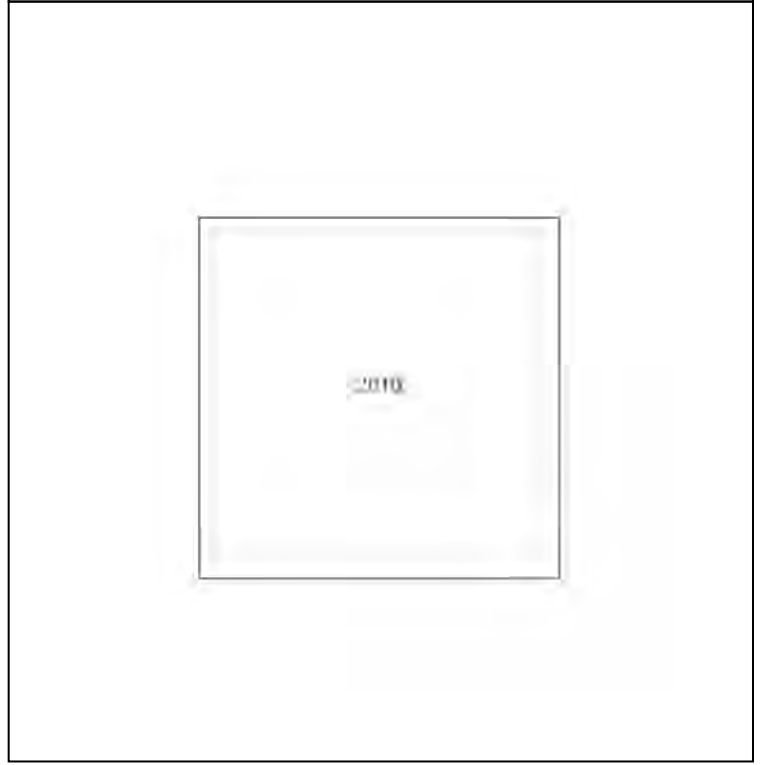
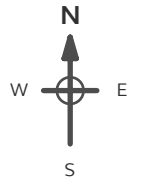


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Client Ref: JER10220_PO23-0661
Report Ref: GS-KPM-C95-5VB-32Z
Grid Ref: 255626, 367914

Map Name: National Grid
Map date: 2010
Scale: 1:10,000
Printed at: 1:10,000

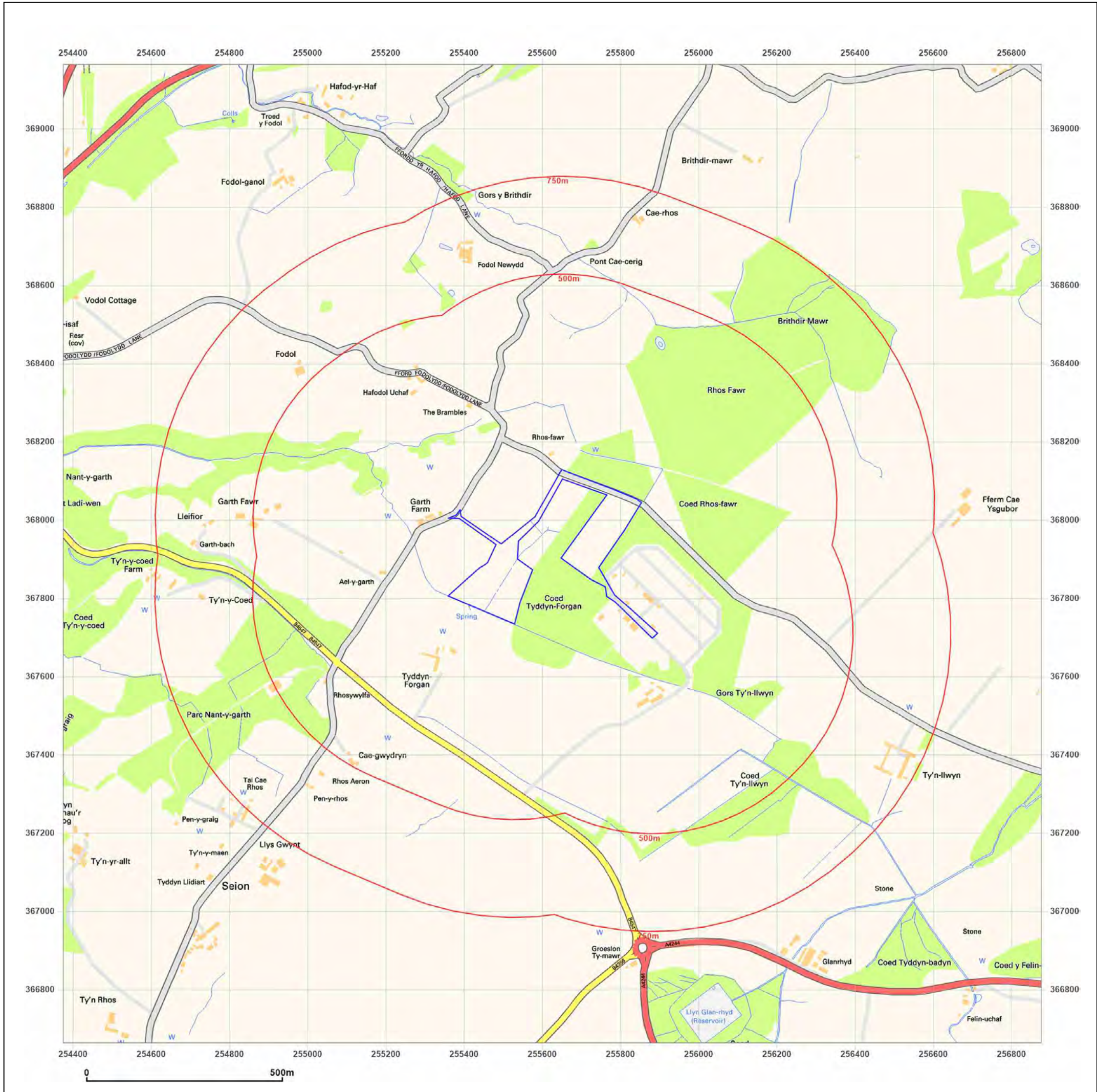


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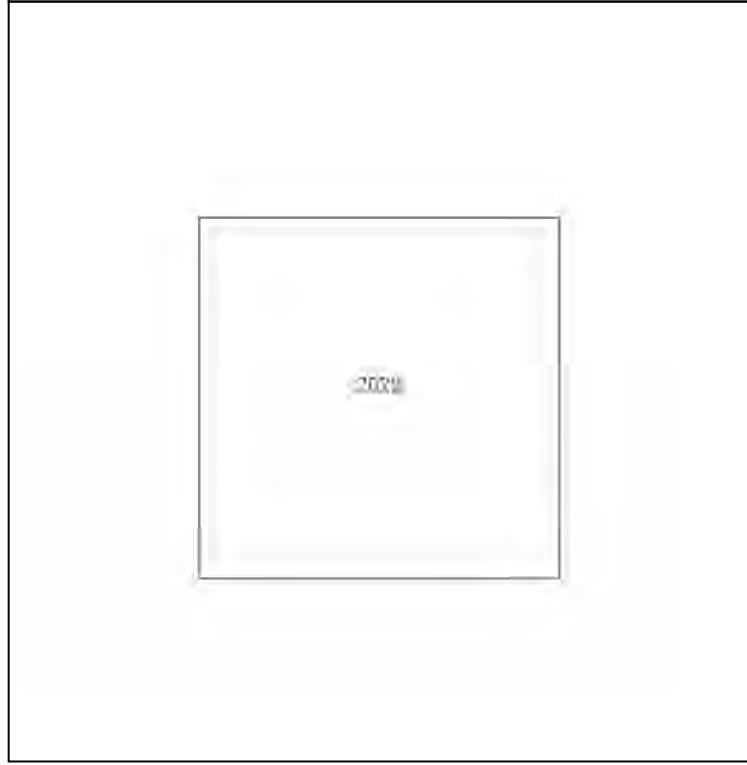
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Report Ref: GS-KPM-C95-5VB-32Z
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Map Name: National Grid

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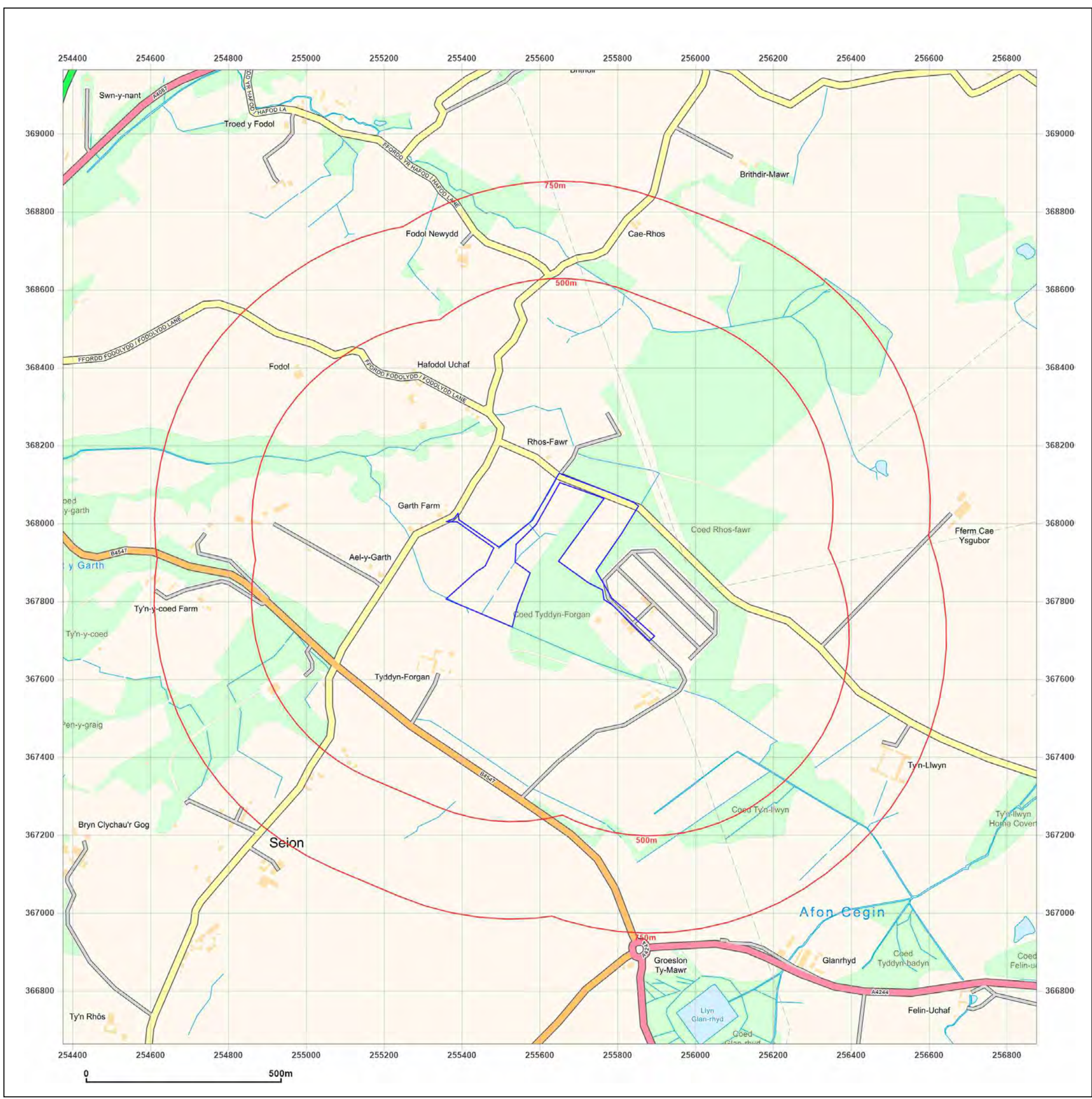


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Order Details

Date: 27/09/2023
Your ref: JER10220_PO23-0661
Our Ref: GS-MJF-TTR-Y1M-IKO

Site Details

Location: 255492 367834
Area: 5.5 ha
Authority: [Gwynedd County Council](#) ↗



[Summary of findings](#)

[p. 2 >](#)

[Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#)

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01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	0	0	4	-
16 >	1.2 >	Historical tanks >	0	1	1	0	-
16 >	1.3 >	Historical energy features >	1	0	1	0	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
18 >	2.1 >	Historical industrial land uses >	2	0	0	4	-
19 >	2.2 >	Historical tanks >	0	1	1	0	-
19 >	2.3 >	Historical energy features >	1	0	2	0	-
20	2.4	Historical petrol stations	0	0	0	0	-
20	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
21	3.1	Active or recent landfill	0	0	0	0	-
21	3.2	Historical landfill (BGS records)	0	0	0	0	-
22	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
22	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
22	3.5	Historical waste sites	0	0	0	0	-
22	3.6	Licensed waste sites	0	0	0	0	-
22 >	3.7 >	Waste exemptions >	0	5	9	3	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
25 >	4.1 >	Recent industrial land uses >	0	0	7	-	-
26	4.2	Current or recent petrol stations	0	0	0	0	-
26 >	4.3 >	Electricity cables >	1	1	1	1	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.7	Regulated explosive sites	0	0	0	0	-
27	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
28	4.12	Radioactive Substance Authorisations	0	0	0	0	-
28 >	4.13 >	<u>Licensed Discharges to controlled waters ></u>	0	1	1	0	-
29	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
29	4.15	Pollutant release to public sewer	0	0	0	0	-
29	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30 >	4.18 >	<u>Pollution Incidents (EA/NRW) ></u>	0	2	2	1	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
32 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
35 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
37 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
39	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
39	5.5	Groundwater vulnerability- local information	None (within 0m)				
40	5.6	Groundwater abstractions	0	0	0	0	0
41 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	0	2
41	5.8	Potable abstractions	0	0	0	0	0
42	5.9	Source Protection Zones	0	0	0	0	-
42	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
43 >	6.1 >	<u>Water Network (OS MasterMap) ></u>	13	8	8	-	-



46 >	6.2 >	Surface water features >	1	6	4	-	-
46 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
47 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
47 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	7.3	Flood Defences	0	0	0	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	None (within 50m)				
50	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
51 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
53 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
56 >	10.7 >	Designated Ancient Woodland >	2	0	2	4	56
58	10.8	Biosphere Reserves	0	0	0	0	0
59	10.9	Forest Parks	0	0	0	0	0
59	10.10	Marine Conservation Zones	0	0	0	0	0
59	10.11	Green Belt	0	0	0	0	0
59	10.12	Proposed Ramsar sites	0	0	0	0	0



