



The Abergelli Power Gas Fired Generating Station Order

6.2 Environmental Statement Appendices - Volume H Ground Conditions Part Ia

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Appendix 10.1

Preliminary Geo-Environmental Risk
Assessment

Part Ia

PRELIMINARY GEO-
ENVIRONMENTAL RISK
ASSESSMENT

ABERGELLI POWER PROJECT

for Abergelli Power Ltd

Applicant Reference: 287521A

Preliminary Geo-Environmental Risk Assessment for Abergelli Power Project

Applicant Reference: 287521A

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EXECUTIVE SUMMARY

Introduction	Watt Power commissioned Parsons Brinckerhoff Ltd to undertake a Preliminary Risk Assessment of Abergelli Power Project, South Wales to form a baseline geo-environmental assessment to enable the completion of Chapter 10, Geology, Ground Conditions and Hydrogeology of the Environmental Statement.
Site History	<p>The Project Site and surrounding area has remained predominantly grass fields and with areas of woodland and marshland stretching back from the earliest historical data from 1876 to the present day.</p> <p>A gravel pit was present from 1896, and identified as 'old' in 1913. Other significant historical land uses surrounding the Project Site, include Abergelli Colliery, and associated buildings identified from 1935, and disused from 1964, a spoil heap adjacent the colliery was identified from 1964. The location of this spoil heap was identified as an embankment in 2002. This is likely to be associated with the landfilling works and associated landfill extension which took place in the 1990's. The National Grid 'Swansea North' substation in the western of the Project Site is evident on the historical maps from 1991 to current day.</p>
Geology	<p>'Made Ground' is only likely to be present in areas where there are structures and hardstanding associated with previous development, i.e. the landfill and surrounding the colliery farm buildings.</p> <p>The British Geological Survey on-line viewer and GroundSure Geolnsight Report indicates that the area within the Project Site boundary is underlain by superficial deposits of glacial till (predominantly clay), and glaciofluvial deposits of sand and gravel. There are also pockets of alluvium and peat present locally across the Project Site. The bedrock geology consists of the Grovesend Formation comprising mudstones, siltstones, with well-developed coals, and minor lithic sandstones overlying the Swansea Member. There are two coal seams that were worked from Abergelli Colliery, these are known as the Swanse Four Feet and Craigola.</p> <p>Across the Project Site there are a number of historical ground working features, including spoil / refuse heaps, a colliery and old gravel pits. The workings have included the production of sand and gravel, and the working of coal seams underground.</p>
Hydrogeology & Hydrology	<p>The superficial deposits that cover the Project Site are classified as unproductive strata associated with the glacial till, and a Secondary A Aquifer associated with the glaciofluvial deposits. The bedrock is classified as a Secondary A Aquifer. The Environment Agency website and GroundSure Report indicate that the Project Site is not situated within a groundwater Source Protection Zone (SPZ), with no SPZs are located within 1km of the Project Site. The groundwater vulnerability has a varying classification, from low to high leaching potential, dependent on the geology across the Project Site.</p> <p>There is one licenced groundwater abstraction on the Project Site, associated with Abergelli Farm, used for general farming and domestic purposes. This is not currently used. There are an additional 16No. groundwater abstraction licences within 2km of the Project Site.</p> <p>The closest potable water supply is from the Lower Lliw Reservoir approximately 1km north of the Project Site.</p> <p>There are numerous drainage ditches, springs and small ponds present across the Project Site that drain into the Afon Llan. The Afon Llan flows in a south westerly direction to the west and south of the Project Site, discharging into the Loughor Estuary. Another watercourse, the Afon Lliw located 1.3km north of the Project Site also discharges into the Loughor Estuary.</p> <p>A pollution incident dated May 2007 relating to inert materials and wastes close to the northern entrance to the Project Site caused significant impact to the water environment.</p>

<p>Conceptual Site Model</p>	<p>The identified potential sources include the waste in the landfill and landfill extension, Abergelli Colliery, and water treatment processes that took place where the landfill is now located, and landfill and ground gases associated with these historic land uses. Other possible on Project Site sources include possible fertilisers from agricultural practises, and leaks and spills from associated machinery.</p> <p>Human receptors have been identified based on the proposed current and end land use including residents of dwellings within the vicinity of the Project Site, site workers and construction workers during the Project construction works. Controlled water receptors have been identified as both the bedrock and superficial deposits that underlie the Project Site that are classified as Secondary A aquifers. The abstraction well on the Project Site for Abergelli Farm, and the various surface water bodies across the Project Site are also considered controlled water receptors.</p> <p>Potential pathways have been identified from these sources to residents, workers and controlled waters.</p>
<p>Conclusions and Recommendations</p>	<p>In order to provide further information to assess the potential 'pollutant linkages', a ground investigation will be carried out at detailed design stage to assess soil, ground gas and groundwater conditions at the Project Site.</p> <p>Analytical data will then be used to undertake risk assessments to assess potential risks to human health and controlled waters. The ground investigation will obtain information on ground instability hazards, including the depth and extent of any peat horizons. It will also focus on potential underground mine workings using mine abandonment plans. This information will then be used to complete a mining risk assessment and interpretative geotechnical report.</p>
<p>This sheet is intended as a summary only</p>	

SECTION 1

INTRODUCTION

1 INTRODUCTION

1.1 Context and Objectives

1.1.1 Abergelli Power Ltd (APL) (the 'Client') has commissioned Parsons Brinckerhoff Ltd to undertake a Preliminary Geo-Environmental Risk Assessment (desk study) of the Abergelli Power Project (the Project Site). The Project Site location is shown on Figure 1.1.

1.1.2 The principal objectives of the study were:

- To provide baseline information for the Geology, Ground Conditions and Hydrogeology Chapter 10 of the Environmental Statement (ES) for the Project Site;
- To detail the geo-environmental setting of the Project Site to include the surrounding land use, historical land use, geology, hydrology and hydrogeology;
- To assess the potential for pollutant linkages based on current and future land uses; and
- To provide recommendations for further investigations or assessments if considered necessary.

1.1.3 The report has been completed to reflect the requirements of Preliminary Risk Assessments as outlined in Environment Agency document CLR11 'Model Procedures for the Management of Land Contamination'; which emphasises the use of conceptual site models and the identification of "source-pathway-receptor" pollutant linkages.

1.1.4 In addition the key geo-environmental characteristics of the Project Site and the surrounding area will be described to identify any key constraints, resources and assets that could affect or be affected by the Project.

1.1.5 The Project comprises:

- A new Power Generation Plant in the form of a Simple Cycle Gas Turbine (SCGT) peaking power generating station fuelled by natural gas and capable of providing a rated electrical output of up to 299 Megawatts (MW) comprising:
 - The Generating Equipment including between one and five Gas Turbine Generators and Balance of Plant which are located on the "Generating Equipment Site";
 - A new Access Road to the Generating Equipment Site from the B4489, formed by upgrading an existing Access Road between the B4489 junction and the Swansea North Substation and

- constructing a new section of Access Road from the Swansea North Substation to the Generating Equipment site; and
 - During construction and decommissioning, a temporary construction compound (the Laydown Area).
 - A new Gas Connection to bring natural gas to the Generating Equipment from the National Transmission System; and
 - A new Electrical Connection to export power from the Generating Equipment to the National Grid Electricity Transmission System (NGETS).
- 1.1.6 The Generating Equipment, Access Road, and Laydown Area are together known as the Power Generation Plant, and are located within the Power Generation Plant Site.

1.1.7 The current proposed layout of the scheme is presented on Figure 1.2.

1.2 Scope of Work

- 1.2.1 The preliminary geo-environmental risk assessment collates and presents factual information available for the Project Site from the following sources:
- GroundSure GeoInsight Report (geological conditions, hazards and mining hazards) (GS-1587648 29th July 2014) (Appendix A);
 - GroundSure EnviroInsight Report (groundwater vulnerability, landfills and pollution incident records, and sensitive land uses within the vicinity of the Project) (GS-158647, 29th July 2014) (Appendix A),
 - The GroundSure MapInsight Report (historical maps) (GS-1587646 30th July 2014) (Appendix A),
 - Soilscape Website (Cranfield University) via <http://www.landis.org.uk//soilscapes> (viewed 30th July 2014);
 - Review of available BGS information via <http://mapapps2.bgs.ac.uk/geoindex/home.html> (viewed 30th July 2014) (Selected information reproduced in Appendix B);
 - Review of Geological Survey Maps, scale 1:10,560 Glamorgan Sheet SN60SE, 1964, 1971, and Provisional Edition Sheet SN60SW 1961;
 - Review of EA Groundwater Vulnerability 1:10,000 Map Series, West Glamorgan, Sheet 35, 1996.

- Review of EA, 'What's in your backyard?' Website: <http://maps.environment-agency.gov.uk/wiyby/> (viewed 30th July 2014);
- Consultation information from National Resources Wales (NRW);
- Consultation information from the City and County of Swansea Council (CCS);
- Coal Authority Mining Report, 1st August 2014 (Appendix C); and
- Google Earth Pro imagery (viewed 28th November 2014).

1.2.2 Parsons Brinckerhoff has reviewed planning applications submitted within the vicinity of the Project Site, but they did not include any information not already publicly available.

1.2.3 This report includes a review of the geological, hydrological and hydrogeological information, recorded mining/mineral extraction activities, pollution incidents, landfills, pollution controls, hazardous substance registrations and the historical development of the Project Site and up to a 1 km radius surrounding the Project Site.

1.2.4 Based on this information, a preliminary conceptual site model has been produced through a tabular description of identified potential sources of contamination, pathways for contaminant migration and potential receptors for current and proposed future end uses.

1.2.5 The conceptual site model identifies complete source - pathway - receptor pollutant linkages that could affect human health and controlled waters, and highlights gaps and uncertainties in the available information.

1.3 Limitations

1.3.1 Parsons Brinckerhoff has prepared this report for the sole use of the Client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon by any other party without the explicit written agreement of Parsons Brinckerhoff. No other third party warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.

1.3.2 The records search was limited to information available in a confidential manner from the Client, GroundSure Ltd and public sources including regulatory authorities.

1.3.3 Unless Parsons Brinckerhoff has actual knowledge to the contrary, information obtained from interviews or provided to Parsons Brinckerhoff by site personnel and other information sources has been assumed to be correct. Parsons Brinckerhoff does not assume any liability for misrepresentation of information or for items not visible, accessible, or present on the subject Project Site at the time of the site reconnaissance.

1.4 Business Management System Control

1.4.1 Parsons Brinckerhoff operates under a Business Management System. The Management System comprises the processes necessary for effective operation of the business and is designed to meet the requirements of BS OHSAS 18001:2007, ISO 9001:2008 and ISO 14001:2004.

Safety Management

1.4.2 Site activities, as well as office based work, has been undertaken in accordance with Parsons Brinckerhoff's Integrated Management System – Safety Management Series which operates within the standard outlined in BS OHSAS 18001:2007 (Certificate of Registration: 81259-2010-AHSO-GBR-UKAS).

Quality Control

1.4.3 Work on this project and the preparation of this report has been undertaken in accordance with PB's Integrated Management System – Quality Control Series which operates within the standard outlined in ISO 9001:2008 (Certificate registration No 81255-2010-AQ-GBR-UKAS).

Environmental Management

1.4.4 The design and implementation of this project has been undertaken in accordance with Parsons Brinckerhoff's Integrated Management System - Environmental Management System Series that has been developed in line with ISO 14001:2004 (Certificate registration No. 81257-2010-AE-GBR-UKAS).

SECTION 2

PRELIMINARY GEO-ENVIRONMENTAL RISK ASSESSMENT

2 PRELIMINARY GEO-ENVIRONMENTAL RISK ASSESSMENT

2.1 Site Referencing Information

2.1.1 Site referencing information is provided within Table 2.1 **Error! Reference source not found.** and the Project Site location is illustrated on Figure 1.1.

Table 2.1: Site Description

Name of Site	Abergelli Power Project
Site Location	Abergelli Farm. The Project Site is 2 km north of junction 46 of the M4, approximately 1.4 km south east of Felindre, 1.2 km west of Llwynceilyn and 1.6 km north of Llangyfelach.
Size and Shape of Site	The site is an irregular shape in plan with an approximate total area of 30 ha.
NGR / Latitude and Longitude	Approximate centre of the site at: NGR 265284, 201431; Latitude: 51°41'52.92 Longitude: 3°57'12.95
Current Site Use	The land use is predominantly agricultural, used for sheep and horse grazing. Within the Project Site there is a small historic landfill and the remains of Abergelli Colliery, both of which are located north of Abergelli Farmhouse.

2.1 Site Setting and Surrounding Environment

2.1.1 The site setting and surrounding environment is described in Table 2.2.

Table 2.2 Site Setting and Surrounding Environment

Site Access	Site access will commence from the west via the B4489 utilising the existing National Grid road and then extends (via current agricultural land) to the west of the Generating Equipment Site and along the southern boundary of the Gas Compressor Station.
Ground Cover	Ground cover at the Power Generation Plant Site primarily comprises fields used for grazing, bounded by drainage ditches, fencing and hedgerows. The Generating Equipment Site and Laydown Area are divided into two areas by a soft surface horse training track known as 'the gallops' with a block of broadleaved woodland to the east classified as Ancient Woodland and a Site of Importance for Nature Conservation (SINC).
Site Topography & Elevation	The land within the proposed Generating Equipment Site is at approximately 90 m above Ordnance Datum (AOD) and gently slopes down towards the south.

Surrounding Area	<p>The area surrounding the Project Site is, at present, predominantly rural in character, although there is a park and ride facility to the south and a substantial amount of utilities infrastructure in the area, some of which cross the Project Site.</p> <p>A Gas National Transmission System Pipeline (Feeder 28), and a Welsh Water Main pipeline cross the Project Site and there is also a network of electricity pylons and overhead lines which lead to and from National Grid's Swansea North substation. Furthermore a Water Treatment Works is located to the north west while the Cefn Betingau Solar Park is located to the east of Project Site.</p> <p>The closest residential dwellings are detailed in Chapter 3, the closest 440m south of the Generating Equipment Site, and Abergelli Farmhouse approximately 620m north of the Generating Equipment Site.</p>
Environmentally Sensitive Areas	<p>A block of broadleaved woodland to the east of the existing Generating Equipment Site is classified as Ancient Woodland and a Site of Importance for Nature Conservation (SINC). Further Ancient Woodland is also present to the south of the National Grid Access Road.</p>

2.2 Geological Information

2.2.1 The geology of the Project Site has been reviewed with reference to the following sources:

- BGS Digital Geological map of Great Britain at 1:50,000 scale www.bgs.ac.uk/geoindex; viewed on 30th July 2014;
- The GroundSure GeoInsight Report (geological conditions, hazards and mining hazards) (GS-1587648 29th July 2014), Appendix A;
- BGS archive borehole log: SN60SE24, Appendix B;
- Review of Geological Survey Maps, scale 1:10,560 Glamorgan Sheet SN60SE, 1964, 1971, and Provisional Edition Sheet SN60SW 1961; and
- Coal Authority Mining Report, Appendix C.

2.2.2 On the basis of the above, the ground conditions beneath the Project Site are likely to comprise the following:

Made Ground

2.2.3 Made Ground is not indicated on BGS records. It is only likely to be present in areas where there are structures and hardstanding associated with previous development, i.e. the landfill and surrounding the colliery farm buildings within the vicinity of the Project Site.

- 2.2.4 If present, the stratum would be of unknown provenance and could include a range of materials such as colliery spoil.

Superficial Deposits

- 2.2.5 The superficial deposits located across the Project Site comprise predominantly of glacial till (a diamicton; predominantly clay) and glaciofluvial deposits of sand and gravel. There are also pockets of alluvium and peat present locally within the Project Site boundary. The mapped peat is located north west of Abergelli Farm, and within the north eastern corner of the Generating Equipment Site and Laydown Area, see the excerpt of a superficial geology map in Appendix A. The likely permeability of the superficial deposits range from very low (within the clays) to very high (within the sand and gravel) across the Project Site.

- 2.2.6 There are records of three boreholes formed within the Project Site boundary held by the British Geological Survey (BGS); only one of these is currently available for viewing online¹ and presented in Appendix B. The record has a reference of SN60SE24 and is located east of Abergelli Farm (NGR 265200, 201600), in an area mapped as being underlain by Devensian glaciofluvial deposits of sand and gravel.

- 2.2.7 The superficial deposits recorded on the log comprise yellow brown gravelly clay down to 6 metres below ground level (m bgl), overlying a grey brown clayey gravelly sand, clayey sand and sandy clay down to 15.8 m bgl of likely glaciofluvial deposits that is underlain by firm yellow clay becoming stiff grey gravelly clay that is likely to be glacial till; proven to a maximum depth of 16.8 m bgl. Traces of coal were identified at 10.7 m bgl within the clayey sand.

Bedrock Geology

- 2.2.8 The bedrock geology underlying the Project Site consists of the Grovesend Formation from the Westphalian stage of the Carboniferous period, comprising “argillaceous mudstones and siltstones, with well-developed coals, and minor lithic sandstones”². This is the youngest unit in the South Wales coalfields. The lower boundary “is placed at the base of the Swansea Four Fee Coal of the Swansea district” “where it overlies mudstone seatearth” at the top of the Swansea Member.

- 2.2.9 The north eastern corner of the Project Site consists of the Swansea Member, also from the Westphalian stage, comprising “green-grey pennant sandstone, with thin mudstone / siltstone and seat earth interbeds and mainly thin coals”. The lower boundary of the Swansea

¹http://scans.bgs.ac.uk/soji_scans/boreholes/256144/images/10509869.html

²<http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=GDB>

Member “is placed at the base of the Golden Seam (Swansea Three Feet or Graigola) (Woodland et al., 1957), where the coal rests on mudstone seatearth within the Pennant Sandstone Formation”. This geological formation is overlain conformably by the Grovesend Formation.

- 2.2.10 There are many faults identified within the region of the Project Site. The faults predominantly run from north west to south east, with the downthrow (displacement) noted to the west-south west. There is no information of the dip angle on the geological maps.
- 2.2.11 There was a ‘Slant’ identified at Abergelli Colliery, which provided access to both the Graigola and Swansea Four feet coal seams. At a slightly higher latitude than Abergelli Colliery the Swansea Four Feet and Brynwhilach Two Feet seams are identified with fault offsetting both seams.
- 2.2.12 The permeability of the bedrock geology ranges from low to high, depending on the degree of fracturing. There are nine faults across the Project Site, two of which have been observed, according to BGS records, and the others inferred either as a normal fault or along a coal seam. An excerpt from the geology map is provided in Appendix A.

Soils and Agriculture

- 2.2.13 There are two different soil classification areas across the Project Site. The predominant soil classification is described as “slowly permeable, wet, very acidic upland soils with a peaty surface”. The soils are described as “low fertility” and land cover is described as “moorland rough grazing and forestry”. The precipitation “drains to the stream network”. It is noted in the source information that overgrazing of this unit could lead to accelerated run-off and soil erosion³.
- 2.2.14 Through the centre and north eastern section of the Project Site, the soils are described as “freely draining, slightly acid loamy soils”. The soils are of “low fertility”, with “arable and grassland” land cover and precipitation “drains to local groundwater and rivers”. There is potential for groundwater contamination with these soils, comprising nitrate, siltation and nutrient enrichment of streams from soil erosion.
- 2.2.15 The agricultural land classification for the land within and surrounding the Project Site is grade 4 (“poor quality agricultural land”)⁴ “with severe limitations which significantly restricts the range of crops and / or level

³ <http://www.landis.org.uk/soilscapes/index.cfm>

⁴ Ministry of Agriculture, Fisheries and Food Welsh Office Agricultural Department (1975) Agricultural Land Classification of England and Wales Map, Scale 1:2,000,000.

of yields, mainly suited to grass with occasional arable crops”⁵. The Project Site is known to be utilised as improved grazing for sheep and horses, with small areas of marshy grassland and woodland copses interspersing the improved grassland to the north and east. The importance of this resource is considered low.

Ground Workings and Mineral Resources

- 2.2.16 According to the GroundSure Geolnsight Report (Appendix A), based on historical mapping there have been a number of historical surface ground working features on the Project Site. These comprise refuse heaps, a colliery, old gravel pits, unspecified pits and a pond.
- 2.2.17 The GroundSure Geolnsight Report has identified a gravel pit at Abergelli Fach that produced sand and gravel. There are also a number of surface mineral workings, including sand and gravel, sand, sandstone and one underground deep coal working within 1km of the Project Site. All operations have a “ceased” status (i.e. they are no longer active workings).
- 2.2.18 The Project Site is not within an area of tin or clay mining, or brine or gypsum extraction.

Underground Coal Mining

- 2.2.19 A review of the GroundSure Geolnsight Report identified Abergelli Colliery which is located adjacent to the Project Site approximately 500 m north of Abergelli Farm. A coal pit, shaft, colliery, and mine spoil heap have all been identified on historical mapping at locations extending to between 480 m and 1 km from the Project Site boundary (i.e. off-Project Site).
- 2.2.20 Further details on Abergelli Colliery are presented in the Coal Authority Mining Report (Appendix C) and are summarised below.
- 2.2.21 The Project Site is in the likely zone of influence from workings in three seams of coal, from shallow to a depth of 380 m. The Coal Mining Report indicates the coal seams were last worked in 1986⁶.
- 2.2.22 There are two mine entries close to the Project Site, one of which is located in the vicinity of Abergelli Colliery (north of Abergelli Fach Farm). The other is located south of the National Grid’s ‘Swansea North’ electrical substation at NGR 264970, 200800. There is no record of any treatment to the mine entries.

⁵ Ministry of Agriculture, Fisheries and Food Welsh Office Agricultural Department (October 1988) Agricultural Land Classification of England and Wales, Revised guidelines and criteria for grading the quality of agricultural land.

⁶ Non-Residential Coal Authority Report, 01/08/14

2.2.23 The Project Site is currently not in an area for which the Coal Authority is determining to grant a licence to remove coal using underground methods, where a licence has been granted or in an area that is likely to be affected at the surface from any planned future workings. However, reserves of coal exist and could be worked in the future.

Opencast Coal Mining

2.2.24 The Coal Authority report states that the Project Site is not within the boundary of an opencast site from which coal has been removed by opencast methods, and does not lie within 200 m of a boundary of an opencast site. It also states that the Project Site is not within 800 m of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods, or for which a licence to remove coal has been granted.

Ground Stability / Subsidence

2.2.25 The Coal Authority Mining Report (Appendix C) indicates that no notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

2.2.26 Abergelli Farm has been subject to remedial works, by or on behalf of the Coal Authority under its emergency surface hazard call out procedures. No further information was provided, however two damage notices or claims for alleged subsidence damage were made in June 1995 and November 1996.

2.2.27 Geological hazards at the site identified in the GroundSure GeoInsight Report are detailed within Table 2.3.

Table 2.3 Geological Hazards

Stability	Collapsible ground	Negligible to very low
	Compressible ground	Negligible to high
	Ground dissolution	Null to negligible
	Landslide	Very low to low
	Running sand	Negligible to low
	Shrinking or Swelling Clay	Negligible to very low
Radon hazards		The Project Site is in a Radon Affected Area, as between 3-5% of properties are above the Action Level. Radon protective measures may be necessary in the Project.

- 2.2.28 The high hazard associated with compressible ground is mapped and presented within the GroundSure GeoInsight Report and is presumably associated with the peat. One of the high hazard areas is situated in the location of the Generating Equipment Site, along the eastern boundary, and the other to the west and north west of Abergelli Farm.
- 2.2.29 Consideration of this hazard will be made in the design of any ground works (including site investigation, earthworks, de-watering) and foundation design.

2.3 Hydrogeological Information

- 2.3.1 The hydrogeology of the site has been reviewed with reference to the following sources:
- GroundSure EnviroInsight report dated 29th July 2014 (Appendix A); and
 - Environment Agency Website ‘What’s in your backyard’ (<http://www.environment-agency.gov.uk/>) 30th July 2014.
- 2.3.2 The aquifer classifications associated with the superficial geology comprise “unproductive strata” for the glacial till and “secondary A aquifer” for the glaciofluvial deposits.
- 2.3.3 The bedrock geology has been classified as a Secondary A aquifer.
- 2.3.4 Unproductive strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.
- 2.3.5 Secondary A aquifers are 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.
- 2.3.6 The BGS archived borehole log identified a water strike at 10.7m bgl (ground level was 113m AOD). However, there was no information regarding the resting water level in this borehole.
- 2.3.7 The GroundSure EnviroInsight Report has identified areas susceptible to groundwater flooding within 50 m of the Project Site. This is associated with superficial deposits, where shallow unconsolidated sedimentary aquifers overlie unproductive strata. The susceptibility to groundwater flooding is potentially at the surface, which means that given the geological conditions in the area, groundwater flooding hazard should be considered in all land-use planning decisions. The

BGS confidence rating of this groundwater flooding is classified as 'high'.

- 2.3.8 Groundwater quality in the study area has been assessed against the objectives of the Water Framework Directive (WFD). According to the EA website the current quantitative quality is good and is predicted to remain so in 2015. The current chemical quality is poor and expected to remain so in 2015.

Licensed Groundwater Abstractions

- 2.3.9 The GroundSure EnviroInsight Report has identified one groundwater abstraction licence on the Project Site, associated with Abergelli Farm. The licence number is 22/59/4/0027 with groundwater used for general farming and domestic purposes. The version start date was 01/02/1993, as there is no end date, it has been assumed to be still active.

- 2.3.10 There are an additional 16 No. groundwater abstraction licences within 2 km of the Project Site all used for general farming and domestic purposes. The location of licensed groundwater abstractions within the vicinity of the site are presented in Figure 10.1 of the Environmental Statement.

Groundwater Vulnerability

- 2.3.11 The Project Site does not lie within a groundwater Source Protection Zone (SPZ).
- 2.3.12 Groundwater vulnerability has been identified from the GroundSure EnviroInsight Report with a varying classification across the Project Site; i.e. from low to high leaching potential.
- 2.3.13 Low soil vulnerability is described as soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants. High soil vulnerability is described as coarse or moderately shallow soils which readily transmit non-adsorbed pollutants and liquid discharges but have some ability to attenuate adsorbed pollutants because of their clay or organic matter content.

Discharge Consents to Groundwater

- 2.3.14 There have been three discharge consents on the Project Site, all now expired or revoked:
- Discharging to land associated with Abergelli Farm in 1987;

- The National Grid Gas Compressor Station, discharging sewage to an unnamed land drain, effective between 2007 and 2010; and
- Trade discharges (site drainage) to the Afon Llan, revoked in 2011.

2.3.15 Further details of other discharge consents within 500 m of the Project Site boundary is presented in the GroundSure EnviroInsight Report.

2.4 Hydrological and Drainage Information

2.4.1 There are a number of small watercourses within the vicinity of the Project Site that drain to the Afon Llan, along with a number of springs and small ponds.

2.4.2 The Afon Llan flows in a south westerly direction to the west and south of the Project Site, discharging into the Loughor Estuary. In addition, another watercourse, the Afon Lliw is located approximately 1.3 km north of the Project Site and also discharges into the Loughor Estuary.

2.4.3 Artificial water features include the Felindre water treatment works with covered reservoir situated immediately north of the Project Site, and the Lower Lliw reservoir situated approximately 1.1 km north of the Project Site.

2.4.4 The closest potable water supply is from the Lower Lliw Reservoir approximately 1 km north west of the Project Site. The original start date of abstraction was 09/08/1989.

Flood Risk

2.4.5 The GroundSure EnviroInsight Report indicates that the southern tip of the scoping boundary is located in an area at risk from flooding with an estimated annual probability of between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers (i.e. Flood Zone 2 and 3). However, the Project Site is not located within an area at risk from flooding.

2.4.6 According to the British Geological Survey (BGS) there are areas within 50 m of the Project Site that are susceptible to groundwater flooding. This is associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits flooding).

Licensed Surface Water Abstractions

2.4.7 According to the GroundSure EnviroInsight Report there are no surface water abstractions within the Project Site boundary. However, there is one licensed surface water abstraction within 825 m east of the Project Site used for "lake and pond throughflow", sourced from the Afon Llan.

Discharge Consents to Surface Water

- 2.5 There are no active discharge consents to surface water; however there are seven consents which have either expired or have been surrendered.

Recorded Pollution Incidents

- 2.5.2 According to the GroundSure EnviroInsight Report there have been three pollution incidents within the Project Site. Two were related to atmospheric pollutants and effects, causing a minor impact to air in 2002 situated in the National Grid Gas Plc. The third was related to inert materials and wastes described as soils and clay causing a significant impact to the water environment. The incident was dated May 2007 and located on the northern boundary of the Project Site.

2.6 Recorded Landfill Sites

- 2.6.1 The GroundSure EnviroInsight Report and Environmental Agency data indicate one authorised landfill and an adjacent historic "Landfill Extension" located within the Project Site boundary, presented in Figure 10.1. This is named the Abergelli Fach Farm landfill and its current status is 'closed'. The total void space was calculated at 75,000m³, with a total tonnage of 142,500t. The landfill was only able to accept non-biodegradable wastes.
- 2.6.2 The Landfill Extension is reported to have accepted inert waste. The planning application for this extension was granted in 1997. National Resources Wales (NRW) have provided the Working Plan and associated drawings for the landfill which were dated March 1994 (Appendix D). The total void space was calculated at 99,898m³, with a total tonnage of 179,816t.
- 2.6.3 The Working Plan described the land as low lying, and poorly drained. Approximately three quarters of the landfill area was covered by a mine soil dump from Abergelli Colliery. This mine waste was removed leaving a layer of well compacted mine waste over the majority of the landfill area. The area of ground that was covered by the mine spoil was used for drying out of water treatment sludge (aluminium sulphate) though ceased when the landfill became operational. No further information on this operation is known.

2.7 Recorded Animal Burial Grounds

- 2.7.1 Information obtained from CCS indicates there was no local cull of animals in Swansea, Neath Port Talbot or Carmarthenshire during the

Foot and Mouth outbreak in 2001. No mass burial of animals have been recorded at the Project Site.

2.8 Pollution Controls

2.8.1 There is one Integrated Pollution Prevention and Control (IPPC) permit located within the Project Site boundary. This is for the Gas Compressor Station for the combustion of any fuel held by National Grid Gas Plc.

2.9 Sensitive Land Uses

2.9.1 There are two areas of ancient woodland within the Project Site. One area of ancient woodland is located north east of the Generating Equipment Site and another to the south of the Access Road. Further detail is provided within the Ecology Chapter of the Environmental Statement (Chapter 8).

2.10 Historical Development & Potentially Contaminative Land Uses

2.10.1 Historical maps are provided in the GroundSure MapInsight Report in Appendix A, Google Earth was also used to view satellite imagery of more recent land uses. The historic development of the Project Site is summarised within Table 2.4.

Table 2.4 Historical Map Summary

Dates/Sources	On Project Site	Off Project Site
1876-1878 1:10,560 1:2,500	The Project Site is predominantly agricultural fields and tracks, with areas of woodland and marshland. There are a number of buildings associated with Abergelli Fach and Abergelli Fawr in the central region of the Project Site, and Bryn Mawr along the north western corner of the Project Site.	The land is predominantly agricultural. A lime kiln is identified to the south east of the Project Site; west of the Maes-eglwys development.
1896 – 1897 1:10,560 1898 – 1899 1:2,500	A gravel pit is identified to the west of Abergelli Fach. The woodland in the south of the Project Site has now been identified as Abergelli Fach Plantation and Lletty Morfil Plantation.	An old gravel pit is identified to the south of the Project Site that was not previously identified. An old tramway is identified to the north of the Project Site, which was not previously identified on the older map.

Dates/Sources	On Project Site	Off Project Site
1913-1914 1:10,560 1913-1918 1:2,500	The gravel pit is now identified as old. Rises and streams are now indicated on the map.	Two old quarries have been identified. One approximately 500 m west and one approximately 750 m north west of the Project Site. A tank is identified next to a spring just off Project Site, north of Abergelli Fach Plantation. The limekiln previously identified is now labelled as old limekiln.
1921 1:10,560	No significant changes.	No significant changes.
1935-1938 1:10,560 1935 1:2,500	Abergelli Colliery, associated buildings, engine houses, railway sidings, slant (loading bay) and tank are identified on the map, north of Abergelli Fach.	No significant changes.
1948 1:10,560	The buildings associated with Abergelli Colliery have changed slightly but still appear to be operational.	No significant changes.
1964 1:10,560 1960 1:2,500 1958 1:2,500	The colliery is now identified as disused. A spoil heap/tip adjacent to the colliery is identified to the north west of the mine with a routeway into the centre of the tip. Railway sidings tracks run through the colliery and ends at the edge of the spoil heap/tip.	The tank next to Abergelli Plantation and the previously identified spring are no longer identified. The old tramway is now labelled as dismantled.
1975 1:10,000 1974 1:2,500	The railway sidings and one building associated with the Abergelli Colliery are no longer identified. Electricity pylons are identified across the site, towards the central section of the Project Site, running in a north east to south west direction.	A tip is labelled approximately 300 m to the south of the Project Site.

Dates/Sources	On Project Site	Off Project Site
1991 1:10,000 1989-1:2,500 1989-1992 1992-1993 1:2,500 1999 Google Earth Pro imagery	An electrical substation is present in the south western corner of the Project Site, adjacent to Lletty-morfil Plantation. A large warehouse building is now present in this area. Abergelli Fach is now labelled as Abergelli Farm and looks to have been redeveloped. Abergelli Fawr is now labelled as ruins. From the earliest imagery available on Google Earth Pro the old gravel pit does not look to be backfilled. The landfill looks to be backfilled and the slope graded. The majority of the landfill extension is vegetated.	A gas valve compound is shown adjacent to the north western Project Site boundary. Beyond the gas valve compound are covered reservoirs and associated water treatment works. The tip to the south of the Project Site is no longer identified.
2002 1:10,000 2002 Google Earth Pro imagery	An embankment previously identified as a spoil heap or similar is present to the north west of the former mine. Two buildings associated with the colliery remain. The landfill is becoming vegetated. The northern part of the landfill extension looks to be currently worked	No significant changes.
2006 and 2008 Google Earth Pro imagery	The eastern part of the landfill is under hardstanding for units and vehicles associated with current landfilling operations. There is a large trench through the landfill extension running south east to north west.	No significant changes.
2010 1:10,000 2010 Google Earth Pro imagery	The previous track across the site to Abergelli Farm is now developed into a roadway. Vegetation is developing on the eastern part of the old gravel pit. The landfills no longer look operational. There are no vehicles or units remaining, although the trench is still present. Vegetation is maturing.	No significant changes.

Dates/Sources	On Project Site	Off Project Site
2013 Google Earth Pro imagery	Vegetation is becoming well developed on the eastern part of the old gravel pit and over the landfill and landfill extension areas.	No significant changes.

2.11 Potentially Contaminative Land Uses

2.11.1 Table 2.5 and Figure 10.1 of the Environmental Statement presents potentially contaminative land uses identified on-Project Site and within 500m of the Project Site boundaries. It also details contaminant groups potentially present as a result of these land uses.

Table 2.5 Potentially Contaminative Land Uses

Process/ Land use	Location	Contaminant Groups Potentially Present on-site
Abergelli Colliery, engine houses, tanks, railway sidings/conveyor belt and spoil heap	North of Abergelli Fach (Farm) on the Project Site.	Metals and metalloids, polycyclic aromatic hydrocarbons (PAHs), hydrocarbons, lubricating oils, sulphates, asbestos, ground gas including coal bed methane.
Drying out of water treatment sludges (aluminium sulphate)	Abergelli Colliery and location of historic landfill.	Aluminium sulphate and heavy metals
Historic Landfill and Landfill Extension	North west of Abergelli Colliery (north of Abergelli Fach) on the Project Site.	Hydrocarbons, asbestos and unknown contaminants associated with the waste, landfill gas.
Gas Compressor Station and electricity pylons	Western part of the Project Site – Operated by National Grid Gas Plc. Electricity pylons traverse across the Project Site	Polychlorinated biphenyls (PCB's), other transformer oils and solvents
Agricultural land and plantations	Across the majority of site including plantations to the south of the Project Site.	Fertilisers, hydrocarbons and lubricating oils associated with machinery.

2.12 Sources of Contamination

2.12.1 The most likely sources of contamination for the Project Site are:

- Contamination associated with the historic landfill and landfill extension;
- Contamination associated with the historic colliery, including aluminium sulphate sludge; and
- Contamination from agricultural land use including leaks/spills from machinery.

2.13 Preliminary Conceptual Site Model

2.13.1 On the basis of the information summarised above, a preliminary conceptual site model (CSM) has been developed for the Project Site. The CSM identifies potential contaminants, receptors (both on and off-site) and exposure pathways that may be present. The identification of such potential “pollutant linkages” is a key aspect of the evaluation of potentially contaminated land.

2.13.2 An approach based on CIRIA report C552 has been adopted within this report. For each of the pollutant linkages, an estimate is made of;

- The potential severity of the risk; and
- The likelihood of the risk occurring.

2.13.3 Table 2.6 presents the classification of the severity of the risk.

Table 2.6: Severity of Risk

Severe	Acute risks to human health; Major pollution of controlled waters(watercourses or groundwater)
Medium	Chronic (long-term) risk to human health; Pollution of sensitive controlled waters (surface waters or aquifers)
Minor	Requirement for protective equipment during site works to mitigate health effects; Damage to non-sensitive ecosystems or species

2.13.4 The probability of the risk occurring is classified according to criteria given in Table 2.7.

Table 2.7: Probability of Risk Occurring

High Likelihood	Pollutant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Pollutant linkage may be present, and it is probable that the

	risk will occur over the long term.
Low Likelihood	Pollutant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

2.13.5 An overall evaluation of the level of risk is gained from a comparison of the severity and probability as presented in Table 2.8.

Table 2.8: Comparison of Severity and Probability

		Severity		
		Severe	Medium	Minor
Probability	High Likelihood	Very high risk	High Risk	Moderate / low risk
	Likely	High risk	Moderate risk	Low risk
	Low Likelihood	Moderate risk	Moderate/ low risk	Very low risk
	Unlikely	Moderate / low risk	Low risk	Very low risk

2.13.6 Potential “pollutant linkages” associated with the Project are detailed within Table 2.9.

2.13.7 It should be noted that the identification of potential “pollutant linkages” does not indicate that they are significant in any way or that the Project Site is unsuitable for its current/proposed use. It does however act as a way of focusing future data collection at the Project Site and identifying any key potential risks associated with the Project Site.

2.13.8 The risks to construction workers associated with the Project Site are considered negligible with embedded mitigation taken into consideration, such as PPE and following best practice procedures.

2.13.9 The current conservative assessment is based on a desk study and will be confirmed through intrusive investigation prior to detailed design.

2.13.10 It should also be noted that potential risks associated with ground instability are not incorporated into the assessment.

Table 2.9 Potential Pollutant Linkages Associated with the Future Development and their Preliminary Risk Rating

Source	Pathway	Receptor	Scale	Risk	Comment
Waste within the historic landfill and landfill extension (Including the process of drying out water treatment sludge)	Direct contact with shallow groundwater impacted with landfill leachates.	Construction Workers	Very localised small scale areas	Low	The majority of the development area will comprise hardstanding; therefore the risk of exposure is negligible. Regular contact with this potential contaminative source is unlikely. The presence of vegetation across the majority of the Project Site limits exposure via the direct contact pathway. Also, the potential sources of contamination cover a small area of the land within the Project Site. The risk associated with this S-P-R is irrespective of the Project going ahead.
		Human Health: Future workers on the Generating Equipment		Low	As above. In addition, the exposure durations are limited and the receptor class is less sensitive. Regular contact with site soils is unlikely.
	Cross contamination via piling during the development works.	Controlled Waters: Secondary A superficial and bedrock aquifers and an abstraction well		Low	Whilst a pathway could be created via such a means, the area which will require piling is on greenfield land and therefore the probability of the risk occurring is unlikely; therefore the risk is considered low. Groundwater flow direction is currently unconfirmed.
	Landfill gas generation	Construction Workers		Human Health: Future workers on the Generating Equipment	Low

Source	Pathway	Receptor	Scale	Risk	Comment
	Mine gas generation	Human Health: Residents of dwellings within the study area	Extent of mine workings is unknown	High	During the construction works there is a likelihood that ground gas from coal bed methane or mine workings may be disturbed.
		Human Health: Future workers on the Generating Equipment		High	
Agricultural land use	Surface run-off	Controlled waters, drainage ditches within the Project Site boundary	Wide spread across land, but very low frequency use	Low	Sprayed fertilisers could be washed into receiving surface waters. Drainage ditches run across the Project Site and may transport contaminants. The farming practices and potential use of chemicals is unknown but as the land is predominantly used for grazing the risk is considered low. The risk associated with this S-P-R is irrespective of the Project going ahead.
Natural gas from potential peat stratum	Natural ground gas generation	Human Health: Future workers on the Generating Equipment	One area of mapped peat identified	Moderate / Low	There is potential for natural ground gases to be present within the peat stratum mapped in localised areas within the Project Site. The gas generation is anticipated to be moderate to low in these areas and this currently vents naturally.
		Construction workers		Moderate / Low	Construction workers may potentially disturb the peat habitat during the construction works; this is particularly relevant with sub-surface construction activities where ground gas may accumulate.

SECTION 3

CONCLUSIONS AND RECOMMENDATIONS

3 CONCLUSIONS AND RECOMMENDATIONS

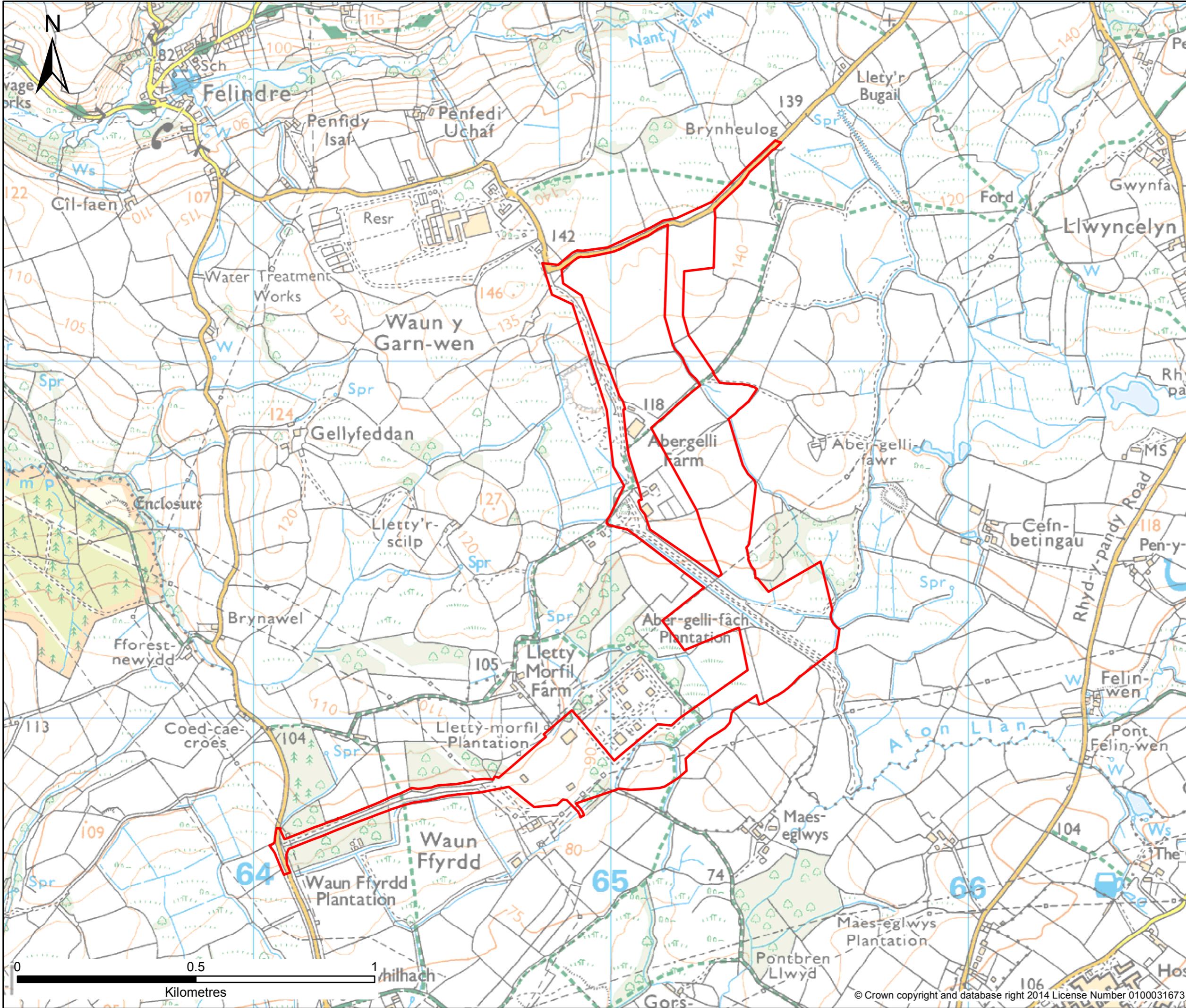
3.1 Conclusions

- 3.1.1 APL commissioned Parsons Brinckerhoff to undertake a preliminary risk assessment (desk study) as part of the geology, ground conditions and hydrogeology chapter for the Environmental Statement of Abergelli Power Project.
- 3.1.2 The geological and hydrogeological conditions have been investigated and described on the basis of the available published information.
- 3.1.3 Following a review of information relating to the site and surrounding area, a number of discrete potential 'pollutant linkages' have been identified at the Project Site.
- 3.1.4 Potential sources from the previous use of the site are localised and include an historic landfill and landfill extension, a colliery and historic water treatment processes associated with the mine, a potentially backfilled gravel pit, and agricultural use including potential animal burials.