59	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
60	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
60	10.15	Nitrate Sensitive Areas	0	0	0	0	0
60	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
61	10.17	SSSI Impact Risk Zones	0	-	-	-	-
61	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	11.1	World Heritage Sites	0	0	0	-	-
62	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
62	11.3	National Parks	0	0	0	-	-
62	11.4	Listed Buildings	0	0	0	-	-
63	11.5	Conservation Areas	0	0	0	-	-
63	11.6	Scheduled Ancient Monuments	0	0	0	-	-
63	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	<u>Agricultural designations</u> >	On site	0-50m	50-250m	250-500m	500-2000m
64 >	12.1 >	<u>Agricultural Land Classification</u> >	Grade 5 (within 250m)				
65	12.2	Open Access Land	0	0	0	-	-
65	12.3	Tree Felling Licences	0	0	0	-	-
66	12.4	Environmental Stewardship Schemes	0	0	0	-	-
66	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
67	13.1	Priority Habitat Inventory	0	0	0	-	-
67	13.2	Habitat Networks	0	0	0	-	-
67	13.3	Open Mosaic Habitat	0	0	0	-	-
67	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	<u>Geology 1:10,000 scale</u> >	On site	0-50m	50-250m	250-500m	500-2000m
68 >	14.1 >	<u>10k Availability</u> >	Identified (within 500m)				
69	14.2	Artificial and made ground (10k)	0	0	0	0	-
70	14.3	Superficial geology (10k)	0	0	0	0	-

70	14.4	Landslip (10k)	0	0	0	0	-
71	14.5	Bedrock geology (10k)	0	0	0	0	-
71	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
72 >	15.1 >	50k Availability >	Identified (within 500m)				
73	15.2	Artificial and made ground (50k)	0	0	0	0	-
73	15.3	Artificial ground permeability (50k)	0	0	-	-	-
74 >	15.4 >	Superficial geology (50k) >	4	1	3	5	-
75 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77 >	15.8 >	Bedrock geology (50k) >	2	0	0	0	-
78 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
78	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
79 >	16.1 >	BGS Boreholes >	0	2	7	-	-
Page	Section	Natural ground subsidence >					
81 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
82 >	17.2 >	Running sands >	Low (within 50m)				
84 >	17.3 >	Compressible deposits >	High (within 50m)				
86 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
87 >	17.5 >	Landslides >	Very low (within 50m)				
88 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
90	18.1	BritPits	0	0	0	0	-
91	18.2	Surface ground workings	0	0	0	-	-
91	18.3	Underground workings	0	0	0	0	0
91	18.4	Underground mining extents	0	0	0	0	-
91	18.5	Historical Mineral Planning Areas	0	0	0	0	-



91 >	18.6 >	Non-coal mining >	1	0	0	0	2
92	18.7	JPB mining areas	None (within 0m)				
92	18.8	The Coal Authority non-coal mining	0	0	0	0	-
93	18.9	Researched mining	0	0	0	0	-
93	18.10	Mining record office plans	0	0	0	0	-
93	18.11	BGS mine plans	0	0	0	0	-
93	18.12	Coal mining	None (within 0m)				
93	18.13	Brine areas	None (within 0m)				
94	18.14	Gypsum areas	None (within 0m)				
94	18.15	Tin mining	None (within 0m)				
94	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
95	19.1	Natural cavities	0	0	0	0	-
95	19.2	Mining cavities	0	0	0	0	0
95	19.3	Reported recent incidents	0	0	0	0	-
95	19.4	Historical incidents	0	0	0	0	-
96	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
97 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
99 >	21.1 >	BGS Estimated Background Soil Chemistry >	18	2	-	-	-
100	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
100	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
101	22.1	Underground railways (London)	0	0	0	-	-
101	22.2	Underground railways (Non-London)	0	0	0	-	-
101	22.3	Railway tunnels	0	0	0	-	-
101	22.4	Historical railway and tunnel features	0	0	0	-	-
101	22.5	Royal Mail tunnels	0	0	0	-	-



102	22.6	Historical railways	0	0	0	-	-
102	22.7	Railways	0	0	0	-	-
102	22.8	Crossrail 1	0	0	0	0	-
102	22.9	Crossrail 2	0	0	0	0	-
102	22.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 16/04/2020

Site Area: 5.5ha



Recent site history - 2018 aerial photograph



Capture Date: 06/06/2018

Site Area: 5.5ha



Recent site history - 2013 aerial photograph



Capture Date: 04/06/2013

Site Area: 5.5ha



Recent site history - 2009 aerial photograph

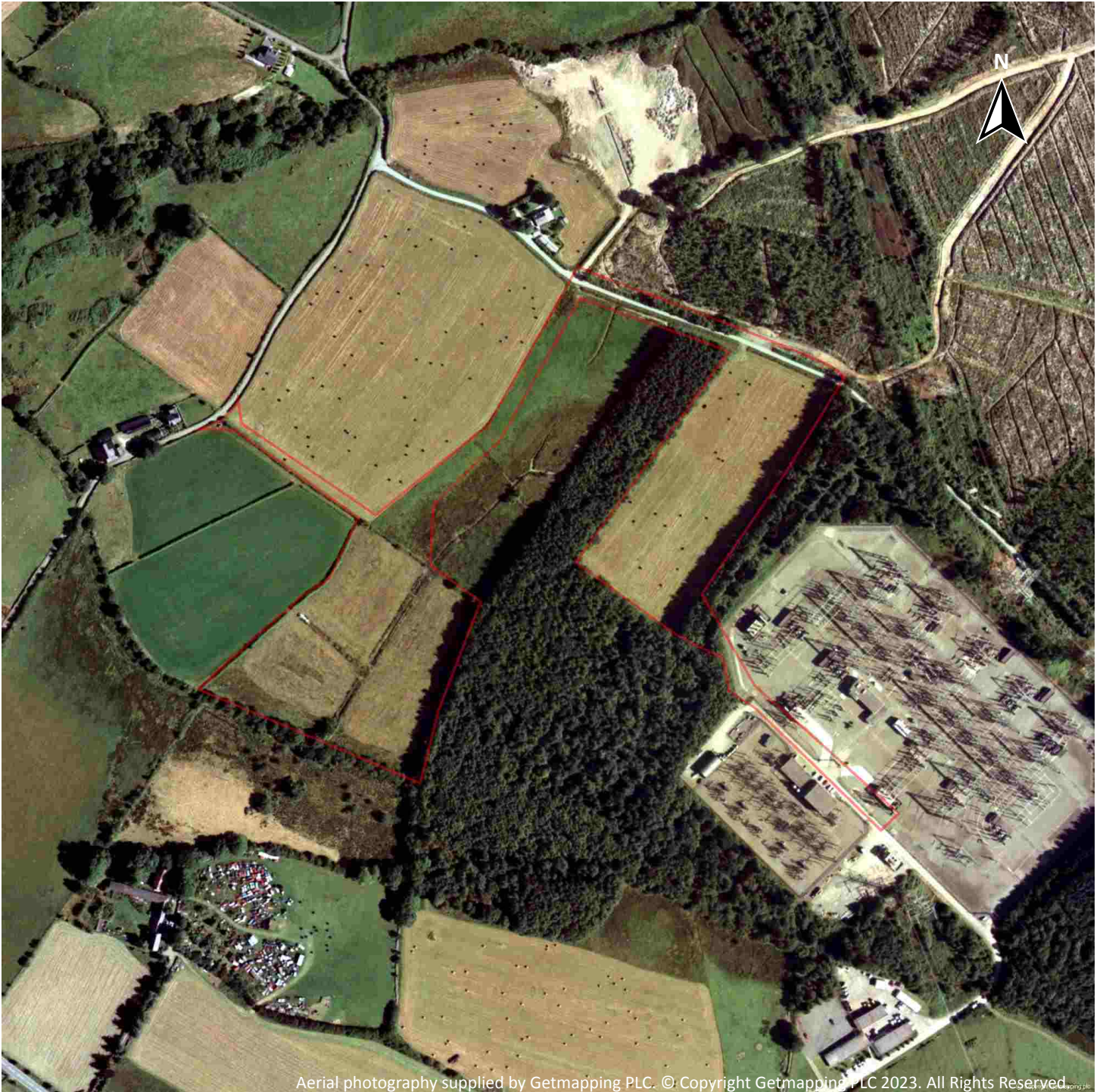


Capture Date: 20/04/2009

Site Area: 5.5ha



Recent site history - 2000 aerial photograph

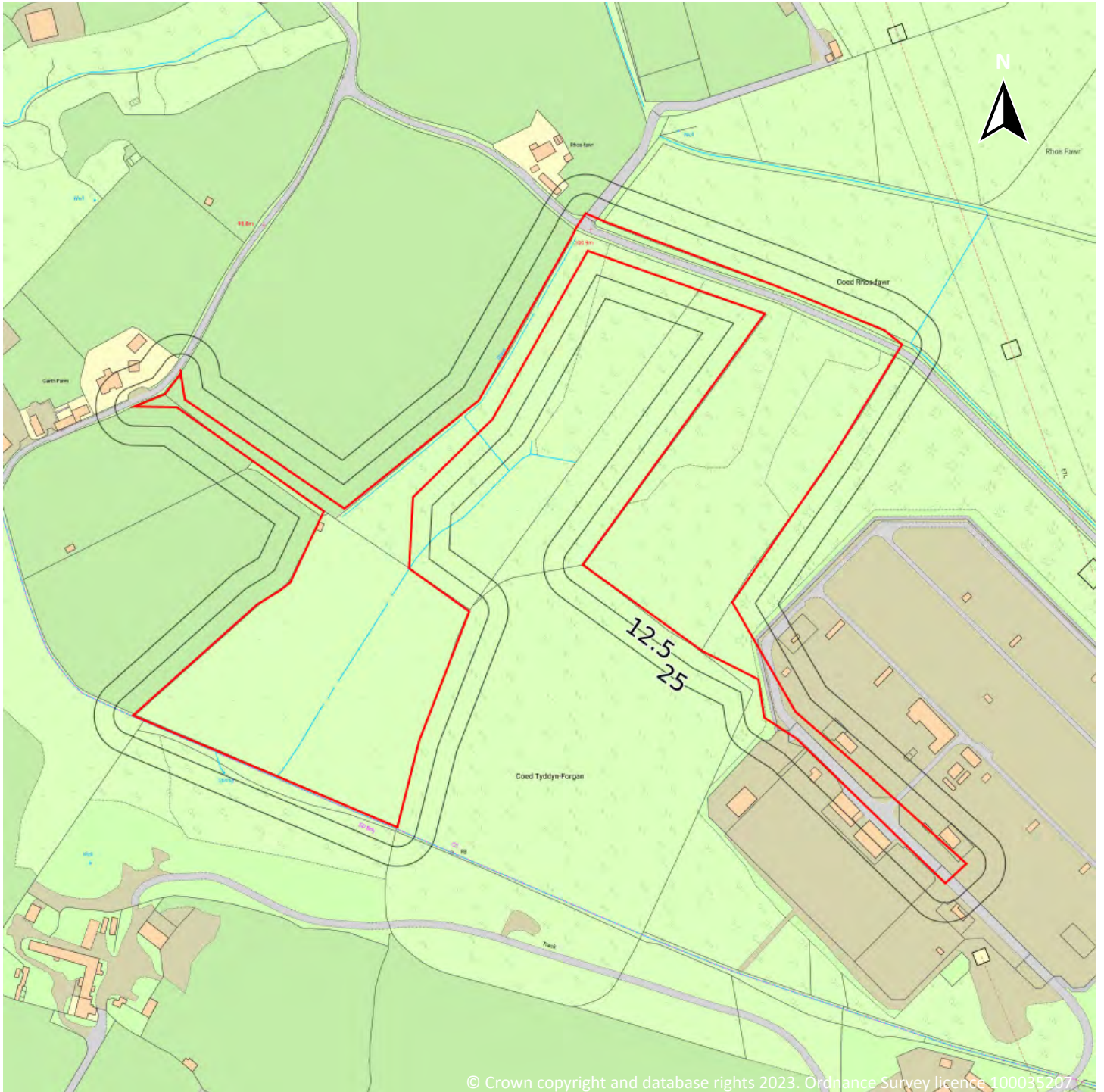


Capture Date: 21/07/2000

Site Area: 5.5ha



OS MasterMap site plan






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Site Area: 5.5ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
-  Historical industrial land uses
-  Historical tanks
-  Historical energy features

1.1 Historical industrial land uses

Records within 500m **5**

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
A	On site	Electric Substation	1976 - 1989	235973

ID	Location	Land use	Dates present	Group ID
B	321m NW	Smithy	1959	248993
4	332m SW	Unspecified Heap	1959	215778
B	333m NW	Smithy	1949	225673
B	333m NW	Smithy	1899	237687

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

2

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	17m SE	Tanks	1969	31206
3	166m SW	Unspecified Tank	1914	29941

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

2

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
A	On site	Electricity Substation	1969	15784
2	128m E	Electricity Substation	1971 - 1995	16456



This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

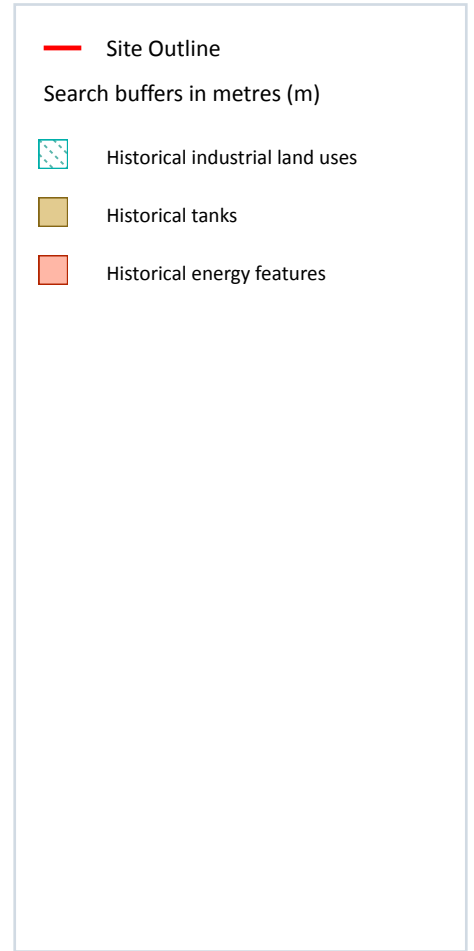
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m

6

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 18](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Electric Substation	1989	235973
A	On site	Electric Substation	1976	235973
C	321m NW	Smithy	1959	248993

ID	Location	Land Use	Date	Group ID
3	332m SW	Unspecified Heap	1959	215778
C	333m NW	Smithy	1949	225673
C	333m NW	Smithy	1899	237687

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

2

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 18 >](#)

ID	Location	Land Use	Date	Group ID
1	17m SE	Tanks	1969	31206
2	166m SW	Unspecified Tank	1914	29941

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

3

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 18 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Electricity Substation	1969	15784
B	128m E	Electricity Substation	1995	16456
B	129m E	Electricity Substation	1971	16456

This data is sourced from Ordnance Survey / Groundsure.