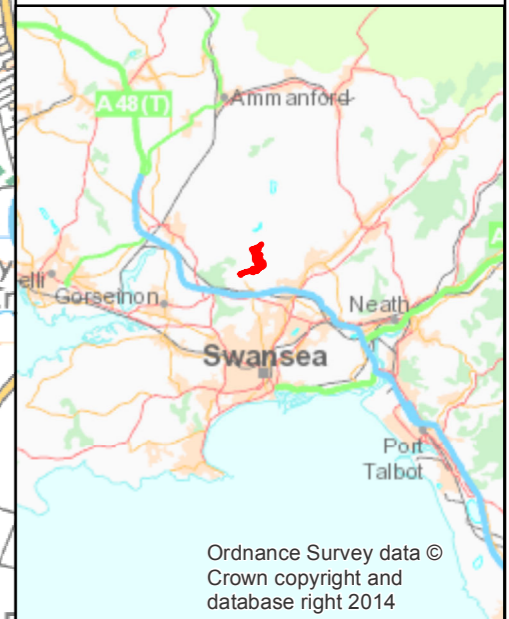
3.2 Recommendations

- 3.2.1 In order to provide further information for this assessment to assess the potential 'pollutant linkages', a focused intrusive ground investigation is recommended.
- 3.2.2 This would likely be incorporated into the site-wide ground investigation and include exploratory holes (boreholes and trial pits) to investigate soil and groundwater conditions at the Project Site, and to characterise the deposits in each of the areas identified as a potential source of contamination.
- 3.2.3 The ground investigation would also obtain information on ground instability hazards, including the depth and extent of any peat horizons. It will also focus on potential underground mine workings using mine abandonment plans. This information will then be used to complete a mining risk assessment and interpretative geotechnical report.
- 3.2.4 Sampling of soils, groundwater and surface water will be carried out for chemical analysis to establish the presence/absence of any contamination and allow the assessment of the significance through the completion of a risk assessment.
- 3.2.5 Ground gas monitoring will also be required in the area due the increased potential for gas generation from coal workings, the landfill or peat areas.

FIGURES



 Project Site



Ordnance Survey data ©
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Rev	Date	Description	By	Chk	App
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FINAL

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Client:
Abergelli 
power

Site/Project:
Abergelli Power Project

Title:
Site Location Plan

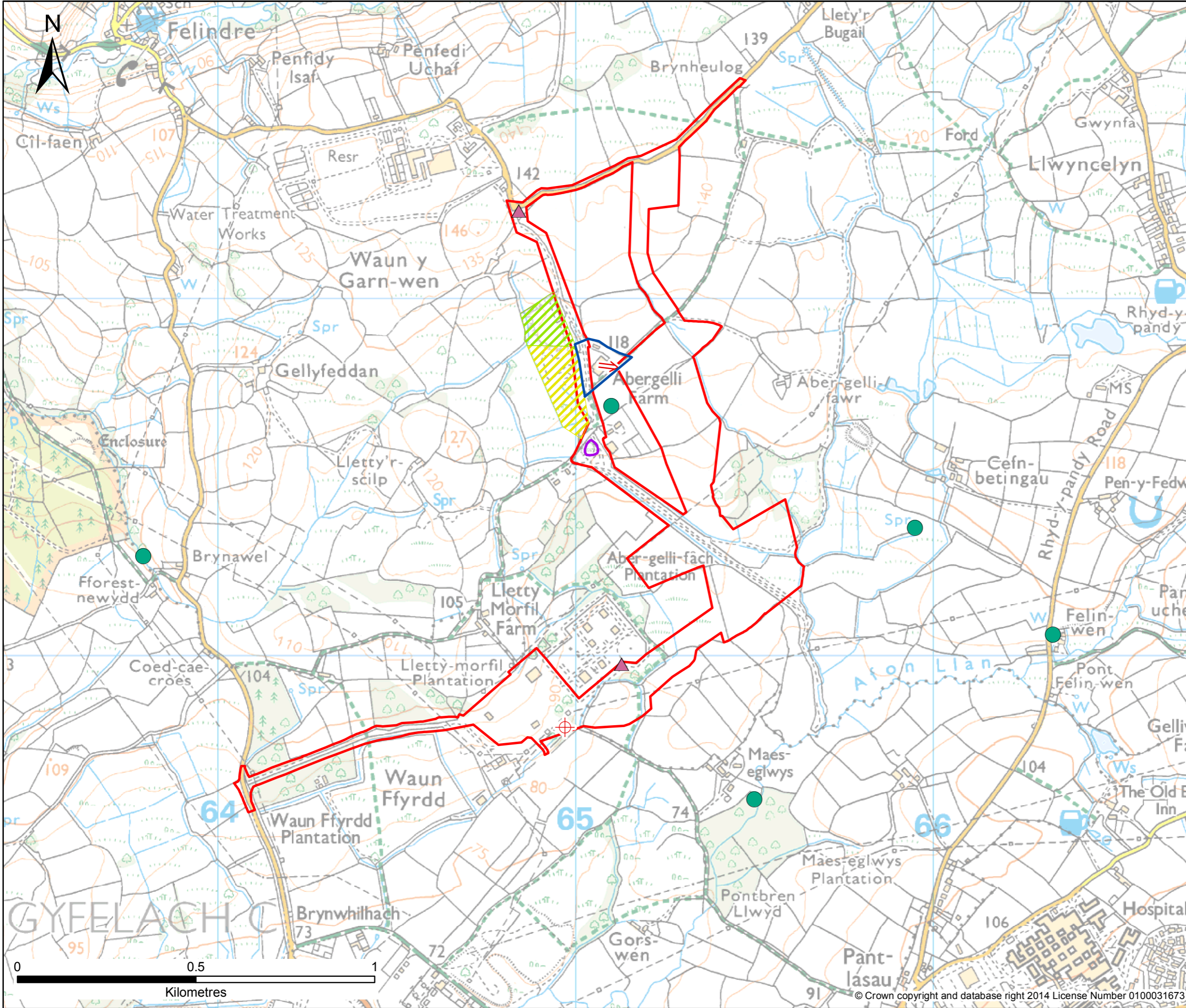
Drawn: CD	Checked: JL
Designed: AH	Approved: AH
Date: 24/09/2014	Scale: 1:10,000 A3 Sheet:
Project Number: 287521A	Drawing Number: Figure 1.1
	Revision: -

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File Name: \\EALON\FI\02\Data\GIS\287521A\Abergelli Power Project\Map\PIER Report_20140811_287521A_1.1_Site_Location_Plan.mxd
Login: chris.davies
Plot Date: 24/09/2014

File Name: \\Eaonif02\data\GIS\287521A-Abergelli Power Project\mxd\ES Figures_20141107_287521A_10_1_Pollution_Incidents_and_Groundwater_Abstraction_Licences.mxd
 Login: Caroline Broughton
 Plot Date: 05/12/2014



- Project Site
- ⊕ Disused Adit or Mineshaft
- Groundwater Abstraction
- ▲ Recorded Pollution Incident
- Abergelli Farm Landfill Extension
- Abergelli Farm Landfill and Historical Mine Spoil Heap
- Disused Abergelli Colliery
- Old Gravel Pit

Rev	Date	Description	By	Chk	App
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DRAFT

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Abergelli
power

Site/Project:

Abergelli Power Project

Title:

Potential Sources of Contamination
and Locations of Interest

Drawn: CB	Checked: CD
Designed: AH	Approved: AH
Date: 05/12/2014	Scale: 1:10,000 A3 Sheet:
Project Number:	Drawing Number: Revision:
287521A	Figure 10.1 -

APPENDIX A

GROUNDSURE REPORTS



Parsons Brinckerhoff
27-29 PARSONS BRINCKERHOFF LTD,
CATHEDRAL ROAD,
CARDIFF, CF11 9HA

GroundSure Reference: GS-1587647

Your Reference: PB84891

Report Date 29 Jul 2014

Report Delivery Method: Email - pdf

GroundSure EnviroInsight

Address: ABERGELLI FACH FARM, FELINDRE, ABERTAWE, SA5 7NN

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure Enviroinsight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above GroundSure reference number.

Yours faithfully,

A handwritten signature in black ink, appearing to be "D. J. O'Connell", followed by a small circle and a period.

Managing Director
Groundsure Limited

Enc.
GroundSure EnviroInsight



GroundSure Envirolnsight

Address: ABERGELLI FACH FARM, FELINDRE, ABERTAWE, SA5 7NN
Date: 29 Jul 2014
Reference: GS-1587647
Client: Parsons Brinckerhoff

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 22-May-2010
Grid Reference: 265243,201702
Site Size: 146.24ha

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Overview of Findings

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Section 1: Environmental Permits, Incidents and Registers		On-site	0-50m	51-250	251-500		
1.1 Industrial Sites Holding Environmental Permits and/or Authorisations							
1.1.1	Records of historic IPC Authorisations	0	0	0	0		
1.1.2	Records of Part A(1) and IPPC Authorised Activities	2	0	0	0		
1.1.3	Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0		
1.1.4	Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0		
1.1.5	Records of List 1 Dangerous Substances Inventory sites	0	0	0	0		
1.1.6	Records of List 2 Dangerous Substances Inventory sites	0	0	0	0		
1.1.7	Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0		
1.1.8	Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0		
1.1.9	Records of Licensed Discharge Consents	3	0	2	3		
1.1.10	Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	1		
1.2	Records of COMAH and NIHHS sites	0	0	2	0		
1.3 Environment Agency Recorded Pollution Incidents							
1.3.1	National Incidents Recording System, List 2	3	0	0	2		
1.3.2	National Incidents Recording System, List 1	0	0	0	0		
1.4	Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0		
Section 2: Landfill and Other Waste Sites		On-site	0-50m	51-250	251-500	501-1000	1000-5000
2.1 Landfill Sites							
2.1.1	Environment Agency Registered Landfill Sites	1	0	0	0	0	Not searched
2.1.2	Environment Agency Historic Landfill Sites	1	0	2	1	0	0
2.1.3	BGS/DoE Landfill Site Survey	0	0	0	1	0	0
2.1.4	GroundSure Local Authority Landfill Sites Data	0	0	0	0	0	0
2.2 Landfill and Other Waste Sites Findings							
2.2.1	Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	2	0	0	0	Not searched	Not searched
2.2.2	Environment Agency Licensed Waste Sites	2	0	0	0	2	4

Section 3: Current Land Use	On-site	0-50m	51-250	251-500
3.1 Current Industrial Sites Data	14	6	6	Not searched
3.2 Records of Petrol and Fuel Sites	0	0	0	0
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0

Section 4: Geology

4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
4.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 5: Hydrogeology and Hydrology

	0-500m
5.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
5.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
5.3 Groundwater Abstraction Licences (within 2000m of the study site)	1	0	1	1	5	10
5.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	2	3
5.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
5.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
5.7 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	4	0	2	1	Not searched	Not searched

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
5.8 Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	Yes	Yes
5.9 Detailed River Network entries within 500m of the site	47	19	72	82	Not searched	Not searched
5.10 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 6: Flooding

6.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	Yes
6.2 Are there any Environment Agency Zone 3 floodplains within 250m of the study site?	Yes
6.3 Are there any Flood Defences within 250m of the study site?	No
6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
6.5 Are there any areas used for Flood Storage within 250m of the study site?	No
6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	High

Section 7: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	2
7.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
7.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
7.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
7.5 Records of Ramsar sites	0	0	0	0	0	0
7.6 Records of Ancient Woodlands	1	0	0	0	1	6
7.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
7.8 Records of World Heritage Sites	0	0	0	0	0	0
7.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0
7.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
7.11 Records of National Parks	0	0	0	0	0	0
7.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
7.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0

Section 8: Natural Hazards

8.1 What is the maximum risk of natural ground subsidence? High

Section 9: Mining

9.1 Are there any coal mining areas within 75m of the study site? Yes

9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site? Low

9.3 Are there any brine affected areas within 75m of the study site? No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

1. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

2. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

3. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

4. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

5. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

6. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

7. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

8. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

9. Mining

Provides information on areas of coal and shallow mining.

10. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

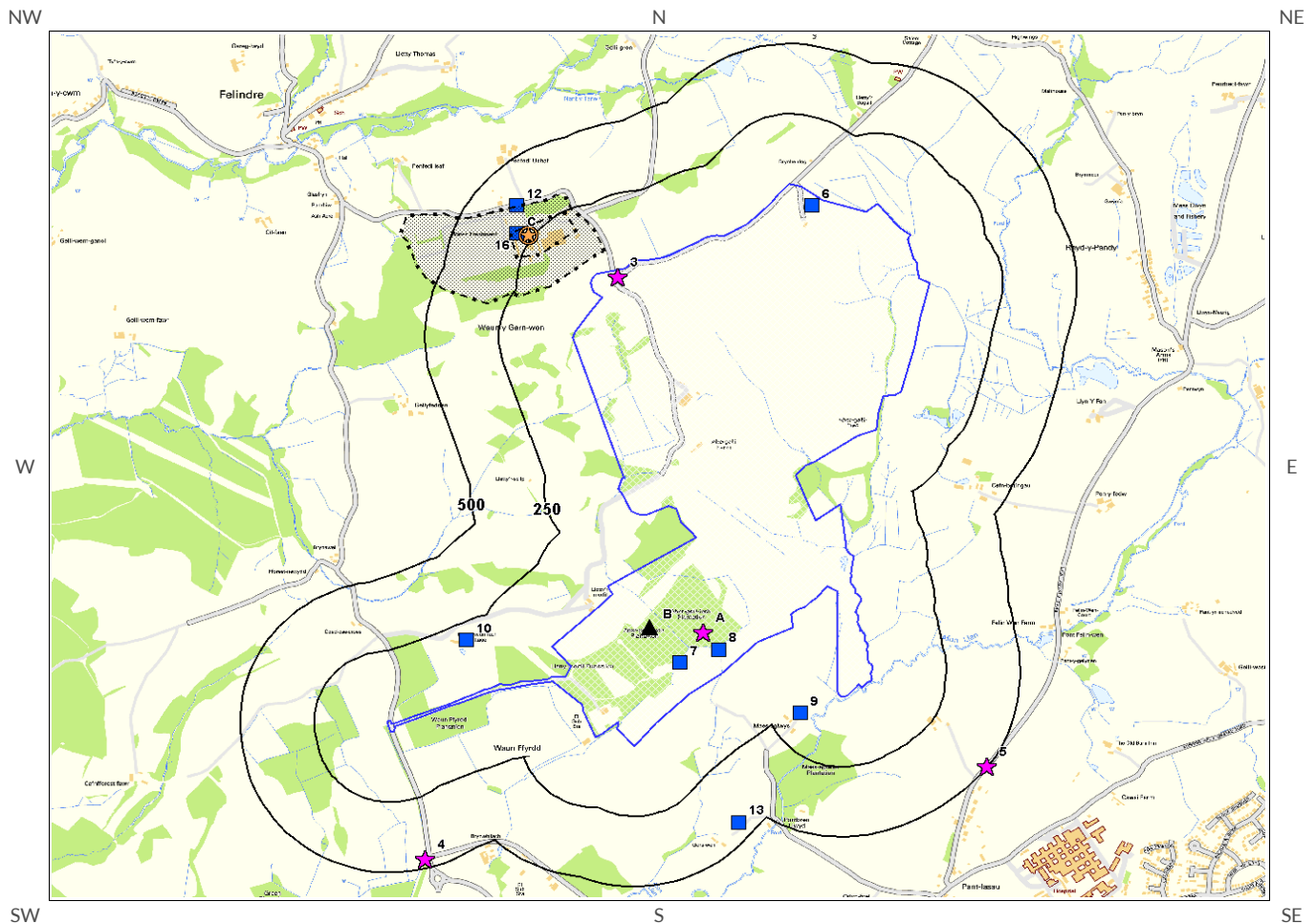
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.















1. Environmental Permits, Incidents and Registers Map



Environmental Permits, Incidents and Registers Legend



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- | | | | | | |
|---|--------------------|---|-------------------------------|---|--|
|  | Site Outline |  | Recorded Pollution Incident |  | RAS 3 & 4 Authorisations |
|  | Search Buffers (m) |  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |
| | |  | Dangerous Substances (List 2) |  | Part A(2) and Part B Authorised Processes |
| | |  | Water Industry Referrals |  | COMAH / NIHS Sites |
| | |  | Licenced Discharge Consents |  | Sites Determined as Contaminated Land |
| | |  | Red List Discharge Consents |  | Hazardous Substance Consents and Enforcements |



1. Environmental Permits, Incidents and Registers

1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

1.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

1.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

2

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	NGR		Details
19B	0.0	On Site	264950 200990	Operator: National Grid Gas Plc Installation Name: Felindre, Gas Compressor Station Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: RP3232LD Original Permit Number: RP3232LD EPR Reference: - Issue Date: 2/7/2007 Effective Date: 2/7/2007 Last date noted as effective: 2014-04-01 Status: Superseded
20B	0.0	On Site	264950 200990	Operator: National Grid Gas Plc Installation Name: Felindre, Gas Compressor Station Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: WP3230TU Original Permit Number: RP3232LD EPR Reference: - Issue Date: 29/3/2010 Effective Date: 29/3/2010 Last date noted as effective: 2014-04-01 Status: Effective

1.1.3 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

1.1.4 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

1.1.5 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

1.1.6 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

1.1.7 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

0

Database searched and no data found.

1.1.8 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

1.1.9 Records of Licensed Discharge Consents within 500m of the study site:

8

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details	
6	0.0	On Site	265500 202500	Address: Abergelli Farm Felindre Swansea, Abergelli Farm Felindre Swansea, Felindre Swansea, Swansea, Swansea, SWANSEA Effluent Type: Unspecified Permit Number: BP0051701 Permit Version: 1	Receiving Water: To Land Status: Consent Expired - Time Limit Issue date: 14/8/1987 Effective Date: 14/8/1987 Revocation Date: -

ID	Distance	Direction	NGR	Details	
7	0.0	On Site	265052 200870	Address: Nat'l Grid Compressor Sta Swansea, Nat'l Grid Newb'd Compressor Sta, Felindre, Swansea, SA5 7LU Effluent Type: Sewage Discharges - Final/treated Effluent - Not Water Company Permit Number: BP0370301 Permit Version: 1	Receiving Water: Unnamed Land Drain Status: Surrendered Under Epr 2010 Issue date: 2/11/2007 Effective Date: 2/11/2007 Revocation Date: 26/8/2010
8	0.0	On Site	265183 200917	Address: National Grid Site Llangyfelach, National Grid Site, Llangyfelach, Felindre, Swansea Effluent Type: Trade Discharges - Site Drainage Permit Number: BP0361101 Permit Version: 1	Receiving Water: Afon Llan Status: Surrendered Under Epr 2010 Issue date: - Effective Date: - Revocation Date: 16/6/2011
9	146.0	SW	265460 200690	Address: Maes Eglwys Farm Pantlasau Morrsto, Maes Eglwys Farm Pantlasau Morri, Pantlasau Morrston, Morrston Effluent Type: Unspecified Permit Number: BF0214701 Permit Version: 1	Receiving Water: To Land Nr. River Llan Status: Consent Expired - Time Limit Issue date: 1/2/1979 Effective Date: 1/2/1979 Revocation Date: 22/4/1994
10	188.0	N	264330 200950	Address: Penywaun Fach Cottages Felindre Swa, Penywaun Fach Cottages Felindre, Felindre Swansea., Swansea. Effluent Type: Unspecified Permit Number: BP0108201 Permit Version: 1	Receiving Water: To Land Status: Consent Expired - Time Limit Issue date: - Effective Date: - Revocation Date: -
11 C	302.0	NW	264500 202400	Address: Felindre Chlor.overflow, Felindre Chlor.overflow Effluent Type: Unspecified Permit Number: BP0180001 Permit Version: 1	Receiving Water: To Land Status: Consent Expired - Time Limit Issue date: 2/10/1989 Effective Date: 2/10/1989 Revocation Date: 14/3/1994
12	365.0	NW	264500 202500	Address: Felindre Wtw (septic Tank Disc, Felindre Wtw (septic Tank Disc Effluent Type: Unspecified Permit Number: BC0011901 Permit Version: 1	Receiving Water: Unnamed Trib. River Lliw Status: Consent Expired - Time Limit Issue date: 22/5/1970 Effective Date: 22/5/1970 Revocation Date: -
13	442.0	SE	265250 200300	Address: Bungalow At Gorswen Farm Pontlasse, Bungalow At Gorswen Farm Pontlas, Pontlasse Swansea , Swansea , Swansea , Effluent Type: Unspecified Permit Number: BP0011401 Permit Version: 1	Receiving Water: To Land Status: Consent Expired - Time Limit Issue date: 7/2/1986 Effective Date: 7/2/1986 Revocation Date: -

1.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

1

The following records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
21C	265.0	NW	HAZ 5/92	264539 202392	Approved	No details.	Felindre Waterworks, Felindre, Welsh Water, Swansea, West Glamorgan, SA5 7NP	Storage of chlorine.	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

2

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	Company	Address	Operational Status	Tier
16	58.0	NW	Dwr Cymru / Welsh Water	Dwr Cymru / Welsh Water, Felindre Water Treatment Works, Felindre, Swansea, Sa5 7np	Current COMAH Site	COMAH Lower Tier Operator
17C	168.0	NW	Welsh Water Development Authority	Welsh Water Development Authority(glamorgan Water Division), Felindre Treatment Plant, Felindre, Sa5 7np	Historical NIHHS Site	-

1.3 Environment Agency Recorded Pollution Incidents

1.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

5

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance	Direction	NGR	Details	
1A	0.0	On Site	265129 200977	Incident Date: 25/06/2002 Incident Identification: 87384 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
2A	0.0	On Site	265129 200977	Incident Date: 25/06/2002 Incident Identification: 87384 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
3	0.0	On Site	264841 202246	Incident Date: 10/05/2007 Incident Identification: 493773 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	467.0	S	264189 200169	Incident Date: 16/08/2002 Incident Identification: 100861 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
5	496.0	SE	266090 200500	Incident Date: 10/05/2001 Incident Identification: 5132 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

1.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

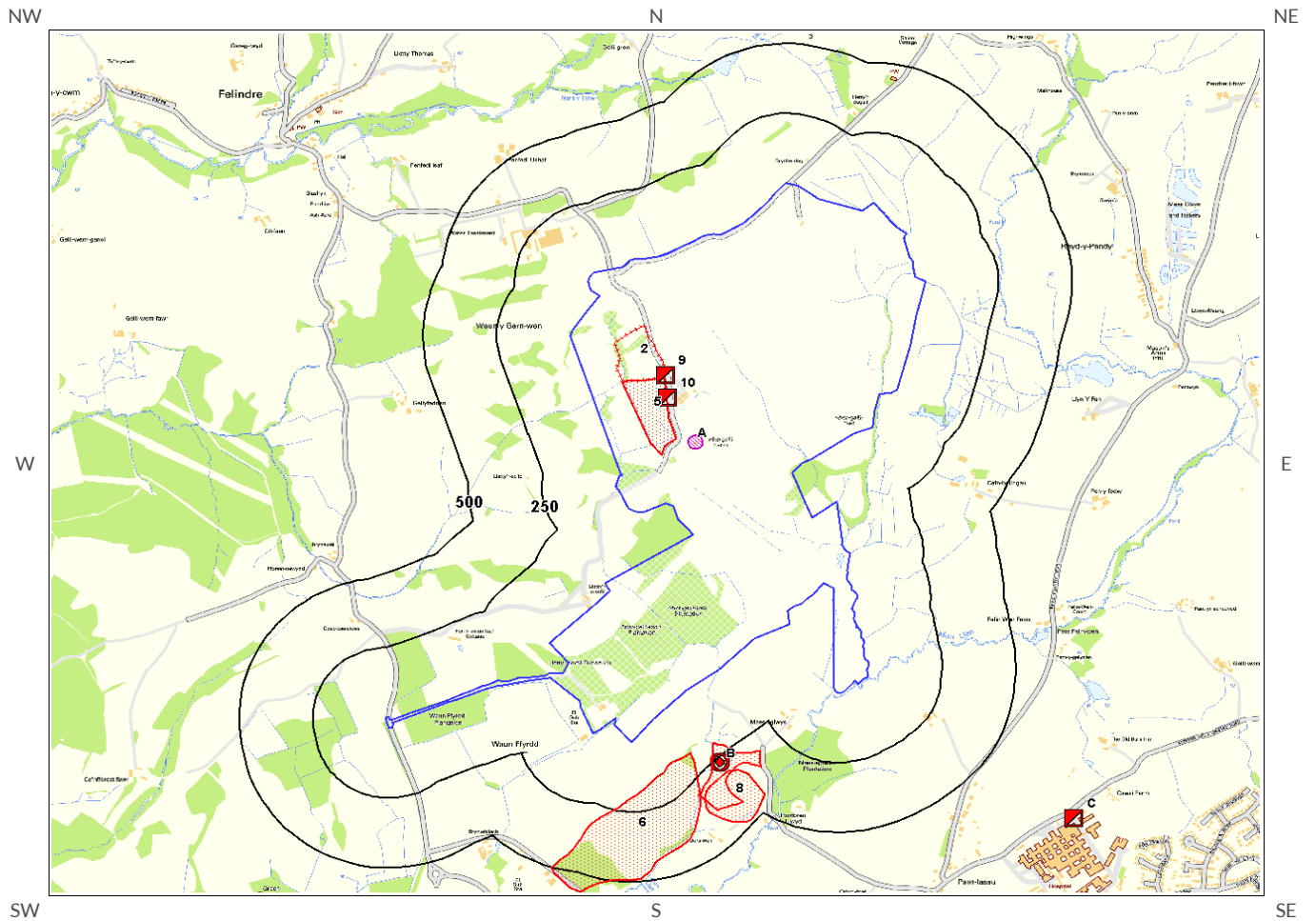
1.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

Database searched and no data found.




2. Landfill and Other Waste Sites Map



Landfill and Other Waste Sites Legend



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- | | | | | | |
|---|--------------------|---|--------------------------|---|----------------------------------|
|  | Site Outline |  | E.A. Active Landfill |  | Historic and Planned Waste Sites |
|  | Search Buffers (m) |  | E.A. Historic Landfill |  | E.A. Licensed Waste Site |
| | |  | Local Authority Landfill |  | BGS / DoE Survey Landfill |



2. Landfill and Other Waste Sites

2.1 Landfill Sites

2.1.1 Records from Environment Agency landfill data within 1000m of the study site:

1

The following Environment Agency landfill records are represented as polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
2	0.0	On Site	265014 201890	Address: Abergelli Fach Farm, Felindre, Swansea, SA5 7NN Landfill Reference: 34108.0 Environmental Permitting Regulations (Waste) Reference: LLE001 Landfill Type: A5 : Landfill taking Non-Biodegradable Wastes Operator: Llewellyn Bryn Status: Closure IPPC Reference: EPR Reference:

2.1.2 Records of Environment Agency historic landfill sites within 1500m of the study site:

4

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
5	0.0	On Site	265020 201808	Site Address: Abergelli Fach Farm Landfill Extension, Felindre Waste Licence: Yes Site Reference: - Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 06-Sep-1999 Licence Surrendered: Licence Hold Address: Felindre Operator: Abergelli Fach Farm Landfill Extension
6	147.0	SE	264900 200200	Site Address: British Steel Corporation, Velindre, Pant-Iasau, Swansea Waste Licence: Yes Site Reference: - Waste Type: Industrial, Household, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 21-Jun-1991 Licence Surrendered: 20-Jun-1994 Licence Hold Address: Velindre, Swansea Operator: -
7B	200.0	SE	265200 200400	Site Address: Gorswen Farm, Pontdassau, Llangyfelach, Glamorgan Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -

ID	Distance (m)	Direction	NGR	Details
8	302.0	SE	265200 200300	Site Address: Gors Wen, Felindre Waste Licence: - Site Reference: - Waste Type: Inert, Industrial, Special, Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -

2.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

1

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
1B	266.0	SE	26520 0.0 20050 0.0	Address: Gorswen Farm, Pontdassau, Llangyfelach, Glam BGS Number: 1208.0 Risk: No risk to aquifer Waste Type: N/A

2.1.4 Records of Local Authority landfill sites within 1500m of the study site:

0

Database searched and no data found.

2.2 Other Waste Sites

2.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

2

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
3A	0.0	On Site	265117 201648	Type of Site: Recycling Facility Site Address: Abergelli Fach Farm, Felindre, SWANSEA, West Glamorgan, SA5 7NN Planning Application Reference: 2008/0827 Date: - Further Details: Scheme comprises change of use from agricultural land to recycling of green waste and composting treatment. An application (ref: 2008/0827) for detailed planning permission was refused by Swansea C.C. A detailed planning application has been refused. Data Source: Historic Planning Application Data Type: Point

ID	Distance (m)	Direction	NGR	Details	
4A	0.0	On Site	265117 201648	Type of Site: Waste Transfer Station Site Address: Landfill Site, Abergelli Fach Farm, Felindre, SWANSEA, West Glamorgan, SA5 7NN Planning Application Reference: 2002/0312 Date: -	Further Details: Scheme comprises provision of a waste transfer station together with the removal of inert material and engineering works at Abergelli tip. An application (ref: 2002/0312) for Detailed Planning permission was submitted to Swansea C.C. on 22nd February 2002. Data Source: Historic Planning Application Data Type: Point

2.2.2 Records of Environment Agency licensed waste sites within 1500m of the study site:

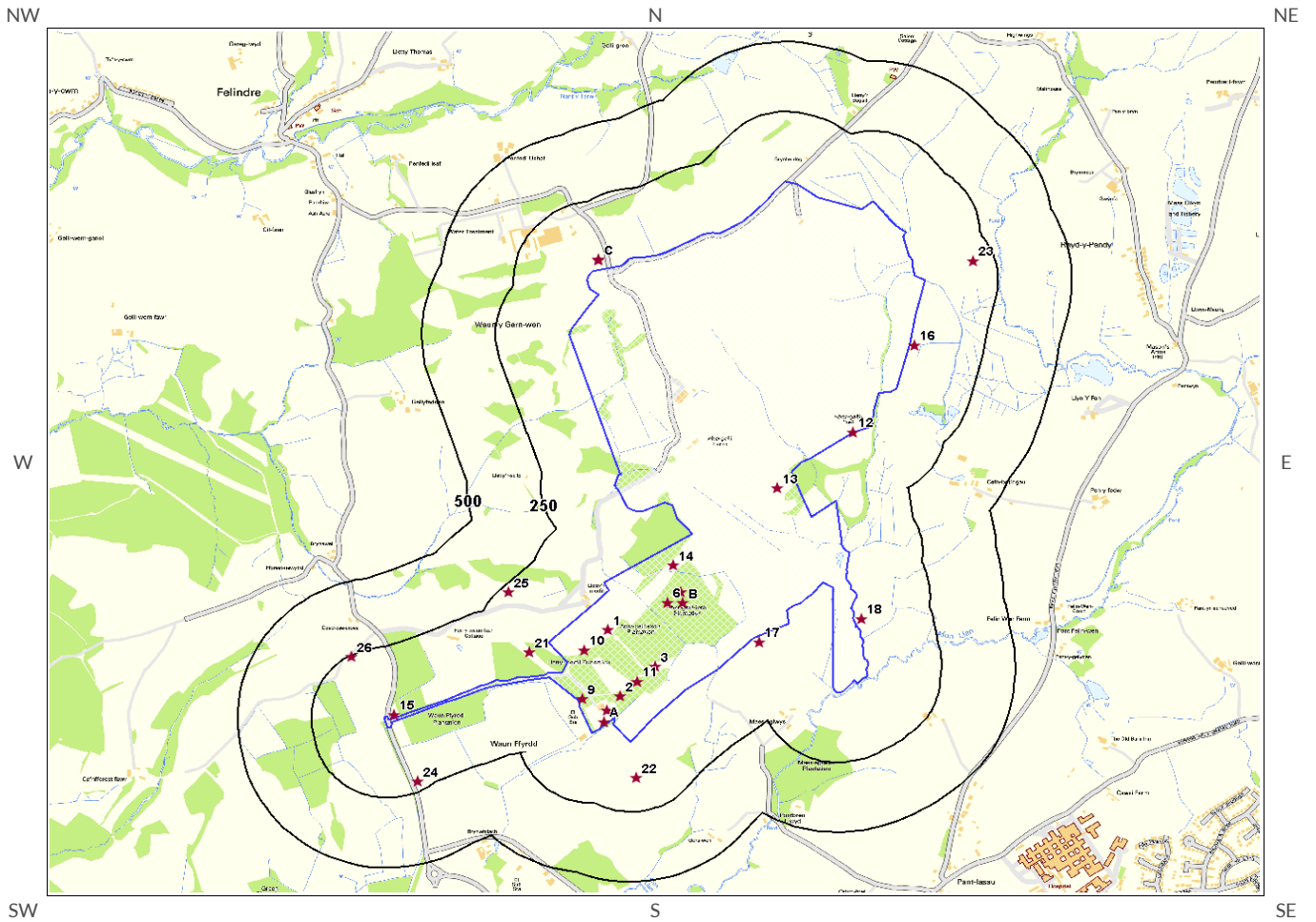
8

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
9	0.0	On Site	265014 201890	Site Address: Abergelli Fach Farm, Felindre, Swansea, SA5 7NN Type: Landfill taking Non-Biodegradable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LLE001 EPR reference: EA/EPR/XP3198FC/A001 Operator: Llewellyn Bryn Waste Management licence No: 34108 Annual Tonnage: 82628.0	Issue Date: 29/09/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Abergelli Fach Farm Correspondence Address: -, -
10	0.0	On Site	265020 201808	Site Address: - Type: Landfill taking Non-Biodegradable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LLE002 EPR reference: EA/EPR/CP3098FZ/V002 Operator: Llewellyn William Bryn Waste Management licence No: 34165 Annual Tonnage: 35000.0	Issue Date: 06/09/1999 Effective Date: - Modified: 10/10/2003 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Abergelli Fach Farm Landfill Extension Correspondence Address: -, -
11C	864.0	SE	266400 200300	Site Address: Morryston Hospital, Heol Maes Eglwys, Morryston, Swansea, SA6 6NL Type: Clinical Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOR003 EPR reference: EA/EPR/TP3598FV/S002 Operator: Morryston Hospital NHS Trust Waste Management licence No: 34135 Annual Tonnage: 1606.0	Issue Date: 30/03/1996 Effective Date: - Modified: - Surrendered Date: 11/04/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Morryston Hospital Correspondence Address: -, -
12C	864.0	SE	266400 200300	Site Address: Morryston Hospital, Heol Maes Eglwys, Morryston, Swansea, SA6 6NL Type: Clinical Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOR003 EPR reference: - Operator: Morryston Hospital N H S Trust Waste Management licence No: 34135 Annual Tonnage: 0.0	Issue Date: 30/03/1996 Effective Date: - Modified: - Surrendered Date: 11/04/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Morryston Hospital Correspondence Address: -, Morryston Hospital, Heol Maes Eglwys, Morryston, Swansea, SA6 6NL

ID	Distance (m)	Direction	NGR	Details
Not shown	1209.0	S	263976 199417	<p>Site Address: Jr Works, Bryntywod, Swansea, SA5 7LE Type: - Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GAV004 EPR reference: EA/EPR/EB3397TU/A001 Operator: Mr Gavin Griffiths Waste Management licence No: 900031 Annual Tonnage: 0.0</p> <p>Issue Date: 09/09/2013 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Griffiths Recycling Correspondence Address: -, -</p>
Not shown	1209.0	S	263976 199417	<p>Site Address: Jr Works, Bryntywod, Langyfelach, Swansea, SA5 7LE Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GAV004 EPR reference: EA/EPR/EB3397TU/A001 Operator: Mr Gavin Griffiths Waste Management licence No: 900031 Annual Tonnage: 75000.0</p> <p>Issue Date: 09/09/2013 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Griffiths Recycling Correspondence Address: -, -</p>
Not shown	1222.0	S	263865 199418	<p>Site Address: J R Works, Bryntywod Llangyfellach, Swansea, W Glamorgan, SA5 7LE Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GRI015 EPR reference: DP3193SR/V002 Operator: Griffiths Pallet Services Ltd Waste Management licence No: 100069 Annual Tonnage: 0.0</p> <p>Issue Date: 08/04/2008 Effective Date: - Modified: 29/01/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Griffiths Pallet Services Correspondence Address: -, -</p>
Not shown	1222.0	S	263865 199418	<p>Site Address: Former J R Works, Bryntywod, Llangyfellach, Swansea, West Galmorgan, SA5 7LE Type: Material Recycling Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GRI039 EPR reference: EA/EPR/NP3699VX/T001 Operator: Griffiths Waste Management Ltd Waste Management licence No: 100069 Annual Tonnage: 24999.0</p> <p>Issue Date: 08/04/2008 Effective Date: 23/12/2010 Modified: 29/01/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Former J R Steelworks Correspondence Address: -, -</p>

3. Current Land Use Map



Current Land Use Legend



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3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

26

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0.0	On Site	Pylon	264821 200971	SA5	Electrical Features	Infrastructure and Facilities
2	0.0	On Site	Pylon	264863 200735	SA5	Electrical Features	Infrastructure and Facilities
3	0.0	On Site	Pylon	264980 200840	SA5	Electrical Features	Infrastructure and Facilities
4A	0.0	On Site	Pylon	264807 200643	SA5	Electrical Features	Infrastructure and Facilities
5A	0.0	On Site	Electricity Sub Station	264817 200683	SA5	Electrical Features	Infrastructure and Facilities
6	0.0	On Site	Chimney	265024 201070	SA5	Chimneys	Industrial Features
7B	0.0	On Site	Gas Compressor Station	265075 201068	SA5	Gas Features	Infrastructure and Facilities
8B	0.0	On Site	Chimney	265068 201107	SA6	Chimneys	Industrial Features
9	0.0	On Site	Pylon	264733 200726	SA5	Electrical Features	Infrastructure and Facilities
10	0.0	On Site	Pylon	264742 200899	SA5	Electrical Features	Infrastructure and Facilities
11	0.0	On Site	Pylon	264922 200788	SA5	Electrical Features	Infrastructure and Facilities
12	0.0	On Site	Pylon	265653 201680	SA6	Electrical Features	Infrastructure and Facilities
13	0.0	On Site	Pylon	265395 201479	SA6	Electrical Features	Infrastructure and Facilities
14	0.0	On Site	Pylon	265041 201203	SA5	Electrical Features	Infrastructure and Facilities
15	12.0	N	Pylon	264095 200669	SA5	Electrical Features	Infrastructure and Facilities
16	14.0	E	Pylon	265860 201991	SA6	Electrical Features	Infrastructure and Facilities
17	21.0	SE	Pylon	265335 200929	SA6	Electrical Features	Infrastructure and Facilities
18	25.0	NE	Pylon	265681 201011	SA6	Electrical Features	Infrastructure and Facilities
19C	36.0	N	Gas Valve Compound	264788 202296	SA5	Gas Features	Infrastructure and Facilities
20C	38.0	N	Gas Valve Compound	264788 202298	SA5	Gas Features	Infrastructure and Facilities
21	76.0	SW	Pylon	264554 200892	SA5	Electrical Features	Infrastructure and Facilities

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
22	130.0	S	Pylon	264918 200442	SA6	Electrical Features	Infrastructure and Facilities
23	178.0	NE	Pylon	266060 202293	SA6	Electrical Features	Infrastructure and Facilities
24	217.0	SE	Pylon	264177 200429	SA5	Electrical Features	Infrastructure and Facilities
25	224.0	NW	Pylon	264485 201107	SA5	Electrical Features	Infrastructure and Facilities
26	243.0	NW	Pylon	263952 200875	SA5	Electrical Features	Infrastructure and Facilities

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site: 0

Database searched and no data found.



4. Geology

4.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

4.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
PEAT-P	PEAT	PEAT
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
PEAT-P	PEAT	PEAT
GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

4.3 Bedrock and Solid Geology

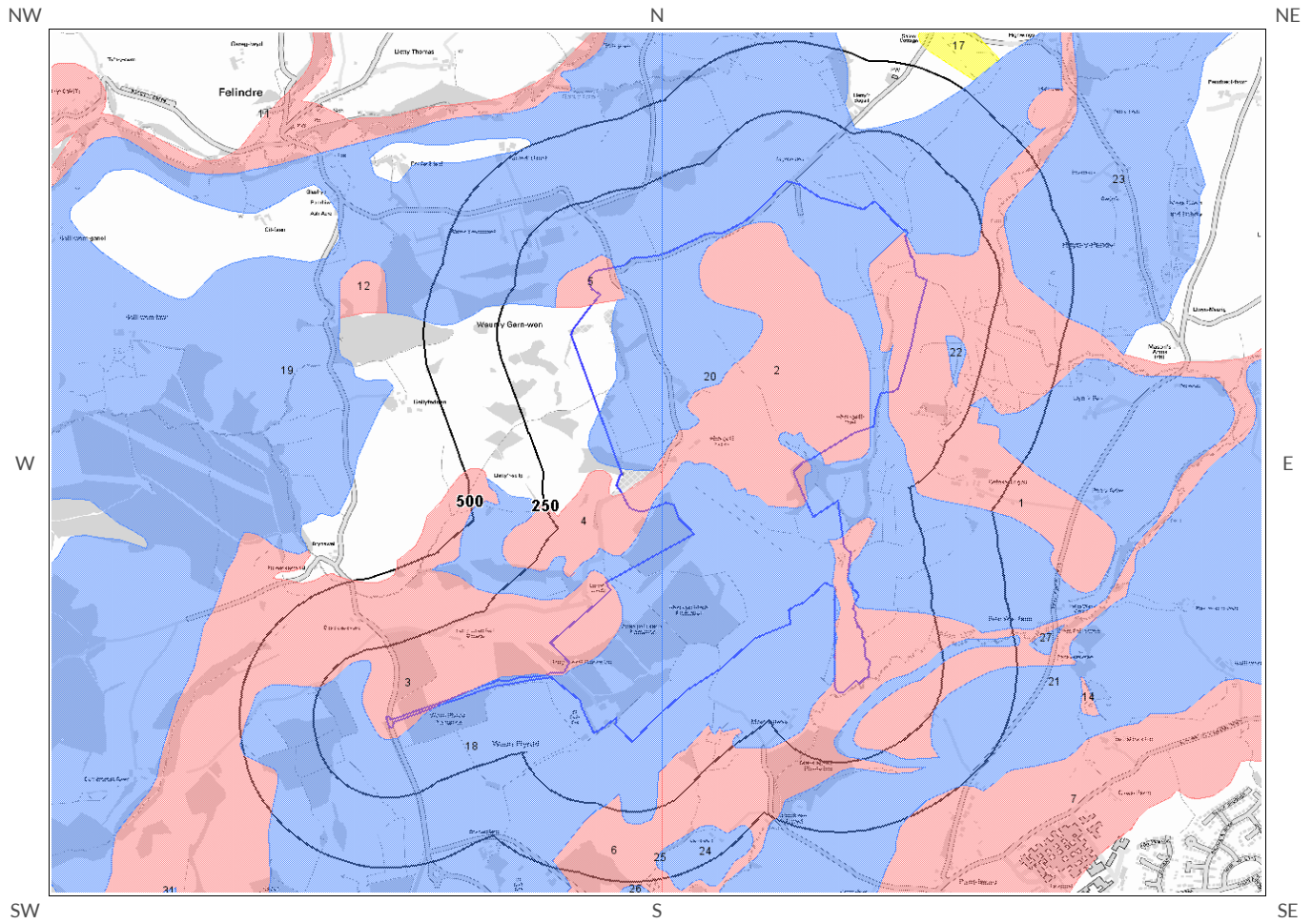
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
GDB-MDSS	GROVESEND FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
GDB-MDSS	GROVESEND FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SW-SDST	SWANSEA MEMBER	SANDSTONE
GDB-MDSS	GROVESEND FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
GDB-MDSS	GROVESEND FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
SW-MDSS	SWANSEA MEMBER	MUDSTONE, SILTSTONE AND SANDSTONE
SW-SDST	SWANSEA MEMBER	SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

5. Hydrogeology and Hydrology










5a. Aquifer Within Superficial Geology



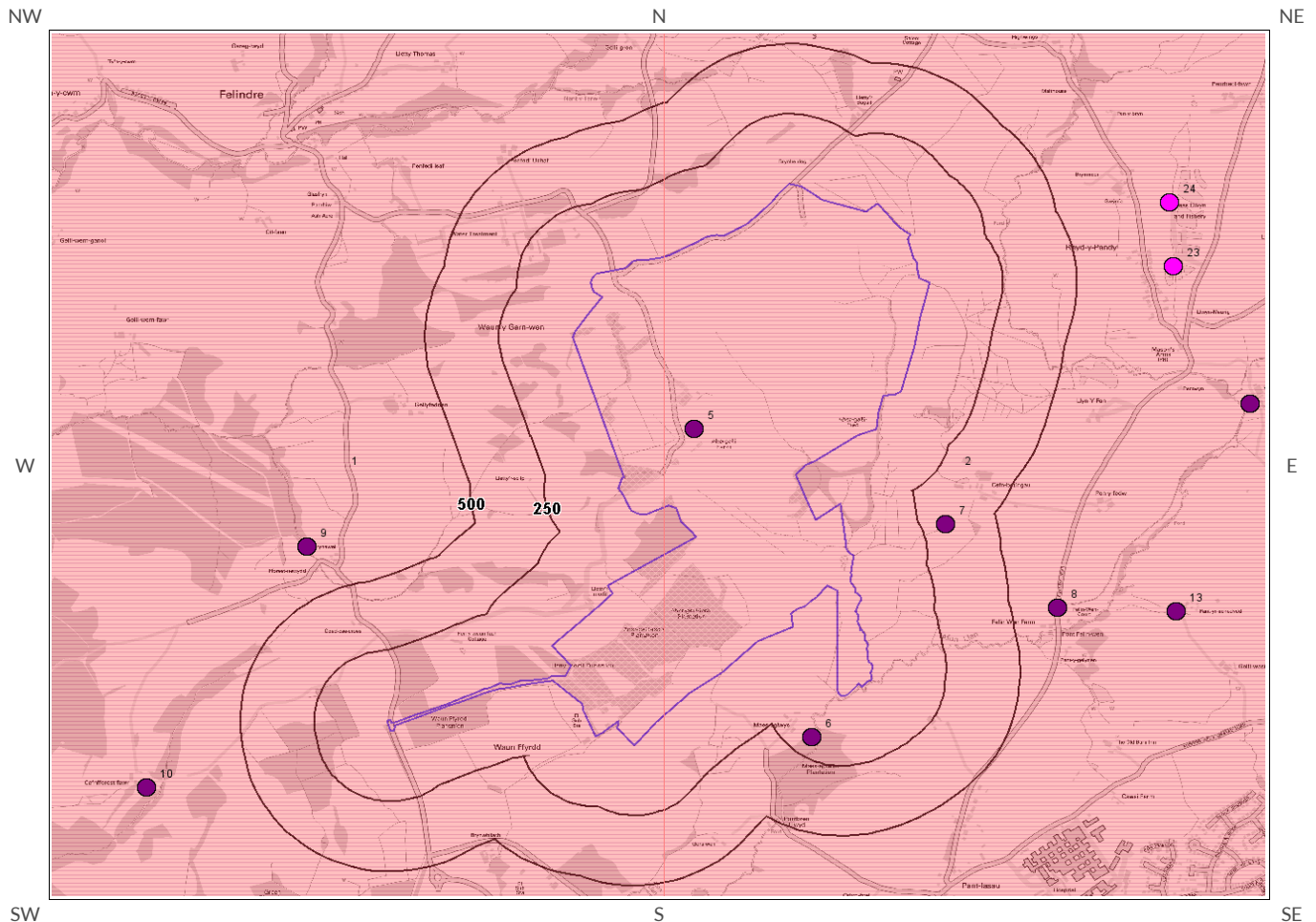
Map Legend



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- | | | | | | |
|---|--------------------|---|---|--|---|
|  | Site Outline |  | Principal Aquifer |  | Secondary Aquifer - Undifferentiated Layers |
|  | Search Buffers (m) |  | Secondary (A) Aquifer - Permeable Layers |  | Unproductive |
|  | |  | Secondary (B) Aquifer - Lower Permeability Layers |  | Unknown (lakes and landslip) |











5b. Aquifer Within Bedrock Geology and Abstraction Licenses



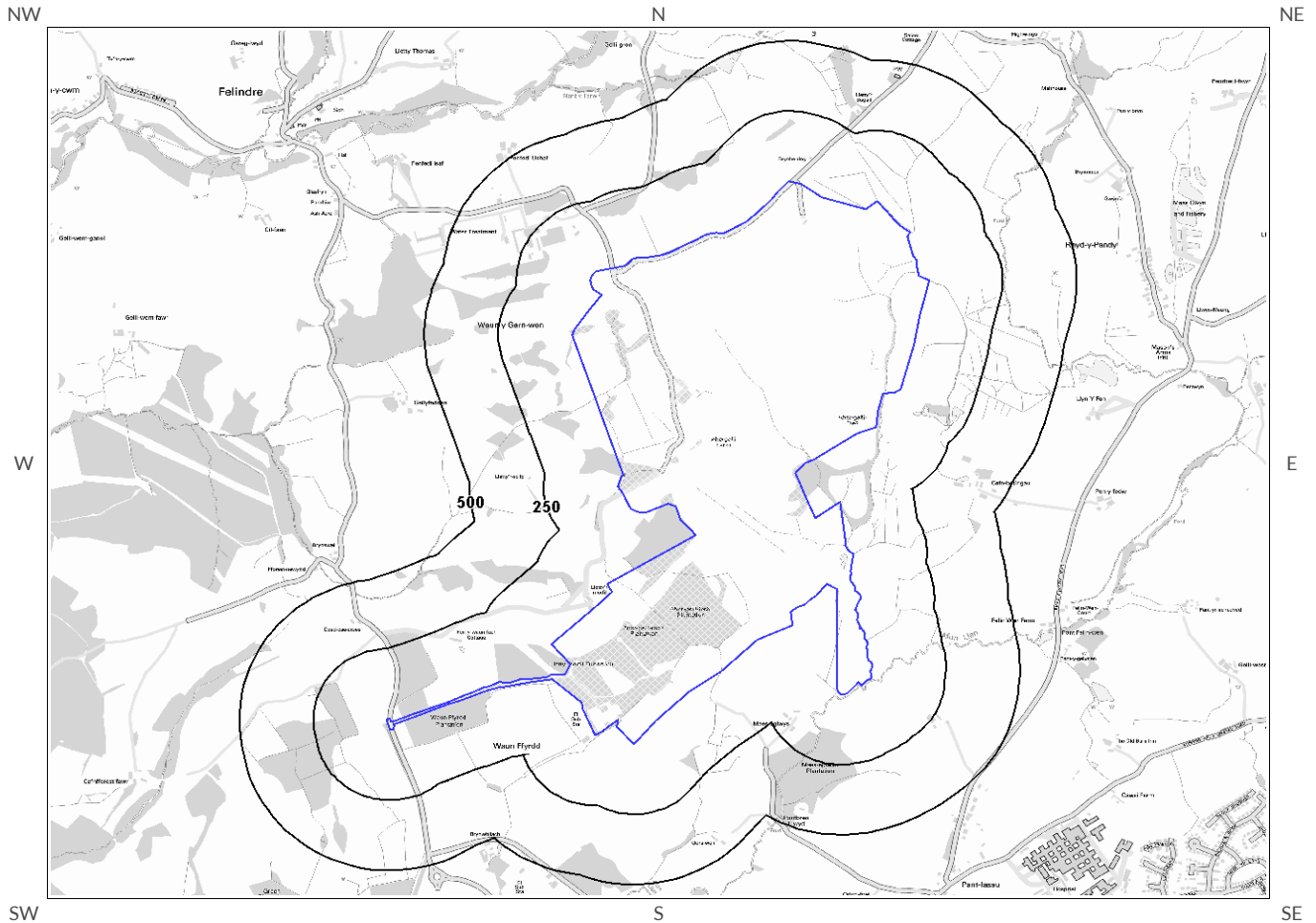
Map Legend



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- | | | | | | |
|---|--------------------|---|---|--|---|
|  | Site Outline |  | Principal Aquifer |  | Secondary Aquifer - Undifferentiated Layers |
|  | Search Buffers (m) |  | Secondary (A) Aquifer - Permeable Layers |  | Unproductive |
| | |  | Secondary (B) Aquifer - Lower Permeability Layers |  | Unknown (lakes and landslip) |
| | |  | Groundwater Abstraction Licence |  | Surface Water Abstraction Licence |











5c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



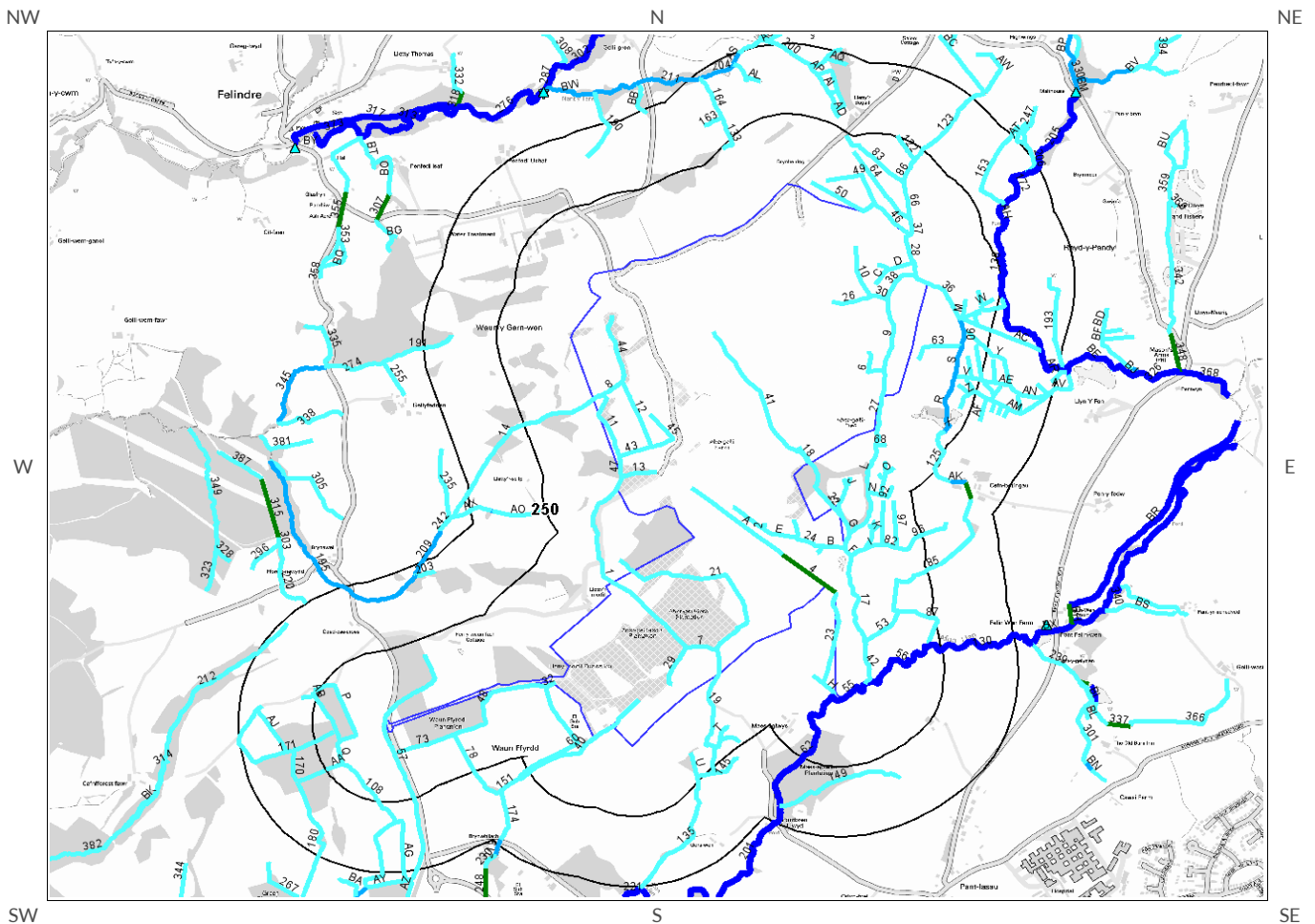
Map Legend



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-  Site Outline
-  Source Protection Zone 1 - Inner Catchment
-  Source Protection Zone 2 - Outer Catchment
-  Source Protection Zone 3 - Total Catchment
-  Source Protection Zone 4 - Zone of Special Interest
-  250
-  500
-  Search Buffers (m)
-  Search Buffers (m)
-  Potable Water Abstraction Licence
















5d. Hydrology – Detailed River Network and River Quality

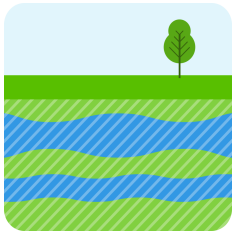


Map Legend



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- | | | | | | |
|---|--------------------|---|---------------------------------------|--|-------------------------------------|
|  | Site Outline |  | Primary River |  | Canal |
|  | Search Buffers (m) |  | Secondary River |  | Canal Tunnel |
| | |  | Tertiary River |  | Culvert |
| | |  | Lake/Reservoir |  | Multiple Channel Culvert |
| | |  | Underground River (inferred) |  | Underground River (Potential Sewer) |
| | |  | General Quality Assessment: Biology |  | Underground River (local knowledge) |
| | |  | General Quality Assessment: Chemistry | | |



5. Hydrogeology and Hydrology

5.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (5a):

ID	Distance (m)	Direction	Designation	Description
1	0.0	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	0.0	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
3	0.0	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
4	0.0	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
5	0.0	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
18	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
19	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
20	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
21	51.0	SE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
22	108.0	E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
6	137.0	SE	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
23	296.0	E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

ID	Distance (m)	Direction	Designation	Description
24	376.0	SE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
25	401.0	S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
7	476.0	SE	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

5.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? **Yes**

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	Designation	Description
1	0.0	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	0.0	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

5.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? **Yes**

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	NGR	Details
5	0.0	On Site	265100 201700	Licence No: 22/59/4/0027 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well In Enclosure 481 At Abergelli Farm, Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 5/3596 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
6	179.0	SW	265500 200600	Licence No: 22/59/4/0013 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well On Land Belonging To Maeseglwys Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3627 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:
7	328.0	E	265950 201360	Licence No: 22/59/4/0022 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring At Cwfn Betinge Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3625 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:
8	655.0	E	266330 201060	Licence No: 22/59/4/0008 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well At Felin Wen Court Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/809 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:
9	678.0	NW	263790 201280	Licence No: 22/59/4/0011 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring At Fforest Newydd Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/267 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 26/3/1999 Version End Date:
10	848.0	W	263250 200420	Licence No: 22/59/4/0016 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring In Field 830,cefn Fforest Fawr Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3595 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:
Not shown	870.0	N	265750 203390	Licence No: 22/59/4/0024 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well At Rhosfawr Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3495 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:
Not shown	888.0	N	264580 203130	Licence No: 22/59/4/0003 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring In Field No. 5700 At Lletty-thomas Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:
13	1045.0	E	266730 201050	Licence No: 22/59/4/0006 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring In Field No. 586 At Gelliwastad Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3534 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
14	1151.0	E	266980 201790	Licence No: 22/59/4/0025 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring In Enc. South West Of Pontycoedcae Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3613 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:
Not shown	1363.0	E	267260 202190	Licence No: 22/59/4/0019 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well In Field No. 437 At Nantymilwr Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3473 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/2/1993 Version End Date:
Not shown	1413.0	NW	264830 203860	Licence No: 22/59/4/0005 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring 1 At Pant Y Fallen Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3471 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:
Not shown	1539.0	E	267200 200460	Licence No: 22/59/1/0057 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well & Reservoir In Enc. No. 2047 Nr Wernfadog Cottage Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3514 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 30/3/1966 Version End Date:
Not shown	1543.0	N	265730 204090	Licence No: 22/59/4/0039 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well At Cwmcile Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR3576 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 30/3/1966 Version End Date:
Not shown	1661.0	N	266080 204130	Licence No: 22/59/4/0039 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring Adjacent To Pentre Bedw Cottage Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR3576 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 30/3/1966 Version End Date:
Not shown	1824.0	N	265500 204400	Licence No: 22/59/4/0040 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring In Enc. No. 847 At Maestir Mawr Farm Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR3614 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 30/3/1966 Version End Date:
Not shown	1906.0	E	267610 200910	Licence No: 22/59/1/0013 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Well In Field No. 349 At Penrhiwgwysfa Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3580 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1920.0	N	265250 204490	Licence No: 22/59/4/0005 Details: General Farming & Domestic Direct Source: Eaw Groundwater Point: Spring 2 At Pant Y Fallen Farm Data Type: Point Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: WR5/3471 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/12/1965 Version End Date:

5.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (5b):

ID	Distance (m)	Direction	NGR	Details
23	825.0	E	266720 202280	Licence No: 22/59/4/0066 Details: Lake & Pond Throughflow Direct Source: Eaw Surface Water Point: Un-named Trib Of Afon Llan Data Type: Point Annual Volume (m ³): 469612 Max Daily Volume (m ³): 2730 Application No: - Original Start Date: 17/4/1990 Expiry Date: - Issue No: 1 Version Start Date: 1/4/2005 Version End Date:
24	862.0	E	266710 202510	Licence No: 22/59/4/0066 Details: Lake & Pond Throughflow Direct Source: Eaw Surface Water Point: Un-named Trib Of Afon Llan Data Type: Point Annual Volume (m ³): 469612 Max Daily Volume (m ³): 2730 Application No: - Original Start Date: 17/4/1990 Expiry Date: - Issue No: 1 Version Start Date: 1/4/2005 Version End Date:
Not shown	1014.0	NW	264890 203440	Licence No: 22/59/4/0065 Details: Potable Water Supply - Storage Direct Source: Eaw Surface Water Point: Lower Lliw Reservoir Data Type: Point Annual Volume (m ³): 82964500 Max Daily Volume (m ³): 227300 Application No: - Original Start Date: 9/8/1989 Expiry Date: - Issue No: 101 Version Start Date: 18/9/2003 Version End Date:
Not shown	1014.0	NW	264890 203440	Licence No: 22/59/4/0065 Details: Potable Water Supply - Storage Direct Source: Eaw Surface Water Point: Lower Lliw Reservoir - Point B Data Type: Point Annual Volume (m ³): 82964500 Max Daily Volume (m ³): 454600 Application No: - Original Start Date: 9/8/1989 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2011 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1951.0	S	266130 198870	Licence No: 22/59/1/0083 Details: Spray Irrigation - Direct Direct Source: Eaw Surface Water Point: Unnamed Stream Data Type: Point	Annual Volume (m ³): - Max Daily Volume (m ³): - Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 1/4/2001 Version End Date:

5.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (5c):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1014.0	NW	264890 203440	Licence No: 22/59/4/0065 Details: Potable Water Supply - Storage Direct Source: Eaw Surface Water Point: Lower Lliw Reservoir Data Type: Point	Annual Volume (m ³): 82964500 Max Daily Volume (m ³): 227300 Original Application No: - Original Start Date: 9/8/1989 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
Not shown	1014.0	NW	264890 203440	Licence No: 22/59/4/0065 Details: Potable Water Supply - Storage Direct Source: Eaw Surface Water Point: Lower Lliw Reservoir - Point B Data Type: Point	Annual Volume (m ³): 82964500 Max Daily Volume (m ³): 454600 Original Application No: - Original Start Date: 9/8/1989 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:

5.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

5.7 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	H2	Deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential.
0	On Site	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
0	On Site	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.
0	On Site	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
194	N	Minor Aquifer/High Leaching Potential	H3	Coarse textured or moderately shallow soils which readily transmit non-adsorbed pollutants and liquid discharges but have some ability to attenuate adsorbed pollutants because of their clay or organic matter content.
243	NW	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.
440	S	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.

5.8 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site? Yes

5.8.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (5d):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
399BW	667.0	N	264600 202900	River Name: Loughor Lliw Reach: Conf.nant Y Crimp - Conf Un Named Trib. End/Start of Stretch: Start of Stretch NGR	A	A	A	A	B
400BW	667.0	N	264600 202900	River Name: Loughor Lliw Reach: Conf Un Named Trib - Lower Lliw Res End/Start of Stretch: End of Stretch NGR	A	A	A	A	B
Not shown	954.0	NW	264800 203300	River Name: Loughor Lliw Reach: Conf Un Named Trib - Lower Lliw Res End/Start of Stretch: Start of Stretch NGR	A	A	A	A	B
Not shown	1333.0	S	263900 199300	River Name: Llan Reach: Melin Llan Br Llangafelach - Cuckoo Mill End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B
Not shown	1333.0	S	263900 199300	River Name: Llan Reach: Cuckoo Mill - Felin-wen End/Start of Stretch: End of Stretch NGR	B	B	B	B	B

5.8.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (5d):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
404BX	614.0	E	266300 201000	River Name: Llan Reach: Cuckoo Mill - Felin-wen End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
405BX	614.0	E	266300 201000	River Name: Llan Reach: Felin-wen - Cynghordy End/Start of Stretch: End of Stretch NGR	A	A	A	A	-
406BW	667.0	N	264600 202900	River Name: Lliw Reach: Conf.nant Y Crimp - Conf Un Named Trib. End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
407BW	667.0	N	264600 202900	River Name: Lliw Reach: Conf Un Named Trib - Lower Lliw Res End/Start of Stretch: End of Stretch NGR	A	A	A	A	-
408BM	759.0	NE	266400 202900	River Name: Llan Reach: Felin-wen - Cynghordy End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
Not shown	954.0	NW	264800 203300	River Name: Lliw Reach: Conf Un Named Trib - Lower Lliw Res End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-
410BY	1097.0	NW	263760 202700	River Name: Lliw Reach: Conf.nant Y Crimp - Conf Un Named Trib. End/Start of Stretch: Sample Point NGR	A	A	A	A	-
411BY	1097.0	NW	263760 202700	River Name: Lliw Reach: Conf Un Named Trib - Lower Lliw Res End/Start of Stretch: Sample Point NGR	A	A	A	A	-
Not shown	1333.0	S	263900 199300	River Name: Llan Reach: Cuckoo Mill - Felin-wen End/Start of Stretch: End of Stretch NGR	A	A	A	A	-
Not shown	1333.0	S	263900 199300	River Name: Llan Reach: Melin Llan Br Llangafelach - Cuckoo Mill End/Start of Stretch: Start of Stretch NGR	A	A	A	A	-

5.9 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (5d):

ID	Distance (m)	Direction	Details	
1	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
2	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
3	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
4	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
5B	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
6	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
7	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
8	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
9	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 A	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 A	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
19	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
20 E	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
22	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
23	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
24	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
25 B	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
26	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
27	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
28	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
29	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
30	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
31 C	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
32	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
33 C	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
34 D	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
35 D	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
36	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
37	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
38	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
39 E	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
40	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
41	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
42	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
43	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
44	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
45	0.0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
46	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
47	0.0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
48	2.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
49	2.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
50	2.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
51 F	2.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
52 F	2.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
53	3.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
54 B	3.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
55	3.0	SE	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
56	3.0	SE	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
57	4.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
58 H	8.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
59 G	9.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
60	14.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
61 G	24.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
62	26.0	SW	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
63	31.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
64	40.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
65 H	41.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
66	50.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
67 L	52.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
68	52.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
69I	52.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
70I	52.0	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
71J	68.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
72J	68.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
73	76.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
74 K	96.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
75 K	98.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
76 K	98.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
77 K	99.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
78	102.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
79 P	108.0	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
80 N	109.0	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
81 K	112.0	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
82	112.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
83	116.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
84 L	118.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
85	119.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
86	122.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
87	136.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
88 M	136.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
89 M	136.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
90	139.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
91 N	147.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
92	147.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
93 M	149.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
94 O	151.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
95 L	152.0	S	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
96	155.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
97	155.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
98 O	156.0	S	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
99 S	158.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
10 OR	158.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
10 1U	160.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 2V	164.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 3P	165.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 4Q	165.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 5T	170.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
10 6Y	172.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 7M	175.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 8	180.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
10 9Q	182.0	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 0R	184.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 1M	185.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 2S	189.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 3A A	190.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 4T	191.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 5T	191.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 6M	196.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 7W	196.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 8U	198.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11 9A C	199.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 0X	200.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
12 1V	200.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 2	203.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 3	203.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 4W	203.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 5	204.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 6X	208.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
12 7X	208.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
12 8Y	208.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
12 9X	209.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
13 0	214.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
13 1R	214.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 2V	220.0	E	River Name: Drains Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 3	230.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 4Z	232.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 5	234.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 6U	234.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 7Z	244.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13 8	249.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
13 9A A	253.0	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 0A B	256.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 1A B	256.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 2Z	258.0	E	River Name: Drains Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 3A C	264.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
14 4Z	264.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 5	267.0	SE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 6A O	276.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 7Y	277.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
14 8A D	282.0	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14 9	283.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 0A F	290.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 1	290.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 2Z	291.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 3	294.0	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 4A D	301.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 5A D	301.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 6A E	303.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 7A E	310.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 8A F	310.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15 9A F	311.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 0A K	315.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
16 1A H	317.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
16 2A G	320.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 3	320.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 4	320.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 5A F	321.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 6A F	322.0	E	River Name: Drains Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 7A G	322.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16 8A H	324.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
16 9A H	324.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
17 0	328.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 1	328.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 2	342.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
17 3A F	343.0	E	River Name: Drains Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 4	345.0	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 5AI	348.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 6AI	348.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 7A F	348.0	E	River Name: Drains Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 8A J	350.0	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17 9A J	350.0	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 0	354.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 1A K	359.0	SE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
18 2AI	365.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 3A F	366.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 4A M	372.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 5A N	375.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 6A L	376.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 7A L	388.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 8A M	391.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
18 9A P	400.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
190	403.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
191	403.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
192AL	406.0	N	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
193	411.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
194AN	413.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
195	423.0	N	River Name: Nant y Crimp Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
196AO	423.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
197AX	430.0	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
198AR	430.0	E	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
199AP	431.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
200	433.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
201	439.0	SW	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
202AN	439.0	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
203	453.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
204	455.0	NW	River Name: Nant y Tarw Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
205	456.0	NE	River Name: Afon Llan Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
206	456.0	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
207AQ	463.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
208AS	464.0	NW	River Name: Nant y Tarw Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
209	464.0	NW	River Name: Nant y Crimp Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
210AQ	466.0	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
21 1	478.0	NW	River Name: Nant y Tarw Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
21 2	479.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21 3	481.0	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
21 4A R	485.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21 5B B	488.0	NW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21 6A N	492.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21 7A S	493.0	N	River Name: Nant y Tarw Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21 8A T	495.0	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21 9A V	495.0	E	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
22 0	499.0	NW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

5.10 Surface Water Features

Are there any surface water features within 250m of the study site?

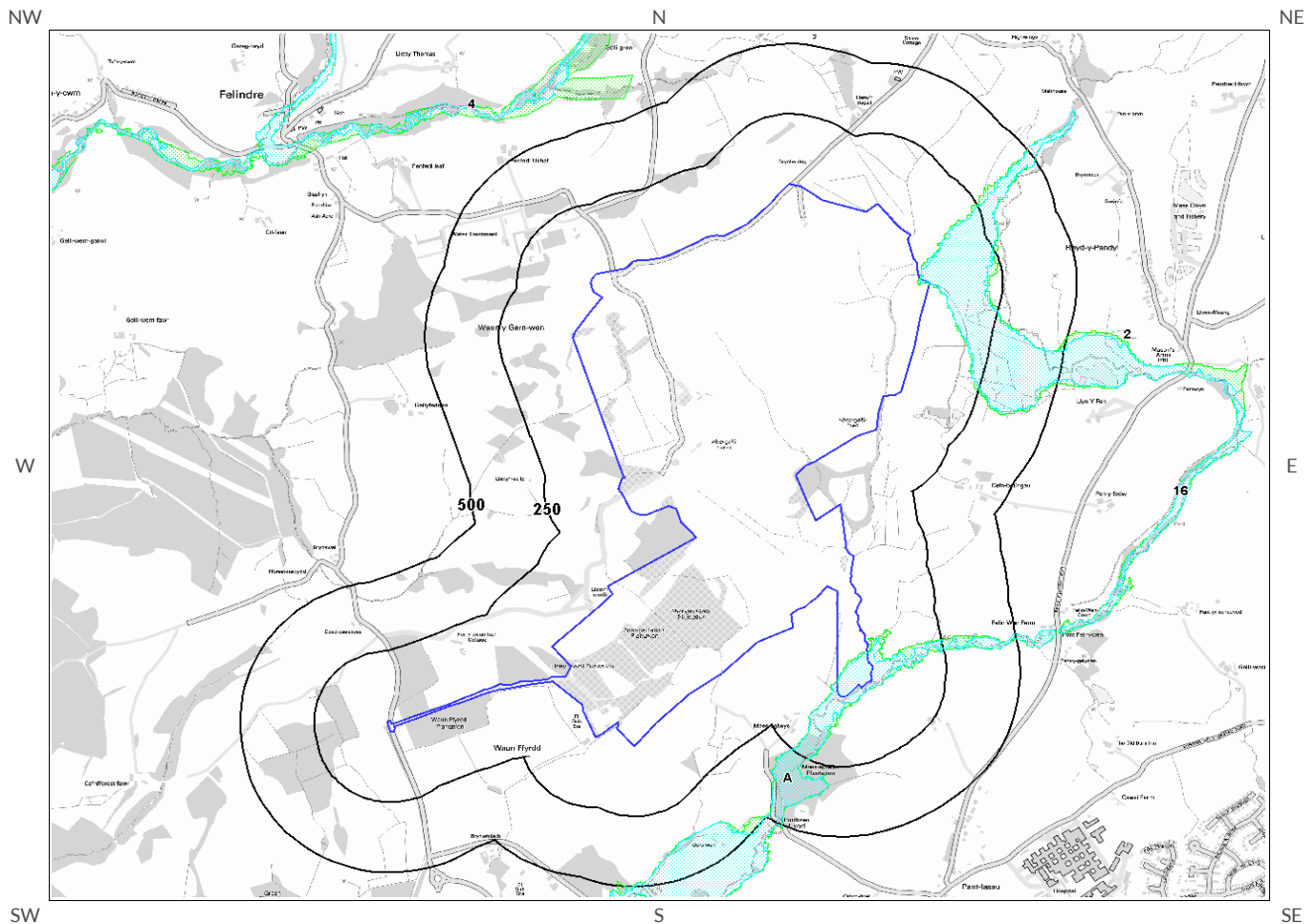
Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
1.0	SE
2.0	NW
2.0	NW
2.0	NE
2.0	NE
2.0	S
3.0	E
3.0	NE
4.0	W
8.0	W
9.0	E
11.0	NE
13.0	N
14.0	S
24.0	E
28.0	N
31.0	E
40.0	NE
41.0	W
52.0	S
52.0	S
52.0	NE
52.0	NE
57.0	S
64.0	SW
65.0	SW
68.0	N
68.0	N
76.0	S
91.0	SE
95.0	NW
95.0	SW
96.0	E
98.0	SE
98.0	E
98.0	E
99.0	E
102.0	S
105.0	NW
108.0	W
109.0	NE
112.0	NE
112.0	NE
117.0	NE
117.0	W
118.0	S
119.0	E
121.0	E
122.0	NE
136.0	E
136.0	E
147.0	E
147.0	E
149.0	E
151.0	SE

Distance (m)	Direction
152.0	S
155.0	E
155.0	E
156.0	S
160.0	SE
161.0	E
165.0	W
165.0	W
166.0	E
169.0	W
170.0	SE
172.0	E
175.0	E
180.0	SW
182.0	W
184.0	E
185.0	E
189.0	E
190.0	SW
191.0	SE
191.0	SE
196.0	E
196.0	E
197.0	NW
198.0	SE
199.0	E
200.0	E
203.0	NE
203.0	NE
203.0	E
205.0	SE
207.0	W
208.0	E
214.0	E
220.0	E
232.0	NW
232.0	E
234.0	SE
234.0	SE
239.0	W
244.0	E
247.0	E









6. Environment Agency Flood Map for planning (from rivers and the sea)



Map Legend



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-  Site Outline
-  250 Search Buffers (m)
-  500 Search Buffers (m)
-  Zone 2 Floodplain
-  Zone 3 Floodplain
-  Flood Storage Area
-  Area Benefiting from Flood Defences
-  Flood Defences



6. Flooding

6.1 Zone 2 Flooding

Environment Agency Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 1 – Environment Agency Flood Map for Planning:

Is the site within 250m of an Environment Agency Zone 2 floodplain? Yes

The following floodplain records are represented as green shading on the Flood Map:

ID	Distance (m)	Direction	Update	Type
1A	0.0	On Site	10-Jun-2014	Zone 2 - (Fluvial Models)
2	0.0	On Site	10-Jun-2014	Zone 2 - (Fluvial Models)

6.2 Zone 3 Flooding

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 1 – Environment Agency Flood Map for Planning.

Is the site within 250m of an Environment Agency Zone 3 floodplain? Yes

The following floodplain records are represented as blue shading on the Flood Map:

ID	Distance (m)	Direction	Update	Type
9A	0.0	On Site	10-Jun-2014	Zone 3 - (Fluvial Models)
10	0.0	On Site	10-Jun-2014	Zone 3 - (Fluvial Models)

6.3 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

6.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

6.5 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

6.6 Groundwater Flooding Susceptibility Areas

6.6.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site?

Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

6.6.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

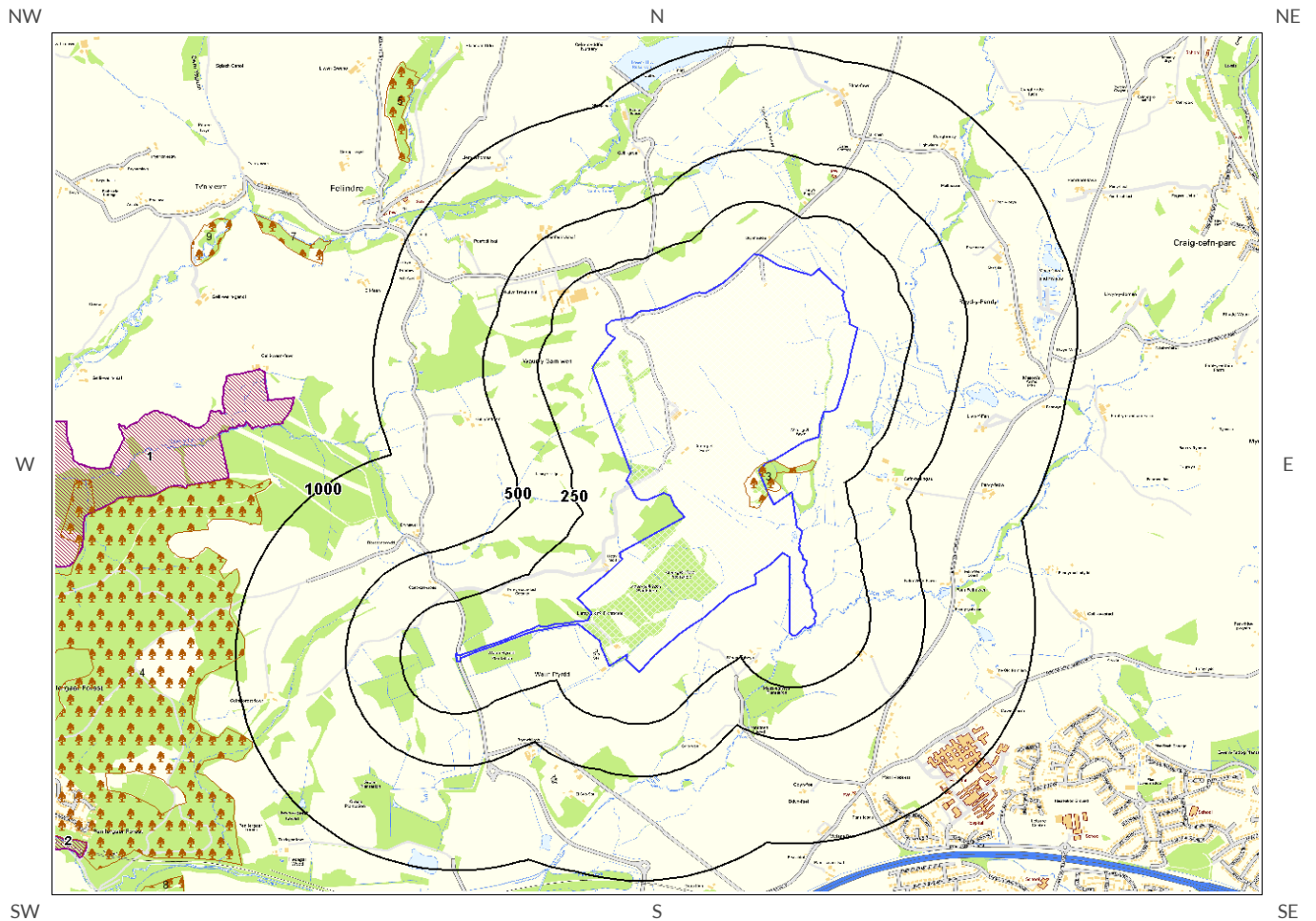
6.7 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? High

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.











7. Designated Environmentally Sensitive Sites Map



Map Legend

Mapping sourced from 

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- | | | | | |
|---|---|--|---|---|
|  Site Outline |  SAC |  SSSI |  NNR |  World Heritage Sites |
|  Areas of Outstanding Natural Beauty |  SPA |  Ramsar |  LNR |  Environmentally Sensitive Areas |
|  Nitrate Vulnerable Zones |  Nitrate Sensitive Areas |  National Parks |  Ancient Woodlands | |



7. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? No

7.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: 2

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Countryside Council for Wales and Scottish Natural Heritage are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
1	1334.0	NW	Nant Y Crimp	Countryside Council for Wales
2	1897.0	SW	Penllergaer Railway Cutting	Countryside Council for Wales

7.2 Records of National Nature Reserves (NNR) within 2000m of the study site: 0

Database searched and no data found.

7.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site: 0

Database searched and no data found.

7.4 Records of Special Protection Areas (SPA) within 2000m of the study site: 0

Database searched and no data found.

7.5 Records of Ramsar sites within 2000m of the study site: 0

Database searched and no data found.

7.6 Records of Ancient Woodland within 2000m of the study site:

8

The following Ancient Woodland records are supplied by English Nature/Scottish Natural Heritage/Countryside Council for Wales and are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
3	0.0	On Site	Unknown	Ancient and Semi-Natural Woodland
4	962.0	W	PENLLERGAER FOREST	Ancient and Semi-Natural Woodland
5	1196.0	NW	LLWYN-GWENO WOOD	Ancient and Semi-Natural Woodland
Not shown	1235.0	S	Unknown	Ancient and Semi-Natural Woodland
7	1319.0	W	Unknown	Ancient and Semi-Natural Woodland
8	1616.0	SW	TIR-FFORDD WOOD	Ancient and Semi-Natural Woodland
9	1774.0	W	TYN-Y-CWM WOOD	Ancient and Semi-Natural Woodland
Not shown	1989.0	SW	VALLEY WOOD	Ancient Replanted Woodland

7.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

7.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

7.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

7.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

7.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

7.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

7.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.



8. Natural Hazards Findings

8.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **GroundSure GeoInsight**, available from our [website](#). The following information has been found:

8.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

8.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property no significant increase in insurance risk due to natural slope instability problems.

8.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Null - Negligible

Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

8.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site?

High

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.

8.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site?

Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

8.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site?

Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

* This indicates an automatically generated 50m buffer and site.



9. Mining

9.1 Coal Mining

Are there any coal mining areas within 75m of the study site? Yes

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

9.2 Shallow Mining

What is the subsidence hazard relating to shallow mining on-site*? Low

*Please note this data is searched with a 150m buffer.

9.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

Contact Details

GroundSure Helpline
Telephone: 08444 159 000
info@groundsure.com



British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries



Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 08708 506 506

Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk



Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
<https://www.gov.uk/government/organisations/public-health-england>
Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk



Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505



Local Authority

Authority: Swansea City and Borough Council
Phone: 01792 636000
Web: www.swansea.gov.uk
Address: County Hall, Oystermouth Road, Swansea, SA1 3SN

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, English Nature who retain the Copyright and Intellectual Property Rights for the data. PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028]. This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with GroundSure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to GroundSure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028.

"GroundSure Materials" means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by GroundSure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.

"Services" means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested GroundSure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from GroundSure and on the website (www.GroundSure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.

2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions

implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

(i) the Beneficiary,

(ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),

(iv) the first purchaser or first tenant of the Site, and

(v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

(i) full payment of all relevant Fees and

(ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death

or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

- (i) loss of profits;
- (ii) loss of business;
- (iii) depletion of goodwill and/or similar losses;
- (iv) loss of anticipated savings;
- (v) loss of goods;
- (vi) loss of contract;
- (vii) loss of use;
- (viii) loss or corruption of data or information;
- (ix) business interruption;
- (x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

8 GroundSure's right to suspend or terminate

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to GroundSure within 30 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client's specification(s) and in any event

(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in

GroundSure's possession or control; and

(ii) the Client shall pay to GroundSure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Third Party Data Providers;
- (viii) changes in law; or
- (ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English

law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law. © GroundSure Limited June 2013



Parsons Brinckerhoff
27-29 PARSONS BRINCKERHOFF LTD,
CATHEDRAL ROAD,
CARDIFF, CF11 9HA

GroundSure Reference: GS-1587648

Your Reference: PB84891

Report Date 29 Jul 2014

Report Delivery Method: Email - pdf

GroundSure Geoinsight

Address: ABERGELLI FACH FARM,FELINDRE,ABERTAWE, SA5 7NN

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure GeoInsight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above GroundSure reference number.

Yours faithfully,

A handwritten signature in black ink, appearing to be "D. J. O.", followed by a period.