2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m

17

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 21 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
A	22m W	Garth Fawr Farm, Y Felinheli, Gwynedd, LL56 4QE	NRW-WME071112	Using waste exemption	Not on a farm	Use of waste in construction

ID	Location	Site	Reference	Category	Sub-Category	Description
A	22m W	Garth Fawr Farm, Nant y Garth, Gwynedd, Gwynedd, n wales, LL56 4QE	NRW-WME051101	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction
A	22m W	Rhos Fawr, Y Felinheli, Gwynedd, LL56 4QE	NRW-WME041707	Using waste exemption	On a farm	Use of waste in construction
A	22m W	Rhos Fawr, Y Felinheli, Gwynedd, LL56 4QE	NRW-WME039433	Using waste exemption	Not on a farm	Use of waste in construction
A	22m W	Rhos Fawr Land Pentir Bangor Gwynedd LL564QE	NRW-WME007151	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction
B	185m SW	Tyddyn Forgan Llanddeiniolen Caernarfon Gwynedd LL553AN	NRW-WME032139	Using waste exemption	Not on a farm	Use of waste in construction
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Disposing of waste exemption	On a farm	Disposal by incineration
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Disposing of waste exemption	On a farm	Burning waste in the open
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Using waste exemption	On a farm	Burning of waste as a fuel in a small appliance

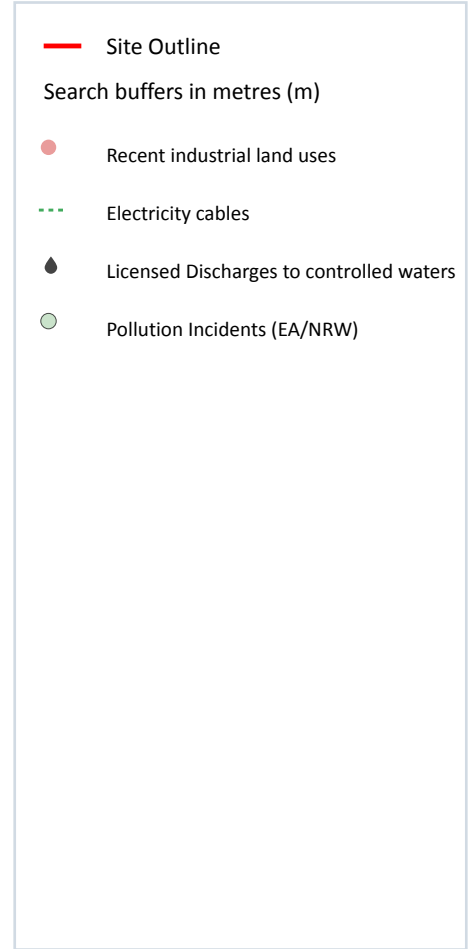
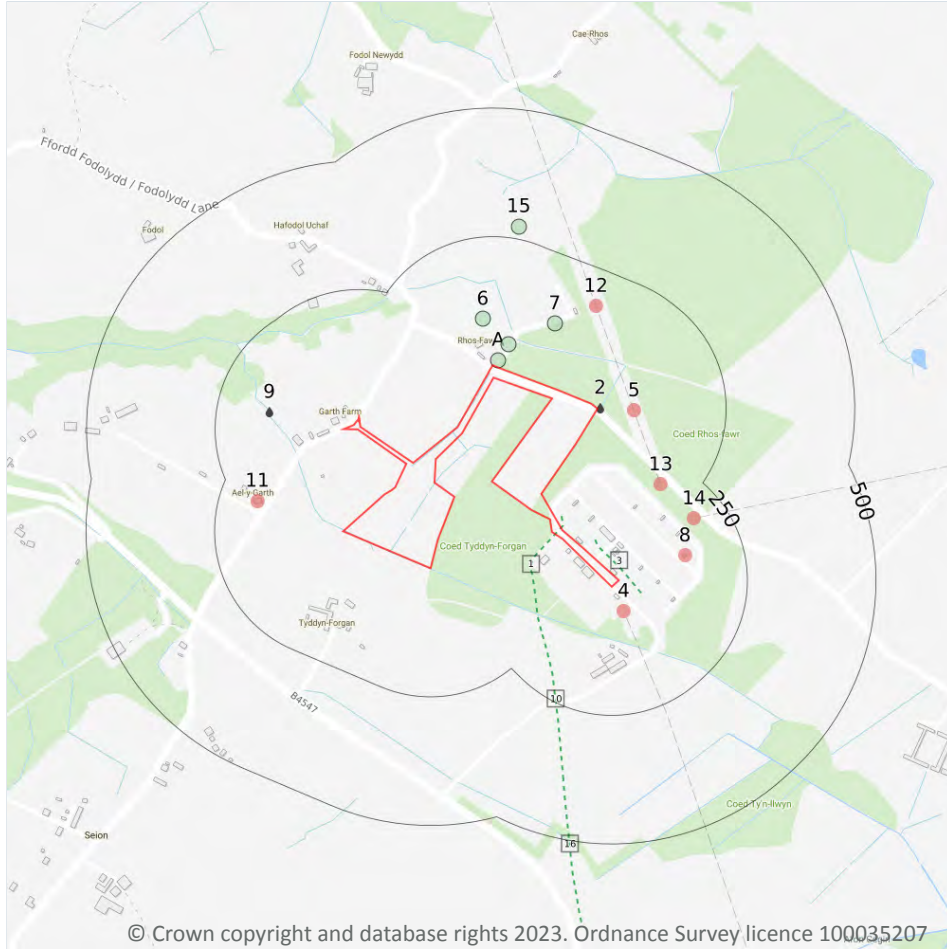


ID	Location	Site	Reference	Category	Sub-Category	Description
B	186m SW	tyddyn forgan, Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL553an	NRW-WME011370	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	186m SW	Tyddyn Forgan, Llanddeiniolen, Caernarfon, Gwynedd, LL55 3AN	NRW-WME003040	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction
1	290m SE	Morgan Sindall Construction & Infrastructure Ltd, National Grid Co plc, Morgan Sindall Site Compound (off B4547), Llanddeiniolen (Pentir), Bangor, Gwynedd, LL57 4ED	NRW-WME068128	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	381m SW	Caernarfon Commercials, Parc, Nant Y Garth, Y Felinheli, Gwynedd, LL56 4QU	NRW-WME071115	Using waste exemption	Not on a farm	Use of waste in construction
C	381m SW	Caernarfon Commercials, Nant Y Garth, Seion, Y Felinheli, Gwynedd, LL564QU	NRW-WME033324	Using waste exemption	Not on a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m

7

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 25](#) >

ID	Location	Company	Address	Activity	Category
4	53m SE	Pylon	Gwynedd, LL57	Electrical Features	Infrastructure and Facilities
5	71m NE	Pylon	Gwynedd, LL57	Electrical Features	Infrastructure and Facilities
8	137m E	Electricity Sub Station	Gwynedd, LL57	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
11	177m W	C & A Asbestos Removal Ltd	Ael y Garth, -, Y Felinheli, Gwynedd, LL56 4QE	Recycling, Reclamation and Disposal	Recycling Services
12	179m NE	Pylon	Gwynedd, LL57	Electrical Features	Infrastructure and Facilities
13	182m E	Pylon	Gwynedd, LL57	Electrical Features	Infrastructure and Facilities
14	189m E	Pylon	Gwynedd, LL57	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0
----------------------------	----------

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	4
----------------------------	----------

High voltage underground electricity transmission cables.

Features are displayed on the Current industrial land use map on [page 25 >](#)

ID	Location	Cable Set	Cable Route	Details	
1	On site	DINORWIG - PENTIR 1 CABLE SECT 39	DINORWIG - PENTIR 1	Cable Make: PIRELLI 400KV Cable Type: A/C Operating Voltage (kV): 400	Year of installation: 1982 Cable in tunnel? Not specified
3	17m SE	TRAWSFYNYDD 400KV CABLE	PENTIR 400KV S/S	Cable Make: PIRELLI 400KV Cable Type: A/C Operating Voltage (kV): 400	Year of installation: 1978 Cable in tunnel? Not specified
10	160m S	DINORWIG - PENTIR 1 CABLE SECT 38	DINORWIG - PENTIR 1	Cable Make: PIRELLI 400KV Cable Type: A/C Operating Voltage (kV): 400	Year of installation: 1982 Cable in tunnel? No
16	380m S	DINORWIG - PENTIR 1 CABLE SECT 37	DINORWIG - PENTIR 1	Cable Make: PIRELLI 400KV Cable Type: A/C Operating Voltage (kV): 400	Year of installation: 1982 Cable in tunnel? No

This data is sourced from National Grid.



4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.



4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

2

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on [page 25 >](#)



ID	Location	Address	Details	
2	5m NE	PENTIR SUBSTATION NEAR BANGOR, PENTIR SUBSTATION, NEAR BANGOR, GWYNEDD, WALES	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0038001 Permit Version: 0 Receiving Water: TRIB OF AFON HEULYN	Status: Effective Issue date: 05/09/2002 Effective Date: 06/09/2002 Revocation Date: -
9	148m W	FFERM Y GARTH, NANT Y GARTH, Y FELINHELI, GWYNEDD, N.WALES, LL56 4QE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0457101 Permit Version: 0 Receiving Water: UN-NAMED WATERCOURSE	Status: Effective Issue date: 26/06/2007 Effective Date: 26/06/2007 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.17 List 2 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m

5

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on [page 25 >](#)

ID	Location	Details	
A	13m N	Incident Date: 31/10/2001 Incident Identification: 40489 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
A	48m N	Incident Date: 05/09/2001 Incident Identification: 29581 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other Animal Matter	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
6	92m N	Incident Date: 11/04/2001 Incident Identification: 2134 Pollutant: Specific Waste Materials Pollutant Description: Other Specific Waste Material	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 2 (Significant)
7	118m NE	Incident Date: 30/04/2002 Incident Identification: 75857 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
15	274m N	Incident Date: 04/09/2001 Incident Identification: 28851 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.



4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

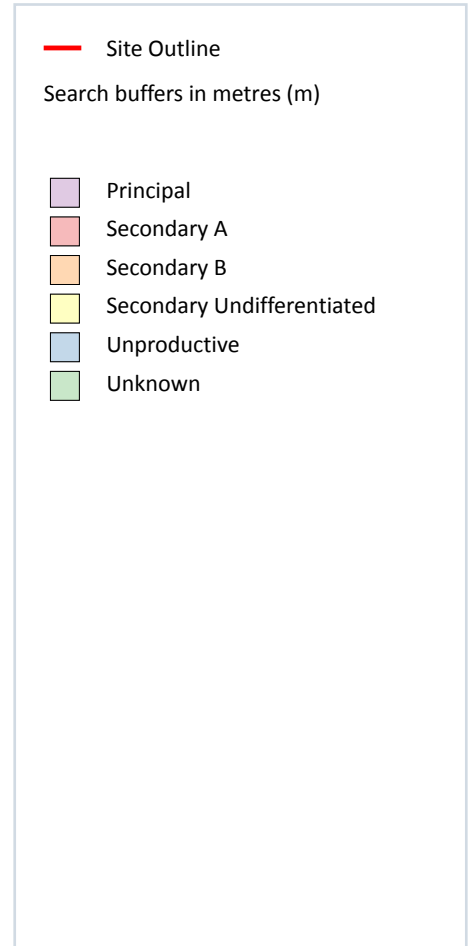
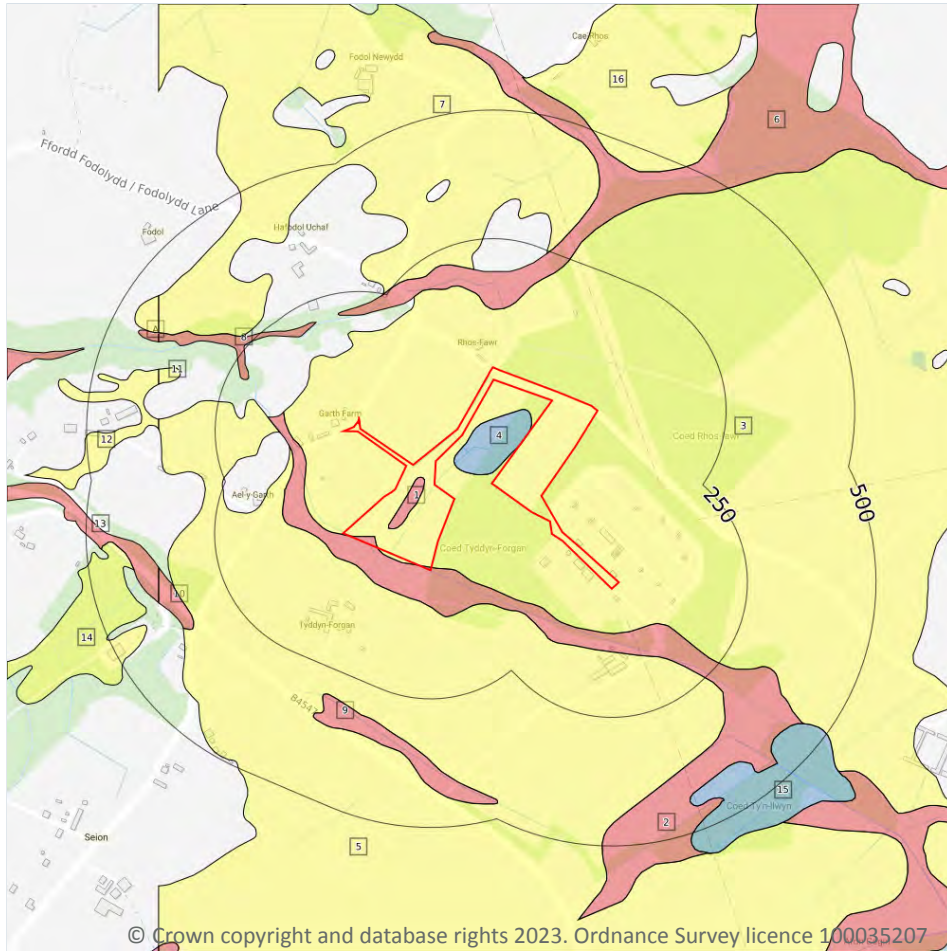
Records within 500m

0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m

18

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 32](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

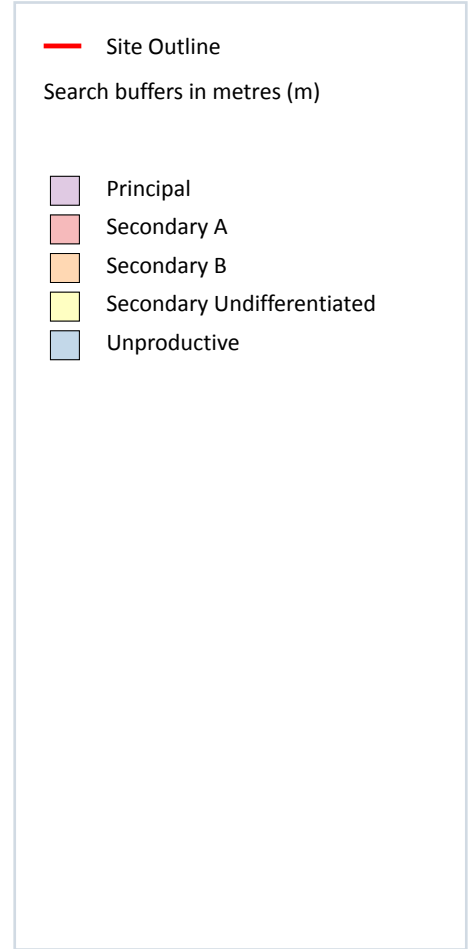
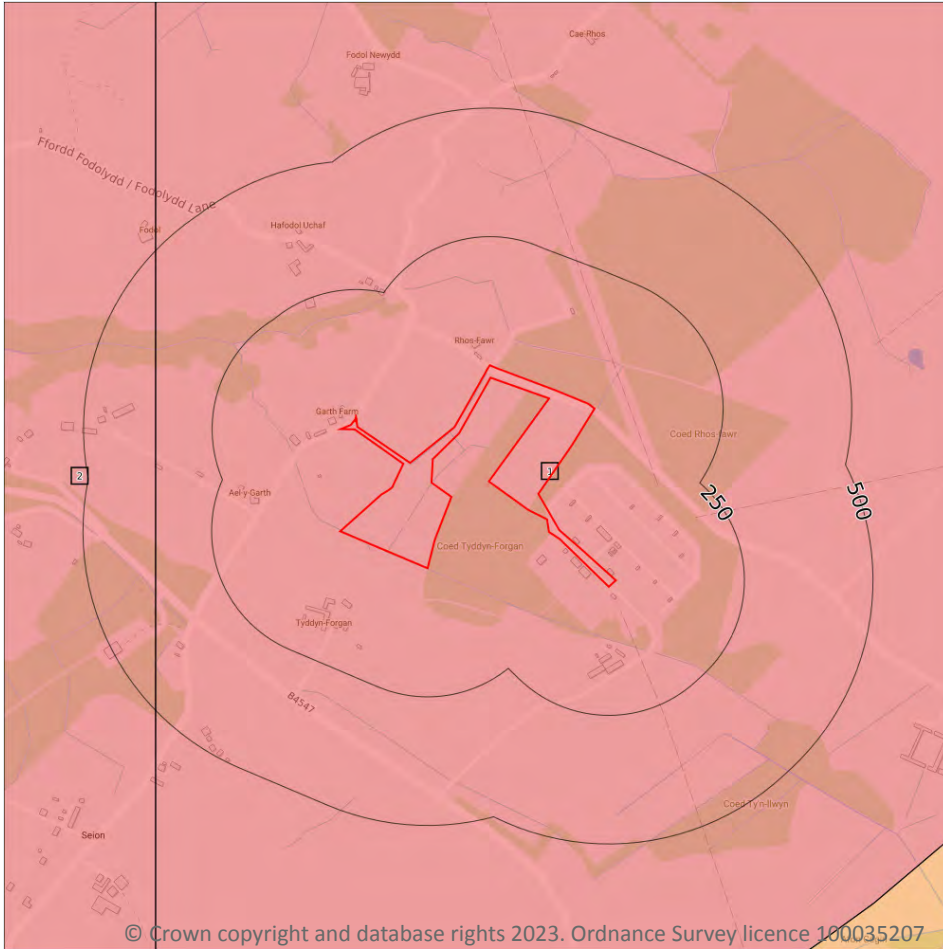
ID	Location	Designation	Description
3	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
5	40m SW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
6	112m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
7	194m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
8	198m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
9	299m SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
10	335m SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
11	336m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
12	360m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
13	365m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
A	399m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
A	408m NW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
14	410m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type



ID	Location	Designation	Description
15	413m SE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
16	457m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

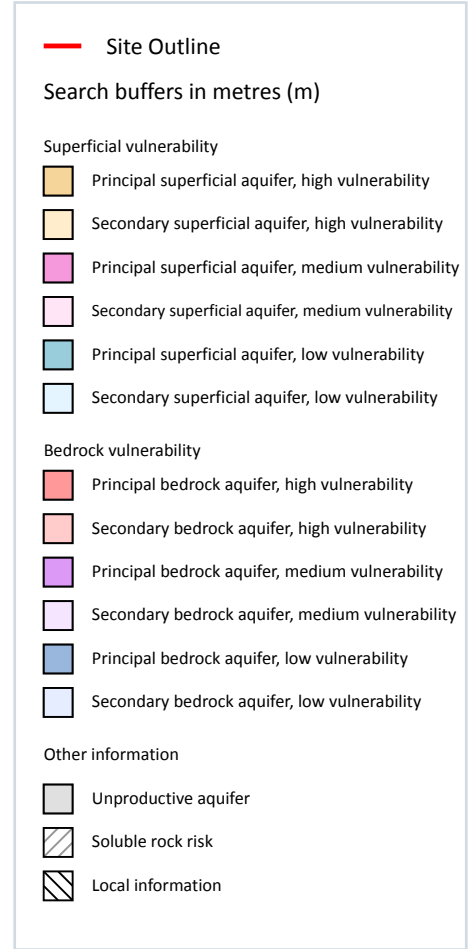
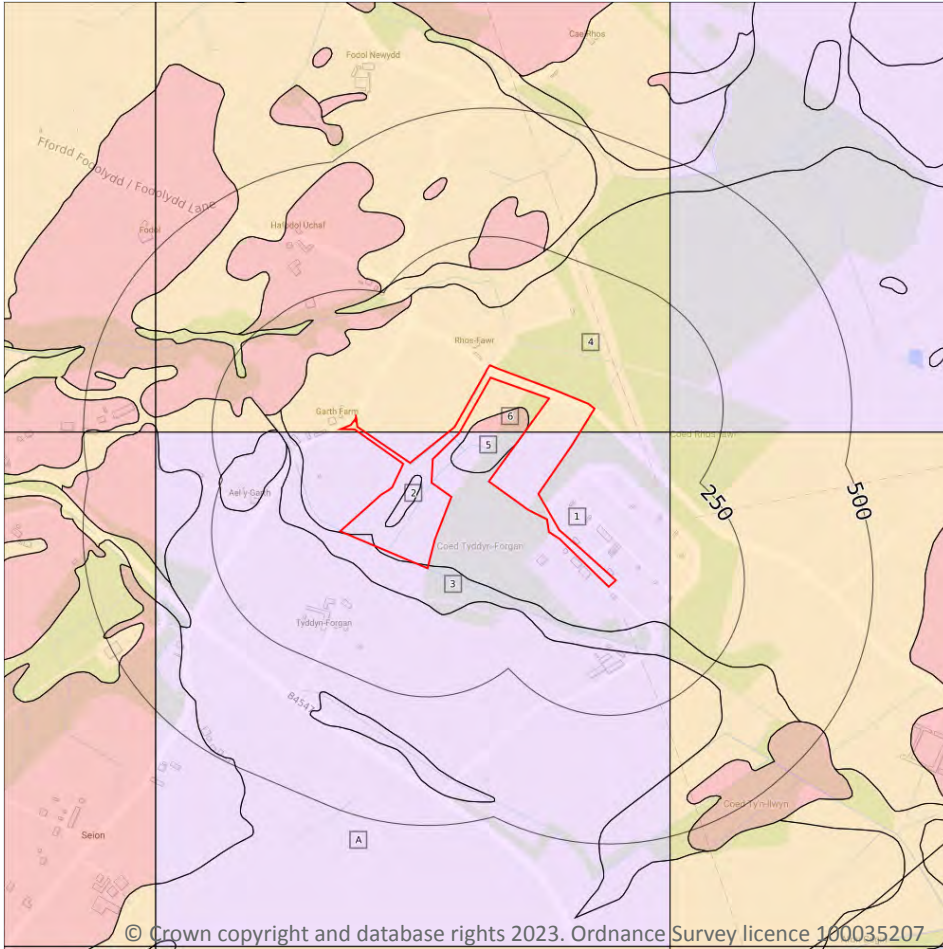
Features are displayed on the Bedrock aquifer map on [page 35](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	359m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

7

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 37](#) >

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
5	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
6	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	39m SW	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40- 70% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m

0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

2

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 40 >](#)

ID	Location	Details	
-	1388m E	Status: Active Licence No: WA/065/0016/007 Details: Make-up or Top-up Water - High Direct Source: Llyn Padarn Point: - Data Type: Point Name: - Easting: 257282 Northing: 367768	Annual Volume (m ³): 1204500 Max Daily Volume (m ³): 3300 Original Application No: - Original Start Date: 03/06/2016 Expiry Date: 31/03/2025 Issue No: - Version Start Date: - Version End Date: -
-	1388m E	Status: Historical Licence No: WA/065/0016/007 Details: Make-Up Or Top Up Water Direct Source: EAW Surface Water Point: LLYN PADARN Data Type: Point Name: Snowdonia Pumped Hydro Limited Easting: 257282 Northing: 367768	Annual Volume (m ³): 550000 Max Daily Volume (m ³): 2000 Original Application No: - Original Start Date: 15/07/2015 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 15/07/2015 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.



5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

29

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on [page 43 >](#)

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	1m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	5m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	29m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	31m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	33m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	63m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	77m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	103m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	103m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
7	142m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
H	156m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
I	193m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	228m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	11
----------------------------	-----------

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on [page 43 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 43 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River WB catchment	Nant-y-Garth (Menai Strait)	GB110065058490	Gwyrfai Seiont	Llyn and Eryri

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on [page 43 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1037m W	River	Nant-y-Garth (Menai Strait)	GB110065058490	Good	Good	Good	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1
------------------------	----------

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on [page 43 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Llyn and Eryri	GB41002G204600	Poor	Poor	Good	2017

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m

0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

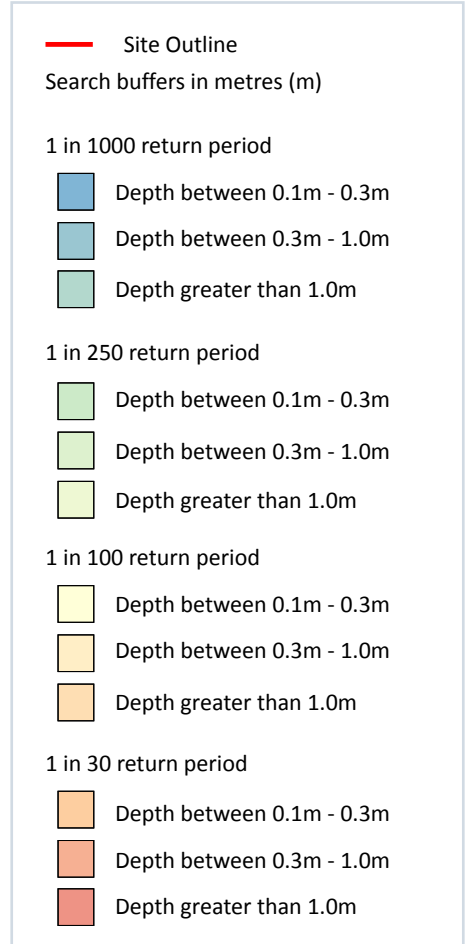
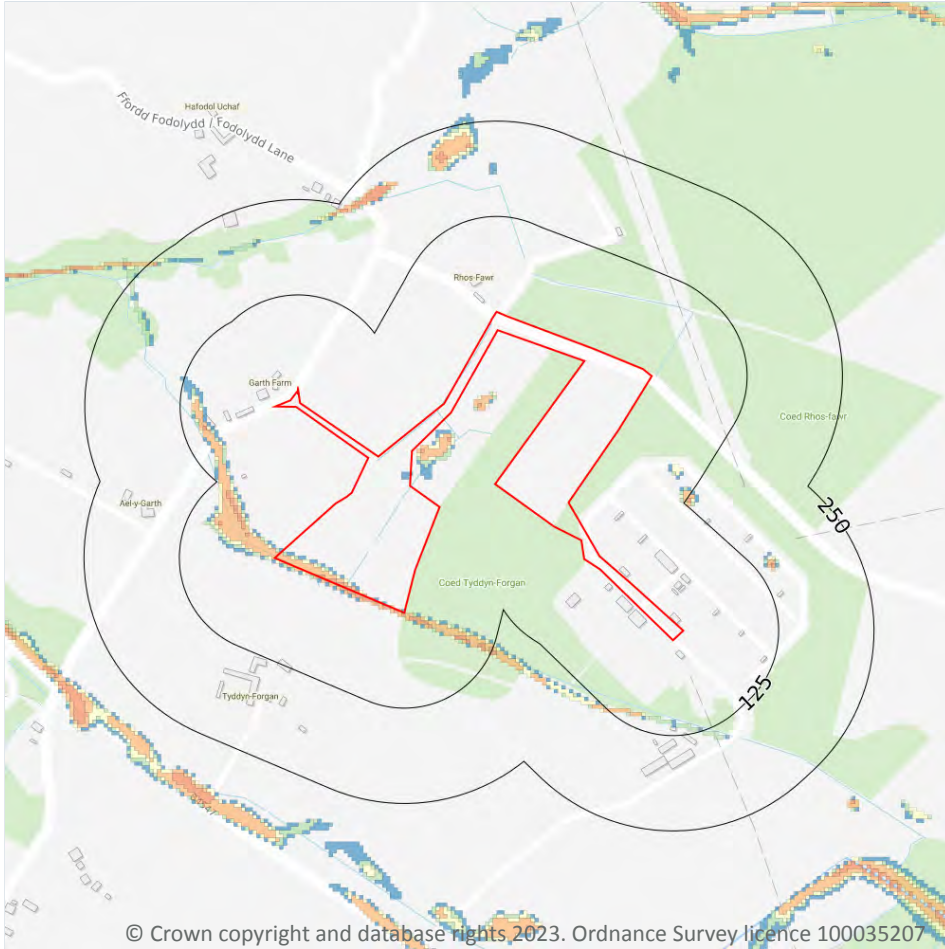
Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 51](#) >