Managing Director
Groundsure Limited

Enc.
GroundSure GeoInsight



GroundSure GeoInsight

Address: ABERGELLI FACH FARM,FELINDRE,ABERTAWE, SA5 7NN
Date: 29 Jul 2014
Reference: GS-1587648
Client: Parsons Brinckerhoff

NW N NE

W E



SW S SE

Aerial Photograph Capture date: 22-May-2010
Grid Reference: 265243,201702
Site Size: 146.24ha

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Overview of Findings

The GroundSure GeoInsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and GroundSure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?	Yes
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	Yes
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	1.2.4 Are there any records relating to permeability of landslips within the study site boundary?	No
1.3 Bedrock, Solid Geology & Faults	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records relating to permeability of bedrock within the study site boundary?	Yes
	1.3.3 Are there any records of faults within 500m of the study site boundary?	Yes
1.4 Radon data	1.4.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level
	1.4.2 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	Basic radon protective measures are necessary

Section 2:Ground Workings	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	13	10	9	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	4	0	0	1	10
2.3 Current Ground Workings	1	0	0	3	8

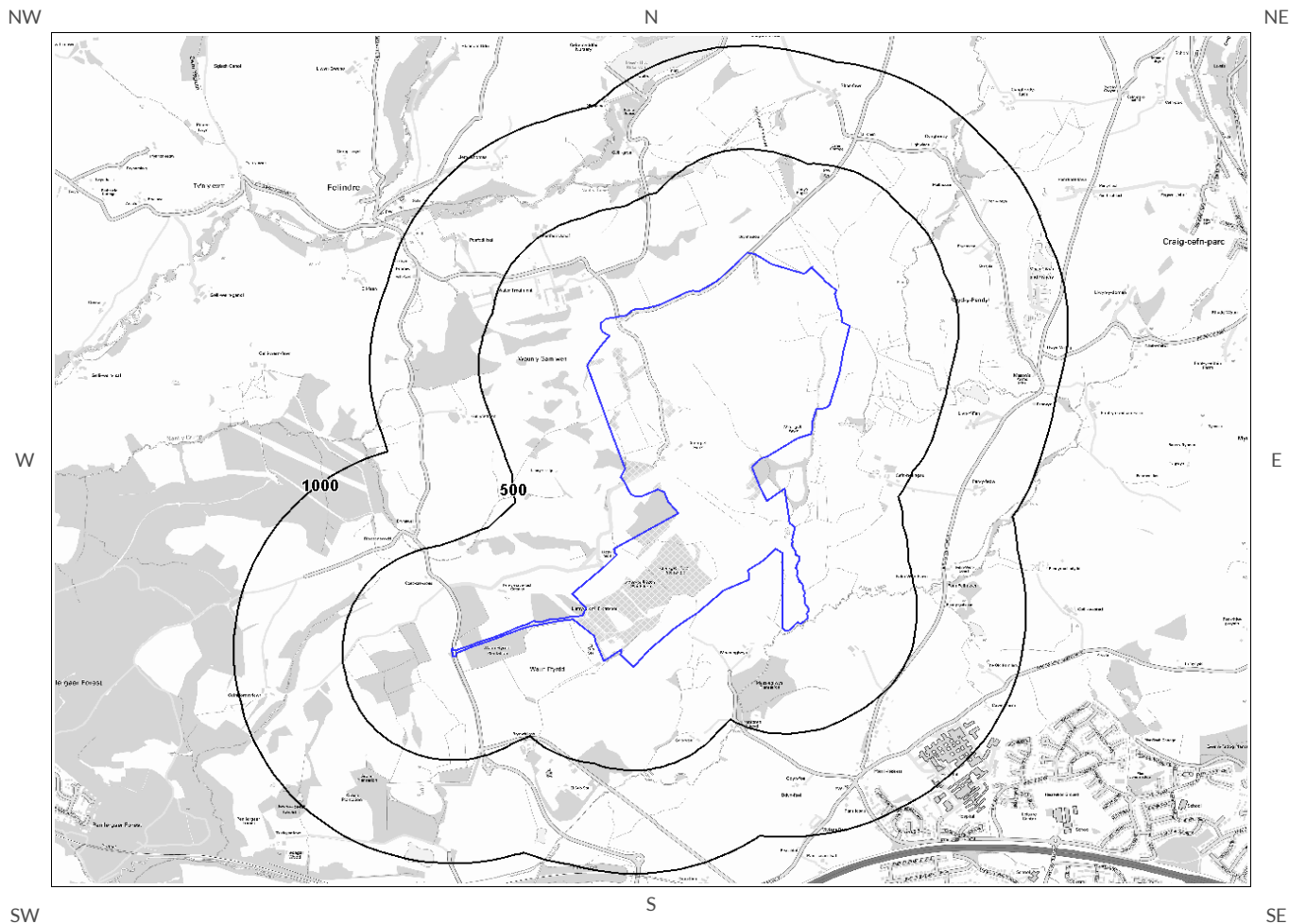
Section 3:Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	4	0	0	1	4

Section 3: Mining, Extraction & Natural Cavities					
	On-site	0-50m	51-250	251-500	501-1000
3.2 Coal Mining	1	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	0	0	0	0	0
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0
Section 4: Natural Ground Subsidence					
	On-site				
4.1 Shrink Swell Clay	Very Low				
4.2 Landslides	Low				
4.3 Ground Dissolution of Soluble Rocks	Null				
4.4 Compressible Deposits	High				
4.5 Collapsible Deposits	Very Low				
4.6 Running Sand	Low				
Section 5: Borehole Records					
	On-site	0-50m	51-250		
5 BGS Recorded Boreholes	3	0	2		
Section 6: Estimated Background Soil Chemistry					
	On-site	0-50m	51-250		
6 Records of Background Soil Chemistry	43	3	34		
Section 7: Railways and Tunnels					
	On-site	0-50m	51-250	251-500	
7.1 Tunnels	0	0	0	Not Searched	
7.2 Historical Railway and Tunnel Features	9	2	0	Not Searched	
7.3 Historical Railways	0	0	0	Not Searched	
7.4 Active Railways	0	0	0	Not Searched	

Section 7:Railways and Tunnels	On-site	0-50m	51-250	251-500
7.5 Railway Projects	0	0	0	0

1 Geology




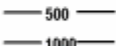




1.1 Artificial Ground Map



Artificial Ground Legend



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	Site Outline		Made Ground (undivided)		Disturbed Ground (undivided)
	Search Buffers (m)		Worked Ground (undivided)		Landscaped Ground (undivided)
			Infilled Ground		Reclaimed Ground



1 Geology

1.1 Artificial Ground

1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:247

Are there any records of Artificial/Made Ground within 500m of the study site boundary? No

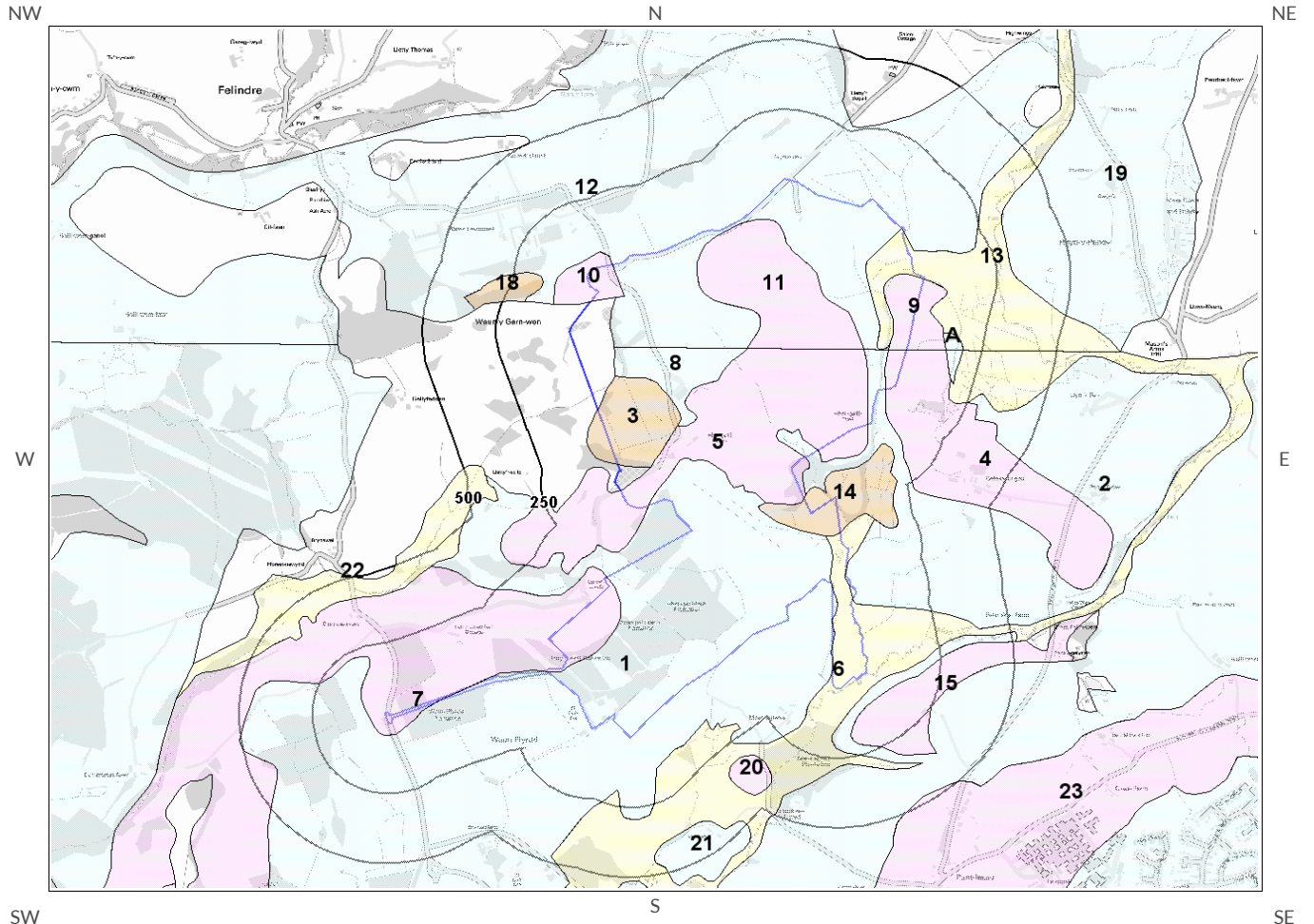
Database searched and no data found.

1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

1.2 Superficial Deposits and Landslips Map



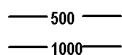
Superficial Deposits and Landslips Legend



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Site Outline



Search Buffers (m)

1.2 Superficial Deposits and Landslips

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? **Yes**

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	0.0	On Site	PEAT-P	PEAT	PEAT
4	0.0	On Site	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
5	0.0	On Site	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
6	0.0	On Site	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
7	0.0	On Site	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
8	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
9	0.0	On Site	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
10	0.0	On Site	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
11	0.0	On Site	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
12	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
13	0.0	On Site	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
14	0.0	On Site	PEAT-P	PEAT	PEAT
15	93.0	SE	GFSDD-SAGR	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
16A	108.0	E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
17A	130.0	E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
18	153.0	W	PEAT-P	PEAT	PEAT
19	296.0	E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
20	311.0	SE	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
21	376.0	SE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
22	400.0	NW	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
23	476.0	SE	GFDUD-SAGR	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Mixed	High	Low
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Mixed	High	Low
0.0	On Site	Mixed	High	Low
0.0	On Site	Intergranular	High	Very Low
0.0	On Site	Mixed	High	Low

1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

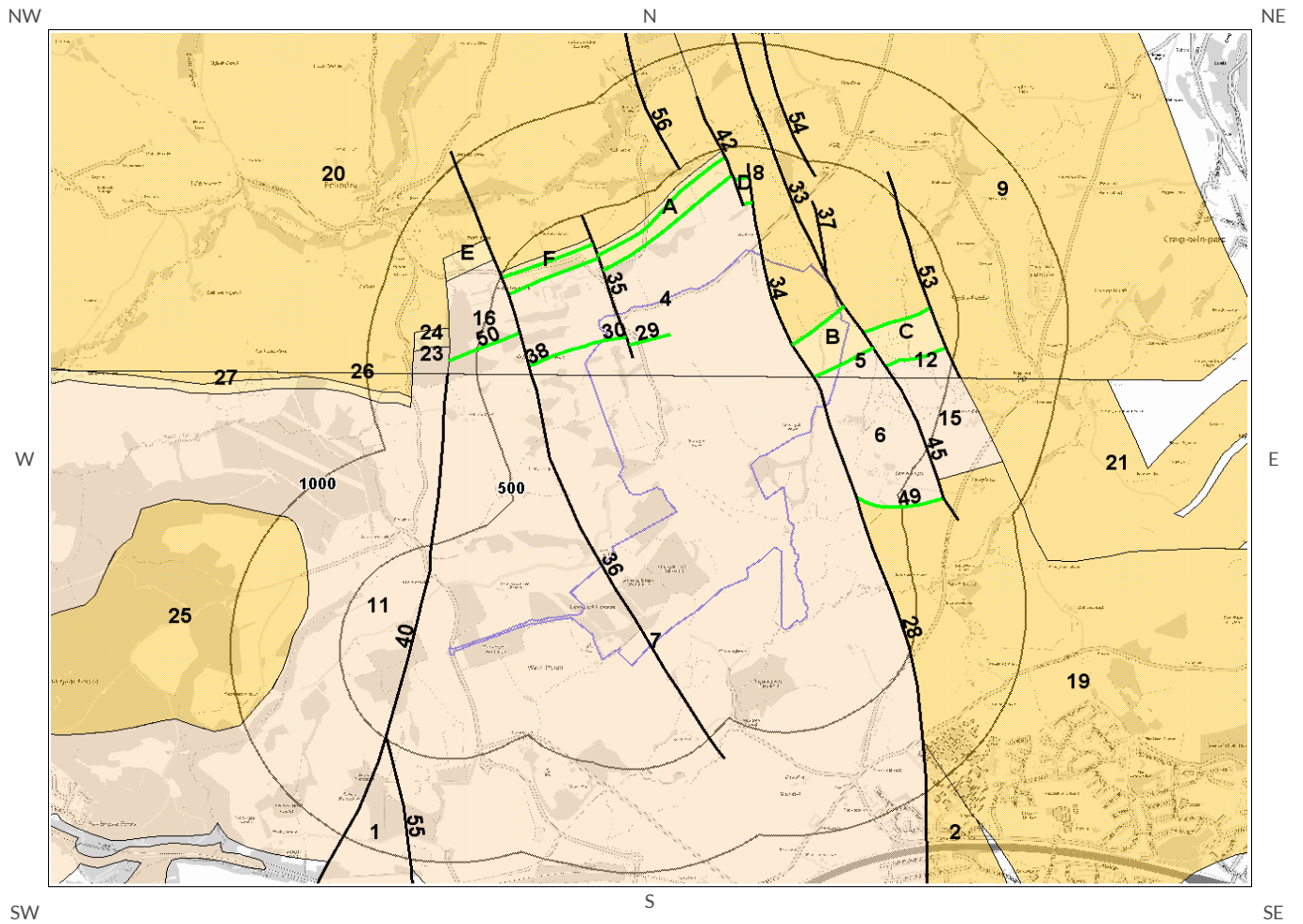
1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site** boundary? No

Database searched and no data found.

* This includes an automatically generated 50m buffer zone around the site

1.3 Bedrock and Faults Map



Bedrock and Faults Legend



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1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:247

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	492.0	SW	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
3B	0.0	On Site	SW-MDSS	Swansea Member - Mudstone, Siltstone And Sandstone	Westphalian D
4	0.0	On Site	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
5	0.0	On Site	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
6	0.0	On Site	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
7	0.0	On Site	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
8	0.0	On Site	SW-SDST	Swansea Member - Sandstone	Westphalian D
9	0.0	On Site	SW-SDST	Swansea Member - Sandstone	Westphalian D
10C	70.0	E	SW-MDSS	Swansea Member - Mudstone, Siltstone And Sandstone	Westphalian D
11	170.0	W	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
12	207.0	E	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
13A	218.0	NW	SW-MDSS	Swansea Member - Mudstone, Siltstone And Sandstone	Westphalian D
14D	224.0	N	SW-MDSS	Swansea Member - Mudstone, Siltstone And Sandstone	Westphalian D
15	249.0	E	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
16	253.0	W	GDB-MDSS	Grovesend Formation - Mudstone, Siltstone And Sandstone	Westphalian D
17F	271.0	N	SW-MDSS	Swansea Member - Mudstone, Siltstone And Sandstone	Westphalian D
18A	294.0	NW	SW-MDSS	Swansea Member - Mudstone, Siltstone And Sandstone	Westphalian D
19	312.0	E	SW-SDST	Swansea Member - Sandstone	Westphalian D
20	325.0	NW	SW-SDST	Swansea Member - Sandstone	Westphalian D

1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site* boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Moderate	Low
0.0	On Site	Fracture	Moderate	Low
0.0	On Site	Fracture	Moderate	Low
0.0	On Site	Fracture	High	Moderate

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
28	0.0	On Site	FAULT	Normal fault, inferred
29	0.0	On Site	ROCK	Coal seam, inferred
30	0.0	On Site	ROCK	Coal seam, inferred
31B	0.0	On Site	ROCK	Coal seam, inferred
32B	0.0	On Site	ROCK	Coal seam, inferred
33	0.0	On Site	FAULT	Normal fault, observed
34	0.0	On Site	FAULT	Normal fault, observed
35	0.0	On Site	FAULT	Normal fault, inferred
36	0.0	On Site	FAULT	Normal fault, inferred
37	18.0	NE	FAULT	Normal fault, observed
38	29.0	NW	ROCK	Coal seam, inferred
39C	70.0	E	ROCK	Coal seam, inferred
40	170.0	W	FAULT	Normal fault, inferred
41C	207.0	E	ROCK	Coal seam, inferred
42	215.0	N	FAULT	Normal fault, observed
43A	218.0	NW	ROCK	Coal seam, inferred
44D	224.0	N	ROCK	Coal seam, observed
45	249.0	E	FAULT	Normal fault, inferred
46E	253.0	W	FAULT	Normal fault, inferred
47F	271.0	N	ROCK	Coal seam, inferred
48A	294.0	NW	ROCK	Coal seam, inferred
49	319.0	NE	ROCK	Coal seam, inferred
50	335.0	NW	ROCK	Coal seam, inferred
51F	344.0	N	ROCK	Coal seam, inferred
52D	344.0	N	ROCK	Coal seam, observed
53	373.0	E	FAULT	Normal fault, inferred
54	427.0	N	FAULT	Normal fault, observed
55	492.0	SW	FAULT	Normal fault, inferred

* This includes an automatically generated 50m buffer zone around the site

ID	Distance (m)	Direction	Category Description	Feature Description
56	495.0	NW	FAULT	Normal fault, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.4 Radon Data

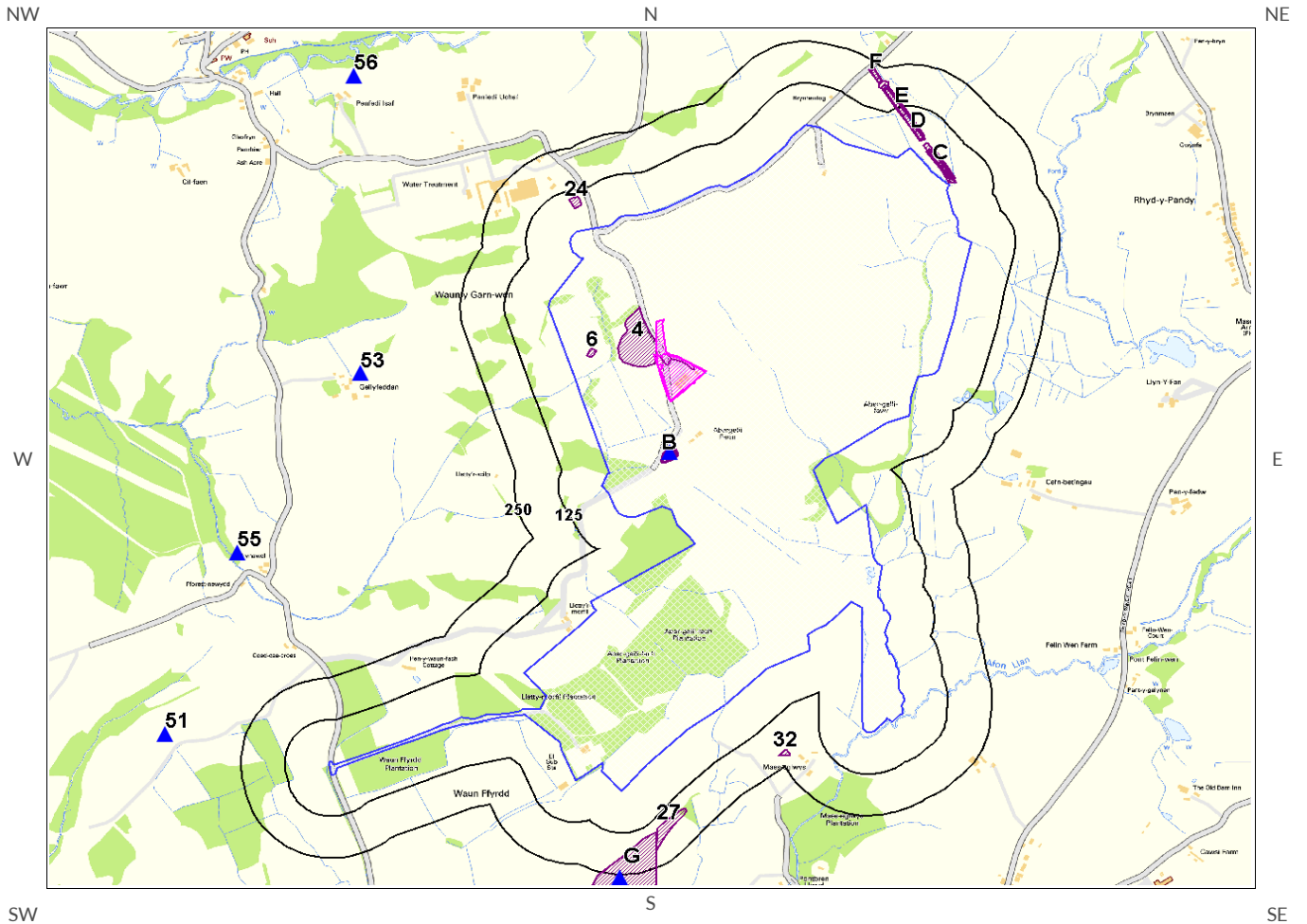
1.4.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level

1.4.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? Basic radon protective measures are necessary


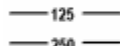


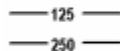
2 Ground Workings Map



Ground Workings Legend



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-  Site Outline
-  Search Buffers (m)
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings



2 Ground Workings

2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on GroundSure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
1A	0.0	On Site	265024 201864	Refuse Heap	1936
2A	0.0	On Site	265070 201821	Colliery	1936
3B	0.0	On Site	265033 201582	Unspecified Pit	1936
4	0.0	On Site	264946 201939	Refuse Heap	1964
5B	0.0	On Site	265034 201586	Old Gravel Pit	1913
6	0.0	On Site	264815 201891	Pond	1914
7A	0.0	On Site	265029 201871	Refuse Heap	1948
8B	0.0	On Site	265033 201582	Unspecified Pit	1948
9A	0.0	On Site	265070 201821	Colliery	1948
10B	0.0	On Site	265040 201589	Gravel Pit	1897
11B	0.0	On Site	265036 201585	Unspecified Pit	1975
12B	0.0	On Site	265027 201591	Unspecified Pit	1964
13B	0.0	On Site	265035 201587	Old Gravel Pit	1921
14C	4.0	NE	265807 202454	Cuttings	1921
15C	8.0	NE	265813 202453	Unspecified Ground Workings	1921
16C	17.0	NE	265814 202455	Unspecified Pit	1964
17C	17.0	NE	265814 202455	Unspecified Pit	1975
18C	18.0	NE	265800 202473	Cuttings	1897
19D	33.0	NE	265743 202550	Cuttings	1921
20D	36.0	NE	265750 202546	Cuttings	1921
21E	36.0	NE	265698 202621	Cuttings	1975

ID	Distance (m)	Direction	NGR	Use	Date
22E	36.0	NE	265698 202621	Cuttings	1964
23D	37.0	NE	265701 202614	Cuttings	1897
24	69.0	N	264769 202343	Covered Reservoir	1991
25E	98.0	N	265680 202646	Cuttings	1921
26E	101.0	N	265677 202648	Cuttings	1921
27	150.0	SE	265020 200459	Refuse Heap	1975
28G	154.0	SE	264905 200262	Refuse Heap	1991
29F	202.0	N	265622 202725	Cuttings	1921
30F	205.0	N	265625 202726	Cuttings	1921
31F	211.0	NE	265621 202730	Cuttings	1897
32	215.0	SE	265363 200689	Pond	1913

2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the GroundSure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
33A	0.0	On Site	265070 201869	Unspecified Disused Mine	1964
34A	0.0	On Site	265070 201869	Unspecified Disused Mine	1975
35A	0.0	On Site	265070 201821	Colliery	1948
36A	0.0	On Site	265070 201821	Colliery	1936
Not shown	480.0	S	264756 200086	Old Coal Pit	1914
Not shown	515.0	S	264707 200029	Coal Pit	1878
Not shown	536.0	S	264701 200070	Unspecified Shaft	1878
Not shown	787.0	S	264931 199675	Colliery	1948
Not shown	787.0	S	264931 199675	Colliery	1936
Not shown	992.0	S	264918 199568	Tunnel	1964

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	993.0	S	265755 199362	Tunnel	1913
Not shown	993.0	S	264918 199568	Tunnel	1994
Not shown	993.0	S	264918 199568	Tunnel	1980
Not shown	993.0	S	264918 199568	Tunnel	1968
Not shown	998.0	S	265739 199358	Tunnel	1921

2.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

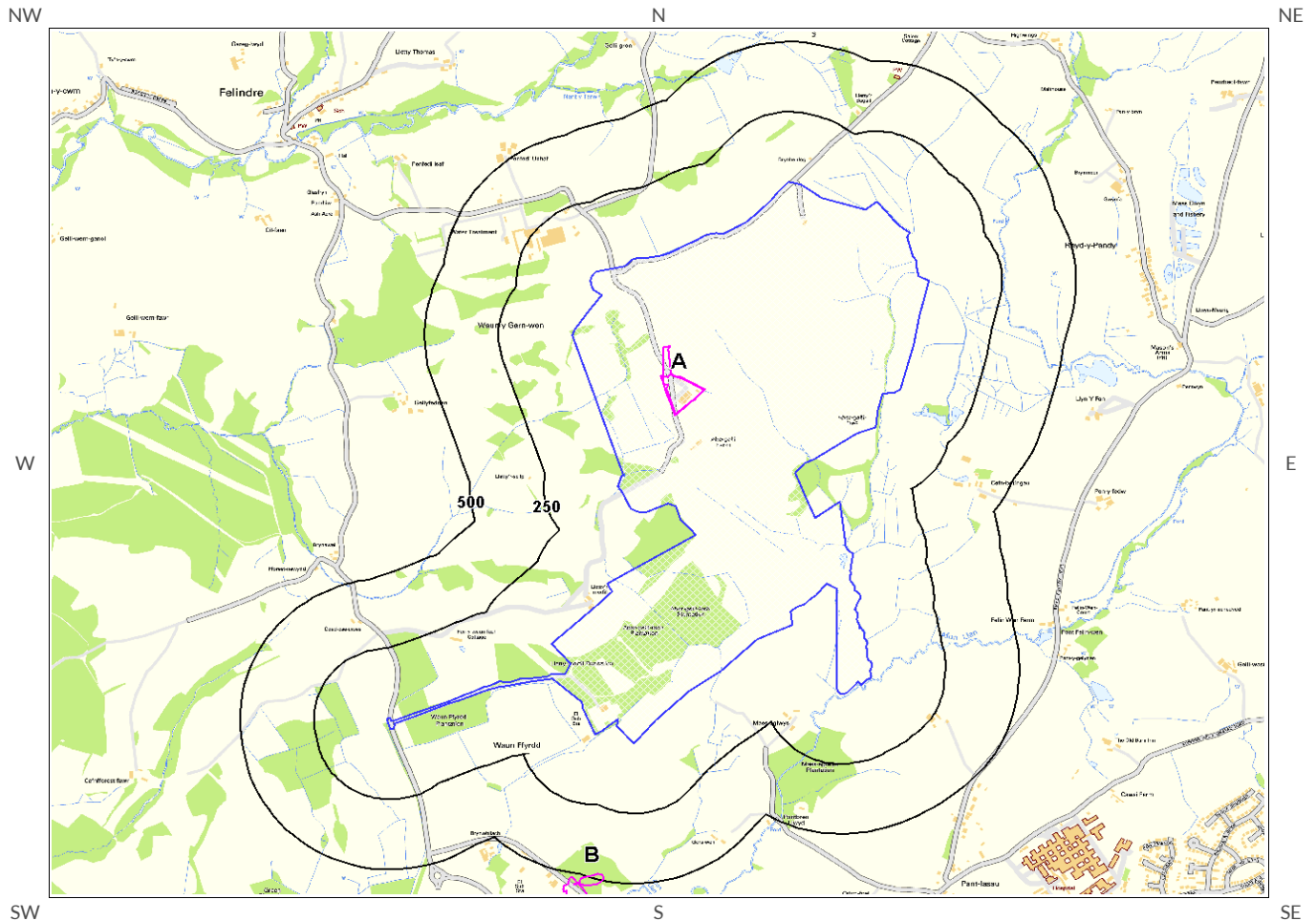
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
48B	0.0	On Site	265036 201591	Sand & Gravel	Aber-gelli-fach Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
49G	261.0	S	264893 200311	Sand & Gravel	Bryn-whilach Plantation Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	465.0	NE	265652 202994	Sandstone	Waun-fach	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
51	476.0	W	263598 200743	Sand	Waen Ffyrdd Plantation Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	507.0	S	264757 200086	Coal, Deep	Bryn-whilach	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
53	573.0	W	264154 201828	Sandstone	Gelli-feddan	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	620.0	N	264937 202972	Sandstone	Gelli-gron	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
55	681.0	NW	263805 201290	Sandstone	Llidiard -y-cleders	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
56	786.0	NW	264137 202724	Sandstone	Pen-y-fedw-isaf	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	874.0	S	264288 199775	Sand	Nant-y-ganol Wood Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	877.0	NW	264910 203289	Sandstone	Waterworks Cottage	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	958.0	E	266801 201886	Sandstone	Rhyd-y-pandy	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend



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3 Mining, Extraction & Natural Cavities

3.1 Historical Mining

This dataset is derived from GroundSure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by GroundSure:

ID	Distance (m)	Direction	NGR	Details	Date
1A	0.0	On Site	265070 201869	Unspecified Disused Mine	1975
2A	0.0	On Site	265070 201869	Unspecified Disused Mine	1964
3A	0.0	On Site	265070 201821	Colliery	1936
4A	0.0	On Site	265070 201821	Colliery	1948
5B	480.0	S	264756 200086	Old Coal Pit	1914
6B	515.0	S	264707 200029	Coal Pit	1878
7B	536.0	S	264701 200070	Unspecified Shaft	1878
Not shown	787.0	S	264931 199675	Colliery	1936
Not shown	787.0	S	264931 199675	Colliery	1948

3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

3.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

3.7 Brine Extraction

This dataset provides information from the Brine Compensation Board which has been discontinued and is now covered by the Coal Authority.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

3.10 Clay Mining

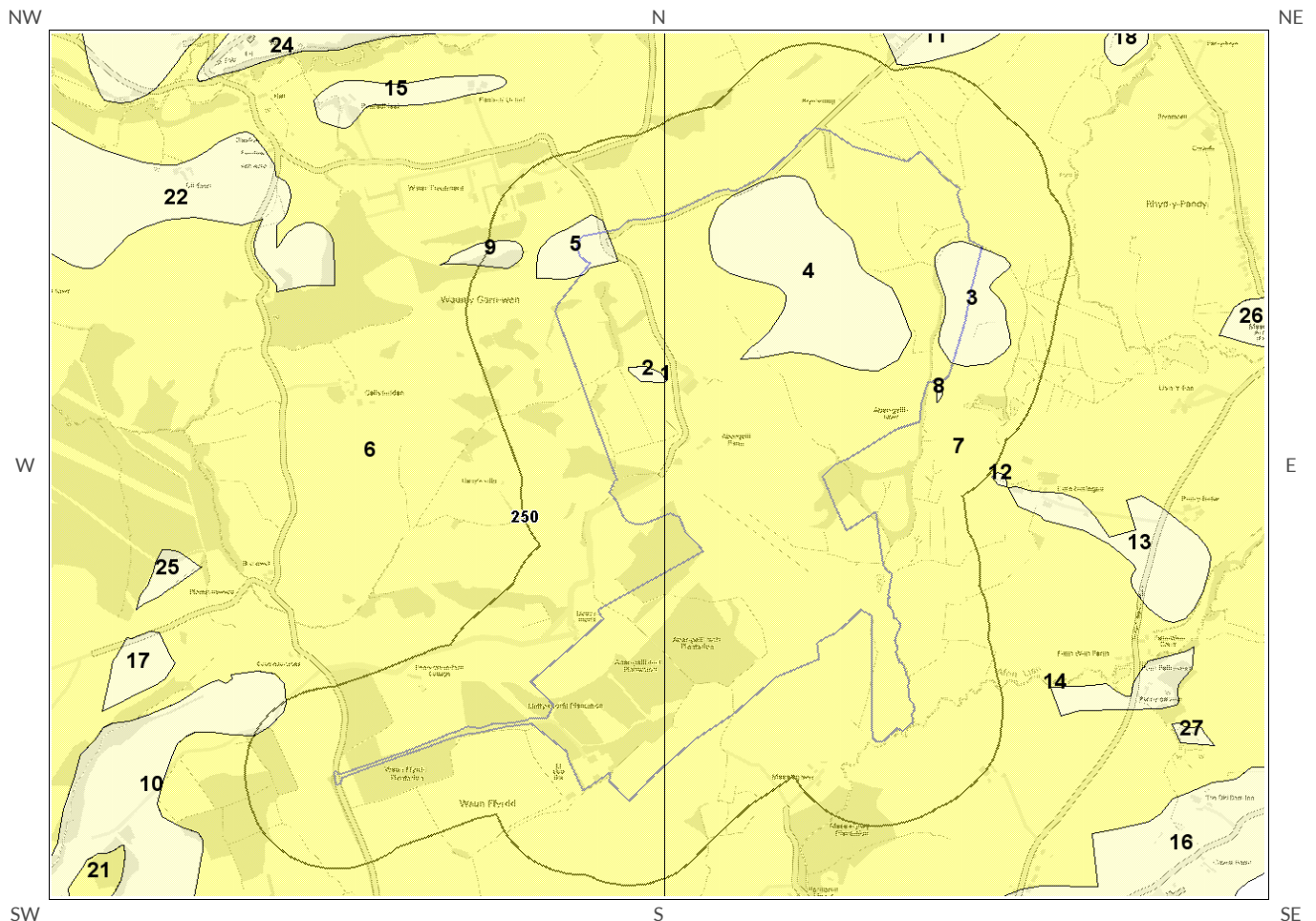
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

4 Natural Ground Subsidence

4.1 Shrink-Swell Clay Map



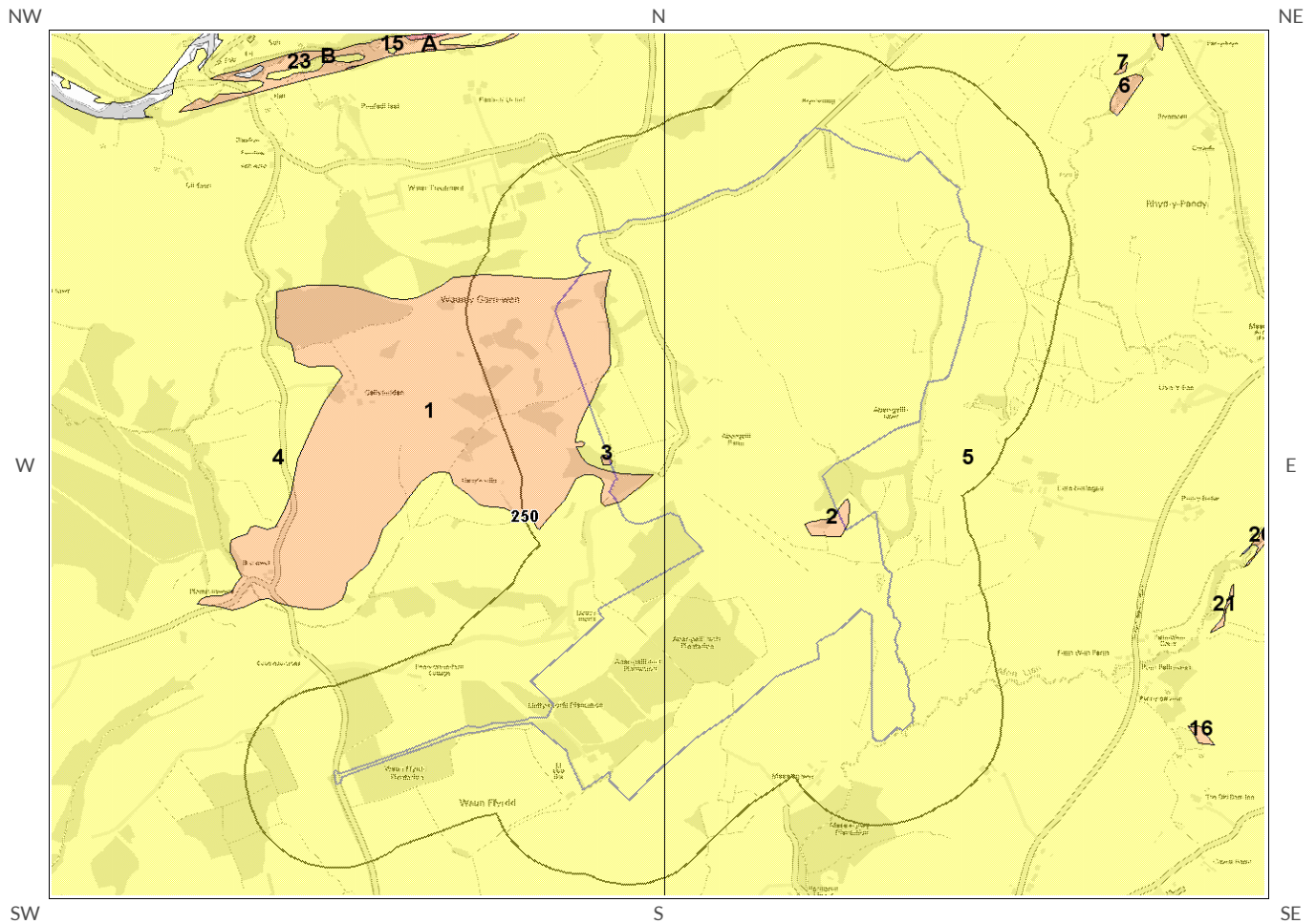
Shrink Swell Clay Legend



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4.2 Landslides Map



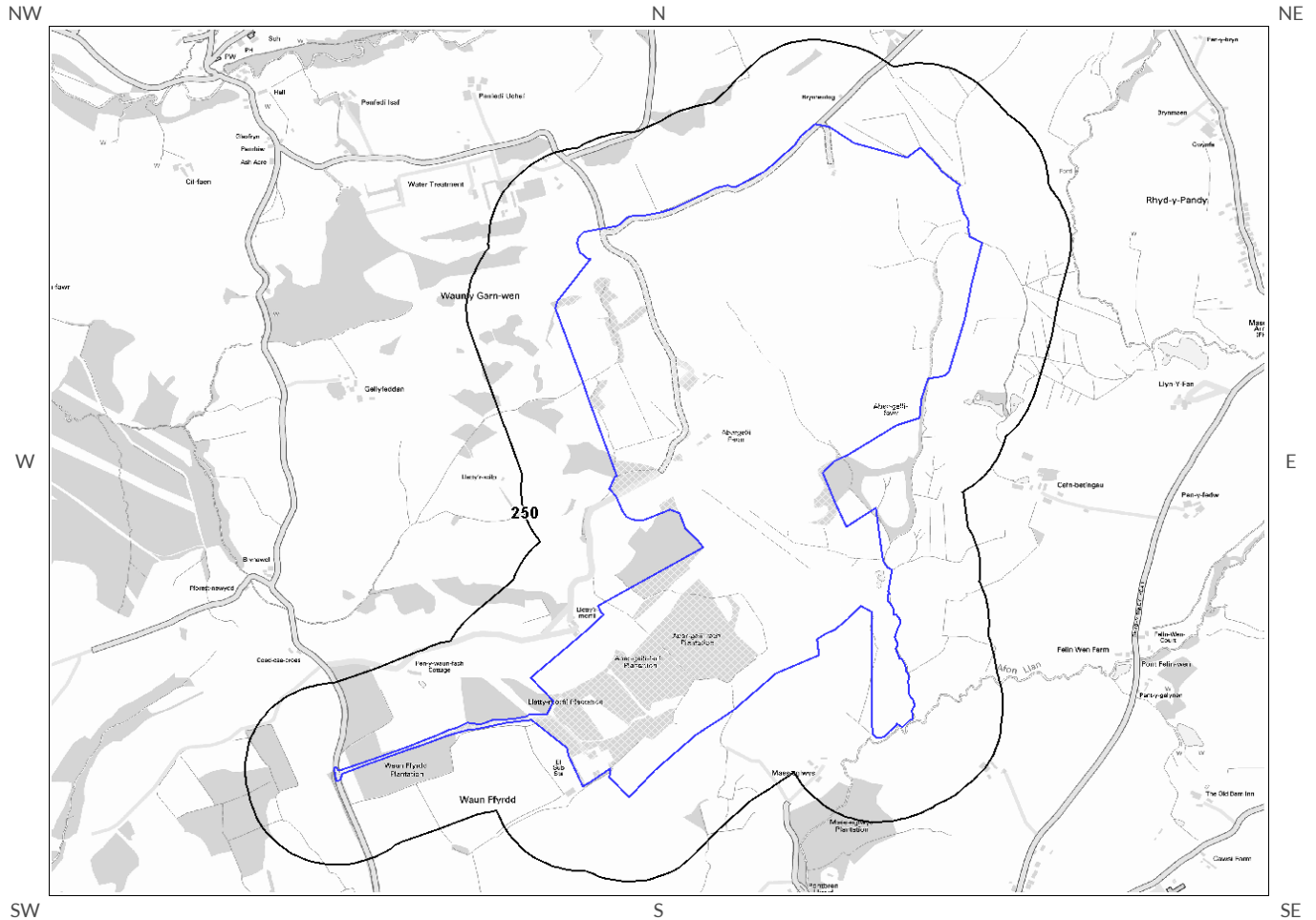
Landslides Legend



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4.3 Ground Dissolution Soluble Rocks Map



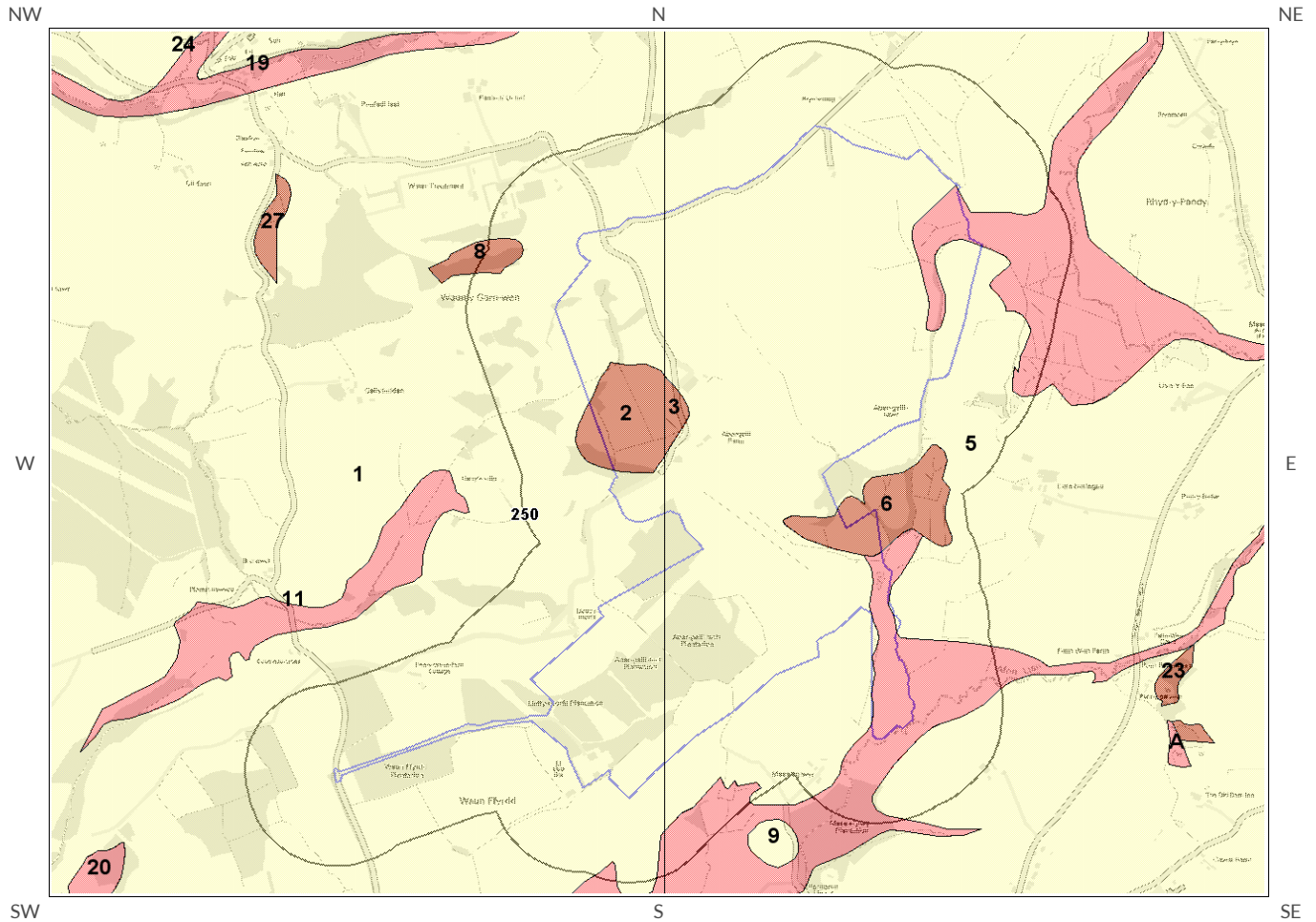
Ground Dissolution Soluble Rocks Legend



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4.4 Compressible Deposits Map



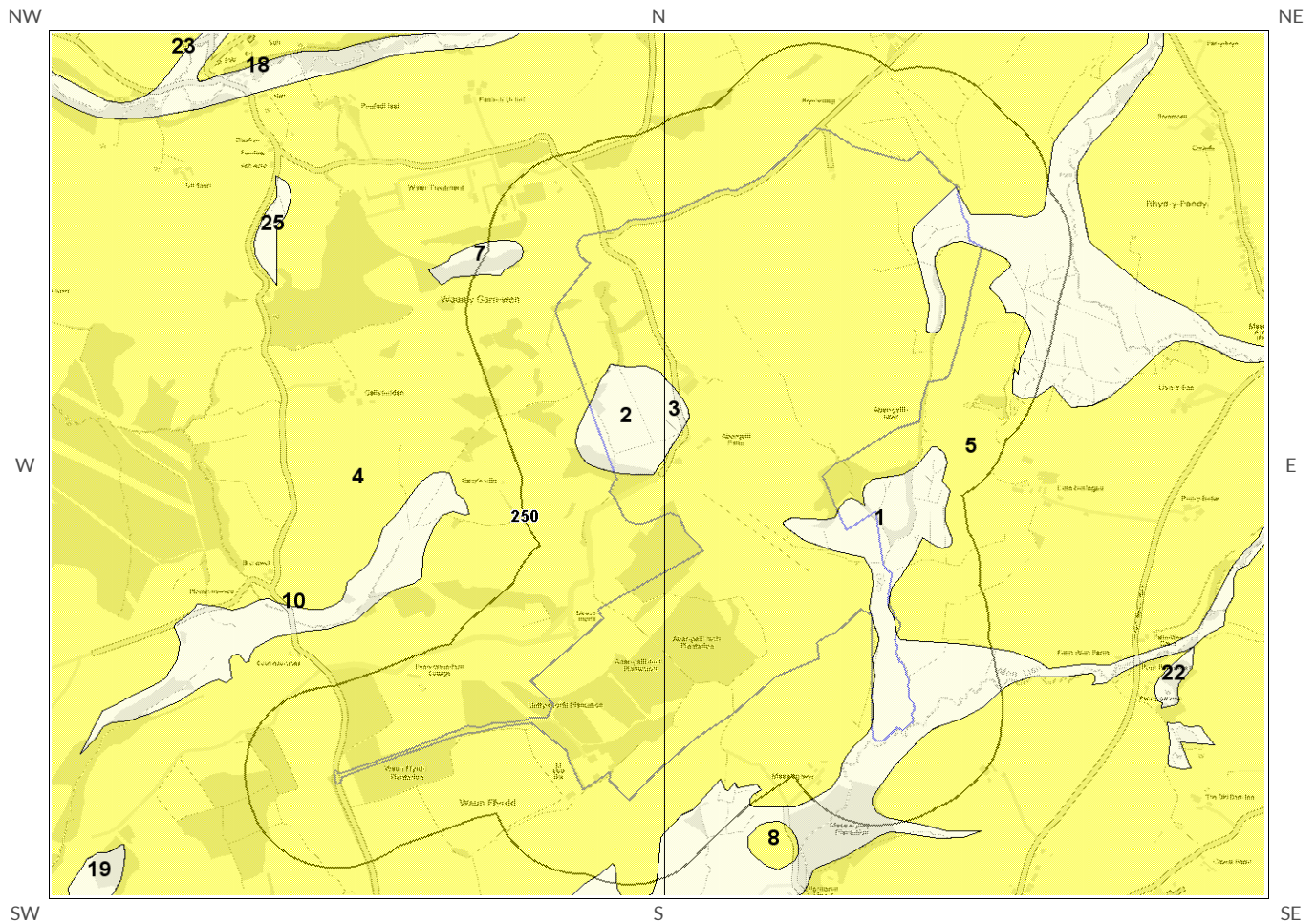
Compressible Deposits Legend



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4.5 Collapsible Deposits Map



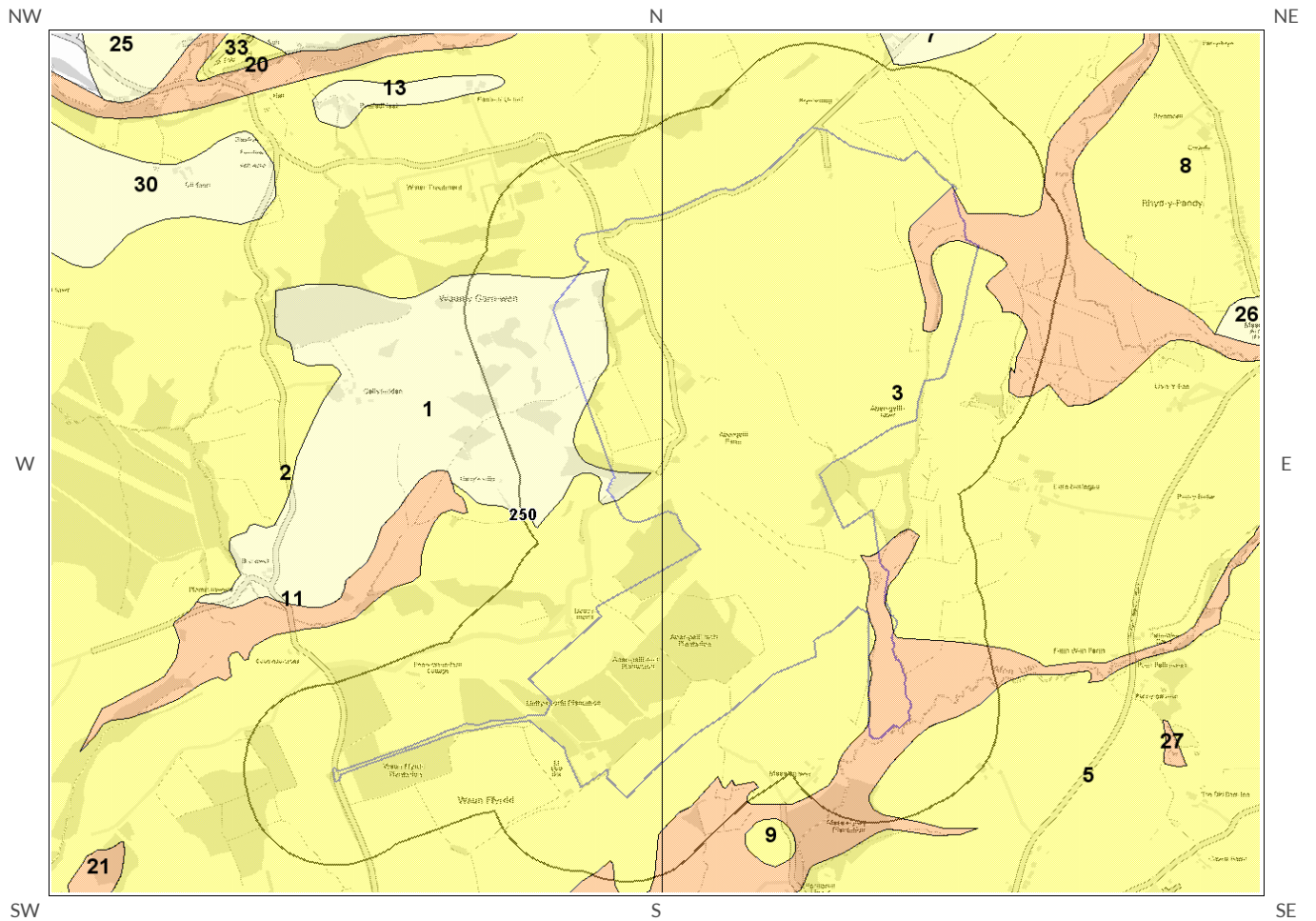
Collapsible Deposits Legend



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4.6 Running Sand Map



Running Sand Legend



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4 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? High

4.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
3	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
4	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
5	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
6	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
7	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
8	10.0	S	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

* This includes an automatically generated 50m buffer zone around the site

4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
2	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
3	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
4	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
5	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

4.3 Ground Dissolution of Soluble Rocks

The following Compressible Deposits information provided by the British Geological Survey:

Distance (m)	Direction	Hazard Rating	Details
0	On site	Null-Negligible	Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

4.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

ID	Distance (m)	Direction	Hazard Rating	Details
2	0.0	On Site	High	Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property - probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.
3	0.0	On Site	High	Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property - probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.
4	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.
5	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
6	0.0	On Site	High	Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property - probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.

4.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

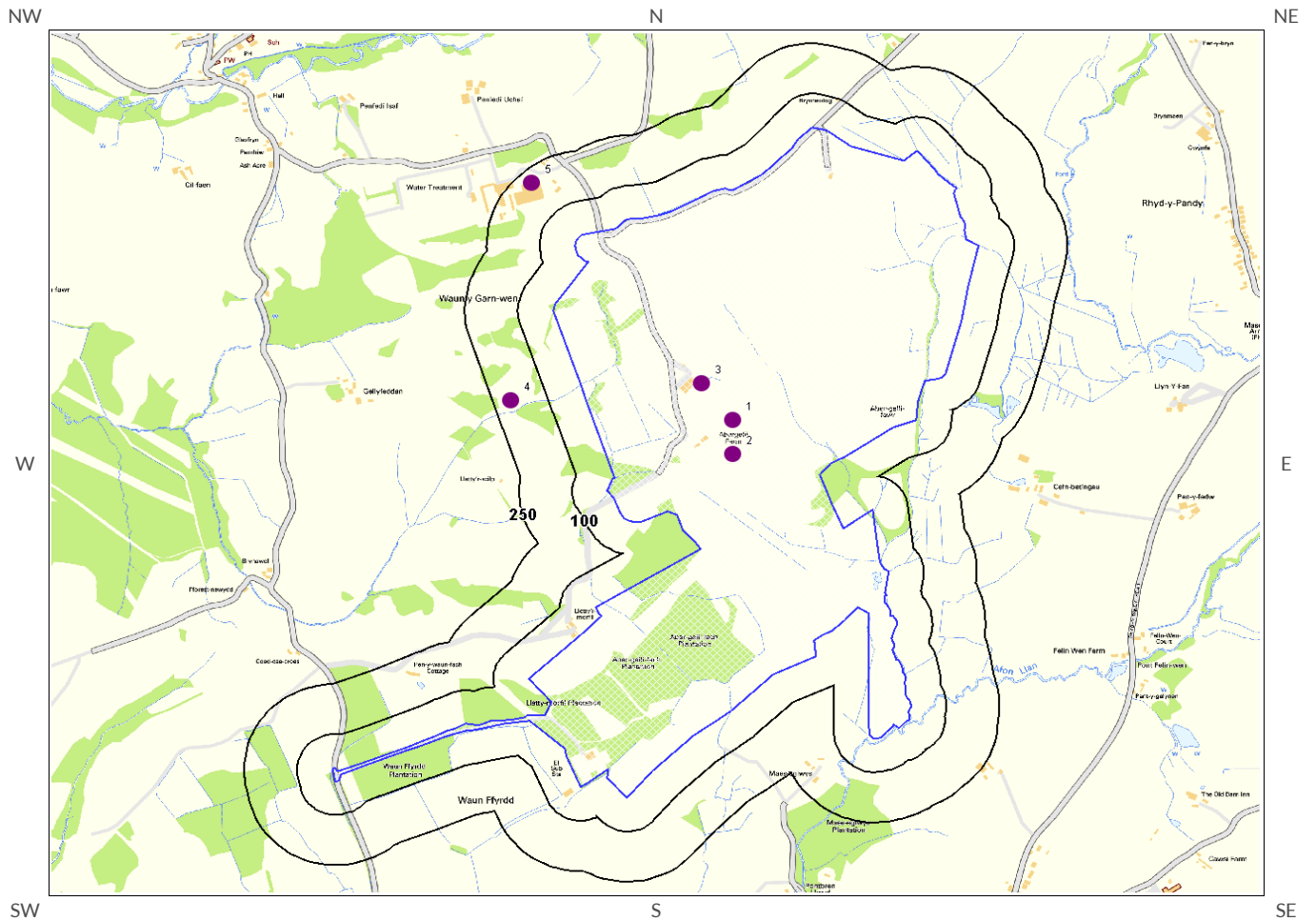
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
3	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
4	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
5	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

4.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
3	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
4	0.0	On Site	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build - consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property - no significant increase in insurance risk due to running sand problems is likely.

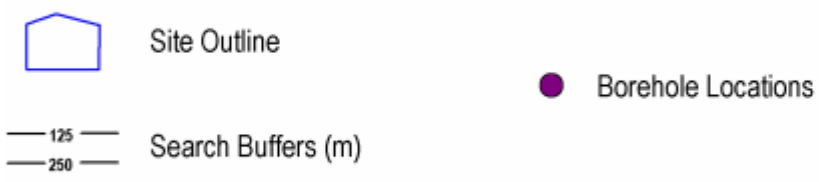
5 Borehole Records Map



Borehole Records Legend



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5 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

5

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	265200 201700	SN60SE16	-1.0	ABERGELLI SLANT, BRYN WHILACH. 2FT V WORKINGS PLAN
2	0.0	On Site	265200 201600	SN60SE24	16.0	ABERGELLI-FACH FARM P4
3	0.0	On Site	265110 201810	SN60SE15	-1.0	ABERGELLI COLLIERY
4	203.0	W	264570 201760	SN60SW68	7.92	ABERGELLI. BOREHOLES 3
5	210.0	NW	264630 202410	SN60SW63	1.98	RIVER TOWN SCHEME, LOWER LLIW RESERVOIR, TP.10

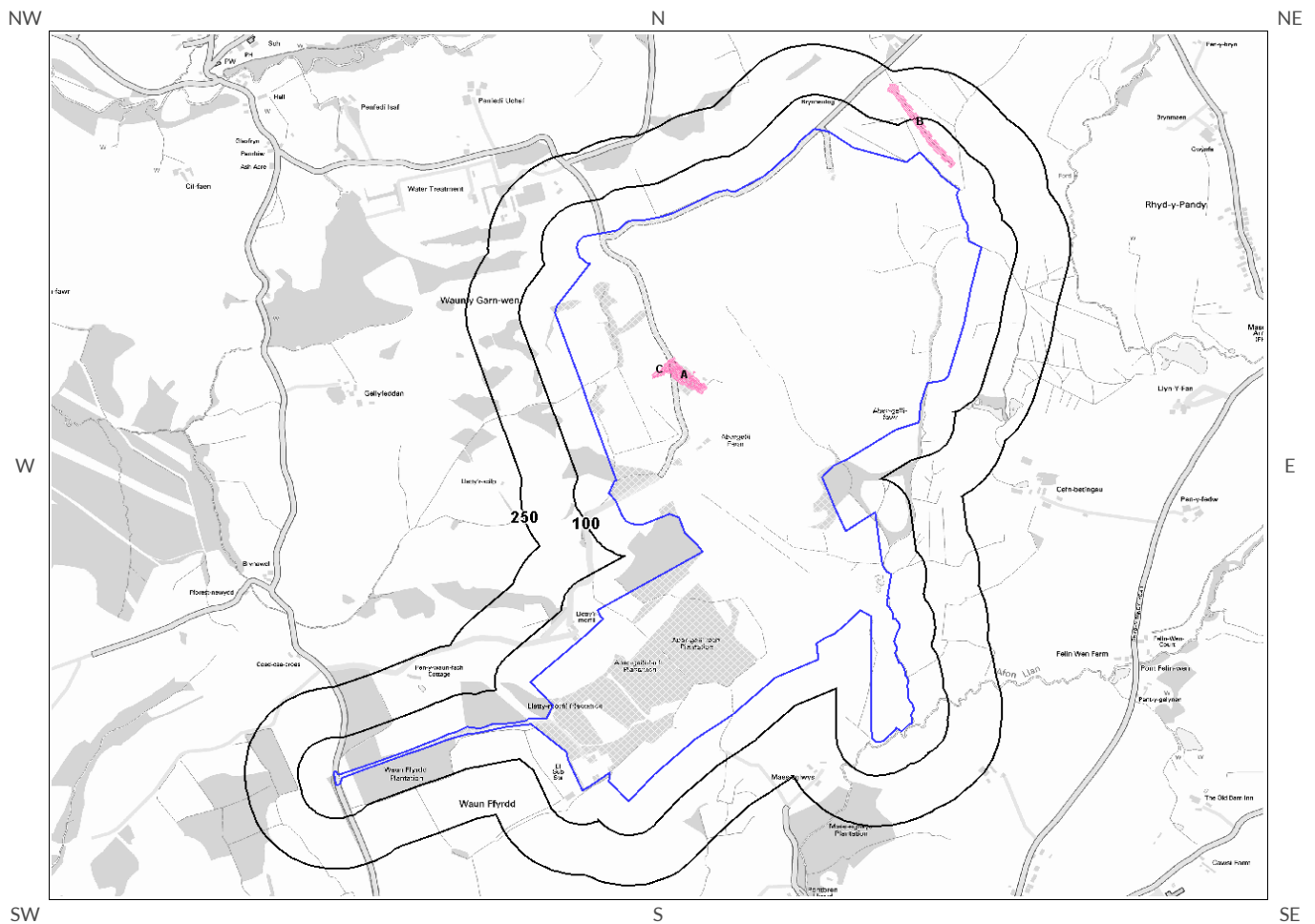
Additional online information is available for the following boreholes listed above:

- #1: scans.bgs.ac.uk/sobi_scans/boreholes/256136
- #2: scans.bgs.ac.uk/sobi_scans/boreholes/256144
- #3: scans.bgs.ac.uk/sobi_scans/boreholes/256135
- #4: scans.bgs.ac.uk/sobi_scans/boreholes/256277
- #5: scans.bgs.ac.uk/sobi_scans/boreholes/256272

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
12.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
19.0	NE	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
49.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
51.0	SE	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
56.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
67.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
67.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
70.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
77.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
78.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
93.0	SE	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
103.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
106.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
108.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
115.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
126.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
129.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
130.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
137.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
137.0	SE	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
146.0	E	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
149.0	E	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
153.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
156.0	E	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
156.0	NW	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
168.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
170.0	W	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<150 mg/kg
173.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
179.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
207.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
208.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
214.0	N	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
218.0	NW	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
221.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
224.0	NW	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
224.0	N	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg
249.0	E	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.












7 Railways and Tunnels Map



Railways and Tunnels Legend



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- | | | | |
|---|--|--|---|
|  | Underground or Partially Underground Railway / Subway System |  | Railway Track (OpenStreetMap) |
|  | Site Outline |  | Railway Tunnel (OS Mapping) |
|  | Search Buffers (m) |  | Abandoned or Dismantled Railway (OpenStreetMap) |
|  | |  | Railway Track (OS Mapping) |
| | |  | High Speed 2 |
| | |  | Crossrail |
| | |  | Railway and/or Tunnel Feature from Historical Mapping |



7 Railways and Tunnels

7.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels Map.

7.2 Historical Railway and Tunnel Features

This data is derived from GroundSure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? Yes

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1C	0	On Site	264984 201852	Railway Sidings	1964
2A	0	On Site	265040 201842	Railway Sidings	1948
3A	0	On Site	265058 201840	Railway Sidings	1964
4A	0	On Site	265040 201842	Railway Sidings	1936
5A	0	On Site	265043 201843	Railway Sidings	1938
8A	0	On Site	264970 201835	Railway Sidings	1960
9C	0	On Site	264992 201849	Railway Sidings	1989
10C	0	On Site	264992 201850	Railway Sidings	1958

ID	Distance (m)	Direction	NGR	Details	Date
11A	0	On Site	265034 201845	Railway Sidings	1935
6B	36	NE	265728 202586	Tramway Sidings	1975
7B	36	NE	265728 202586	Tramway Sidings	1964

Any records that have been identified are represented on the Railways and Tunnels Map.

7.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Note: multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels Map.

7.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail.

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a GroundSure HS2 and Crossrail Report.

Contact Details



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BGS Geological Hazards Reports and general geological enquiries



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Report Reference: GS-1587648

Client Reference: PB84891

Standard Terms and Conditions

1 Definitions

In these terms and conditions unless the context otherwise requires:

"Beneficiary" means the person or entity for whose benefit the Client has obtained the Services.

"Client" means the party or parties entering into a Contract with GroundSure.

"Commercial" means any building or property which is not Residential.

"Confidential Information" means the contents of this Contract and all information received from the Client as a result of, or in connection with, this Contract other than

(i) information which the Client can prove was rightfully in its possession prior to disclosure by GroundSure and

(ii) any information which is in the public domain (other than by virtue of a breach of this Contract).

"Support Services" means Support Services provided by GroundSure including, without limitation, interpreting third party and in-house environmental data, providing environmental support advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Contract" means the contract between GroundSure and the Client for the provision of the Services, and which shall incorporate these terms and conditions, the Order, and the relevant User Guide.

"Third Party Data Provider" means any third party providing Third Party Content to GroundSure.

"Data Reports" means reports comprising factual data with no accompanying interpretation.

"Fees" has the meaning set out in clause 5.1.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028.

"GroundSure Materials" means all materials prepared by GroundSure and provided as part of the Services, including but not limited to Third Party Content, Data Reports, Mapping, and Risk Screening Reports.

"Intellectual Property" means any patent, copyright, design rights, trade or service mark, moral rights, data protection rights, know-how or trade mark in each case whether registered or not and including applications for the same or any other rights of a similar nature anywhere in the world.

"Mapping" means a map, map data or a combination of historical maps of various ages, time periods and scales.

"Order" means an electronic, written or other order form submitted by the Client requesting Services from GroundSure in respect of a specified Site.

"Ordnance Survey" means the Secretary of State for Business, Innovation and Skills, acting through Ordnance Survey, Adanac Drive, Southampton, SO16 0AS, UK.

"Order Website" means the online platform through which Orders may be placed by the Client and accepted by GroundSure.

"Report" means a Risk Screening Report or Data Report for Commercial or Residential property.

"Residential" means any building or property used as or intended to be used as a single dwelling.

"Risk Screening Report" means a risk screening report comprising factual data with an accompanying interpretation by GroundSure.

"Services" means any Report, Mapping and/or Support Services which GroundSure has agreed to provide by accepting an Order pursuant to clause 2.6.

"Site" means the area of land in respect of which the Client has requested GroundSure to provide the Services.

"Third Party Content" means data, database information or other information which is provided to GroundSure by a Third Party Data Provider.

"User Guide" means the user guide, as amended from time to time, available upon request from GroundSure and on the website (www.GroundSure.com) and forming part of this Contract.

2 Scope of Services, terms and conditions, requests for insurance and quotations

2.1 GroundSure agrees to provide the Services in accordance with the Contract.

2.2 GroundSure shall exercise reasonable skill and care in the provision of the Services.

2.3 Subject to clause 7.3 the Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in writing in the Contract and all such statements and representations are hereby excluded to the fullest extent permitted by law.

2.4 The Client acknowledges that terms and conditions appearing on a Client's order form, printed stationery or other communication, or any terms or conditions implied by custom, practice or course of dealing shall be of no effect, and that this Contract shall prevail over all others in relation to the Order.

2.5 If the Client or Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to recommend such insurance, but makes no warranty that such insurance shall be available from insurers or that it will be offered on reasonable terms. Any insurance purchased by the Client or Beneficiary shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. In addition you acknowledge and agree that GroundSure does not act as an agent or broker for any insurance providers. The Client should take (and ensure that the Beneficiary takes) independent advice to ensure that the insurance policy requested or offered is suitable for its requirements.

2.6 GroundSure's quotations or proposals are valid for a period of 30 days only unless an alternative period of time is explicitly stipulated by GroundSure. GroundSure reserves the right to withdraw any quotation or proposal at any time before an Order is accepted by GroundSure. GroundSure's acceptance of an Order

shall be binding only when made in writing and signed by GroundSure's authorised representative or when accepted through the Order Website.

3 The Client's obligations

3.1 The Client shall comply with the terms of this Contract and

(i) procure that the Beneficiary or any third party relying on the Services complies with and acts as if it is bound by the Contract and

(ii) be liable to GroundSure for the acts and omissions of the Beneficiary or any third party relying on the Services as if such acts and omissions were those of the Client.

3.2 The Client shall be solely responsible for ensuring that the Services are appropriate and suitable for its and/or the Beneficiary's needs.

3.3 The Client shall supply to GroundSure as soon as practicable and without charge all requisite information (and the Client warrants that such information is accurate, complete and appropriate), including without limitation any environmental information relating to the Site and shall give such assistance as GroundSure shall reasonably require in the provision of the Services including, without limitation, access to the Site, facilities and equipment.

3.4 Where the Client's approval or decision is required to enable GroundSure to carry out work in order to provide the Services, such approval or decision shall be given or procured in reasonable time and so as not to delay or disrupt the performance of the Services.

3.5 Save as expressly permitted by this Contract the Client shall not, and shall procure that the Beneficiary shall not, re-sell, alter, add to, or amend the GroundSure Materials, or use the GroundSure Materials in a manner for which they were not intended. The Client may make the GroundSure Materials available to a third party who is considering acquiring some or all of, or providing funding in relation to, the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.6 The Client is responsible for maintaining the confidentiality of its user name and password if using the Order Website and the Client acknowledges that GroundSure accepts no liability of any kind for any loss or damage suffered by the Client as a consequence of using the Order Website.

4 Reliance

4.1 The Client acknowledges that the Services provided by GroundSure consist of the presentation and analysis of Third Party Content and other content and that information obtained from a Third Party Data Provider cannot be guaranteed or warranted by GroundSure to be reliable.

4.2 In respect of Data Reports, Mapping and Risk Screening Reports, the following classes of person and no other are entitled to rely on their contents;

- (i) the Beneficiary,
- (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate),
- (iv) the first purchaser or first tenant of the Site, and
- (v) the professional advisers and lenders of the first purchaser or tenant of the Site.

4.3 In respect of Support Services, only the Client, Beneficiary and parties expressly named in a Report and no other parties are entitled to rely on its contents.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise expressly agreed in writing, no other person or entity of any kind is entitled to rely on any Services or Report issued or provided by GroundSure. Any party considering such Reports and Services does so at their own risk.

5 Fees and Disbursements

5.1 GroundSure shall charge and the Client shall pay fees at the rate and frequency specified in the written proposal, Order Website or Order acknowledgement form, plus (in the case of Support Services) all proper disbursements incurred by GroundSure. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services (together "Fees").

5.2 The Client shall pay all outstanding Fees to GroundSure in full without deduction, counterclaim or set off within 30 days of the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). Interest on late payments will accrue on a daily basis from the Payment Date until the date of payment (whether before or after judgment) at the rate of 8% per annum.

5.3 The Client shall be deemed to have agreed the amount of any invoice unless an objection is made in writing within 28 days of the date of the invoice. As soon as reasonably practicable after being notified of an objection, without prejudice to clause 5.2 a member of GroundSure's management team will contact the Client and the parties shall then use all reasonable endeavours to resolve the dispute within 15 days.

6 Intellectual Property and Confidentiality

6.1 Subject to

- (i) full payment of all relevant Fees and
- (ii) compliance with this Contract, the Client is granted (and is permitted to sub-licence to the Beneficiary) a royalty-free, worldwide, non-assignable and (save to the extent set out in this Contract) non-transferable licence to make use of the GroundSure Materials.

6.2 All Intellectual Property in the GroundSure Materials are and shall remain owned by GroundSure or GroundSure's licensors (including without limitation the Third Party Data Providers) the Client acknowledges, and shall procure acknowledgement by the Beneficiary of, such ownership. Nothing in this Contract purports to transfer or assign any rights to the Client or the Beneficiary in respect of such Intellectual Property.

6.3 Third Party Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client shall, and shall procure that any recipients of the GroundSure Materials shall:

(i) not remove, suppress or modify any trade mark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service;

(v) not reformat or otherwise change (whether by modification, addition or enhancement), the Services (save that those acting for the Beneficiary in a professional capacity shall not be in breach of this clause 6.4(v) where such reformatting is in the normal course of providing advice based upon the Services);

(vi) where a Report and/or Mapping contains material belonging to Ordnance Survey, acknowledge and agree that such content is protected by Crown Copyright and shall not use such content for any purpose outside of receiving the Services; and

(vii) not copy in whole or in part by any means any map prints or run-on copies containing content belonging to Ordnance Survey (other than that contained within Ordnance Survey's OS Street Map) without first being in possession of a valid Paper Map Copying Licence from Ordnance Survey,

6.5 Notwithstanding clause 6.4, the Client may make reasonable use of the GroundSure Materials in order to advise the Beneficiary in a professional capacity. However, GroundSure shall have no liability in respect of any advice, opinion or report given or provided to Beneficiaries by the Client.

6.6 The Client shall procure that any person to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability: Particular Attention Should Be Paid To This Clause

7.1 This Clause 7 sets out the entire liability of GroundSure, including any liability for the acts or omissions of its employees, agents, consultants, subcontractors and Third Party Content, in respect of:

(i) any breach of contract, including any deliberate breach of the Contract by GroundSure or its employees, agents or subcontractors;

(ii) any use made of the Reports, Services, Materials or any part of them; and

(iii) any representation, statement or tortious act or omission (including negligence) arising under or in connection with the Contract.

7.2 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from the Contract.

7.3 Nothing in the Contract limits or excludes the liability of the Supplier for death or personal injury resulting from negligence, or for any damage or liability incurred by the Client or Beneficiary as a result of fraud or fraudulent misrepresentation.

7.4 GroundSure shall not be liable for

(i) loss of profits;

(ii) loss of business;

(iii) depletion of goodwill and/or similar losses;

(iv) loss of anticipated savings;

(v) loss of goods;

(vi) loss of contract;

(vii) loss of use;

(viii) loss or corruption of data or information;

(ix) business interruption;

(x) any kind of special, indirect, consequential or pure economic loss, costs, damages, charges or expenses;

(xi) loss or damage that arise as a result of the use of all or part of the GroundSure Materials in breach of the Contract;

(xii) loss or damage arising as a result of any error, omission or inaccuracy in any part of the GroundSure Materials where such error, omission or inaccuracy is caused by any Third Party Content or any reasonable interpretation of Third Party Content;

(xiii) loss or damage to a computer, software, modem, telephone or other property; and

(xiv) loss or damage caused by a delay or loss of use of GroundSure's internet ordering service.

7.5 GroundSure's total liability in relation to or under the Contract shall be limited to £10 million for any claim or claims.

7.6 GroundSure shall procure that the Beneficiary shall be bound by limitations and exclusions of liability in favour of GroundSure which accord with those detailed in clauses 7.4 and 7.5 (subject to clause 7.3) in respect of all claims which the Beneficiary may bring against GroundSure in relation to the Services or other matters arising pursuant to the Contract.

8 GroundSure's right to suspend or terminate

8.1 If GroundSure reasonably believes that the Client or Beneficiary has not provided the information or assistance required to enable the proper provision of the Services, GroundSure shall be entitled to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure shall be entitled to terminate the Contract immediately on written notice in the event that:

(i) the Client fails to pay any sum due to GroundSure within 30

days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an administration order made against it or if a receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any term of the Contract (including, but not limited to, the obligations in clause 4) which is incapable of remedy or if remediable, is not remedied within five days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.1, the Client may at any time upon written notice terminate or suspend the provision of all or any of the Services.

9.2 In any event, where the Client is a consumer (and not a business) he/she hereby expressly acknowledges and agrees that:

(i) the supply of Services under this Contract (and therefore the performance of this Contract) commences immediately upon GroundSure's acceptance of the Order; and

(ii) the Reports and/or Mapping provided under this Contract are

(a) supplied to the Client's specification(s) and in any event

(b) by their nature cannot be returned.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination of the Contract:

(i) GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client and/or Beneficiary any property of the Client and/or Beneficiary in GroundSure's possession or control; and

(ii) the Client shall pay to GroundSure all and any Fees payable in respect of the performance of the Services up to the date of termination or suspension. In respect of any Support Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination or suspension of the Contract.

11 Anti-Bribery

11.1 The Client warrants that it shall:

(i) comply with all applicable laws, statutes and regulations relating to anti-bribery and anti-corruption including but not limited to the Bribery Act 2010;

(ii) comply with such of GroundSure's anti-bribery and anti-corruption policies as are notified to the Client from time to time; and

(iii) promptly report to GroundSure any request or demand for any undue financial or other advantage of any kind received by or on behalf of the Client in connection with the performance of this Contract.

11.2 Breach of this Clause 11 shall be deemed a material breach of this Contract.

12 General

12.1 The Mapping contained in the Services is protected by Crown copyright and must not be used for any purpose other than as part of the Services or as specifically provided in the Contract.

12.2 The Client shall be permitted to make one copy only of each Report or Mapping Order. Thereafter the Client shall be entitled to make unlimited copies of the Report or Mapping Order only in accordance with an Ordnance Survey paper map copy license available through GroundSure.

12.3 GroundSure reserves the right to amend or vary this Contract. No amendment or variation to this Contract shall be valid unless signed by an authorised representative of GroundSure.

12.4 No failure on the part of GroundSure to exercise, and no delay in exercising, any right, power or provision under this Contract shall operate as a waiver thereof.

12.5 Save as expressly provided in this Contract, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

12.6 The Secretary of State for Business, Innovation and Skills ("BIS") or BIS' successor body, as the case may be, acting through Ordnance Survey may enforce a breach of clause 6.4(vi) and clause 6.4(vii) of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

12.7 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

(i) the Client or Beneficiary's failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Third

Party Data Providers;

(viii) changes in law; or

(ix) any other reason beyond GroundSure's reasonable control.

In the event that GroundSure is prevented from performing the Services (or any part thereof) in accordance with this clause 12.6 for a period of not less than 30 days then GroundSure shall be entitled to terminate this Contract immediately on written notice to the Client.

12.8 Any notice provided shall be in writing and shall be deemed to be properly

given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

12.9 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email (save to the extent such day is not a working day where it shall be deemed to have been delivered on the next working day) and on the second working day after the day of posting if sent by first class post.

12.10 The Contract constitutes the entire agreement between the parties and shall supersede all previous arrangements between the parties relating to the subject matter hereof.

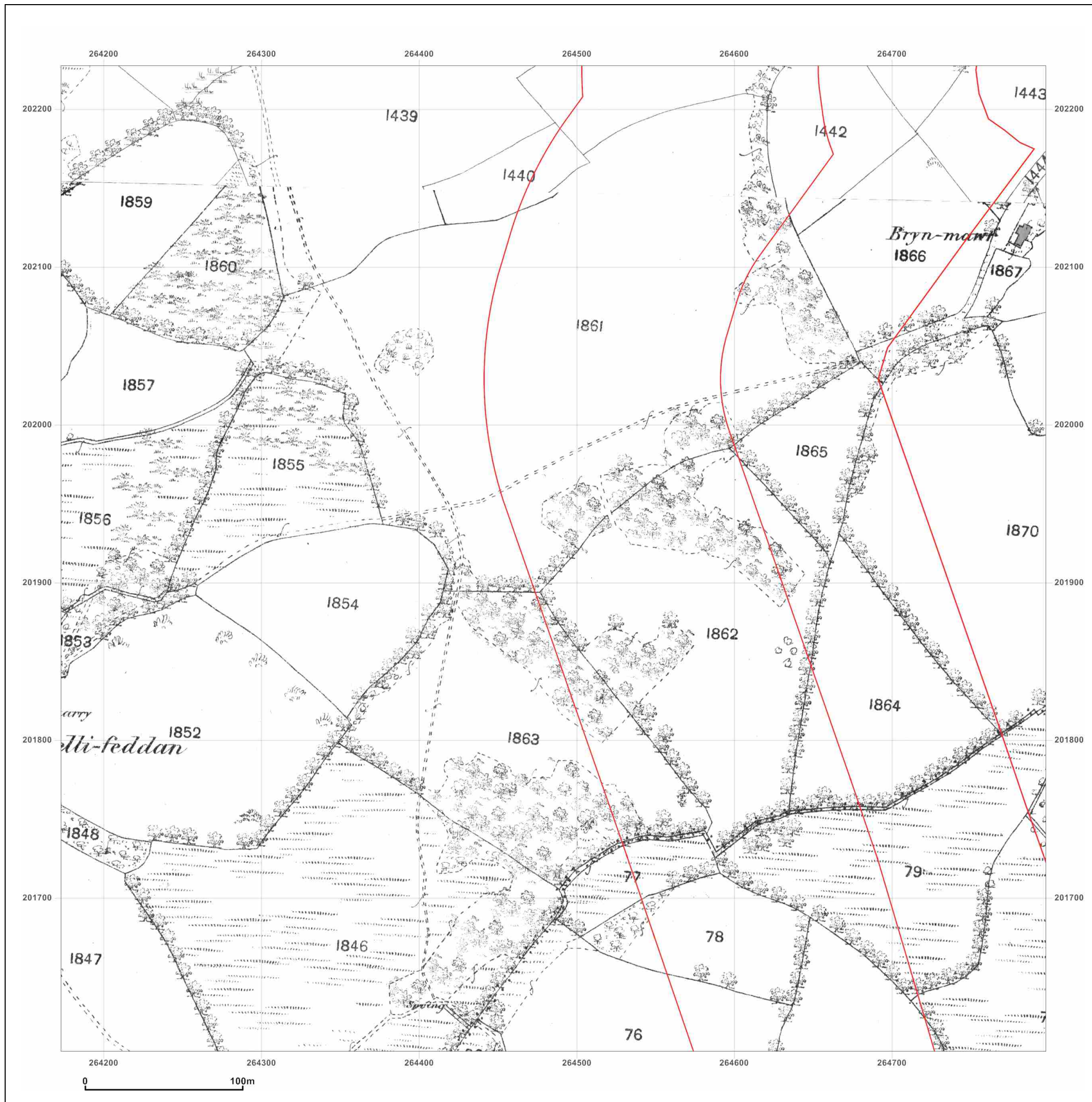
12.11 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

12.12 This Contract shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with this Contract shall be subject to the exclusive jurisdiction of the English courts.

12.13 GroundSure is an executive member of the Council of Property Search Organisation (CoPSO) and has signed up to the Search Code administered by the Property Codes Compliance Board (PCCB). All Risk Screening Reports shall be supplied in accordance with the provisions of the Search Code.

12.14 If the Client or Beneficiary has a complaint about the Services, written notice should be given to the Compliance Officer at GroundSure who will respond in a timely manner.

12.15 The Client agrees that it shall, and shall procure that each Beneficiary shall, treat in confidence all Confidential Information and shall not, and shall procure that each Beneficiary shall not (i) disclose any Confidential Information to any third party other than in accordance with the terms of this Contract; and (ii) use Confidential Information for a purpose other than the exercise of its rights and obligations under this Contract. Subject to clause 6.6, nothing shall prevent the Client or any Beneficiary from disclosing Confidential Information to the extent required by law



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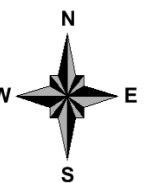
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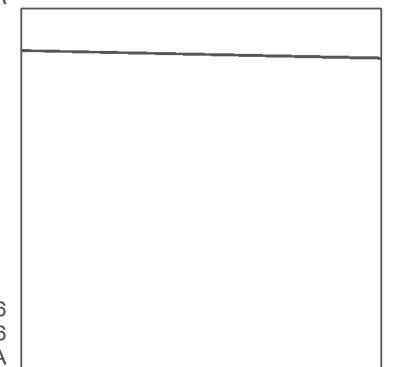
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Edition N/A
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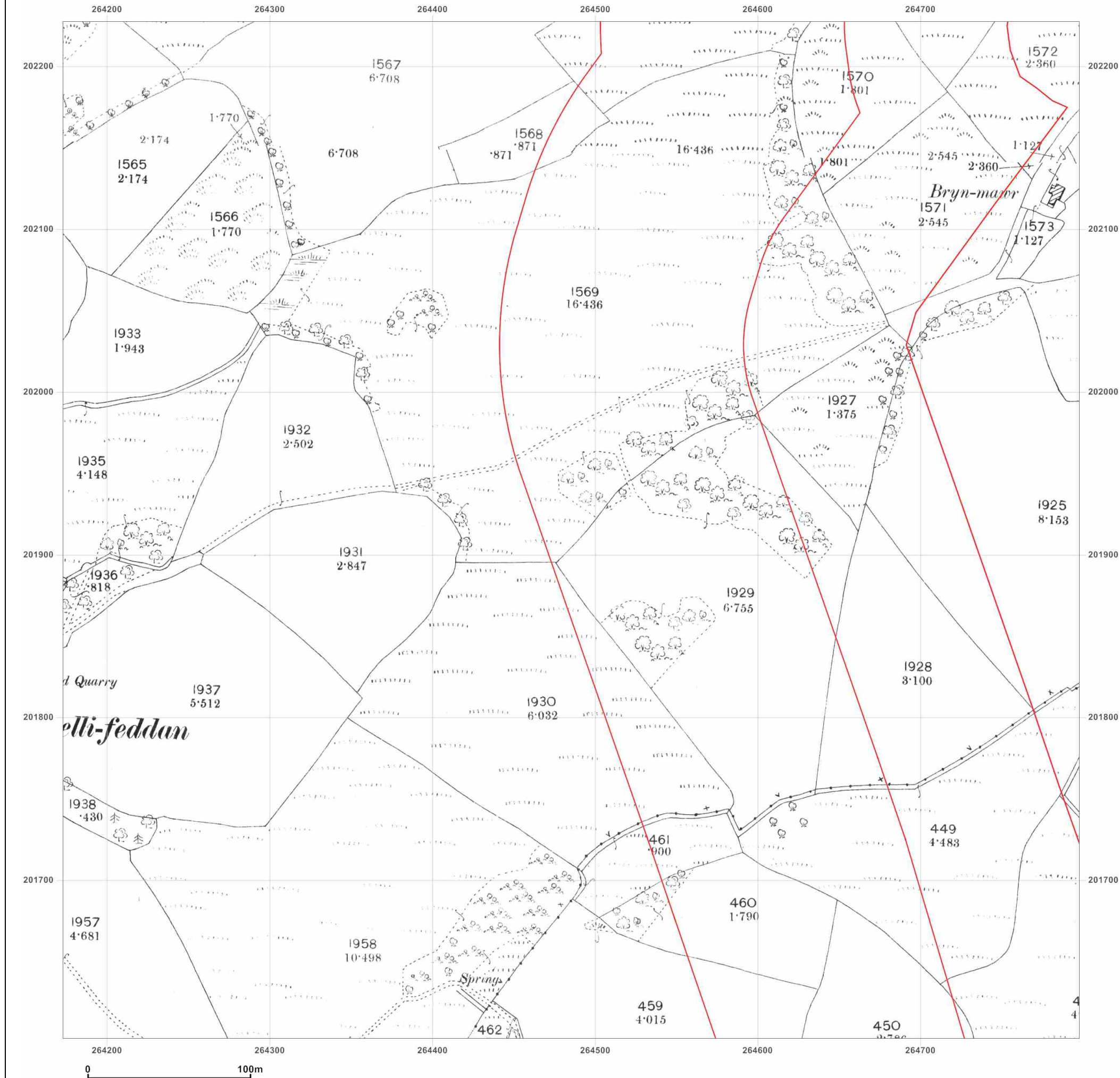


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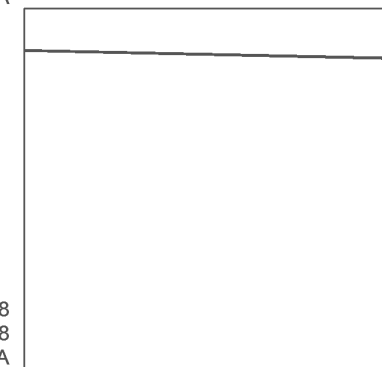
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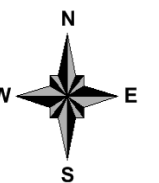
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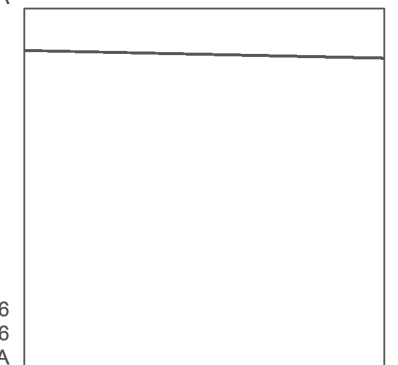
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Revised 1916
Edition N/A
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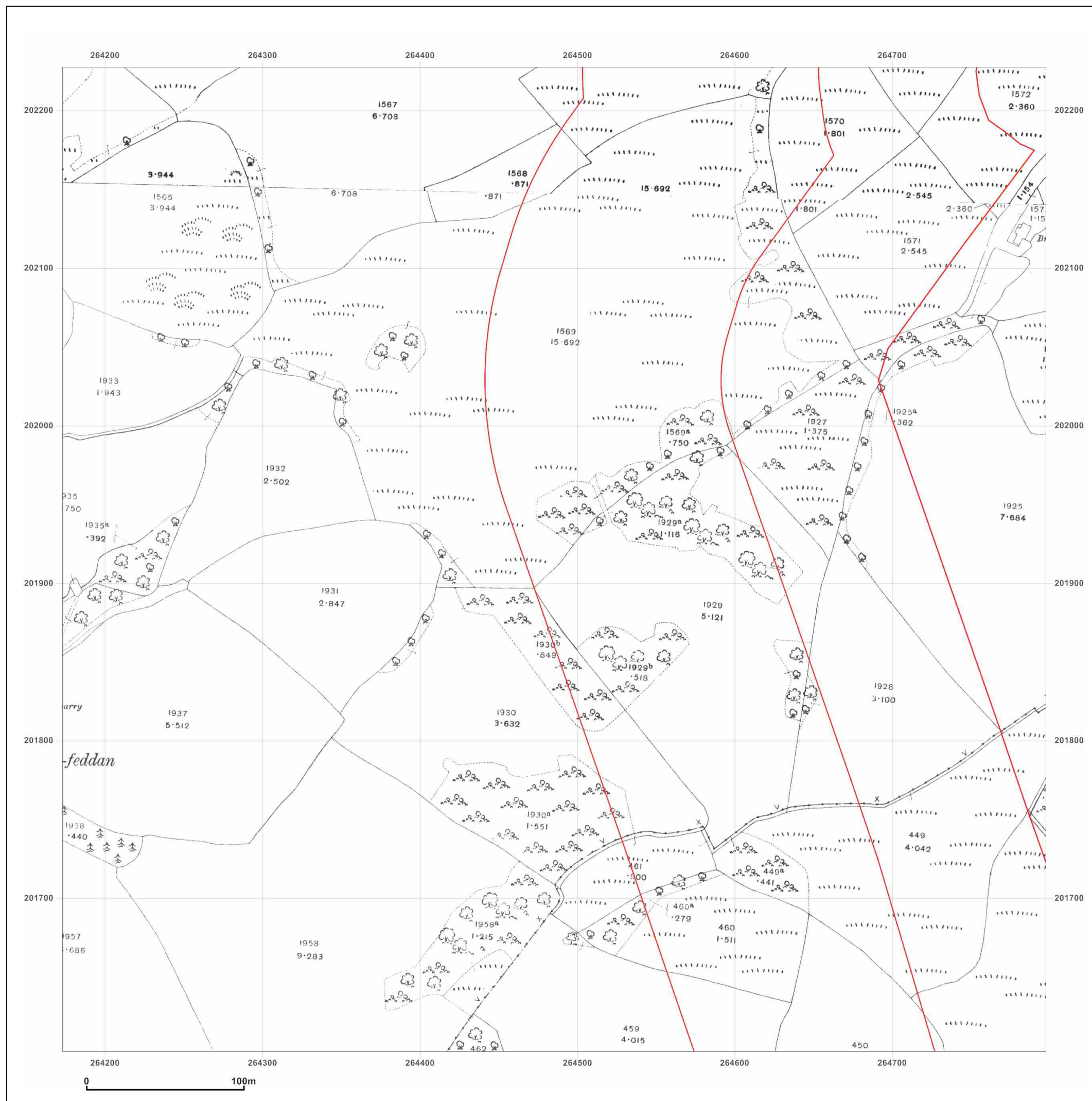