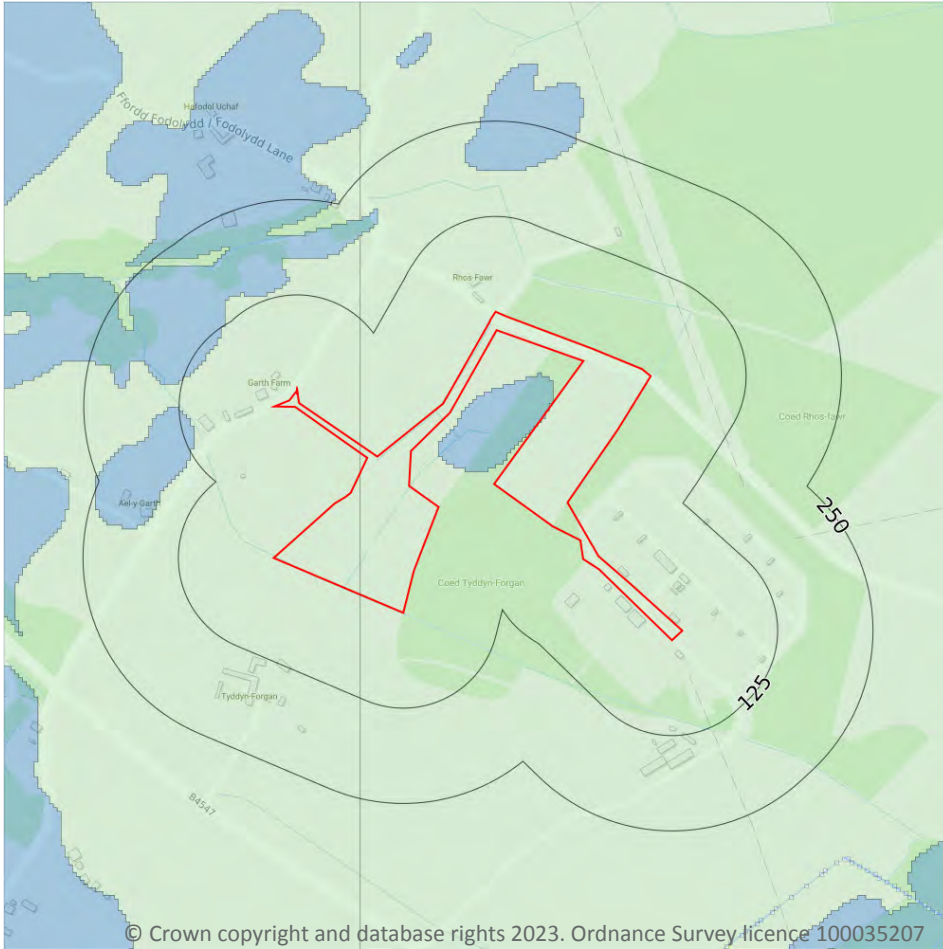
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

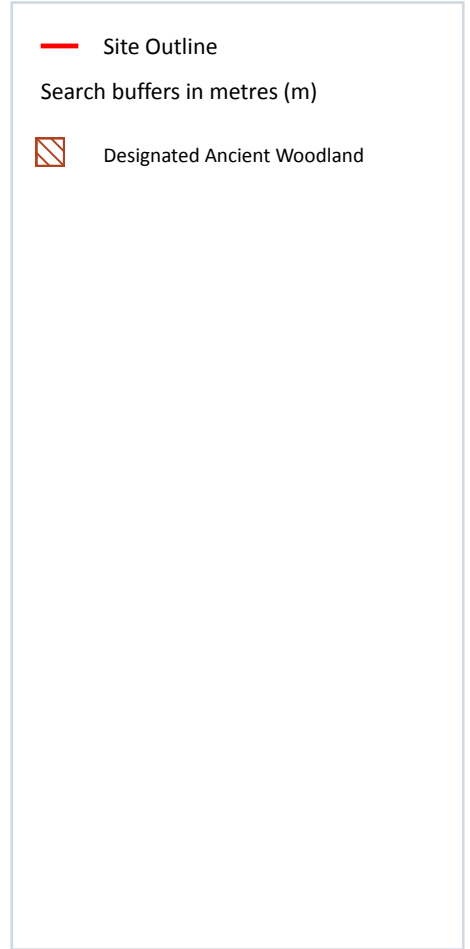
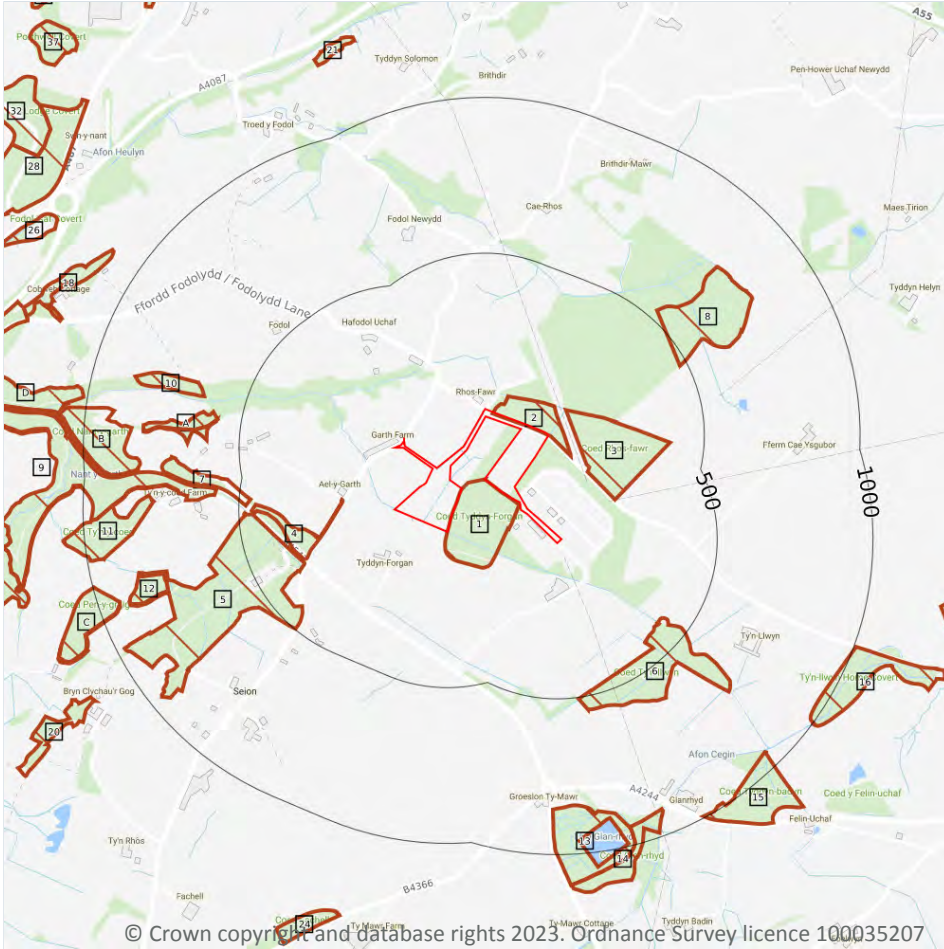
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 53](#) >

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

64

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on [page 54 >](#)

ID	Location	Name	Woodland Type
1	On site	Unknown	Plantation on Ancient Woodland Site
2	On site	Unknown	Plantation on Ancient Woodland Site
3	81m NE	Unknown	Ancient Woodland Site of Unknown Category
4	169m W	Unknown	Restored Ancient Woodland Site
5	337m SW	Unknown	Plantation on Ancient Woodland Site
6	408m SE	Unknown	Restored Ancient Woodland Site
7	463m W	Unknown	Restored Ancient Woodland Site
8	477m NE	Unknown	Ancient Woodland Site of Unknown Category
9	575m W	Unknown	Plantation on Ancient Woodland Site
A	576m W	Unknown	Plantation on Ancient Woodland Site
A	579m W	Unknown	Plantation on Ancient Woodland Site
10	633m W	Unknown	Ancient Woodland Site of Unknown Category
11	698m W	Unknown	Plantation on Ancient Woodland Site
12	767m W	Unknown	Plantation on Ancient Woodland Site
B	819m W	Unknown	Restored Ancient Woodland Site
13	843m S	Unknown	Plantation on Ancient Woodland Site



ID	Location	Name	Woodland Type
B	893m W	Unknown	Restored Ancient Woodland Site
14	917m SE	Unknown	Restored Ancient Woodland Site
C	930m W	Unknown	Plantation on Ancient Woodland Site
C	935m W	Unknown	Plantation on Ancient Woodland Site
15	945m SE	Unknown	Restored Ancient Woodland Site
16	974m SE	Unknown	Restored Ancient Woodland Site
17	1008m W	Unknown	Plantation on Ancient Woodland Site
D	1013m W	Unknown	Plantation on Ancient Woodland Site
D	1086m W	Unknown	Plantation on Ancient Woodland Site
18	1096m NW	Unknown	Plantation on Ancient Woodland Site
19	1112m W	Unknown	Plantation on Ancient Woodland Site
20	1140m SW	Unknown	Plantation on Ancient Woodland Site
21	1226m N	Unknown	Ancient Semi Natural Woodland
22	1237m E	Unknown	Restored Ancient Woodland Site
23	1247m W	Unknown	Restored Ancient Woodland Site
24	1269m S	Unknown	Restored Ancient Woodland Site
-	1278m W	Unknown	Restored Ancient Woodland Site
26	1297m NW	Unknown	Plantation on Ancient Woodland Site
-	1344m S	Unknown	Restored Ancient Woodland Site
28	1375m NW	Unknown	Plantation on Ancient Woodland Site
-	1415m N	Unknown	Restored Ancient Woodland Site
-	1418m W	Unknown	Plantation on Ancient Woodland Site
-	1453m NW	Unknown	Restored Ancient Woodland Site
-	1474m E	Unknown	Plantation on Ancient Woodland Site
32	1480m NW	Unknown	Restored Ancient Woodland Site
-	1564m W	Unknown	Restored Ancient Woodland Site
-	1582m NW	Unknown	Ancient Semi Natural Woodland
35	1612m NW	Unknown	Plantation on Ancient Woodland Site



ID	Location	Name	Woodland Type
-	1627m NW	Unknown	Restored Ancient Woodland Site
-	1633m E	Unknown	Restored Ancient Woodland Site
37	1636m NW	Unknown	Restored Ancient Woodland Site
-	1697m W	Unknown	Restored Ancient Woodland Site
-	1755m NW	Unknown	Restored Ancient Woodland Site
-	1758m NW	Unknown	Restored Ancient Woodland Site
-	1761m NE	Unknown	Restored Ancient Woodland Site
-	1814m NW	Unknown	Plantation on Ancient Woodland Site
-	1818m NE	Unknown	Restored Ancient Woodland Site
42	1819m NW	Unknown	Restored Ancient Woodland Site
-	1823m SE	Unknown	Ancient Semi Natural Woodland
-	1850m NE	Unknown	Restored Ancient Woodland Site
-	1876m NE	Unknown	Ancient Semi Natural Woodland
-	1883m NE	Unknown	Plantation on Ancient Woodland Site
-	1886m NW	Unknown	Plantation on Ancient Woodland Site
-	1921m NW	Unknown	Restored Ancient Woodland Site
-	1937m W	Unknown	Restored Ancient Woodland Site
-	1940m NW	Unknown	Restored Ancient Woodland Site
-	1953m S	Unknown	Restored Ancient Woodland Site
-	1987m NE	Unknown	Restored Ancient Woodland Site

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

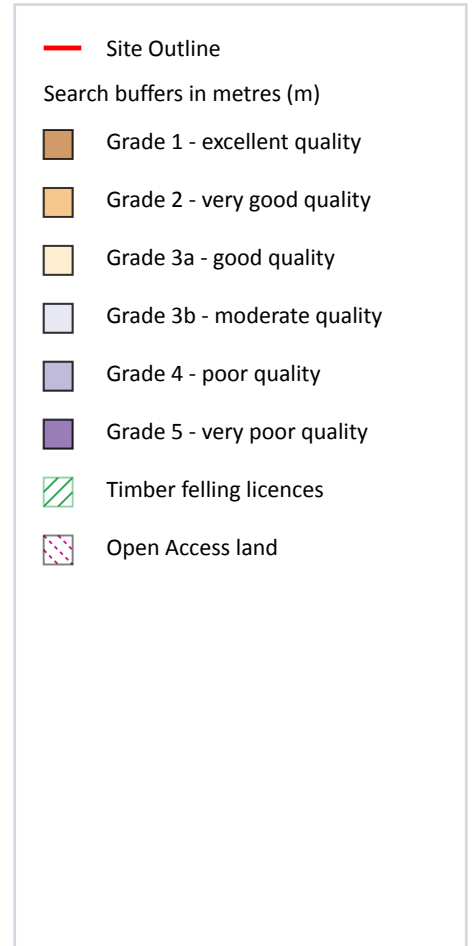
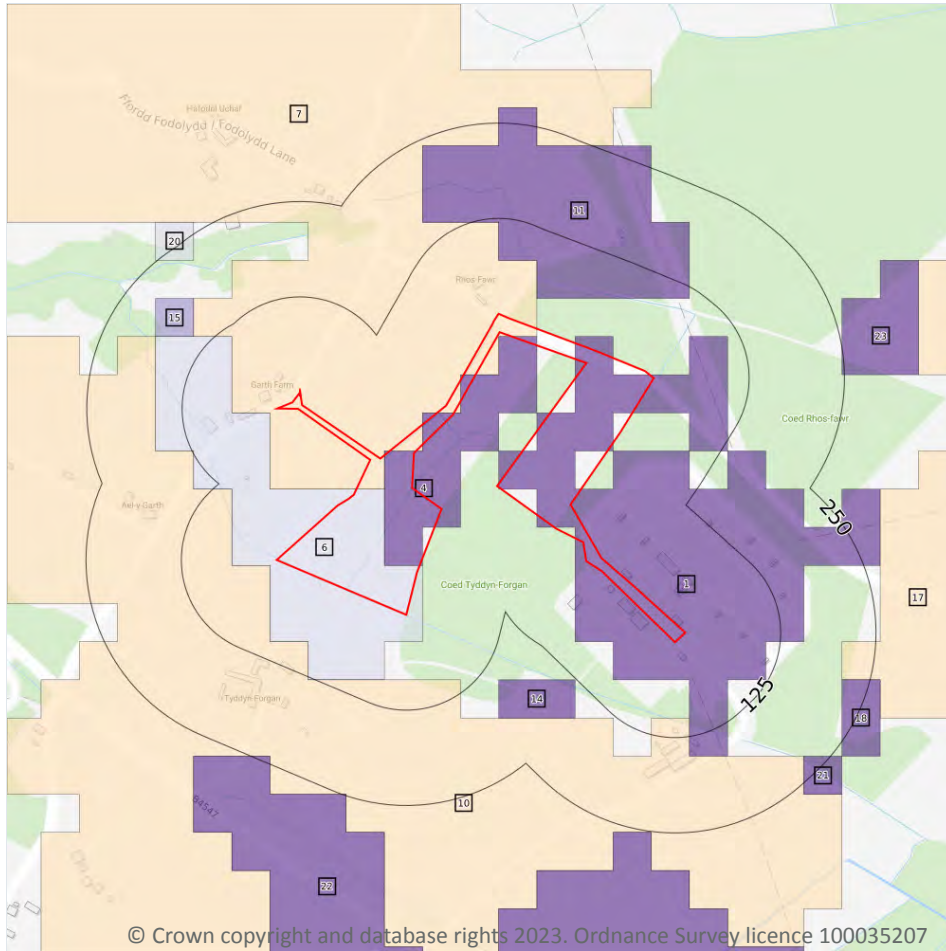
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m

14

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 64](#) >

ID	Location	Classification	Description
1	On site	Grade 5	Very poor quality agricultural land
4	On site	Grade 5	Very poor quality agricultural land
6	On site	Grade 3b	Moderate quality agricultural land

ID	Location	Classification	Description
7	On site	Grade 3a	Good to moderate quality agricultural land
10	11m W	Grade 3a	Good to moderate quality agricultural land
11	37m N	Grade 5	Very poor quality agricultural land
14	127m SE	Grade 5	Very poor quality agricultural land
15	145m NW	Grade 4	Poor quality agricultural land
17	206m SE	Grade 3a	Good to moderate quality agricultural land
18	215m SE	Grade 5	Very poor quality agricultural land
20	222m NW	Grade 3b	Moderate quality agricultural land
21	224m SE	Grade 5	Very poor quality agricultural land
22	240m SW	Grade 5	Very poor quality agricultural land
23	247m E	Grade 5	Very poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.