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Client Ref: PB84891
Report Ref: GS-1587646_LS_3_4
Grid Ref: 264485, 201915

Map Name: County Series

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Printed at: 1:2,500



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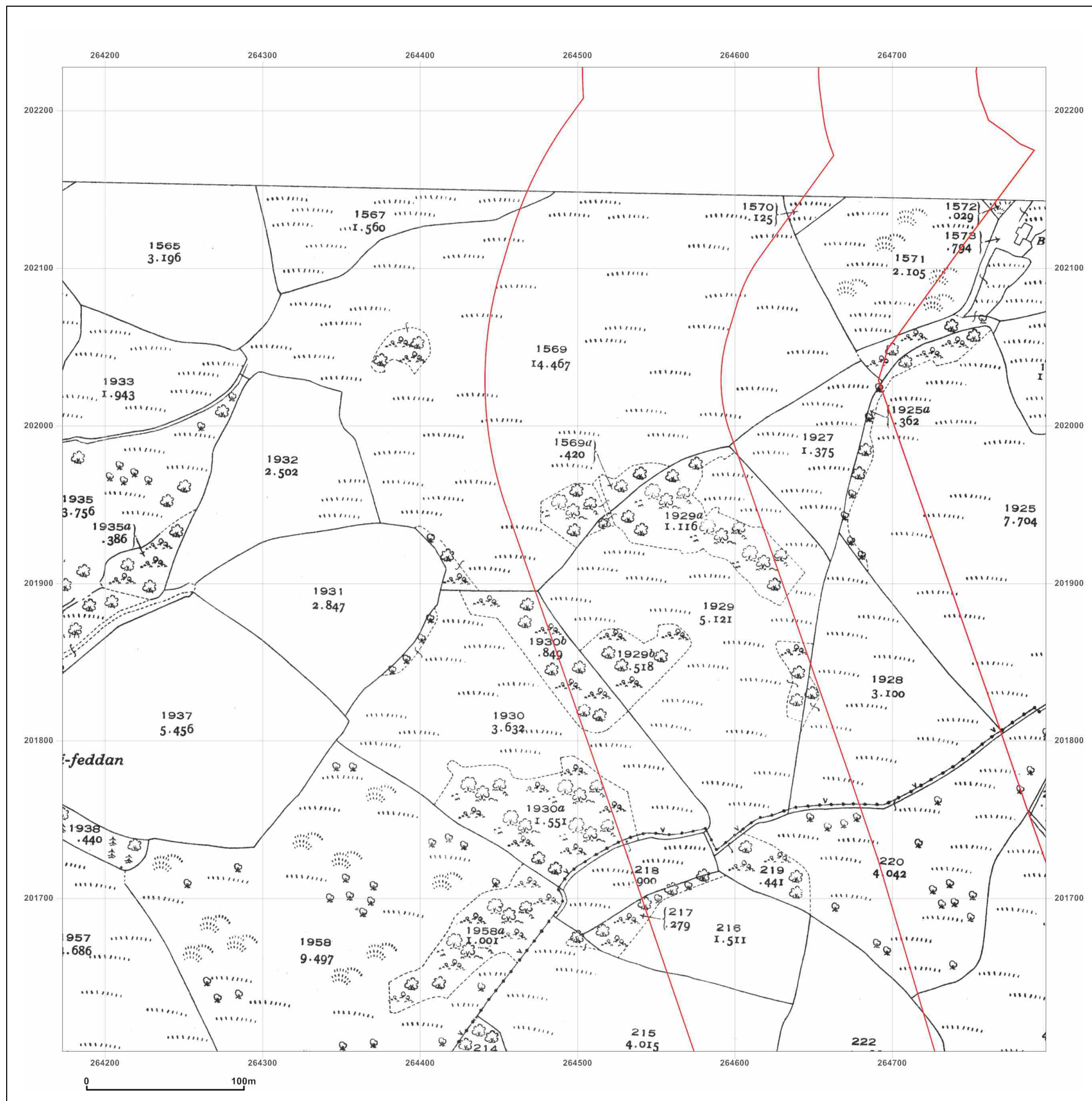


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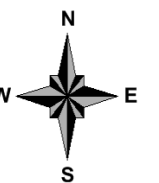
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Map Name: National Grid

Map date: 1958

Scale: 1:2,500

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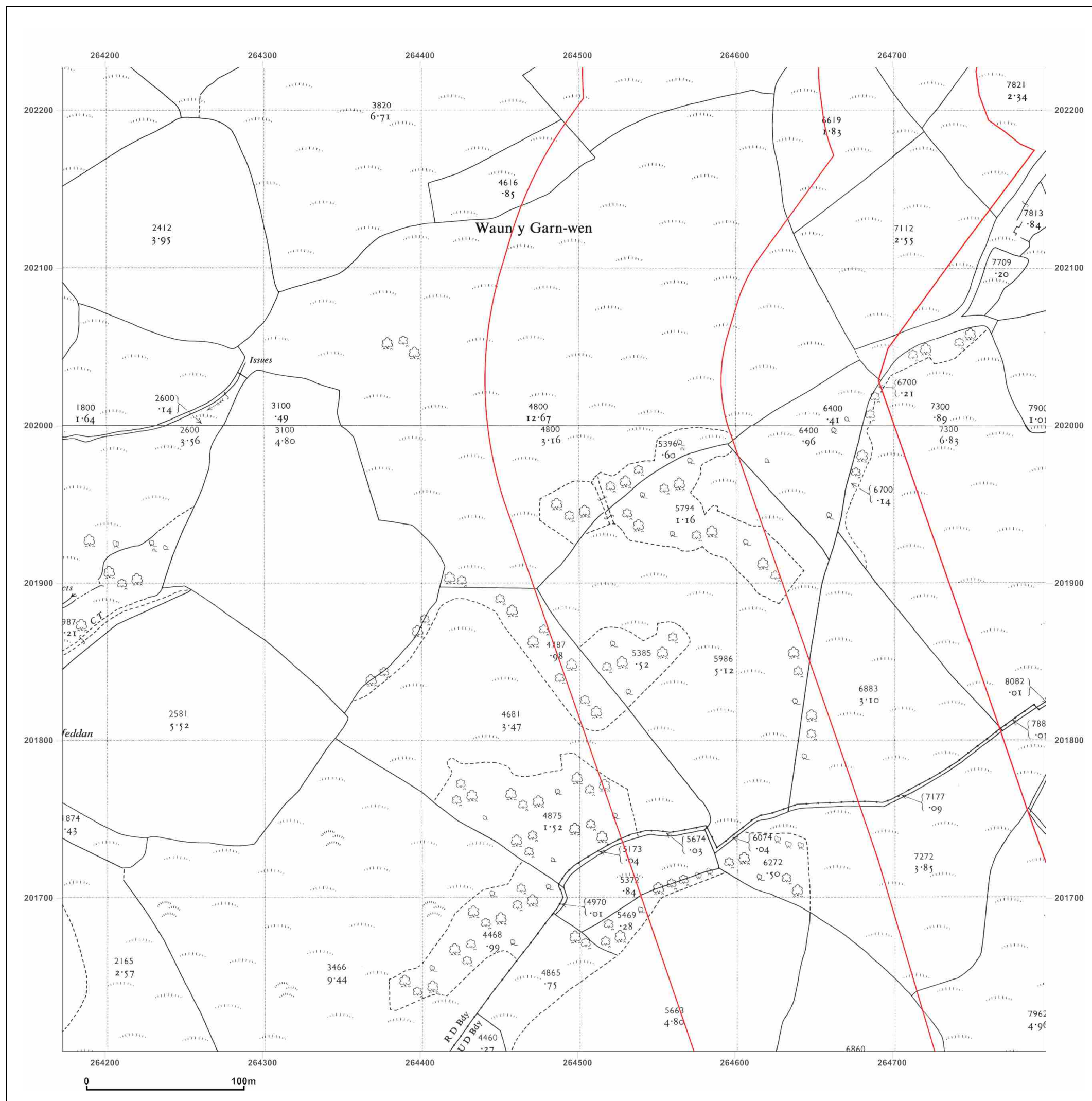


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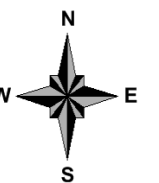
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Map date: 1960

Scale: 1:2,500

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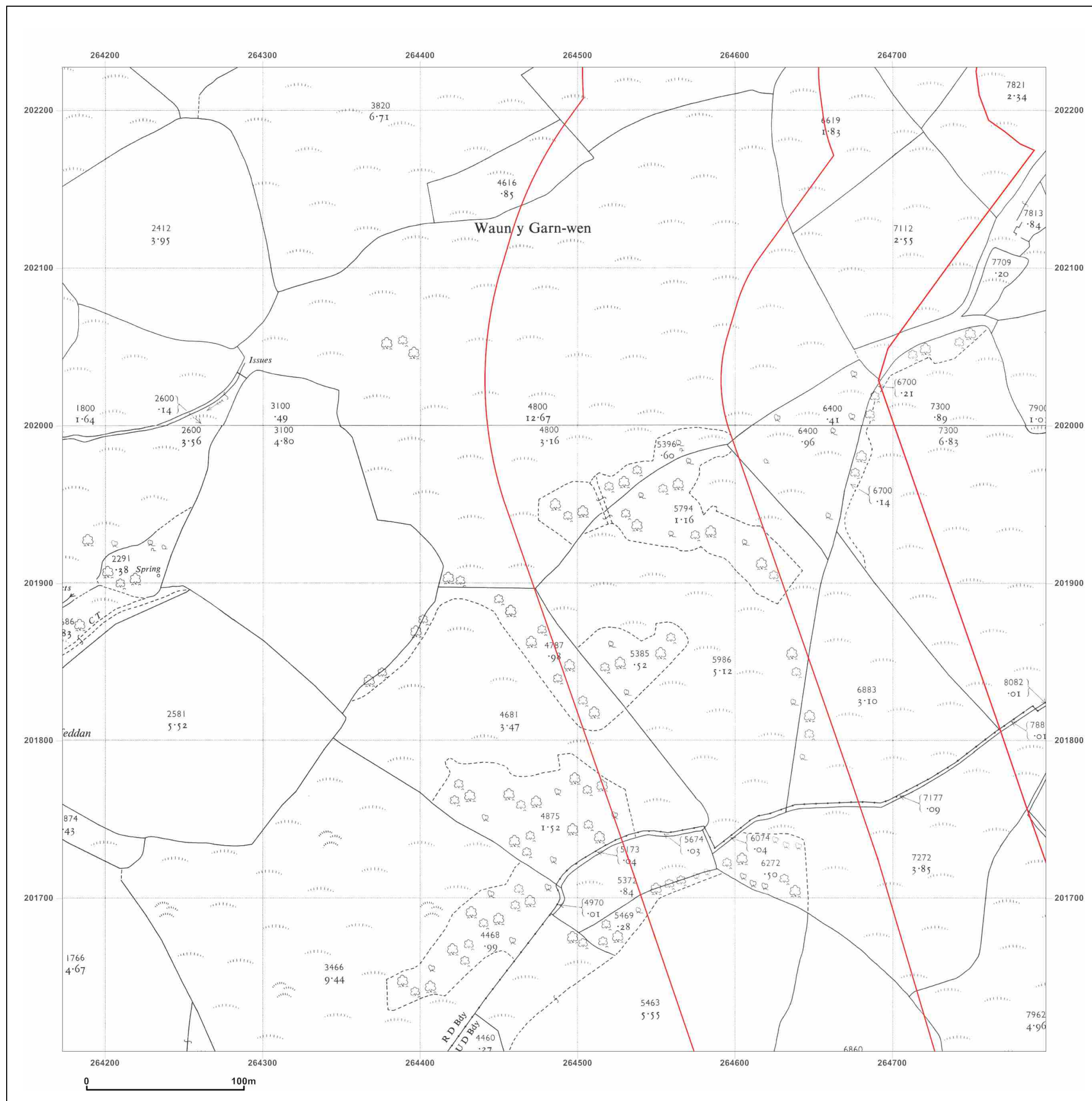


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Client Ref: PB84891
Report Ref: GS-1587646_LS_3_4
Grid Ref: 264485, 201915

Map Name: National Grid

Map date: 1989

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1956
Revised 1989
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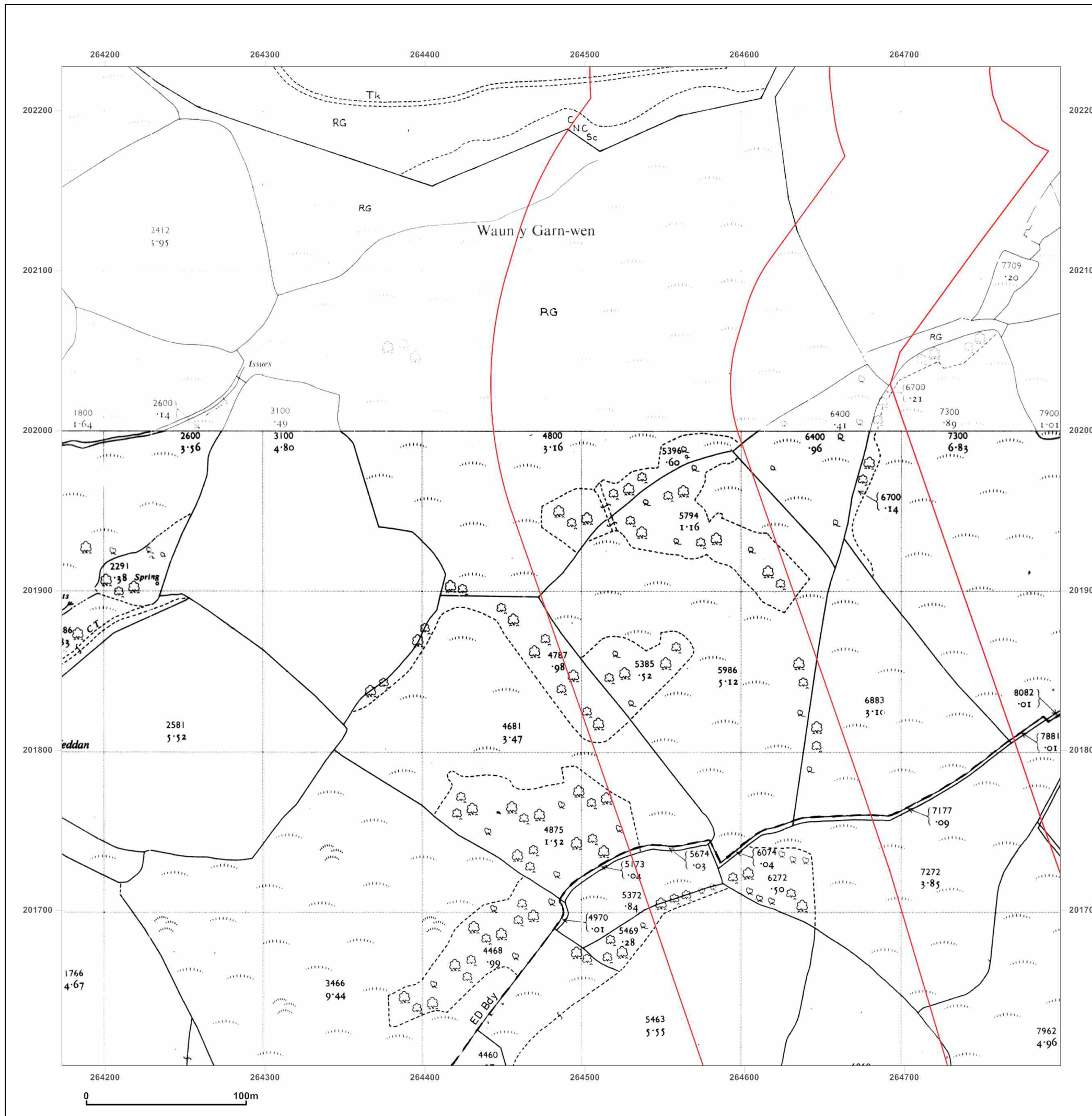


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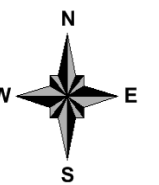
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Grid Ref: 264485, 201915

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



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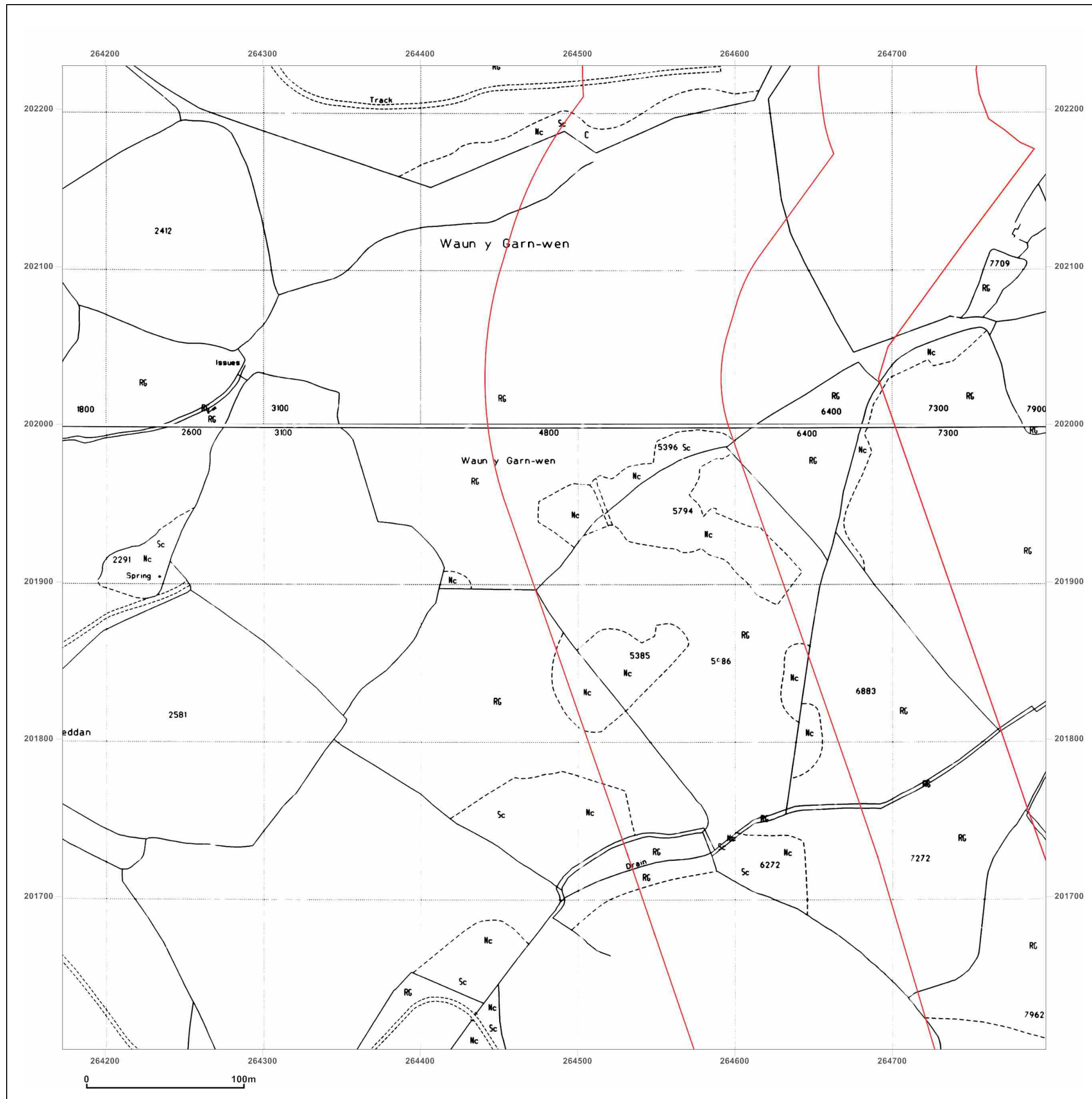


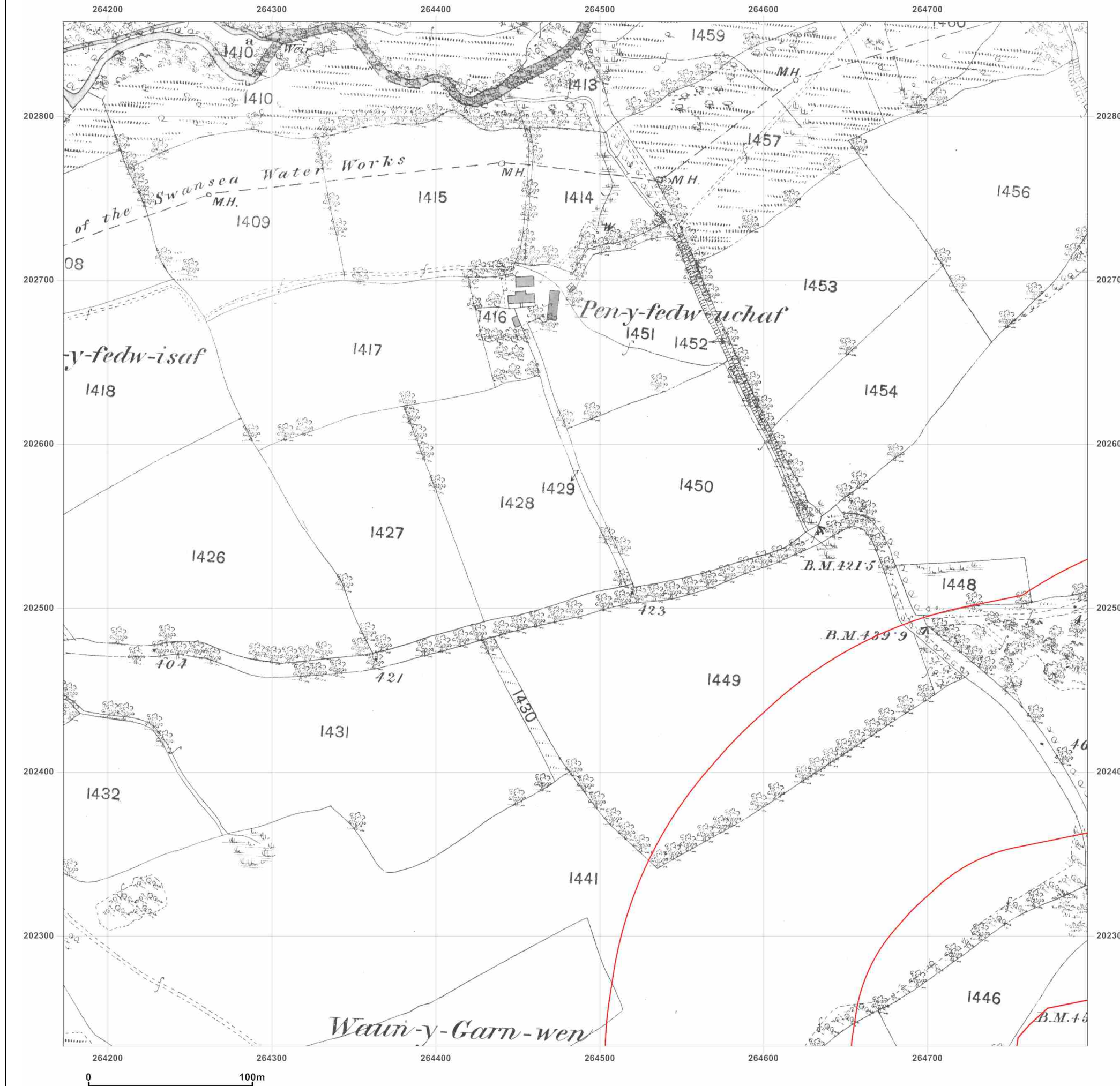
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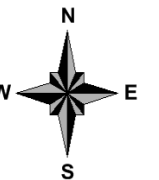
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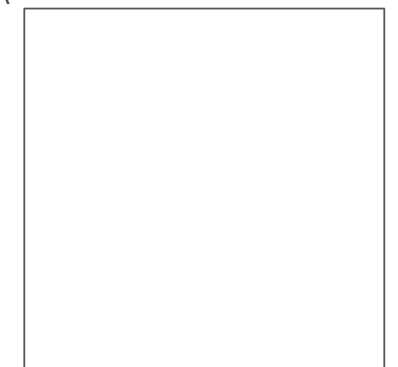
Map date: 1876

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Printed at: 1:2,500



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Revised 1876
Edition N/A
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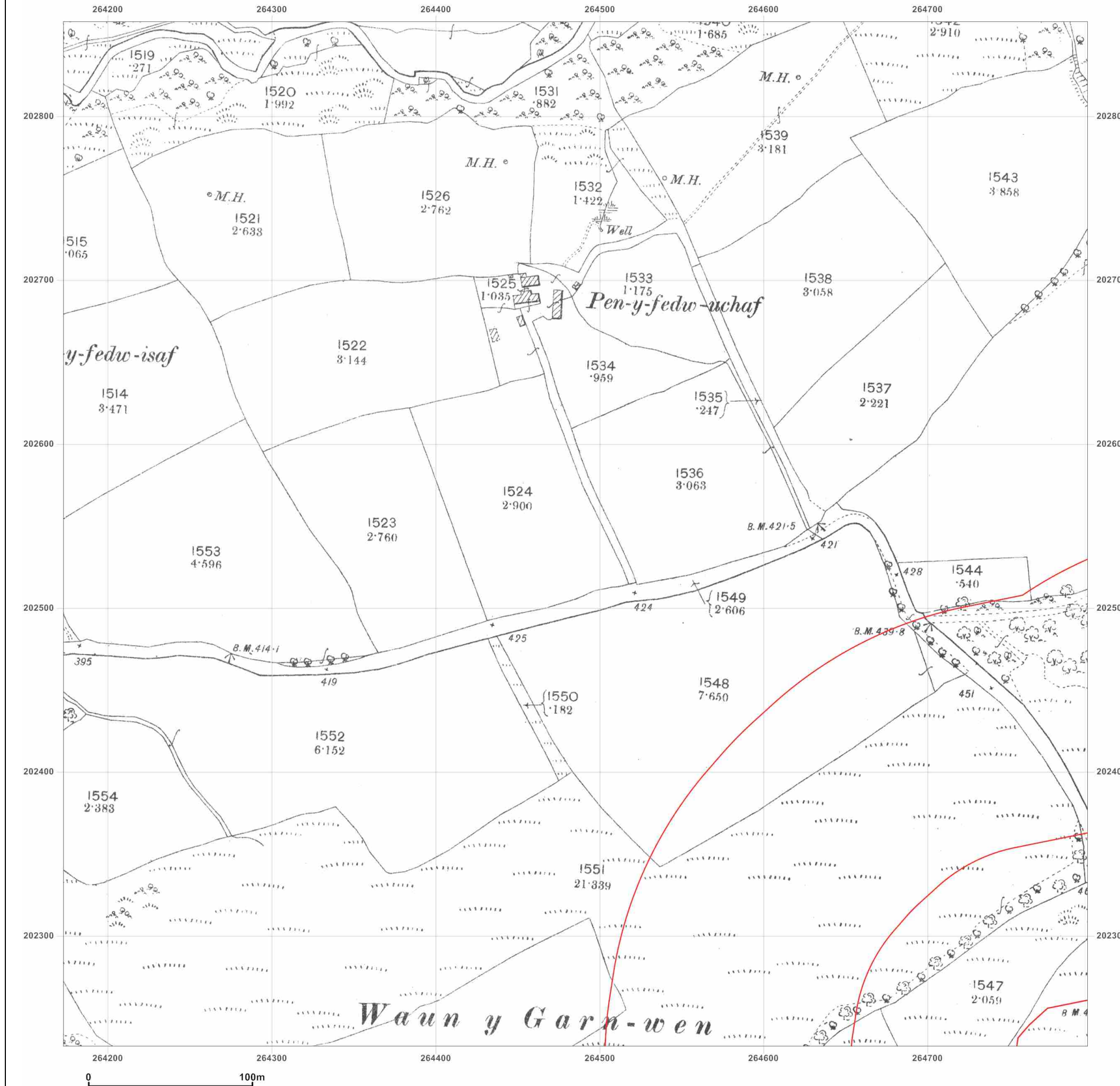


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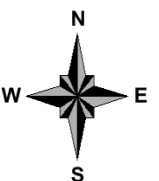
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Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



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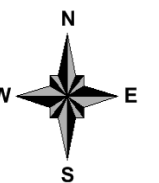
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Report Ref: GS-1587646_LS_3_5
Grid Ref: 264485, 202545

Map Name: County Series

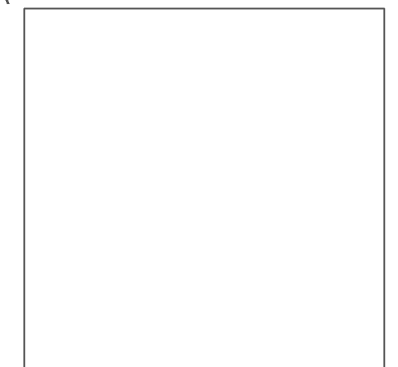
Map date: 1916

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1916
Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

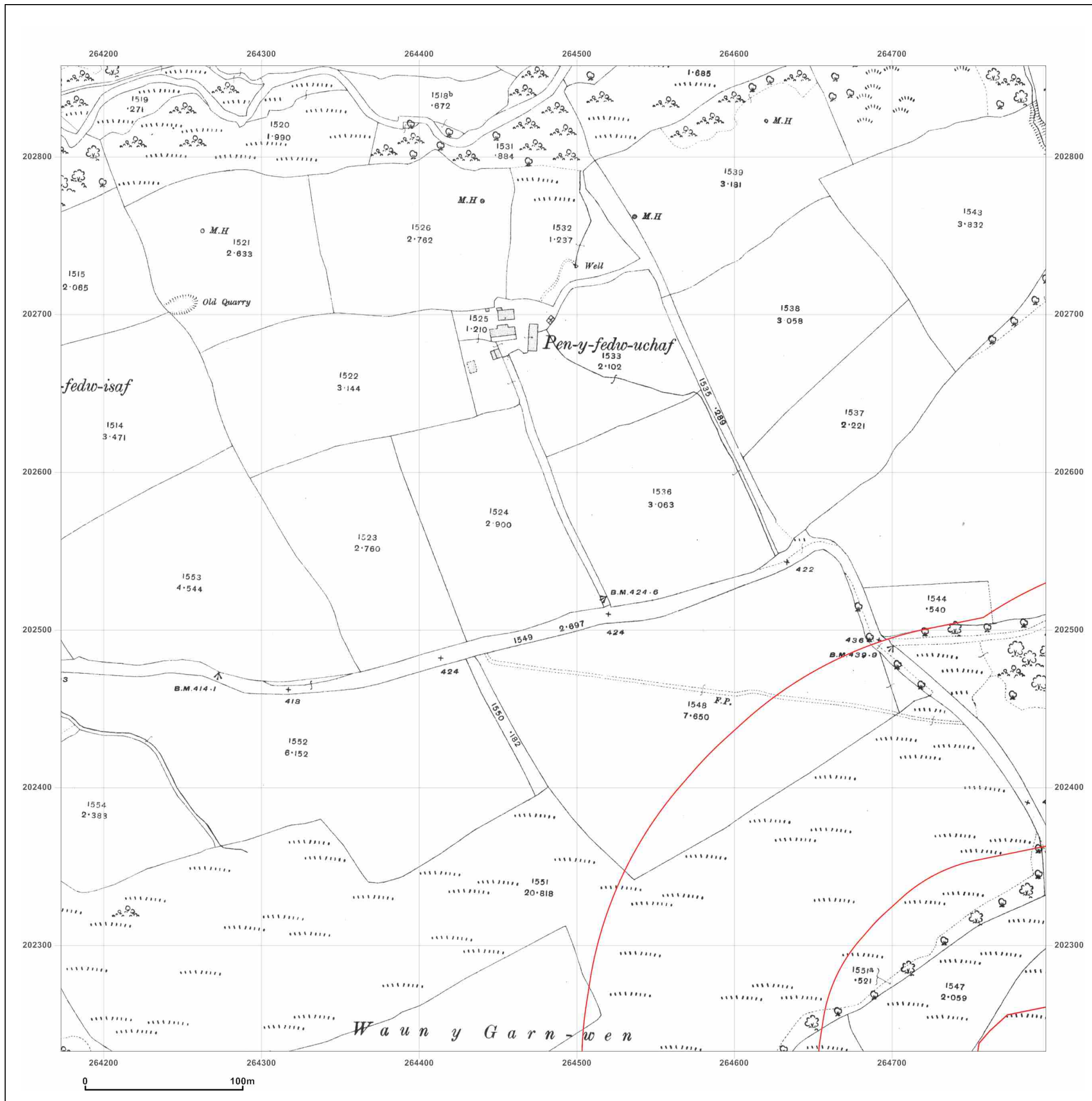


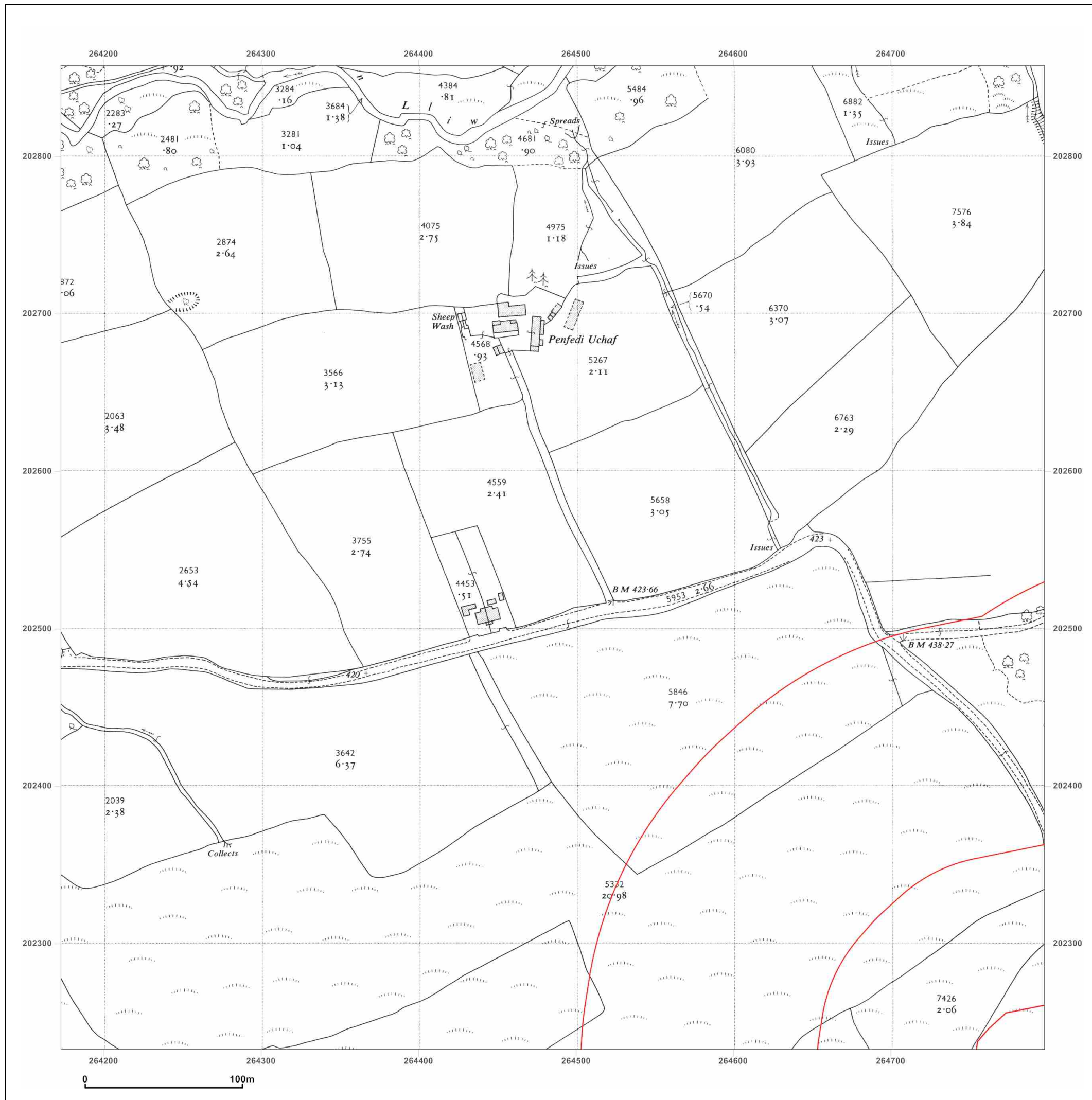
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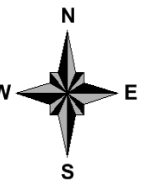
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Grid Ref: 264485, 202545

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
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Edition N/A
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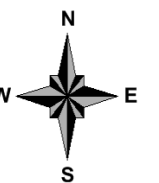
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Report Ref: GS-1587646_LS_3_5
Grid Ref: 264485, 202545

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1956

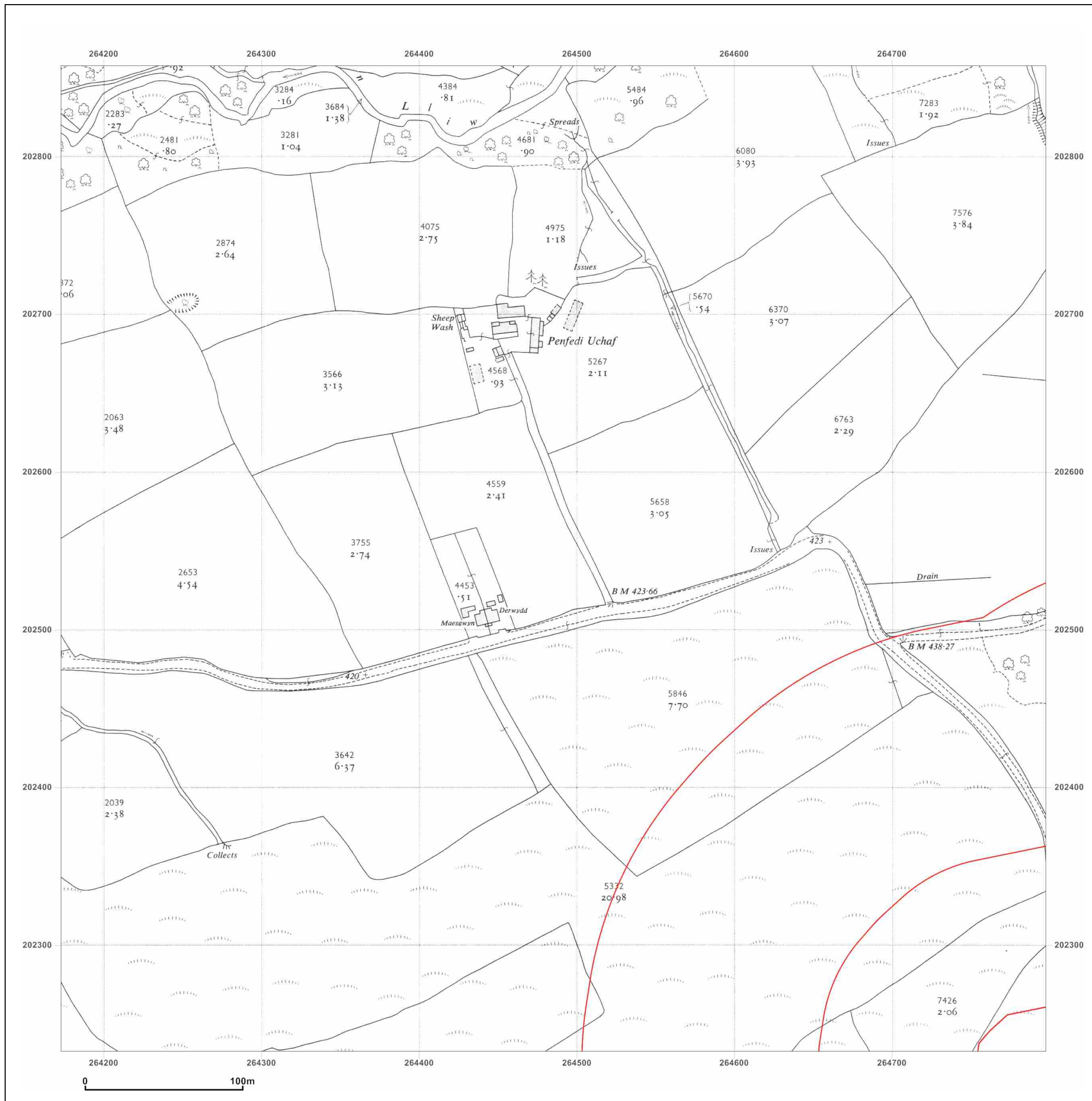


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Client Ref: PB84891
Report Ref: GS-1587646_LS_3_5
Grid Ref: 264485, 202545

Map Name: National Grid

Map date: 1989

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1989
Revised 1989
Edition N/A
Copyright 1989
Levelled N/A



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Client Ref: PB84891
Report Ref: GS-1587646_LS_3_5
Grid Ref: 264485, 202545

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A



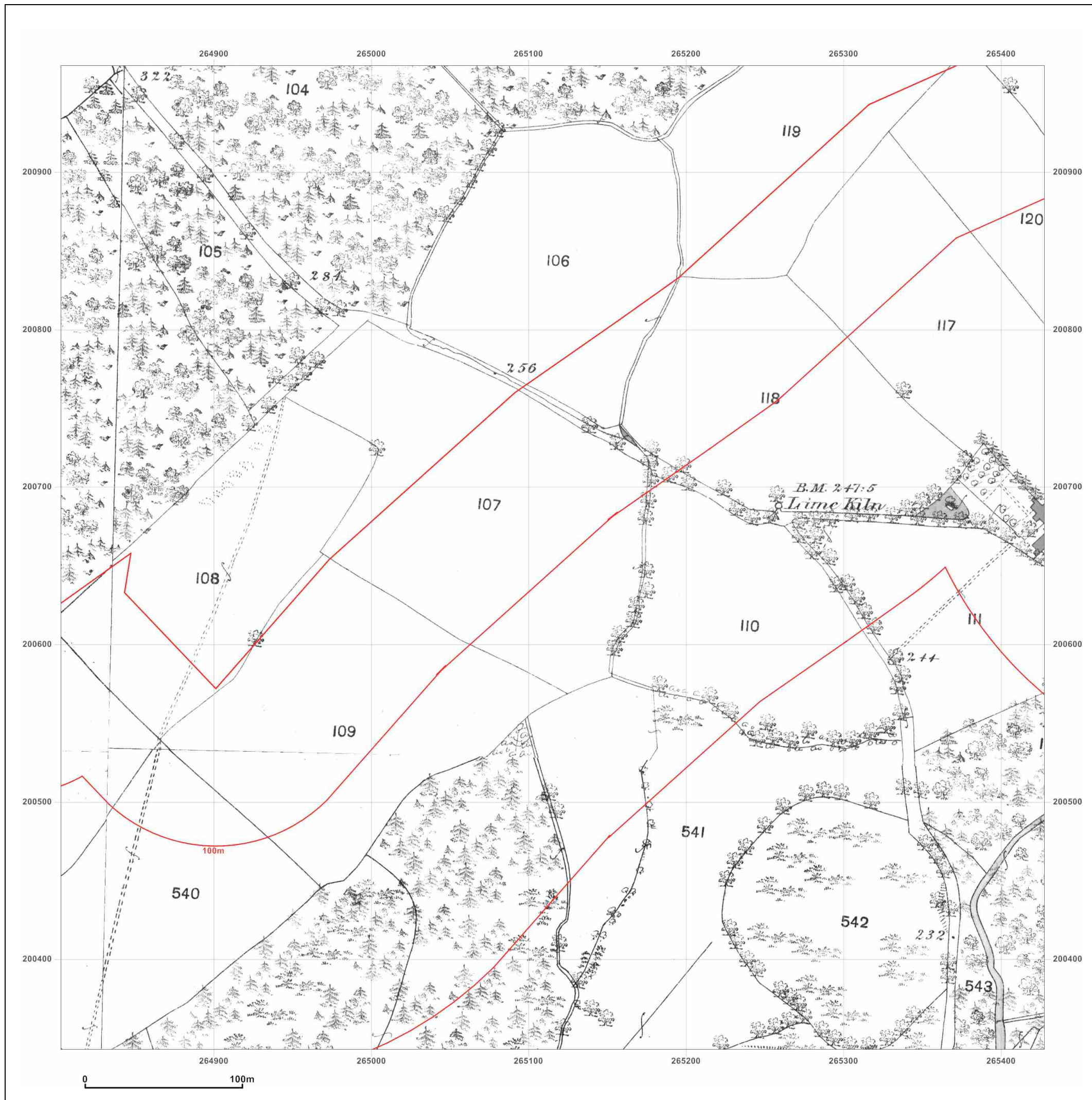
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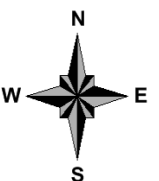
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Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: County Series

Map date: 1876-1878

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1878
Revised 1878
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
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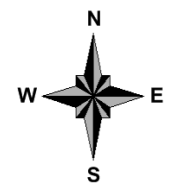
Production date: 30 July 2014

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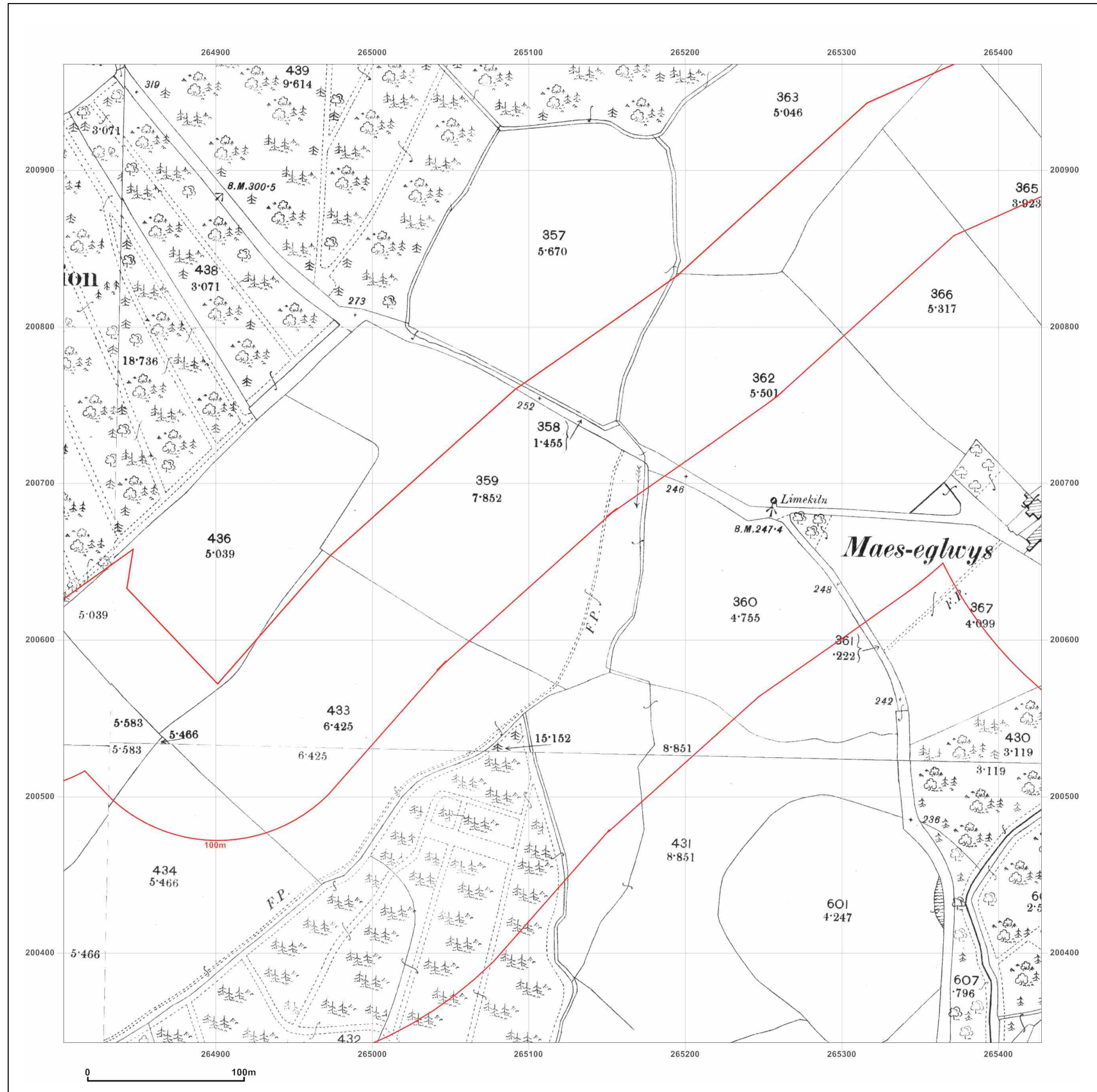
Site Details:
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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: County Series
Map date: 1898-1899
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1898 Revised 1898 Edition N/A Copyright N/A Levelled N/A	Surveyed 1899 Revised 1899 Edition N/A Copyright N/A Levelled N/A
Surveyed 1898 Revised 1898 Edition N/A Copyright N/A Levelled N/A	Surveyed 1899 Revised 1899 Edition N/A Copyright N/A Levelled N/A



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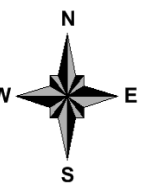
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Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: County Series

Map date: 1916-1918

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1916
Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1918
Revised 1918
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1916
Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1917
Revised 1917
Edition N/A
Copyright N/A
Levelled N/A

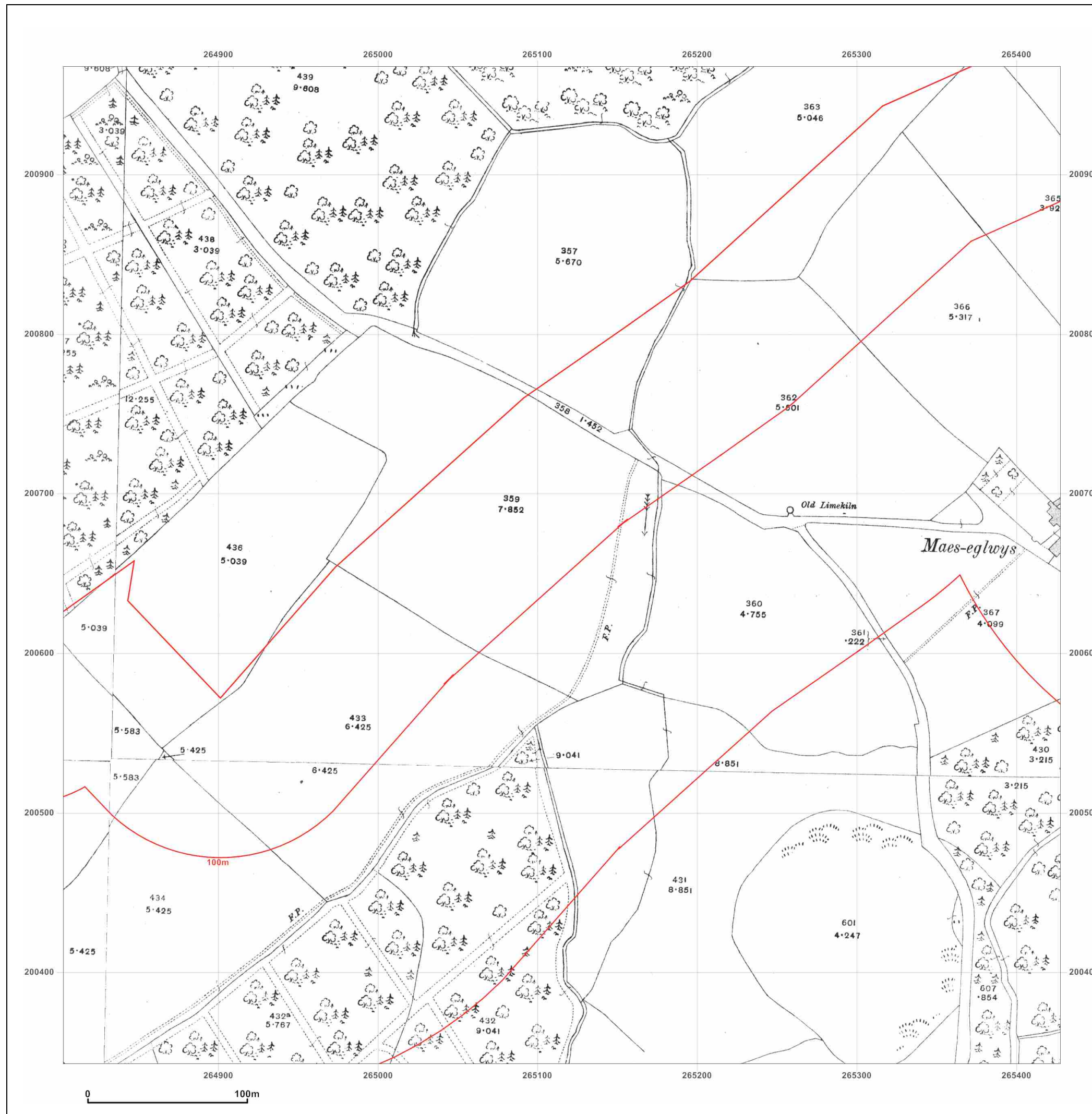


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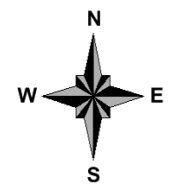
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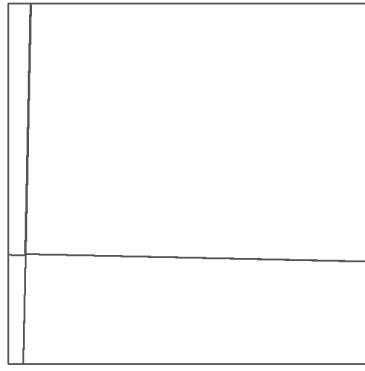


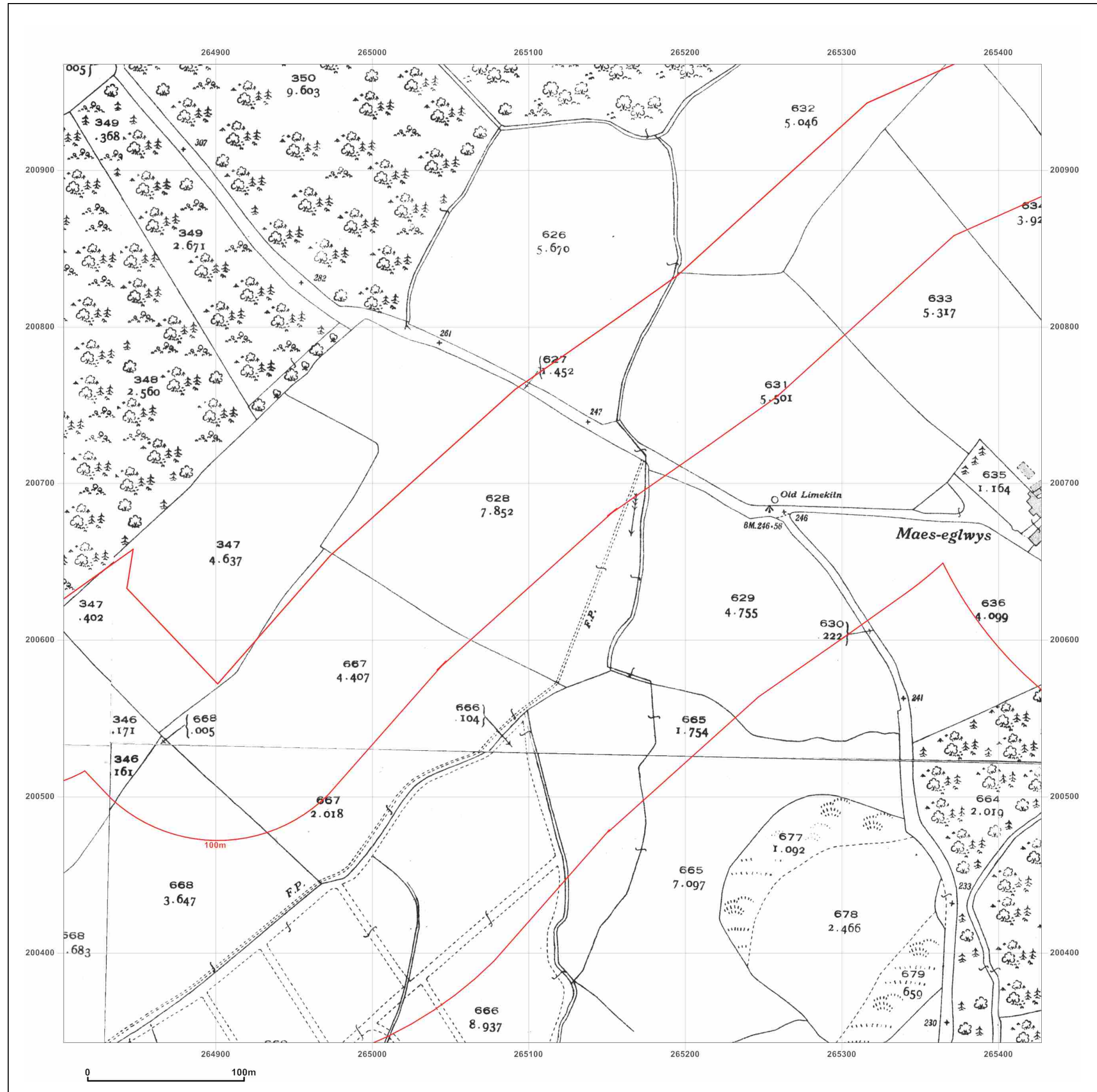
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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: County Series
Map date: 1935
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1935 Revised 1935 Edition N/A Copyright N/A Levelled N/A		Surveyed 1935 Revised 1935 Edition N/A Copyright N/A Levelled N/A
Surveyed 1935 Revised 1935 Edition N/A Copyright N/A Levelled N/A		Surveyed 1935 Revised 1935 Edition N/A Copyright N/A Levelled N/A



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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1956

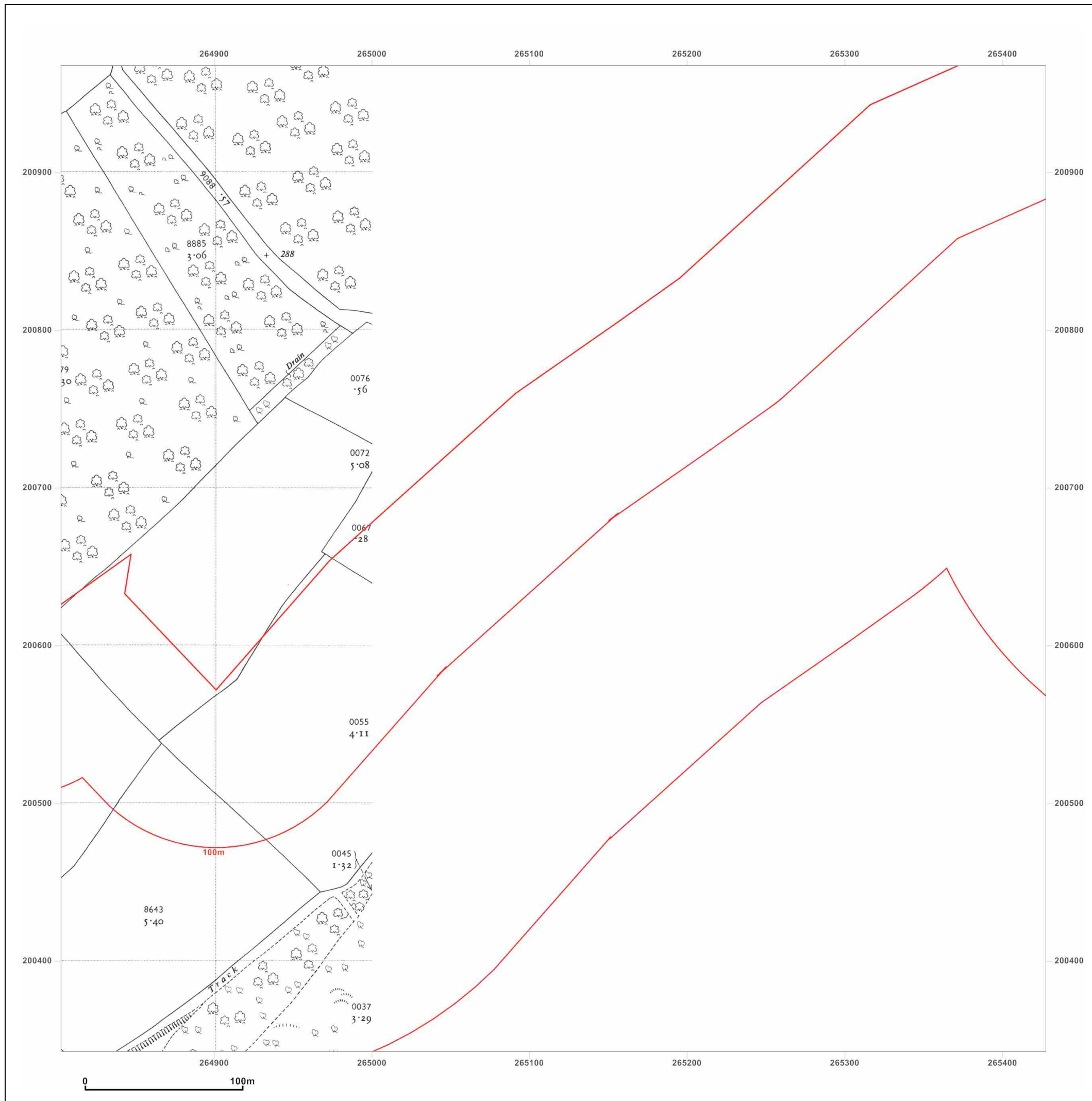


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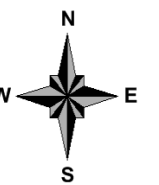
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Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1962
Levelled 1956

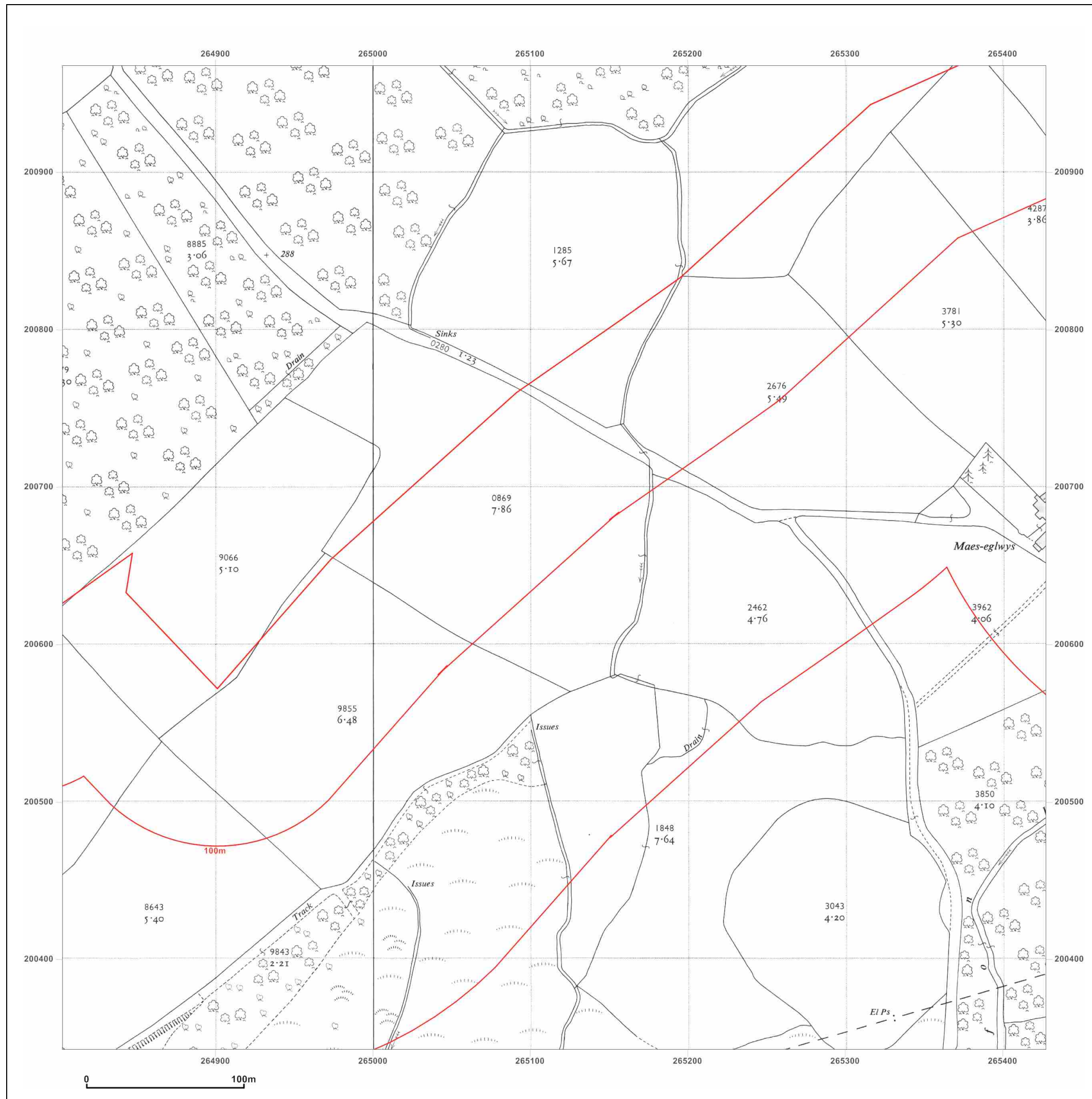


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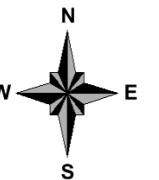
Client Ref: PB84891
Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: National Grid

Map date: 1974

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1963

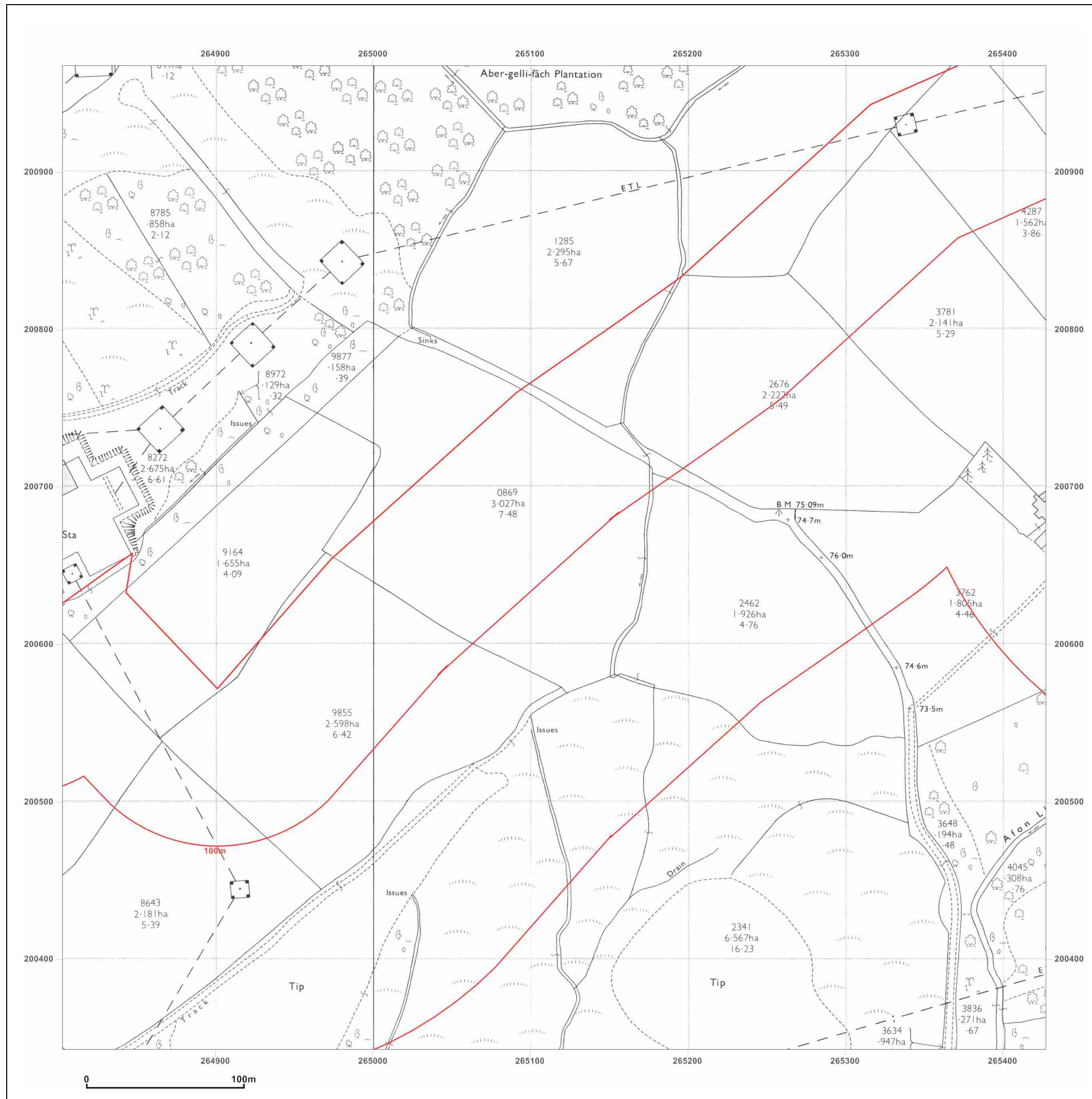


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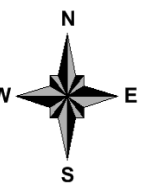
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Report Ref: GS-1587646_LS_4_2
Grid Ref: 265115, 200655

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



<p>Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A</p>	<p>Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A</p>
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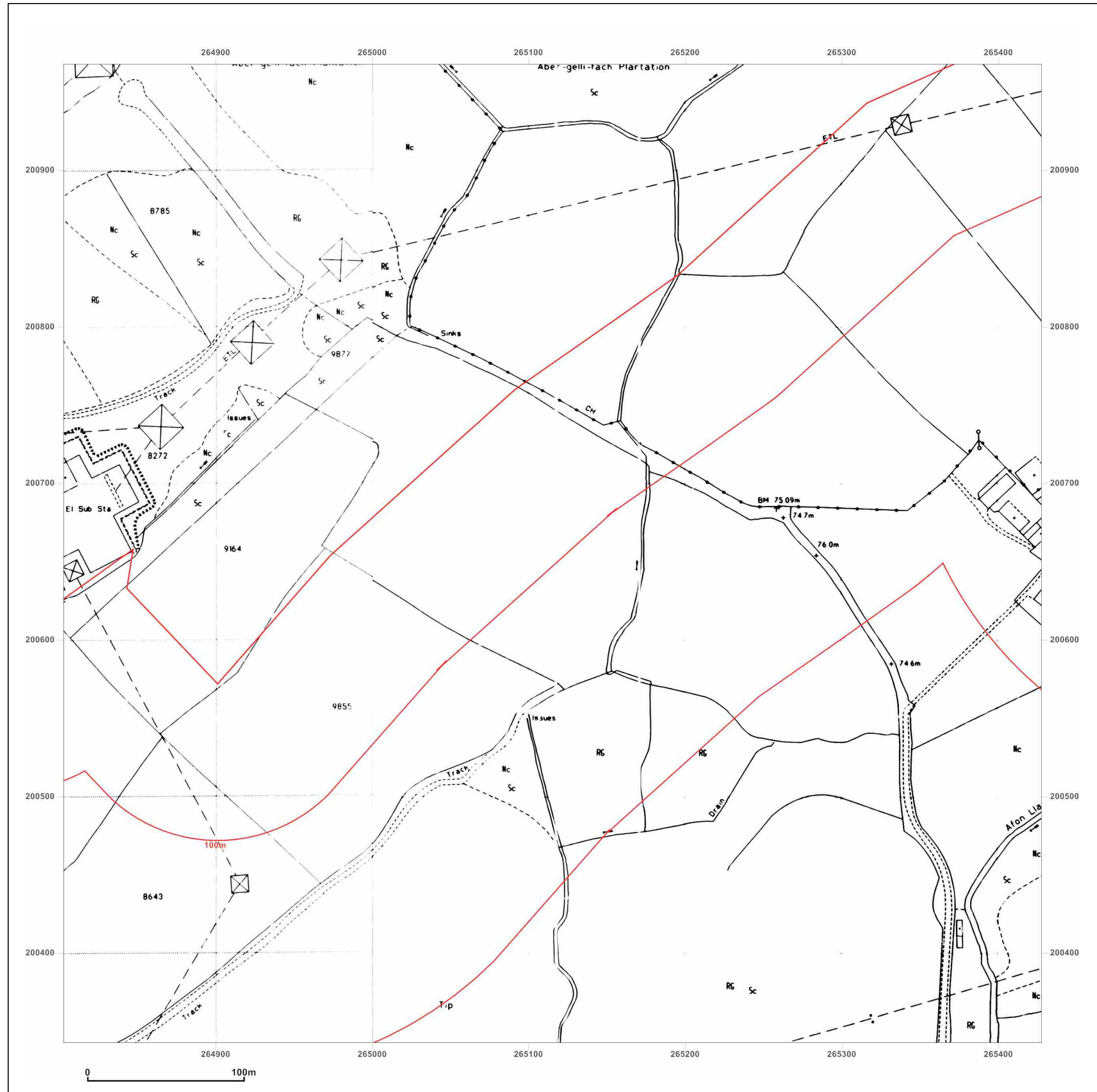


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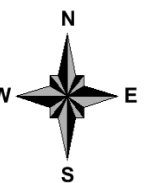
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Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: County Series

Map date: 1876

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

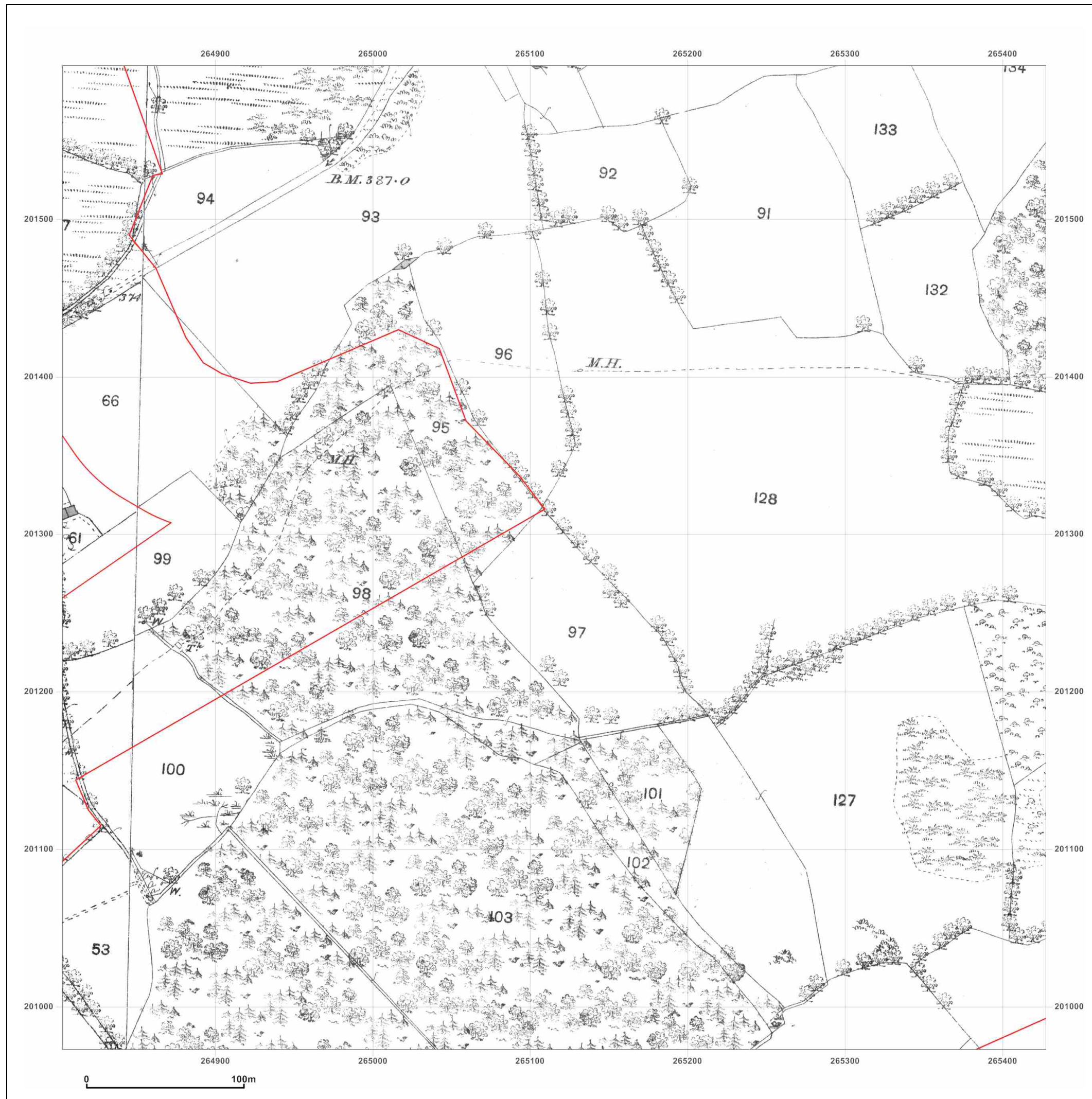


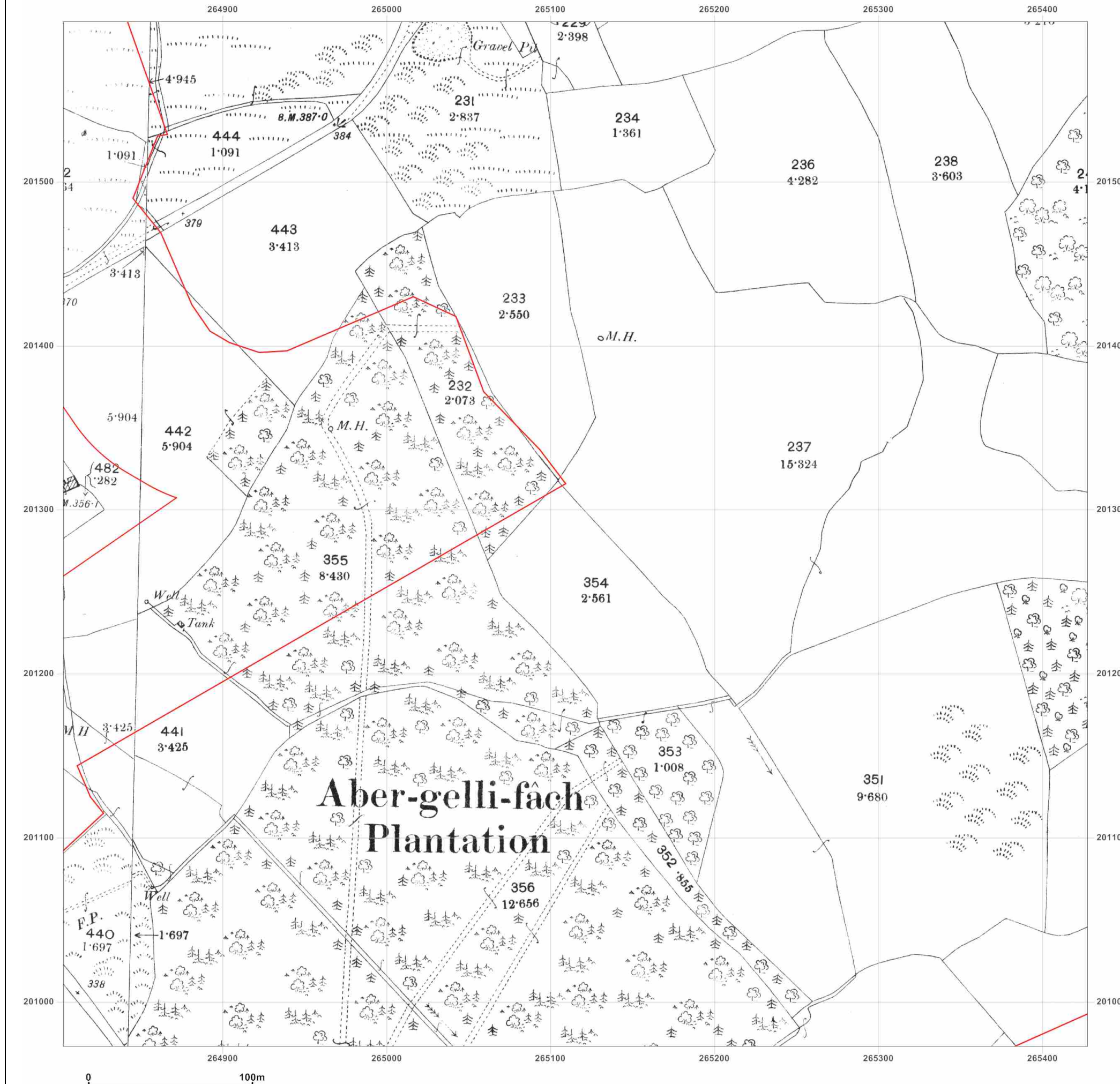
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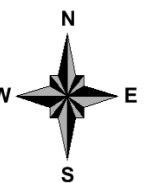
Client Ref: PB84891
Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: County Series

Map date: 1898-1899

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1898
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
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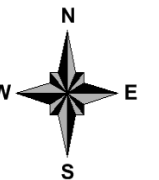
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Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: County Series

Map date: 1916-1918

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1916
Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1918
Revised 1918
Edition N/A
Copyright N/A
Levelled N/A

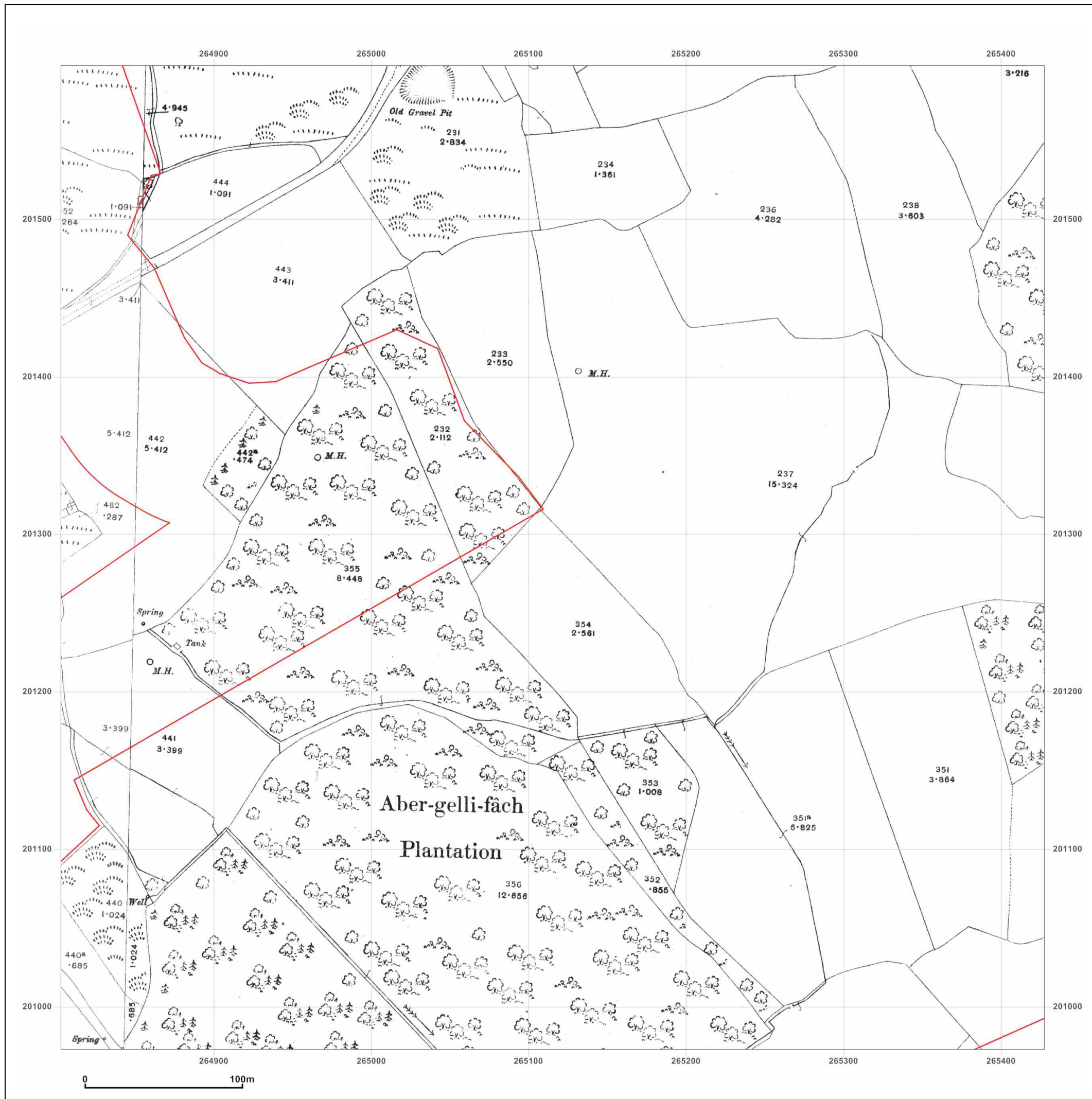


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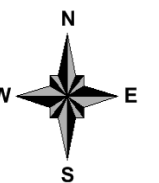
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Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: County Series

Map date: 1935

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1935
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1935
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

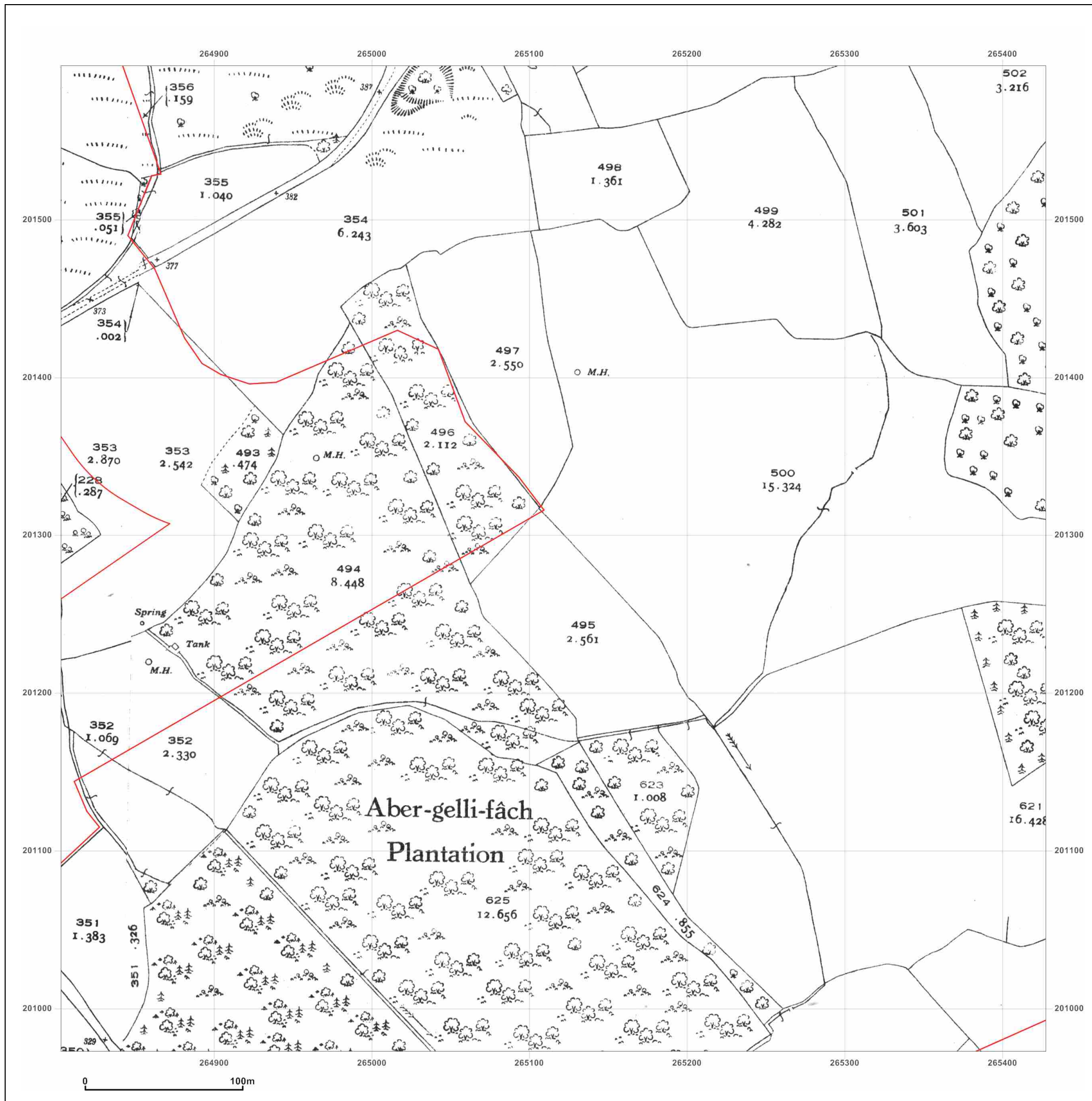


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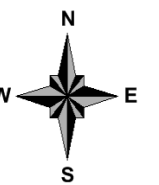
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Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1946