12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
 Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 68](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
 Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 72 >](#)

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW106_bangor_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

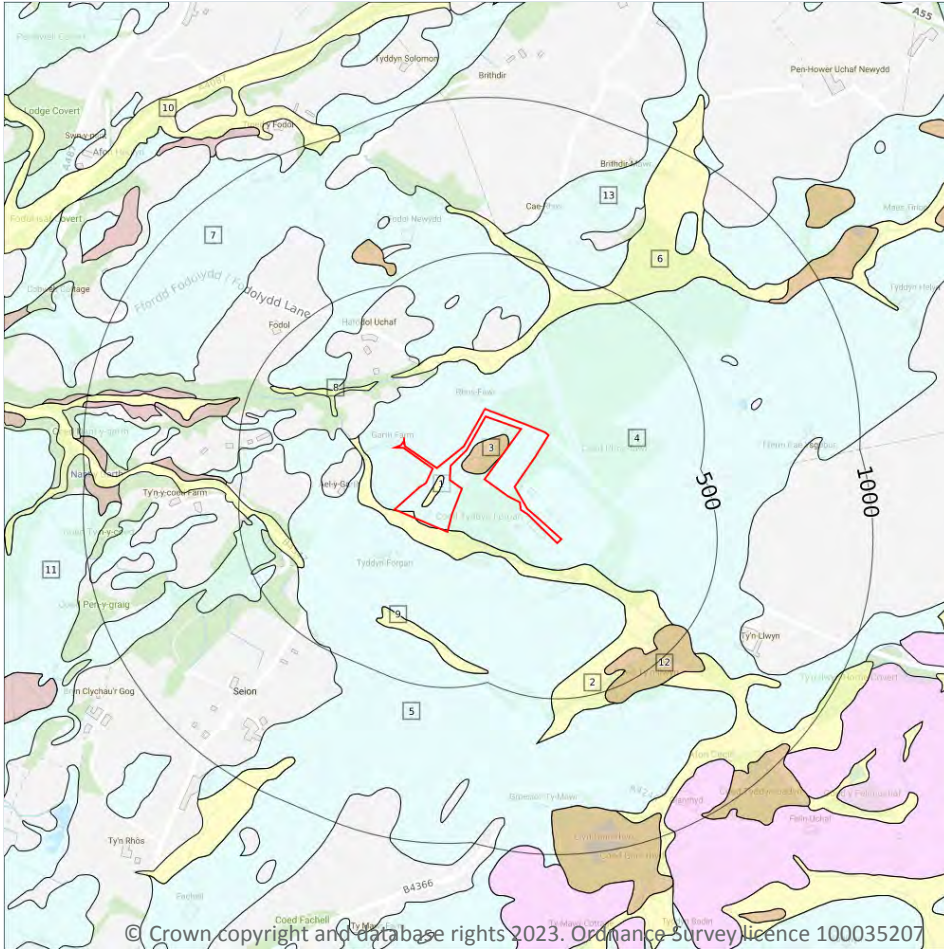
Records within 50m


0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
-  Landslip (50k)
- Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

13

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 74 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	On site	PEAT-P	PEAT	PEAT

ID	Location	LEX Code	Description	Rock description
4	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
5	40m SW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
6	112m N	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
7	194m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
8	198m NW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
9	299m SW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
10	335m SW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
11	410m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
12	413m SE	PEAT-P	PEAT	PEAT
13	457m NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	5
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Very Low
On site	Intergranular	High	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	High	Low
40m SW	Mixed	High	Low

This data is sourced from the British Geological Survey.



15.6 Landslip (50k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

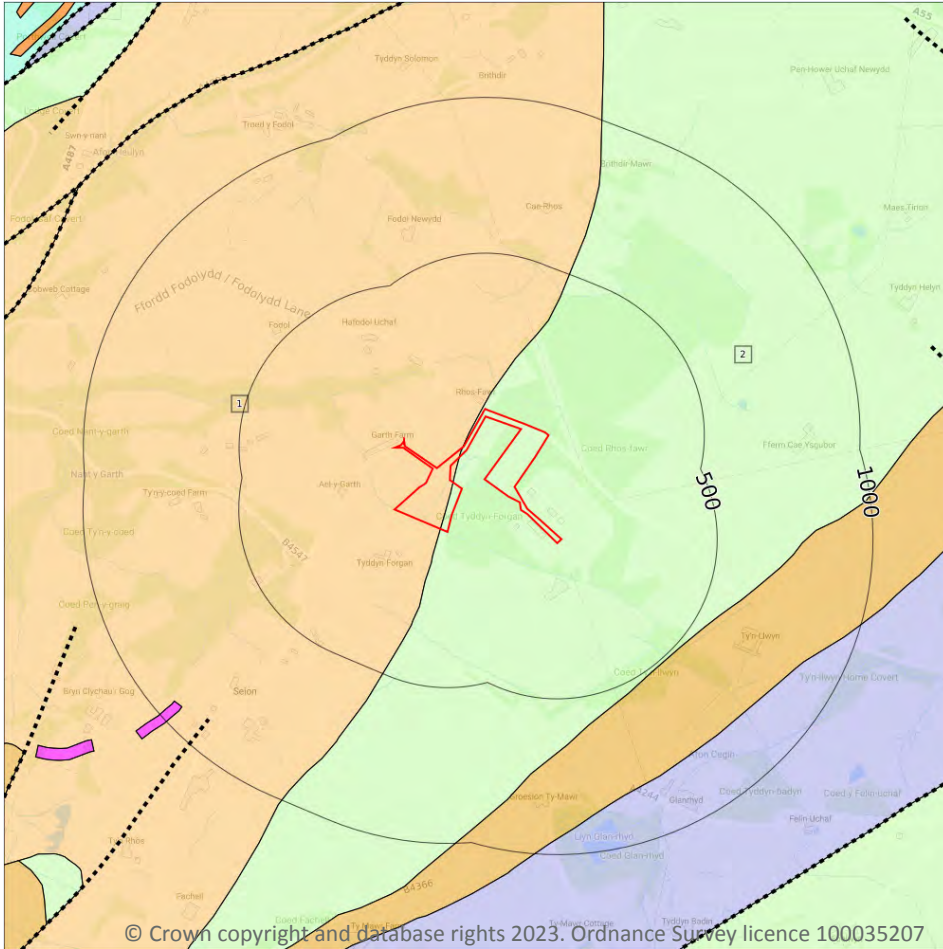
Records within 50m

0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (50k)
- Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 77](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	PDT-FTUFF	PADARN TUFF FORMATION - TUFF, FELSIC	-
2	On site	MINF-SCON	MINFFORDD FORMATION - SANDSTONE AND CONGLOMERATE, INTERBEDDED	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low
On site	Fracture	Low	Low

This data is sourced from the British Geological Survey.

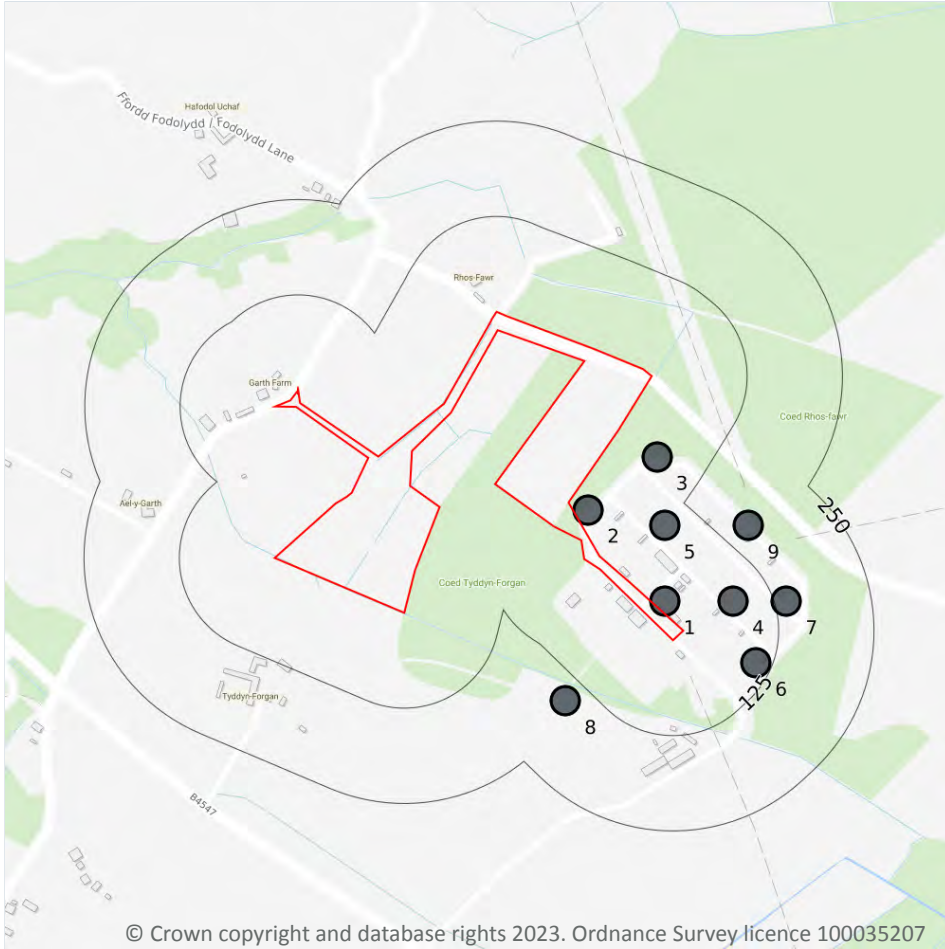
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0
----------------------------	----------

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

16 Boreholes



— Site Outline
 Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

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16.1 BGS Boreholes

Records within 250m

9

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

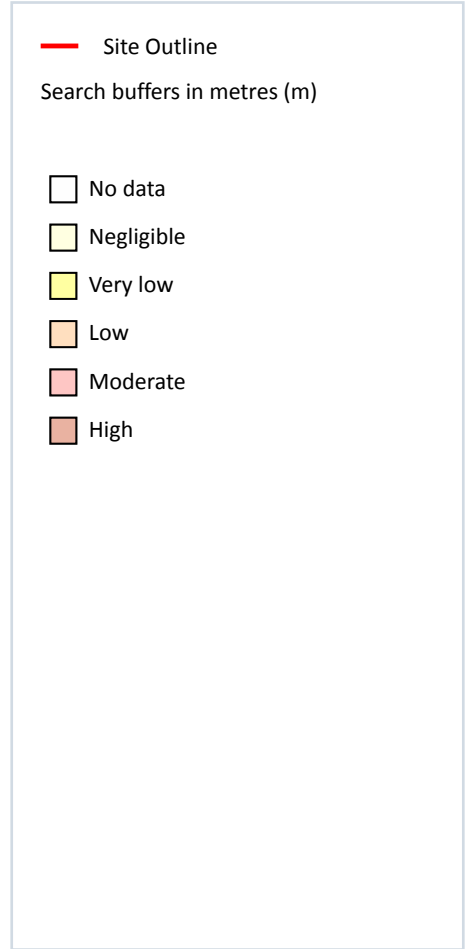
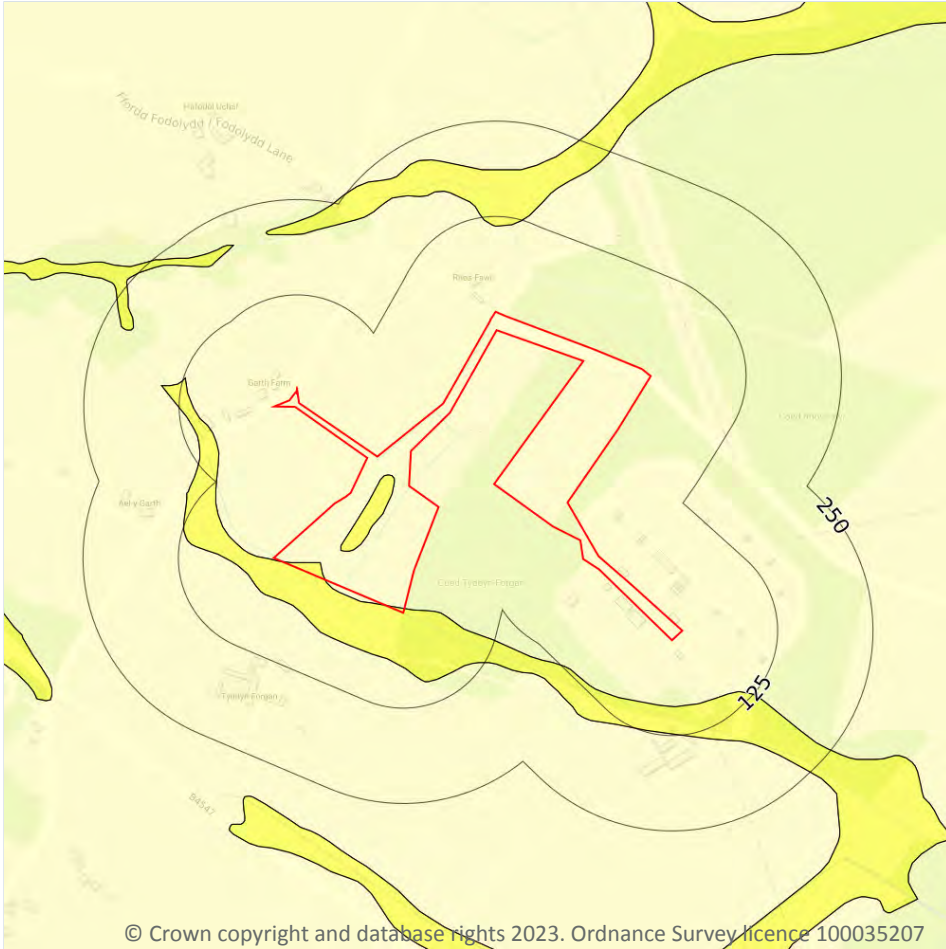
Features are displayed on the Boreholes map on [page 79 >](#)

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	12m SE	255870 367750	PENTIR SUBSTATION 4	-	Y	N/A
2	18m E	255770 367870	PENTIR SUBSTATION 1	-	Y	N/A
3	61m E	255860 367940	PENTIR SUBSTATION 2	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	76m SE	255960 367750	PENTIR SUBSTATION 6	-	Y	N/A
5	87m E	255870 367850	PENTIR SUBSTATION 3	-	Y	N/A
6	104m SE	255990 367670	PENTIR SUBSTATION 7	-	Y	N/A
7	141m E	256030 367750	PENTIR SUBSTATION 8	-	Y	N/A
8	155m S	255740 367620	PENTIR SUBST. C(38/39) 1	-	Y	N/A
9	160m E	255980 367850	PENTIR SUBSTATION 5	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

2

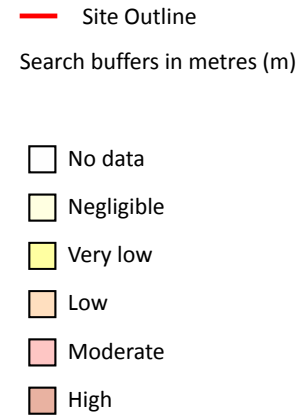
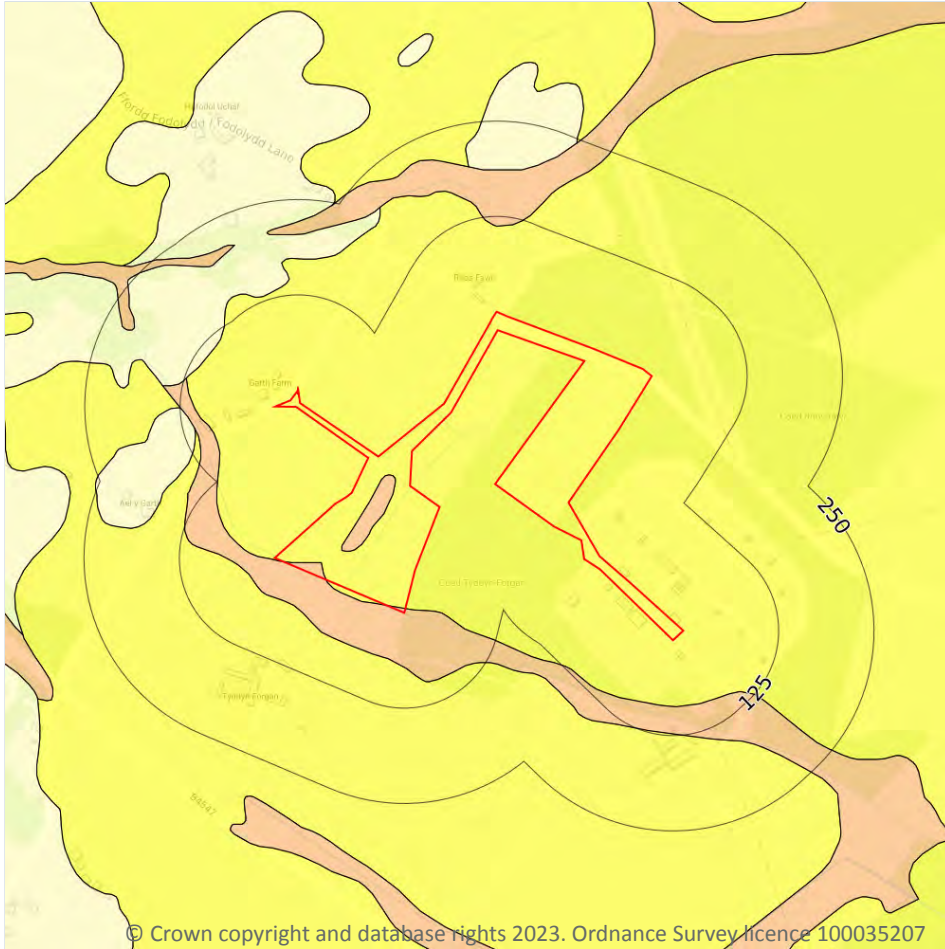
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 81 >](#)

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

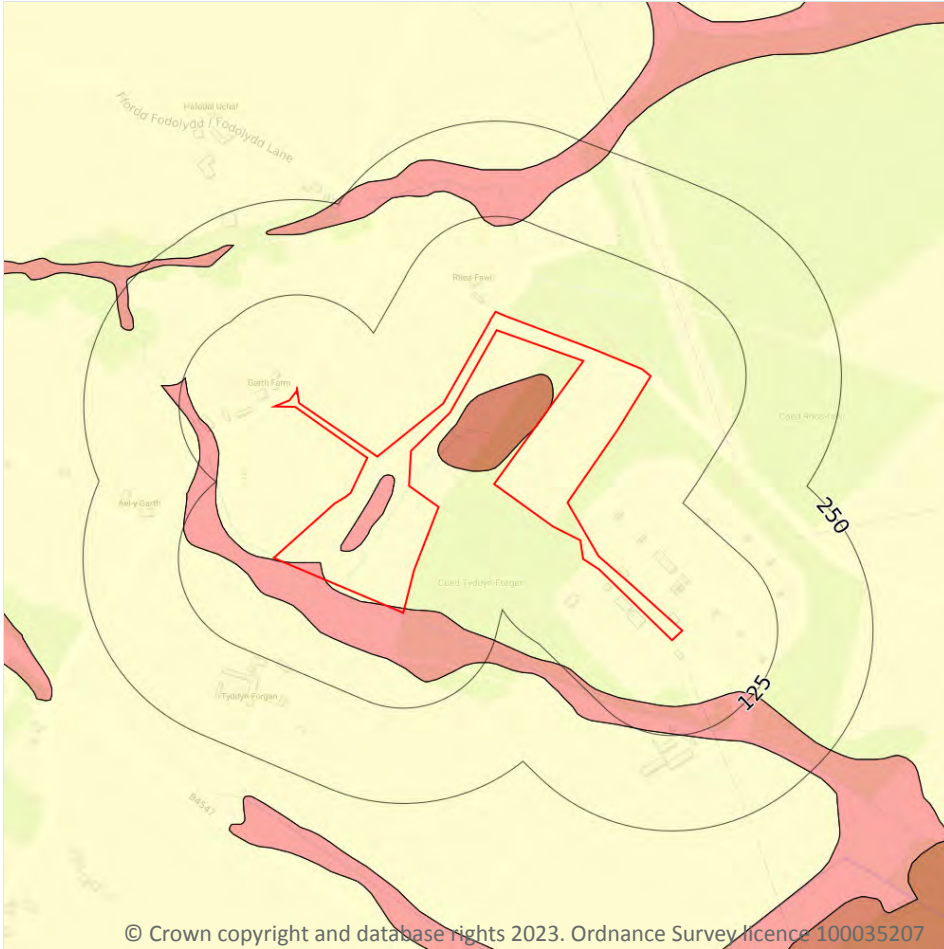
Features are displayed on the Natural ground subsidence - Running sands map on [page 82 >](#)

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

Location	Hazard rating	Details
On site	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



— Site Outline
Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

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17.3 Compressible deposits

Records within 50m

3

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 84](#) >

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

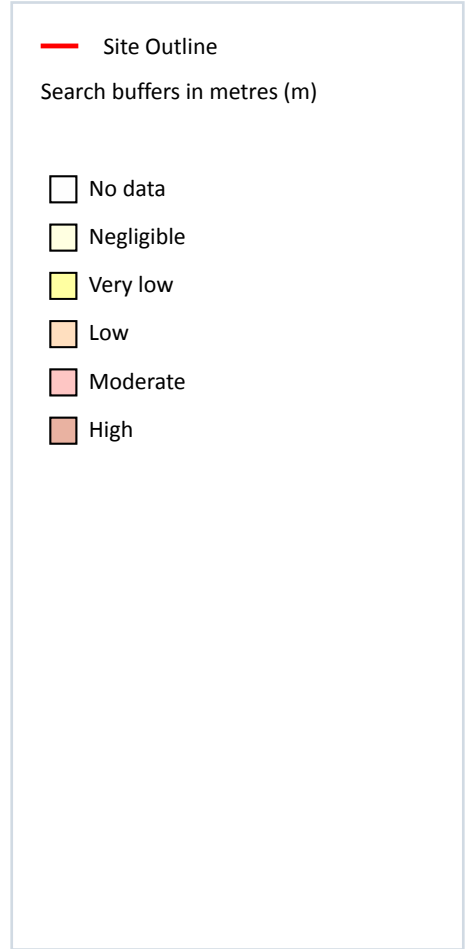
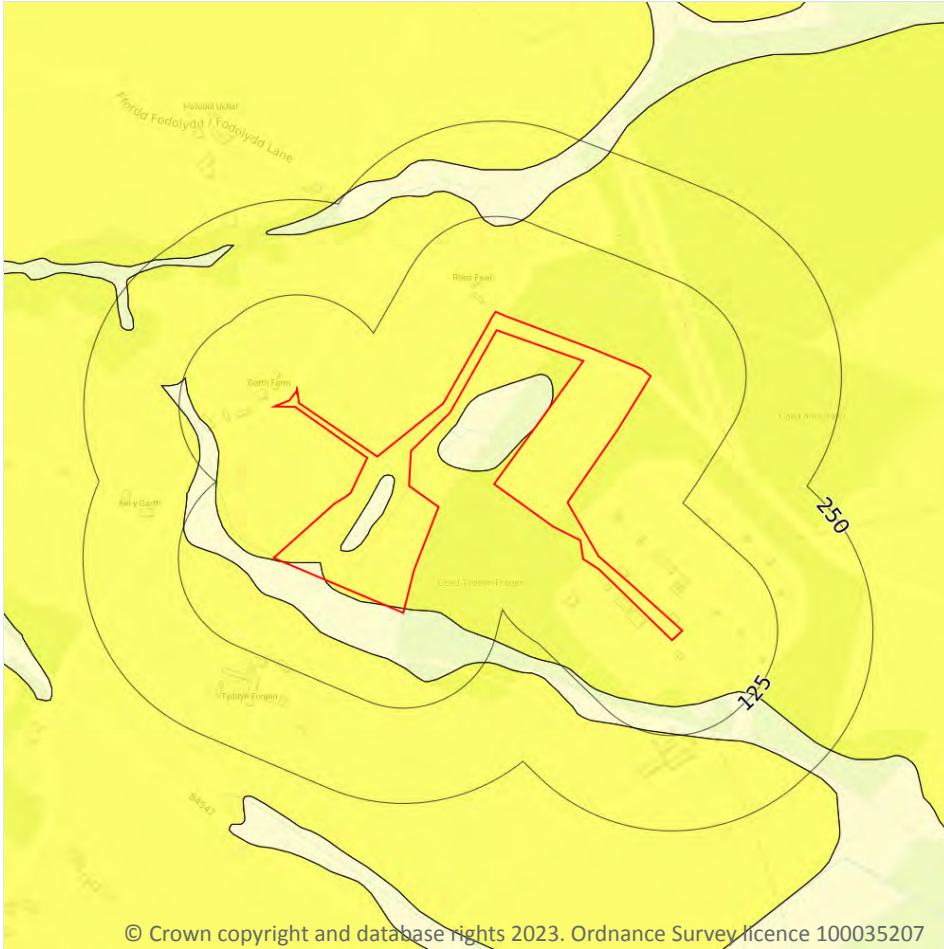


Location	Hazard rating	Details
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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17.4 Collapsible deposits

Records within 50m

2

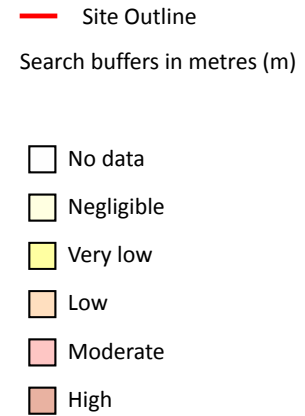
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 86](#) >

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

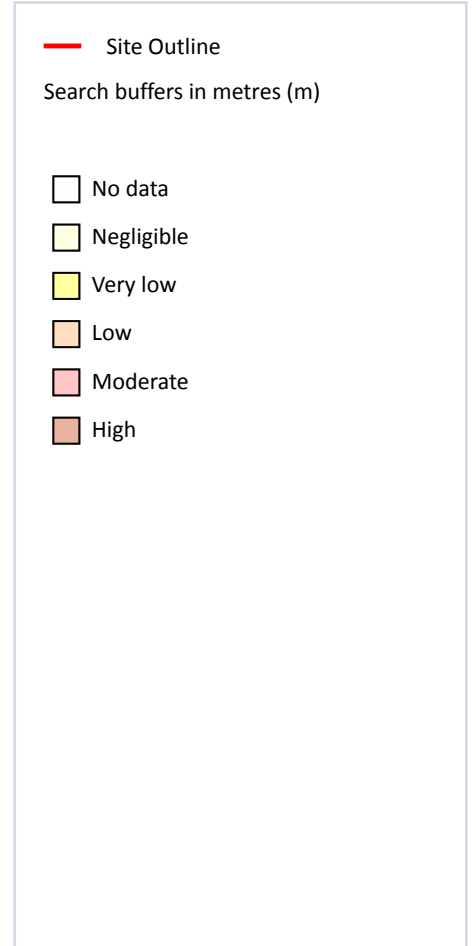
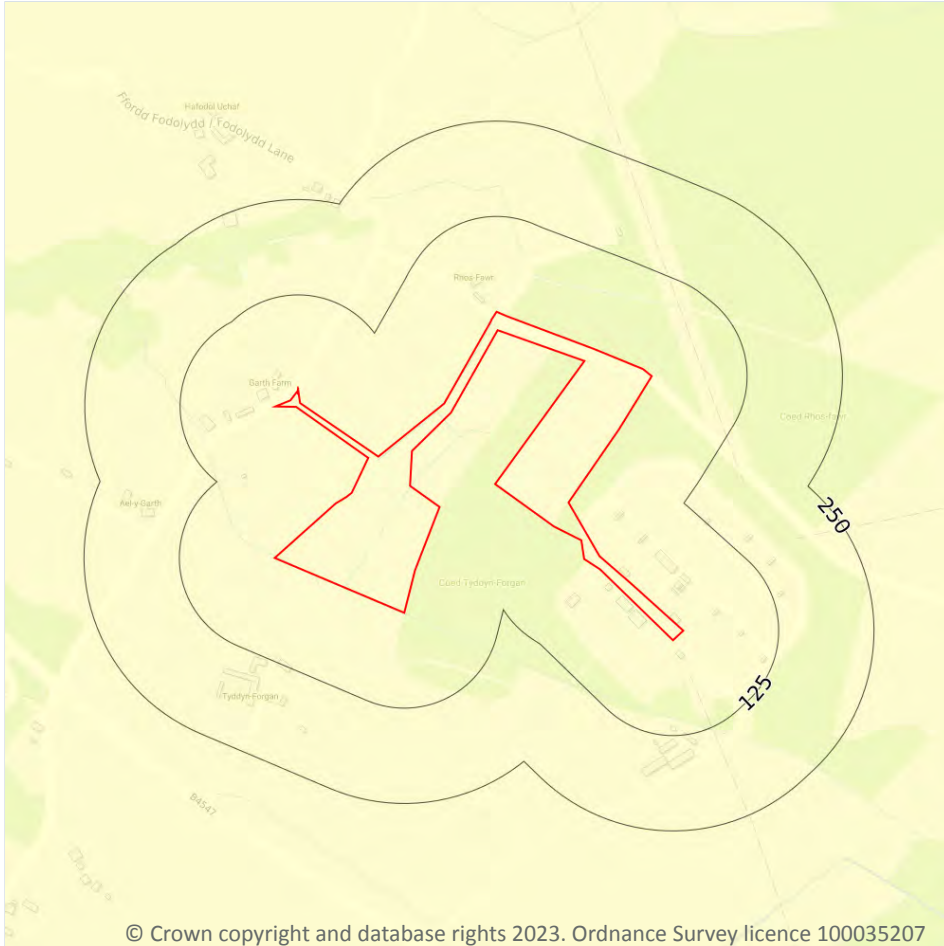
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on [page 87](#) >

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

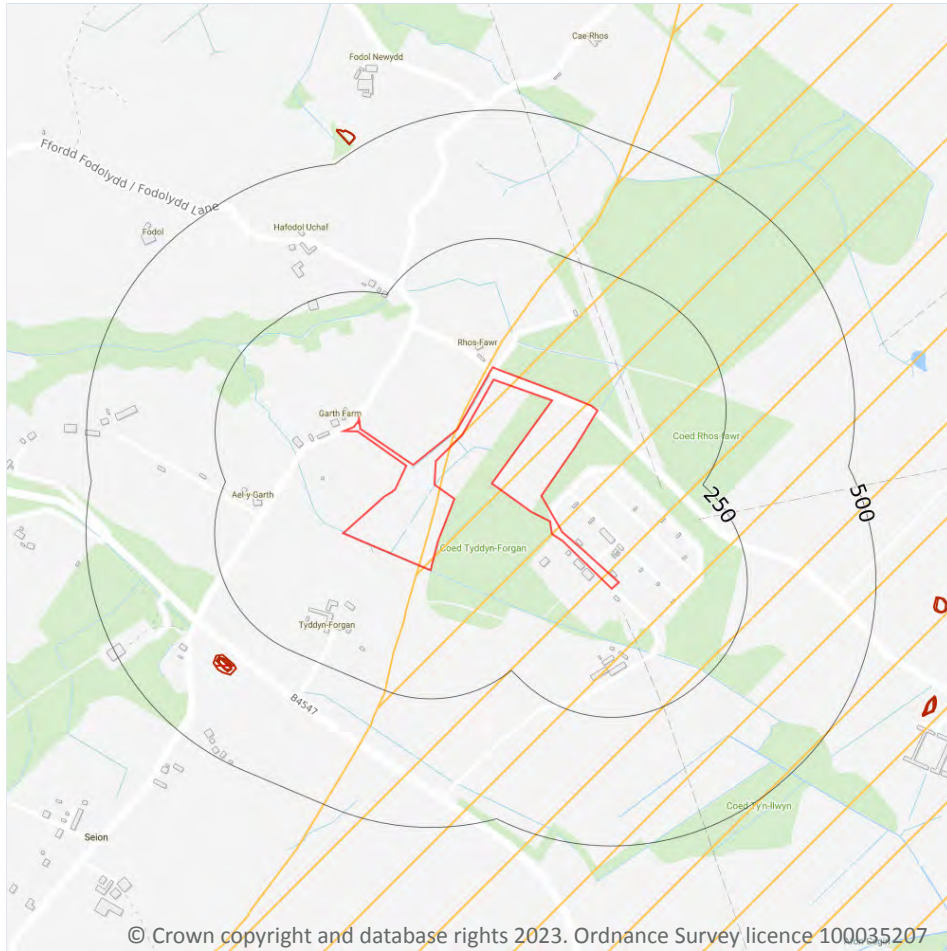
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 88](#)

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.



18 Mining and ground workings



18.1 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

0

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

This data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

3

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on [page 90](#) >



ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	931m SW	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	996m SW	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.



18.14 Gypsum areas

Records on site

0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site

0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site

0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

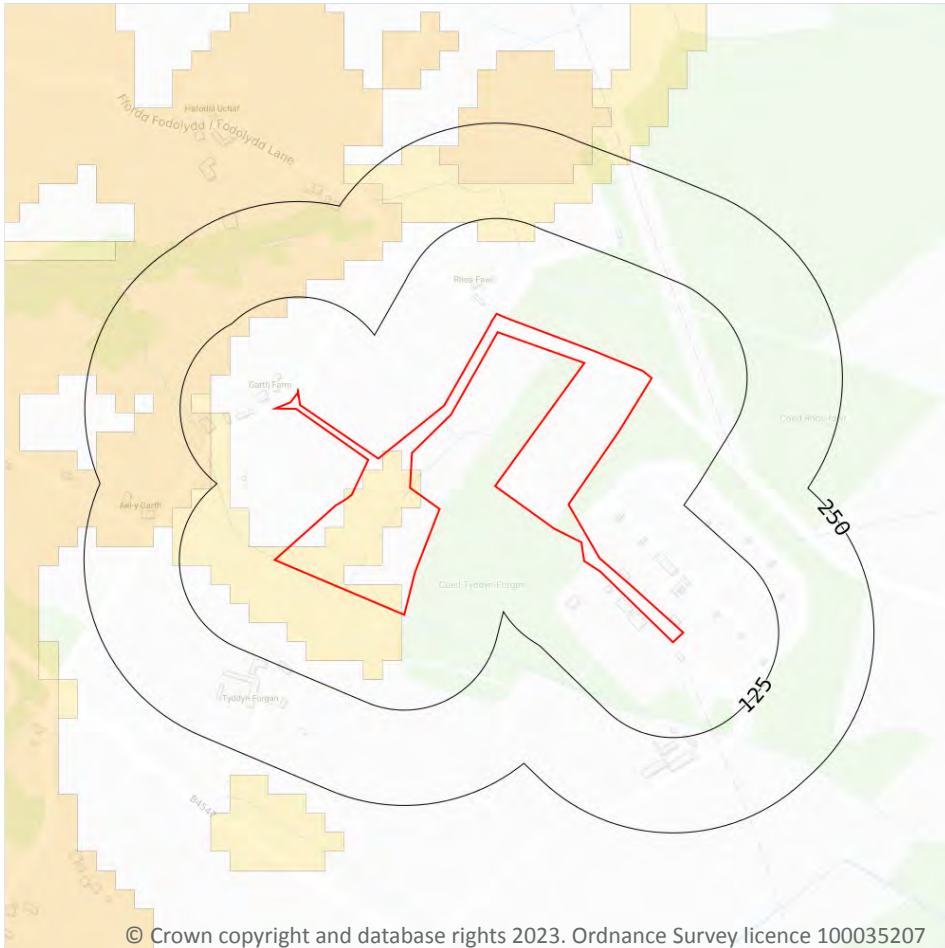
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



— Site Outline
 Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site

2

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 97](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None

This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

20

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
22m SW	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
40m SW	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-april-2023/> ↗.



Appendix C

SITE WALKOVER PHOTOGRAPHS





Plate 01: Field 7 – S Facing – Gate Access



Plate 02: Field 7 – Underground Pumping Tank



Plate 03: Field 7 – SE Facing – Gravel Mounds



Plate 04: Field 7 – NW Facing – Silage Bales



Plate 05: Field 7 – NE Facing – Gravel Mounds



Plate 06: Field 7 – S Facing – Land Towards Field 2 & 3



Plate 07: Field 6 – NW Facing – Agricultural Land



Plate 08: Field 7 – S Facing – Drainage Ditches



Plate 09: Field 7 – E Facing - Westward Running Drainage Ditch



Plate 10: Field 7 – W Facing – Drainage Ditch Towards Field Boundary



Plate 11: Field 7 – E Facing – Mound, Ditch and Vegetation in Eastern Field



Plate 12: Field 2/3 – SE Facing – Land towards East Field Boundary

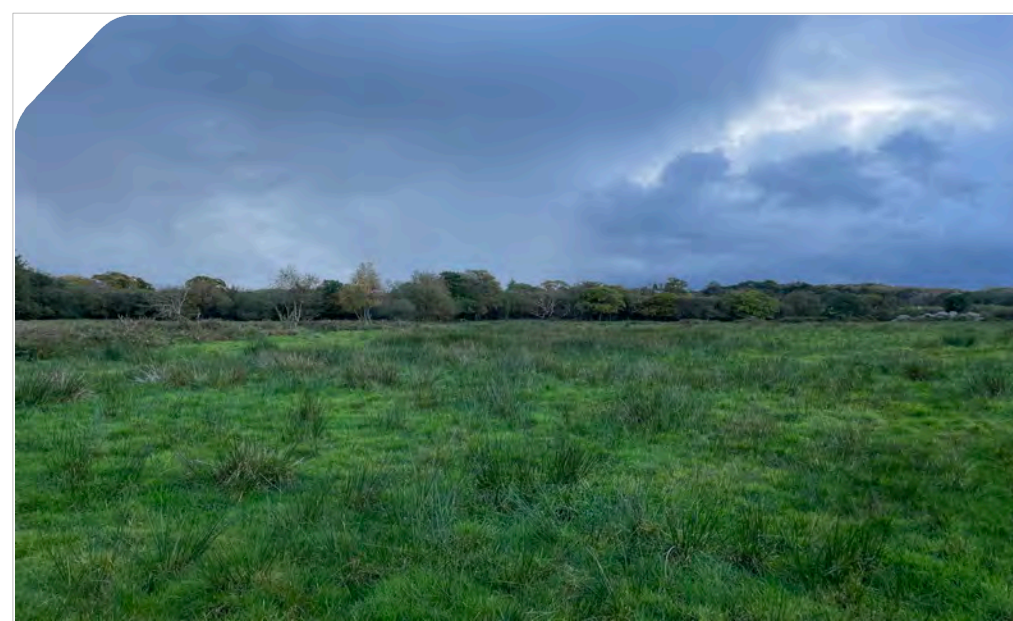


Plate 13: Field 2/3 – SE Facing – Eastern Site Boundary



Plate 14: Field 3 – W Facing – Dilapidated Barn Structure



Plate 15: Field 3 – E Facing – Rock Cobble Boundary Between Field 2 & 3



Plate 16: Field 4 – SW Facing – Field and Barn



Plate 17: Field 2 – S Flowing Stream between Field 2 & 3

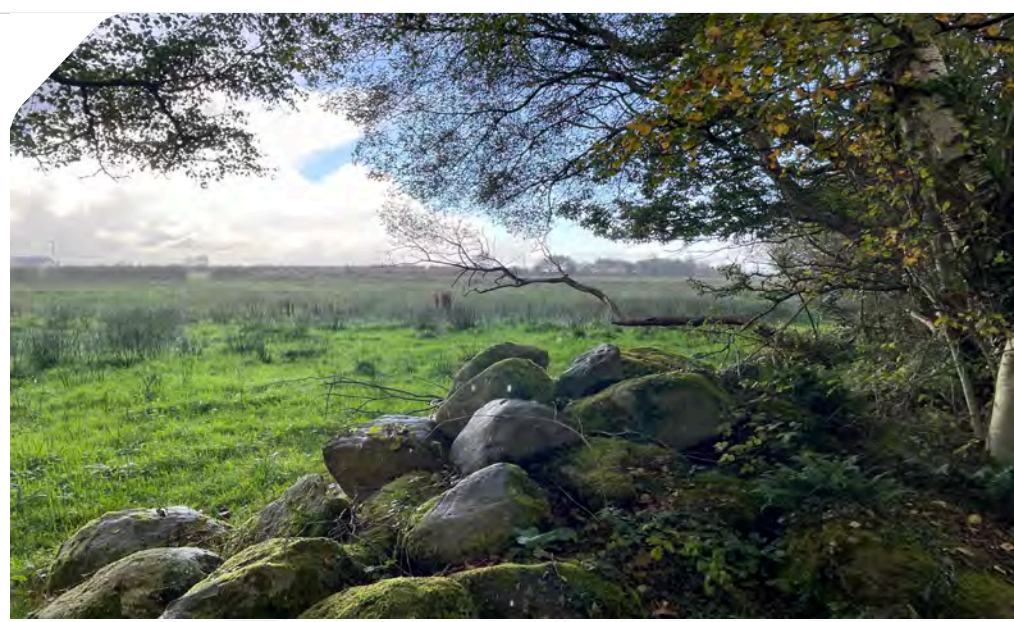


Plate 18: Field 2/3 – NW Facing – Cobbles and Land in Field 2 & 3



Plate 19: Field 2 – E Facing – Land Boundary in East



Plate 20: Field 1 – S Facing – Bathtub towards Site Access



Plate 21: Field 1 – N Facing – Wood Piles and Plastic Heaps



Plate 22: Field 1 – E Facing – Burnt Ground and Plastic



Plate 23: Field 1 – S Facing – Land in Field 1



Plate 24: Field 1 – E Facing – Gravel Piles