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1956

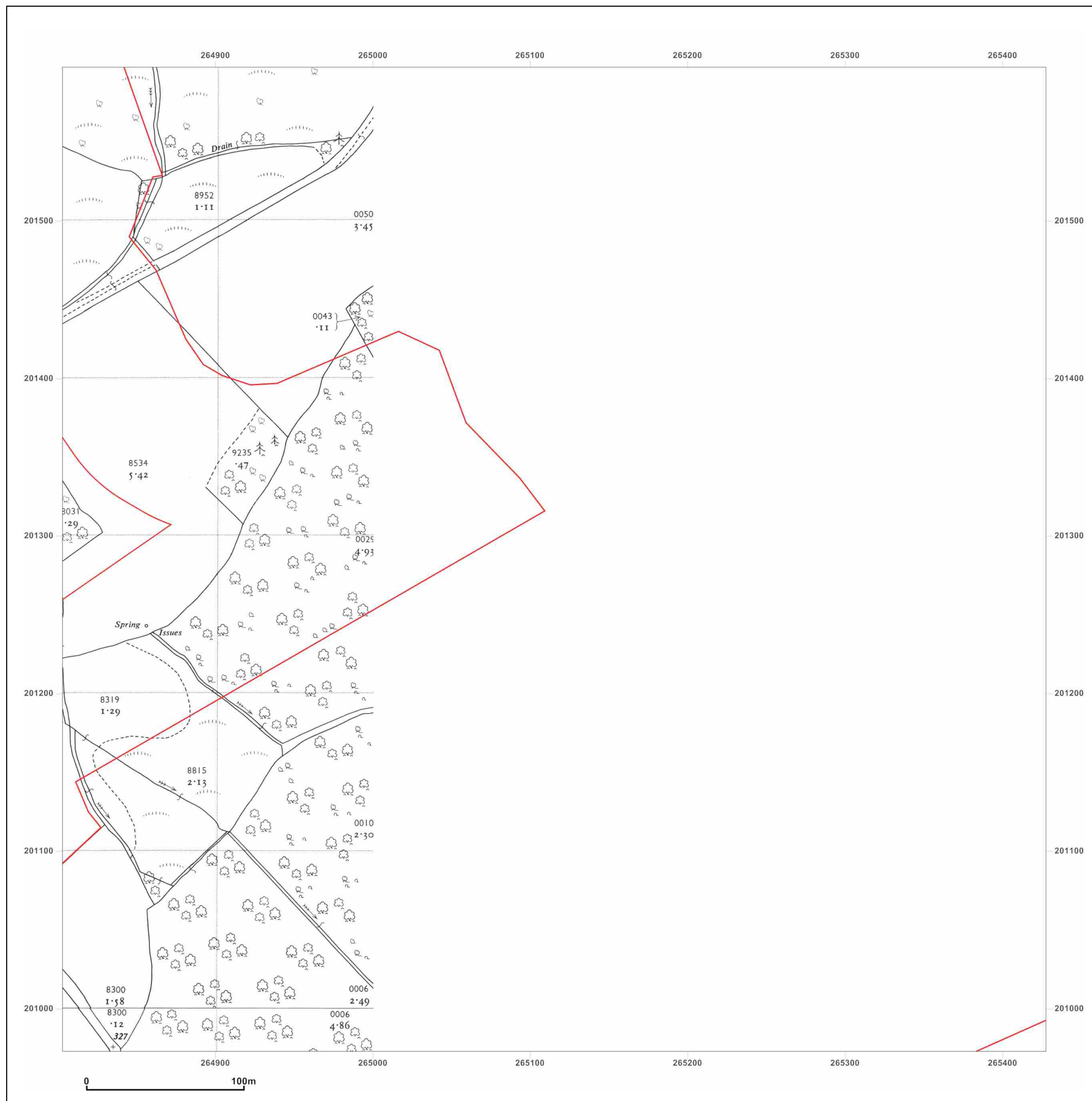


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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1956

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1962
Levelled 1956

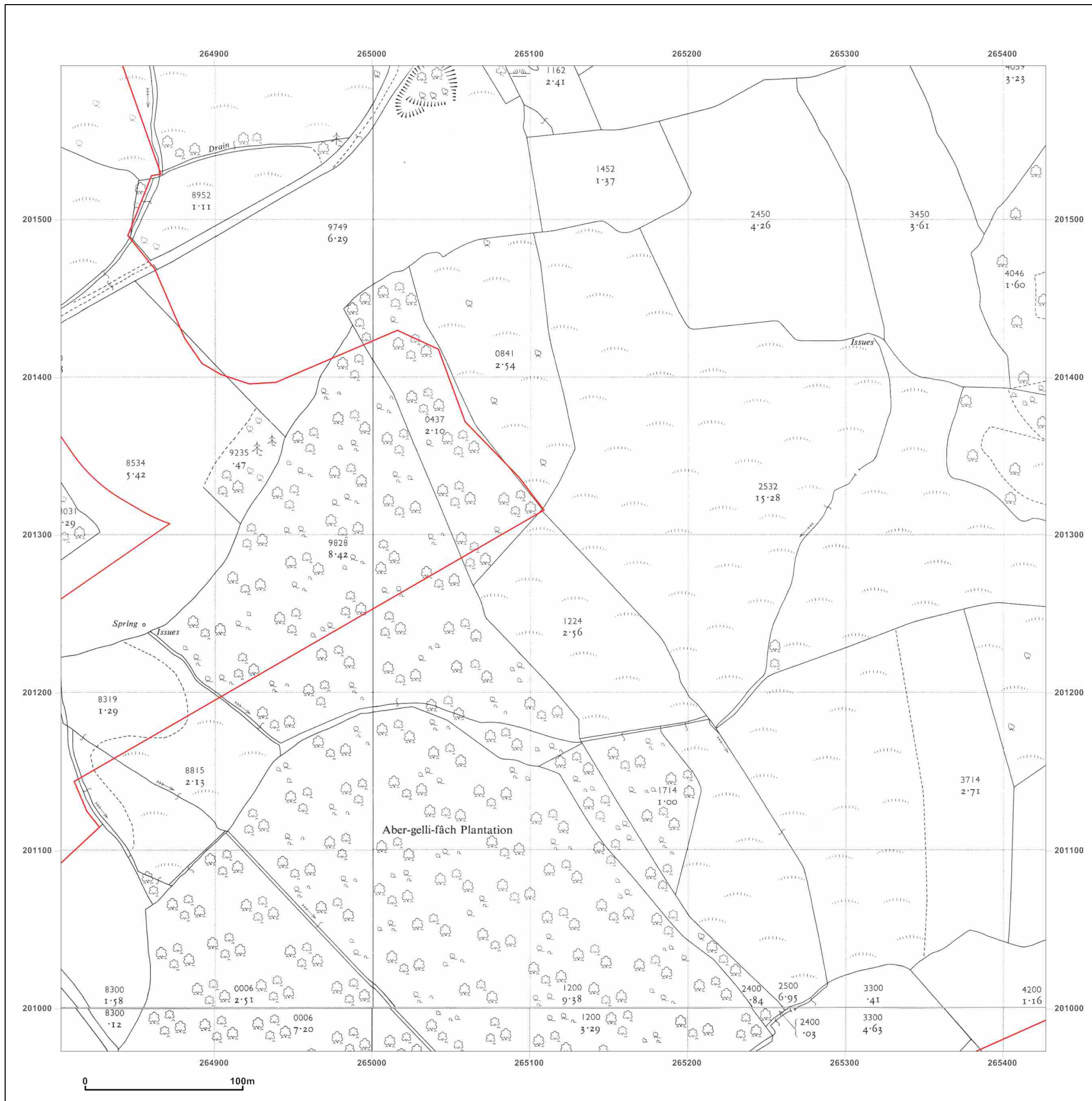


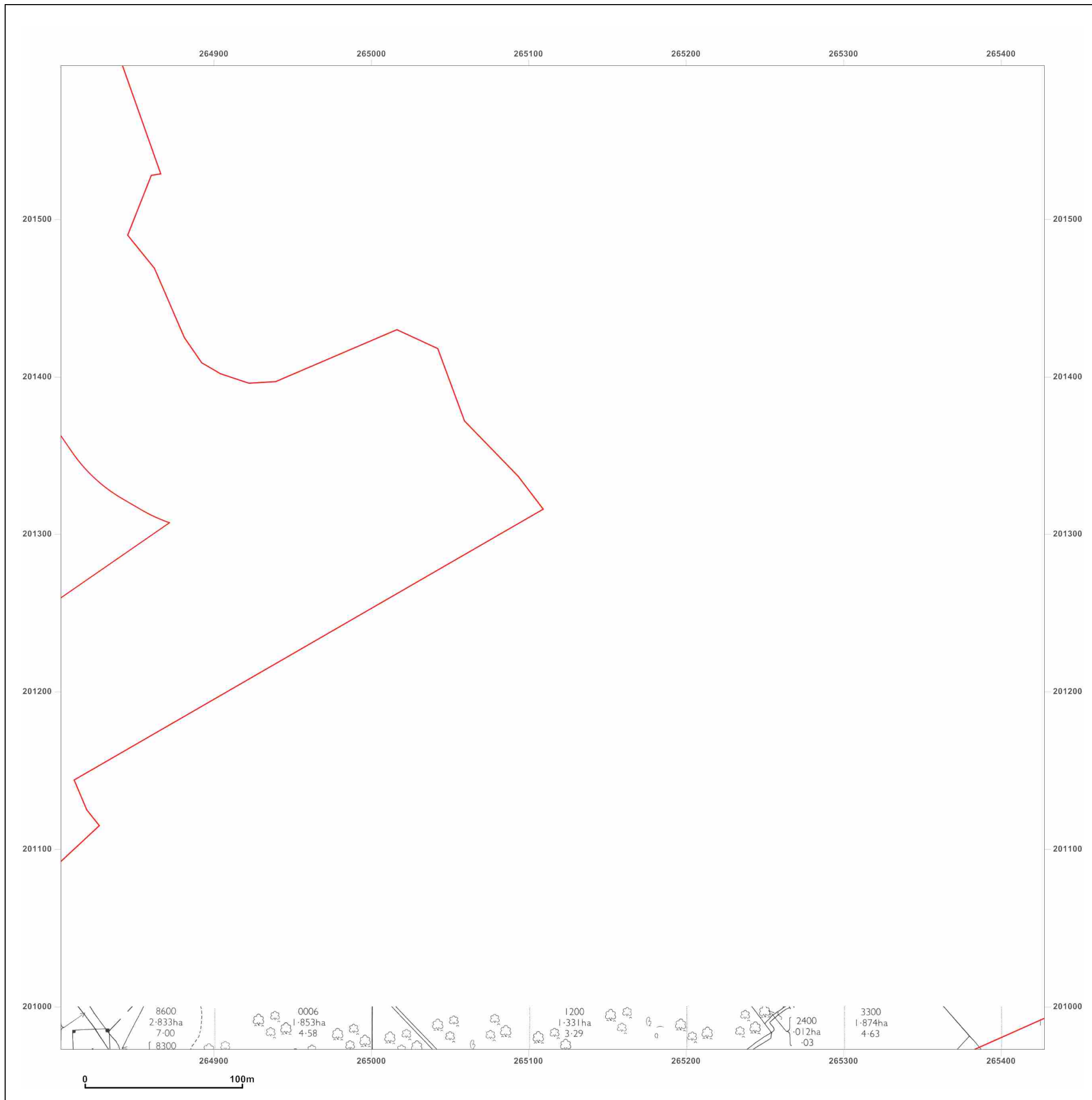
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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: National Grid

Map date: 1974

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1963

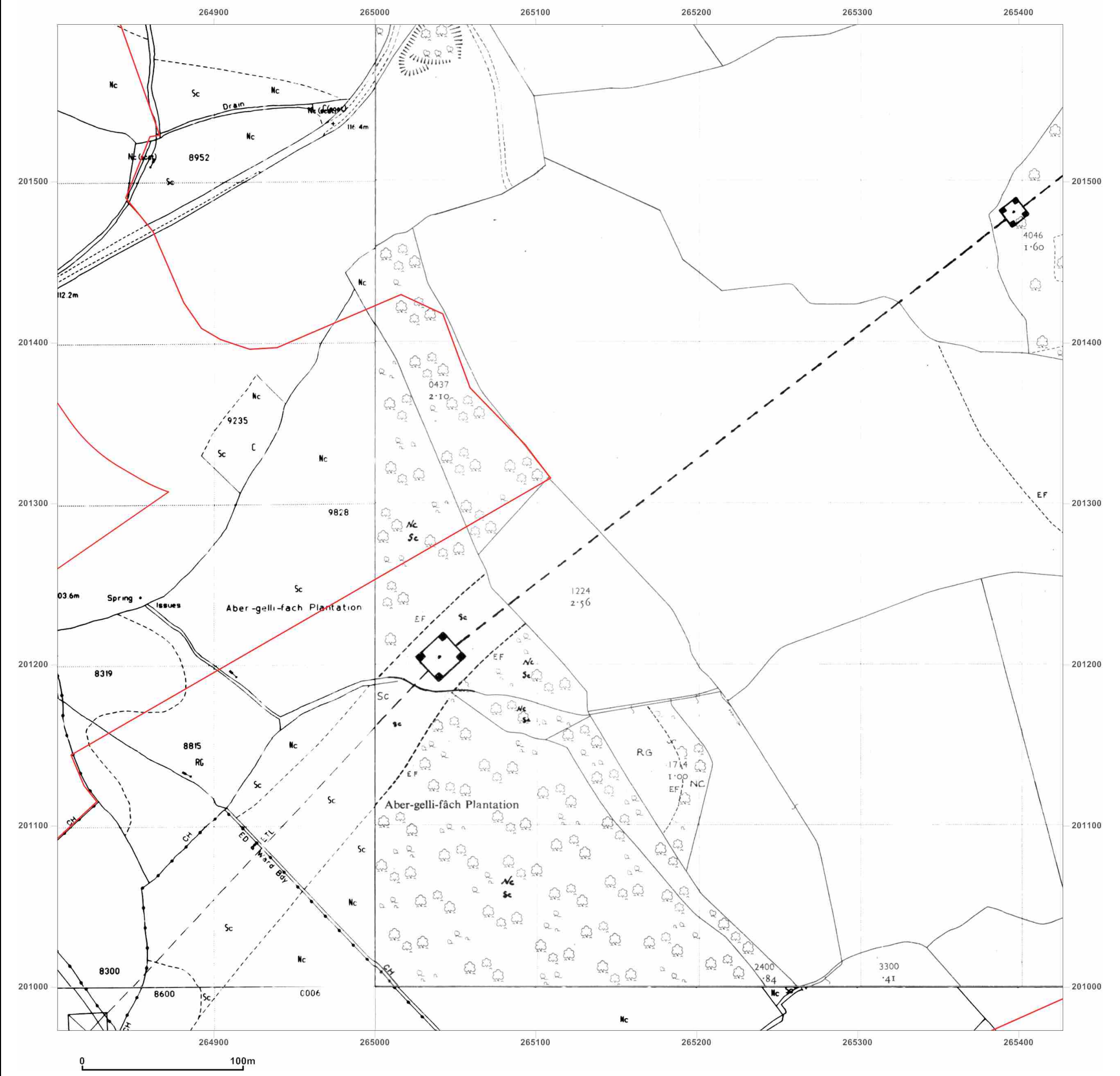


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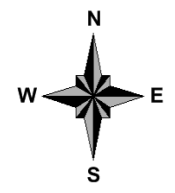
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 FARM, FELINDRE, ABERTAWE,
 SA5 7NN

Client Ref: PB84891
Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: National Grid
Map date: 1992-1993
Scale: 1:2,500
Printed at: 1:2,500



Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A


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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_3
Grid Ref: 265115, 201285

Map Name: National Grid

Map date: 1989-1993

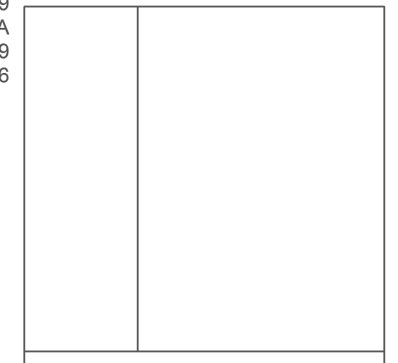
Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1956
Revised 1989
Edition N/A
Copyright 1989
Levelled 1956

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

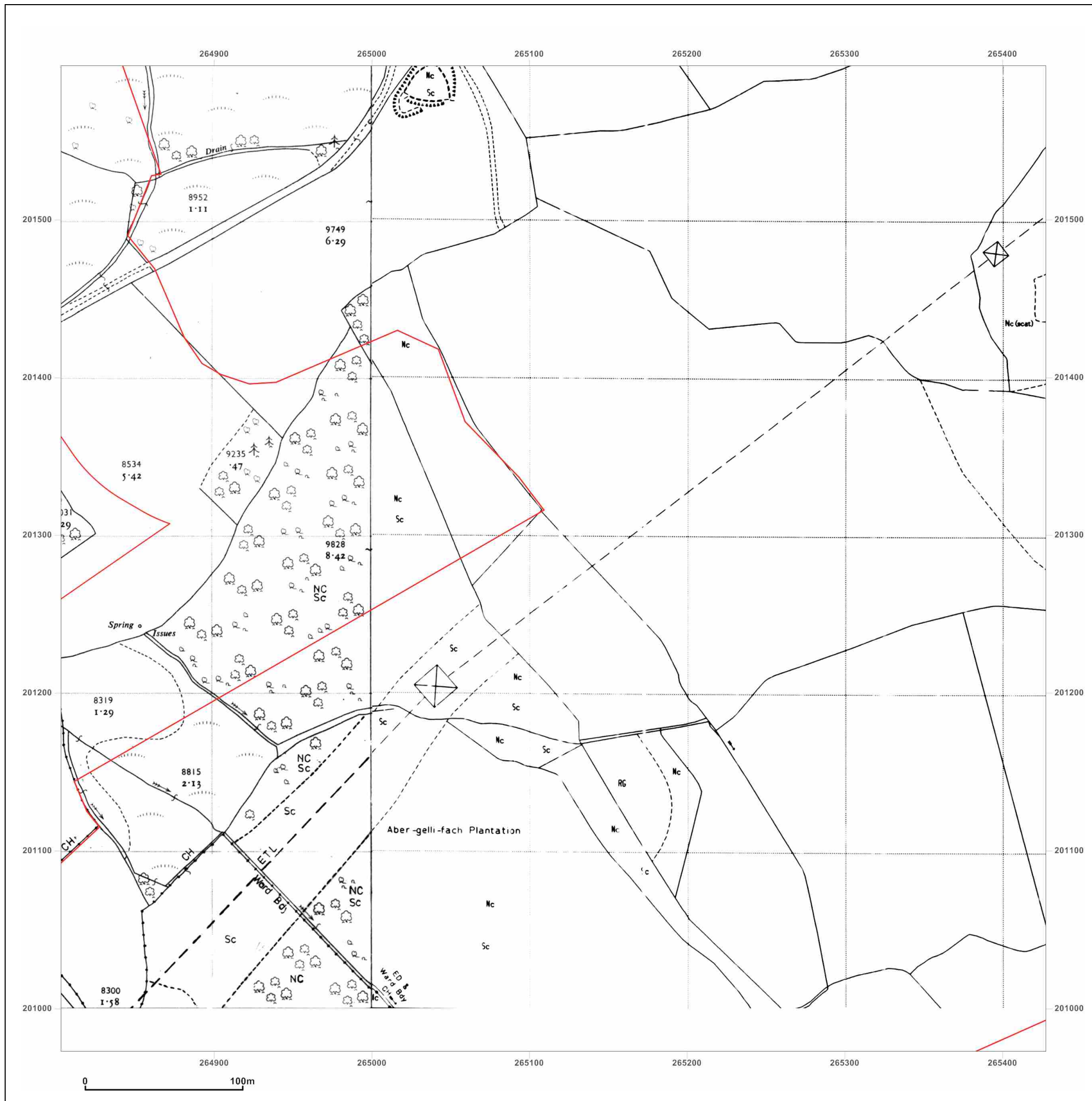


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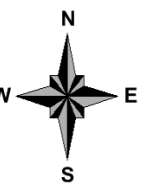
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Grid Ref: 265115, 201915

Map Name: County Series

Map date: 1876

Scale: 1:2,500

Printed at: 1:2,500



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Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

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Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

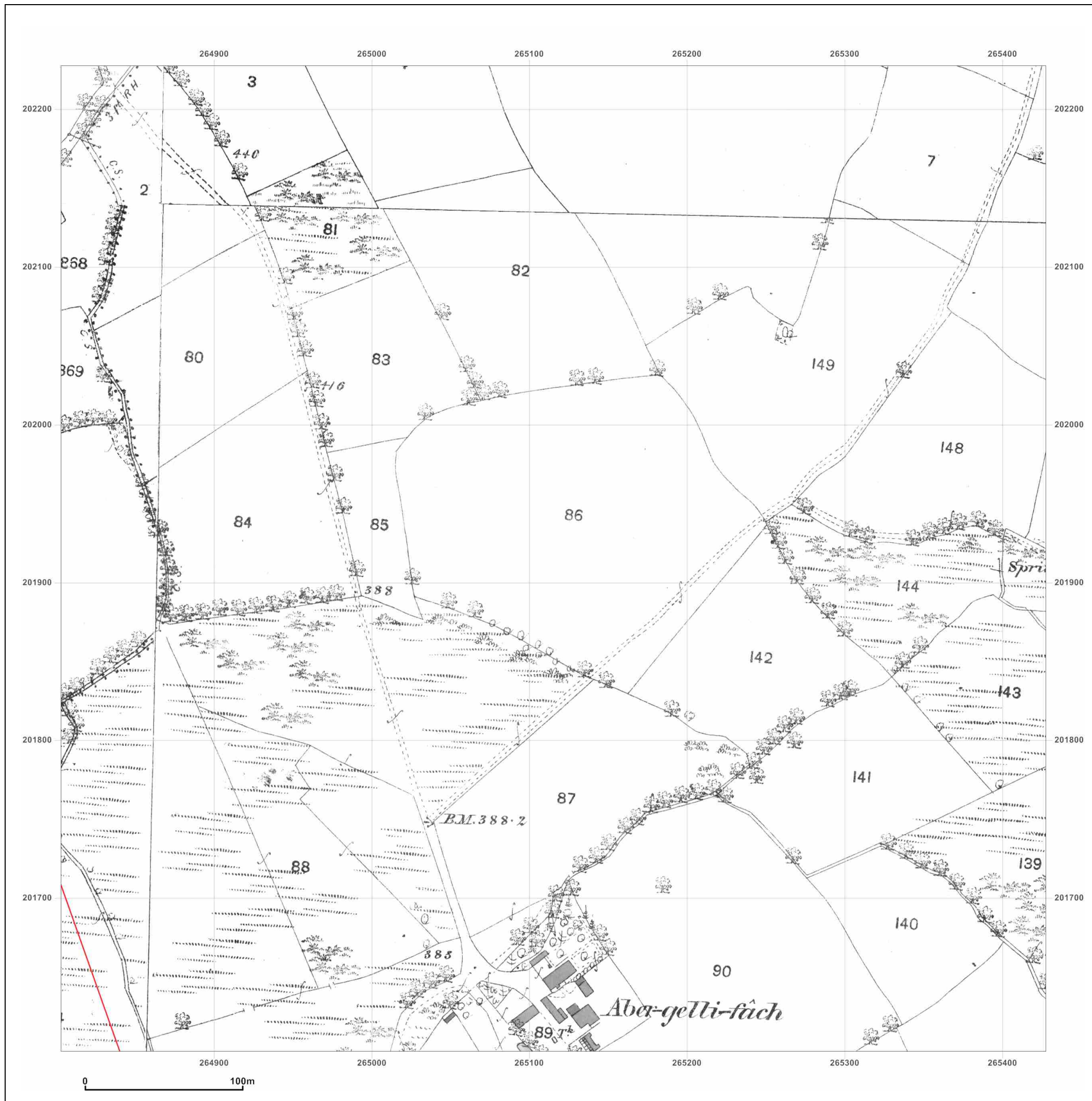


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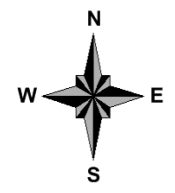
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 SA5 7NN

Client Ref: PB84891
Report Ref: GS-1587646_LS_4_4
Grid Ref: 265115, 201915

Map Name: County Series
Map date: 1898-1899
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1899 Revised 1899 Edition N/A Copyright N/A Levelled N/A	Surveyed 1898 Revised 1898 Edition N/A Copyright N/A Levelled N/A
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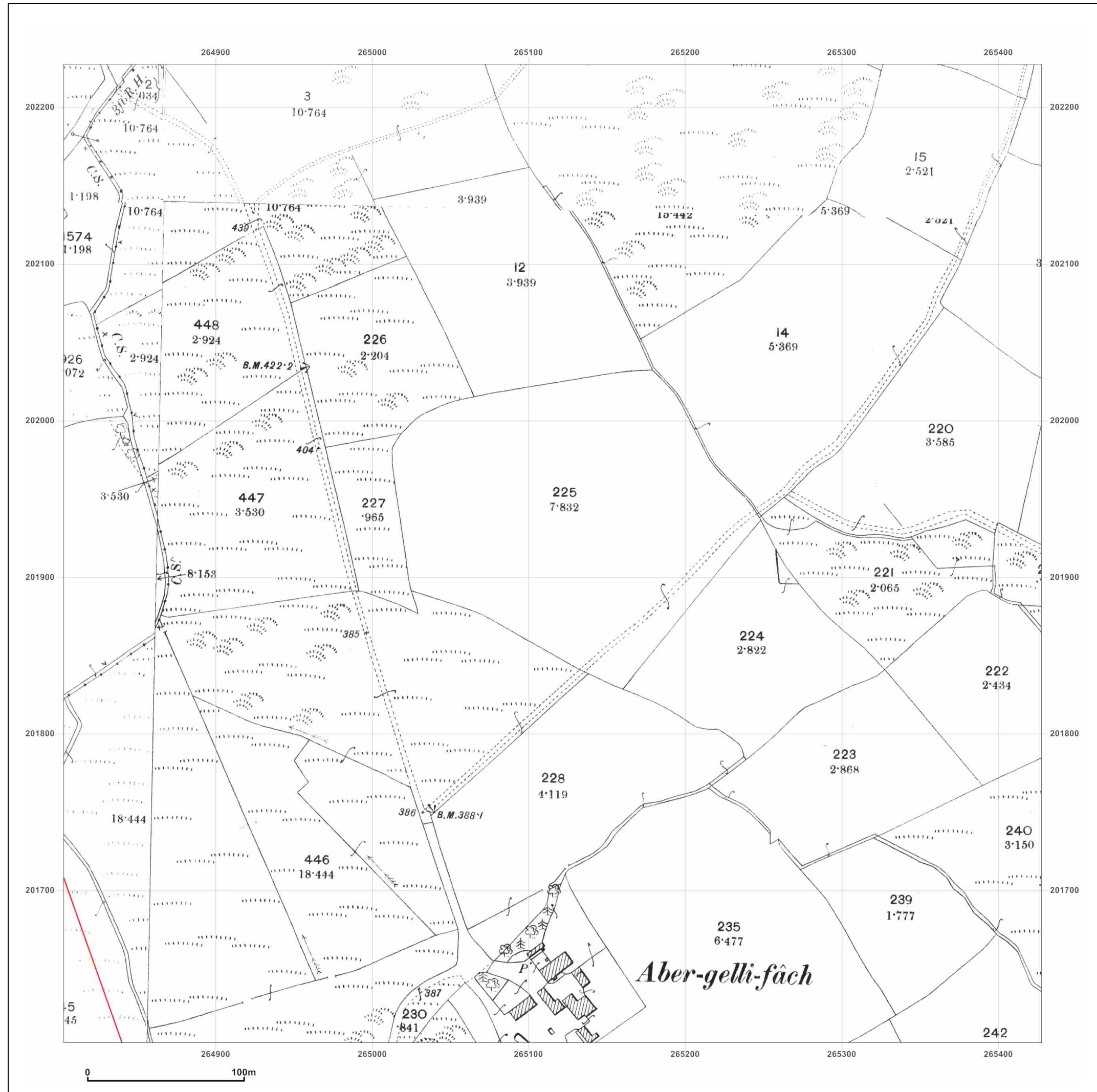


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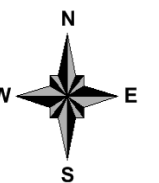
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Map Name: County Series

Map date: 1913-1918

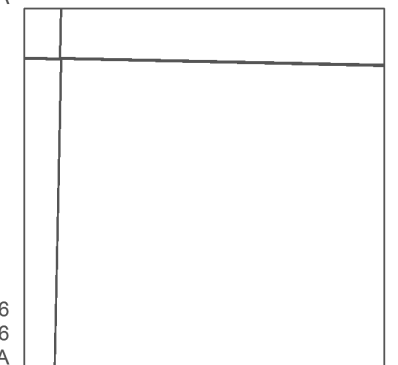
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Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1913
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1916
Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1918
Revised 1918
Edition N/A
Copyright N/A
Levelled N/A

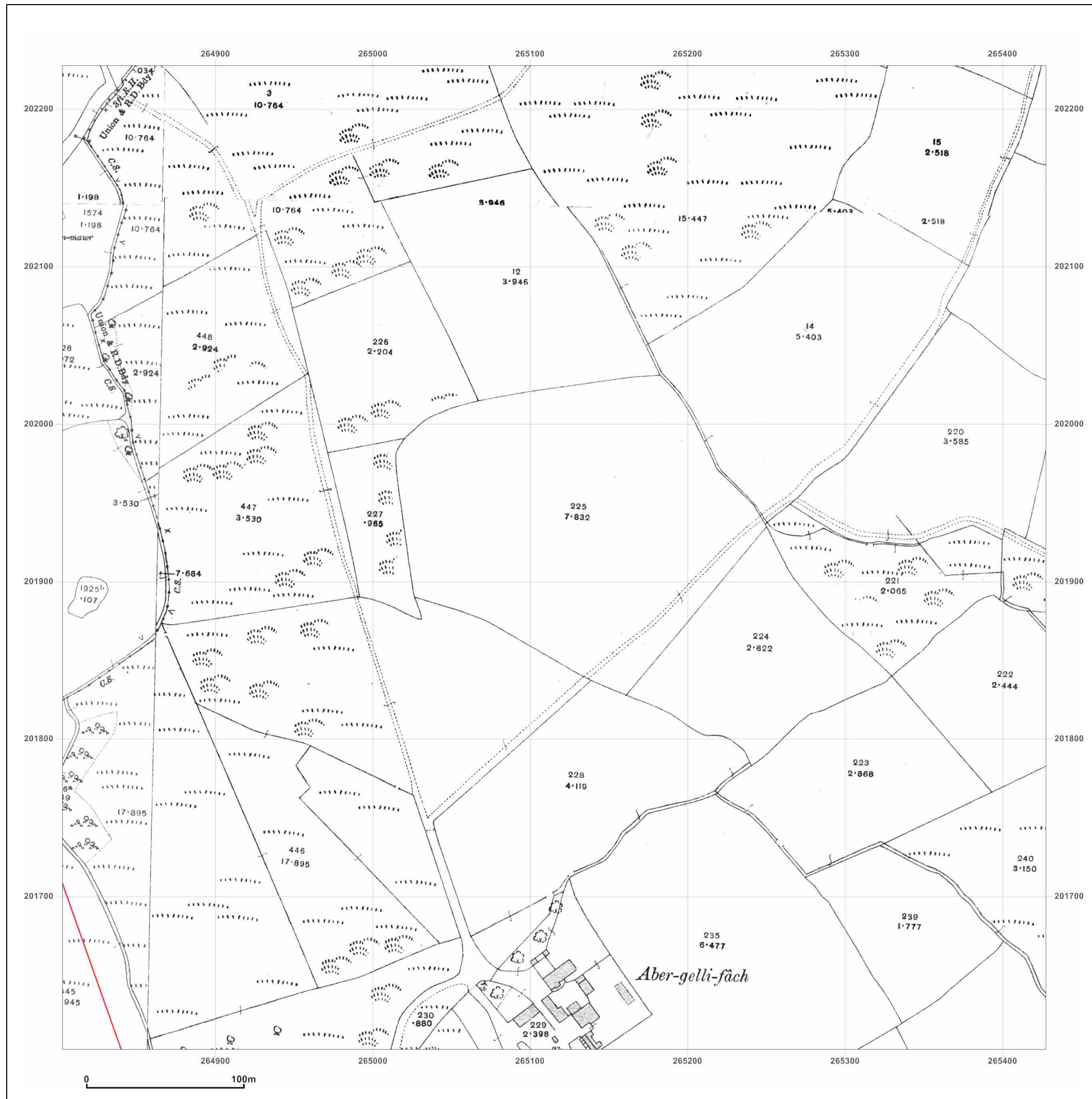


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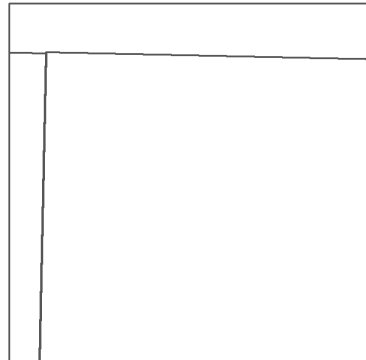
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Grid Ref: 265115, 201915

Map Name: County Series

Map date: 1935

Scale: 1:2,500

Printed at: 1:2,500

Surveyed 1935
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Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1935
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

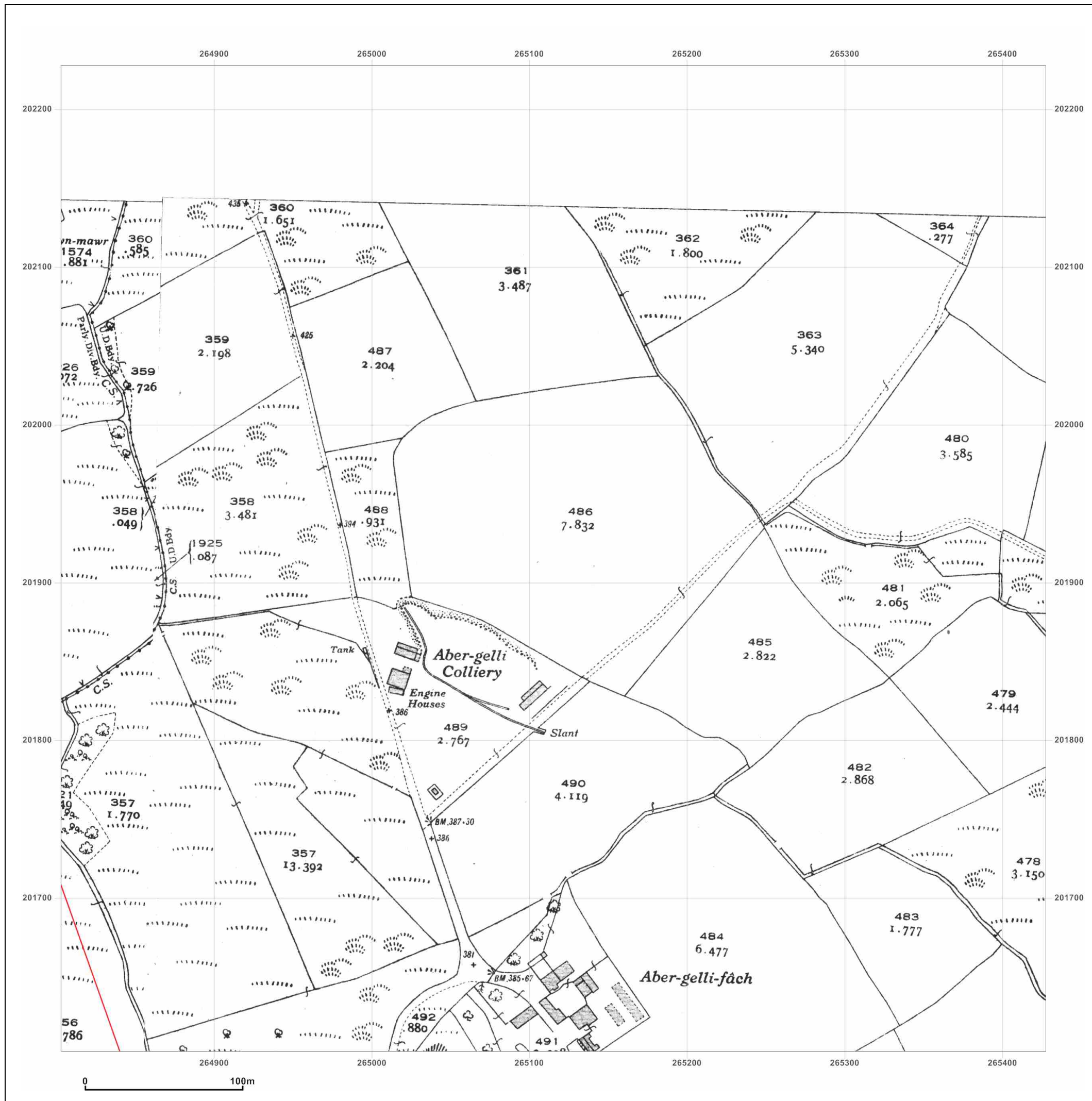


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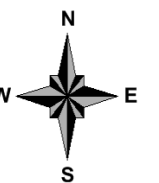
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Grid Ref: 265115, 201915

Map Name: National Grid

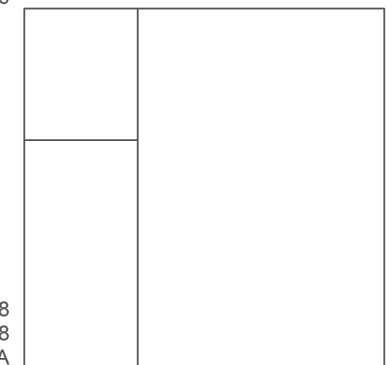
Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1956



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1946

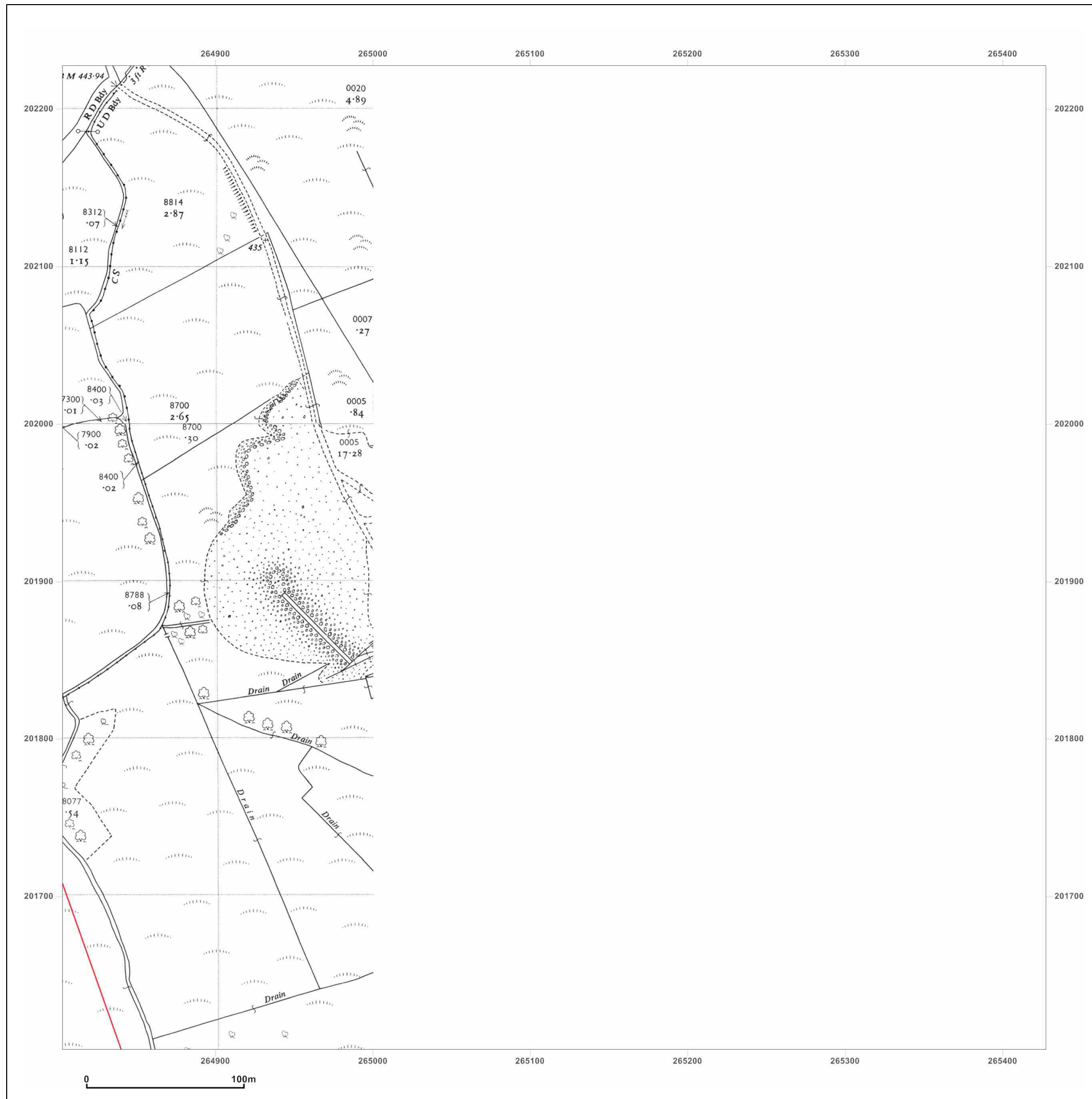


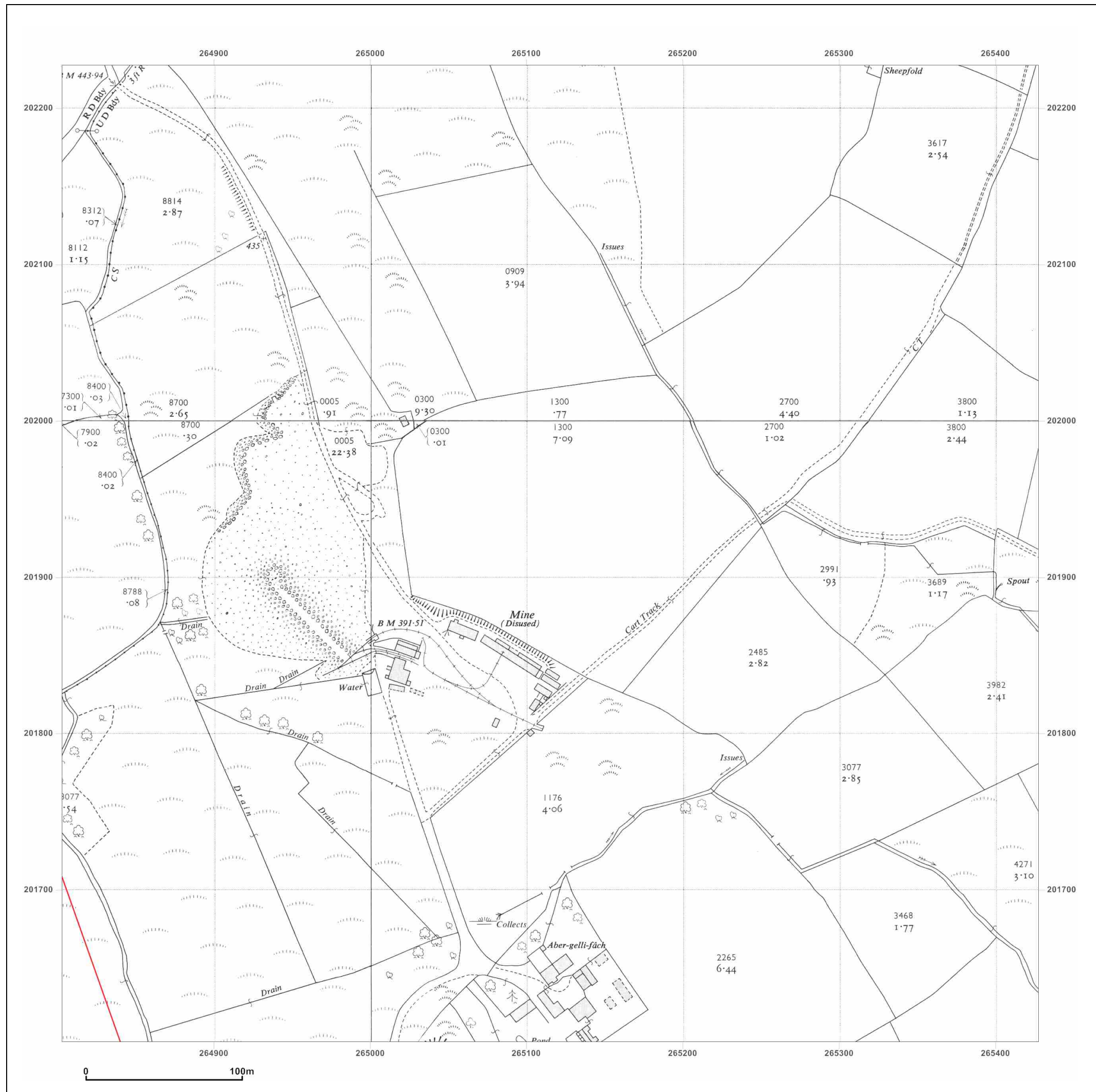
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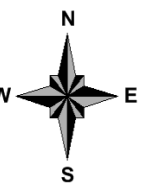
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Grid Ref: 265115, 201915

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
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Edition N/A
Copyright 1961
Levelled 1956

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1956

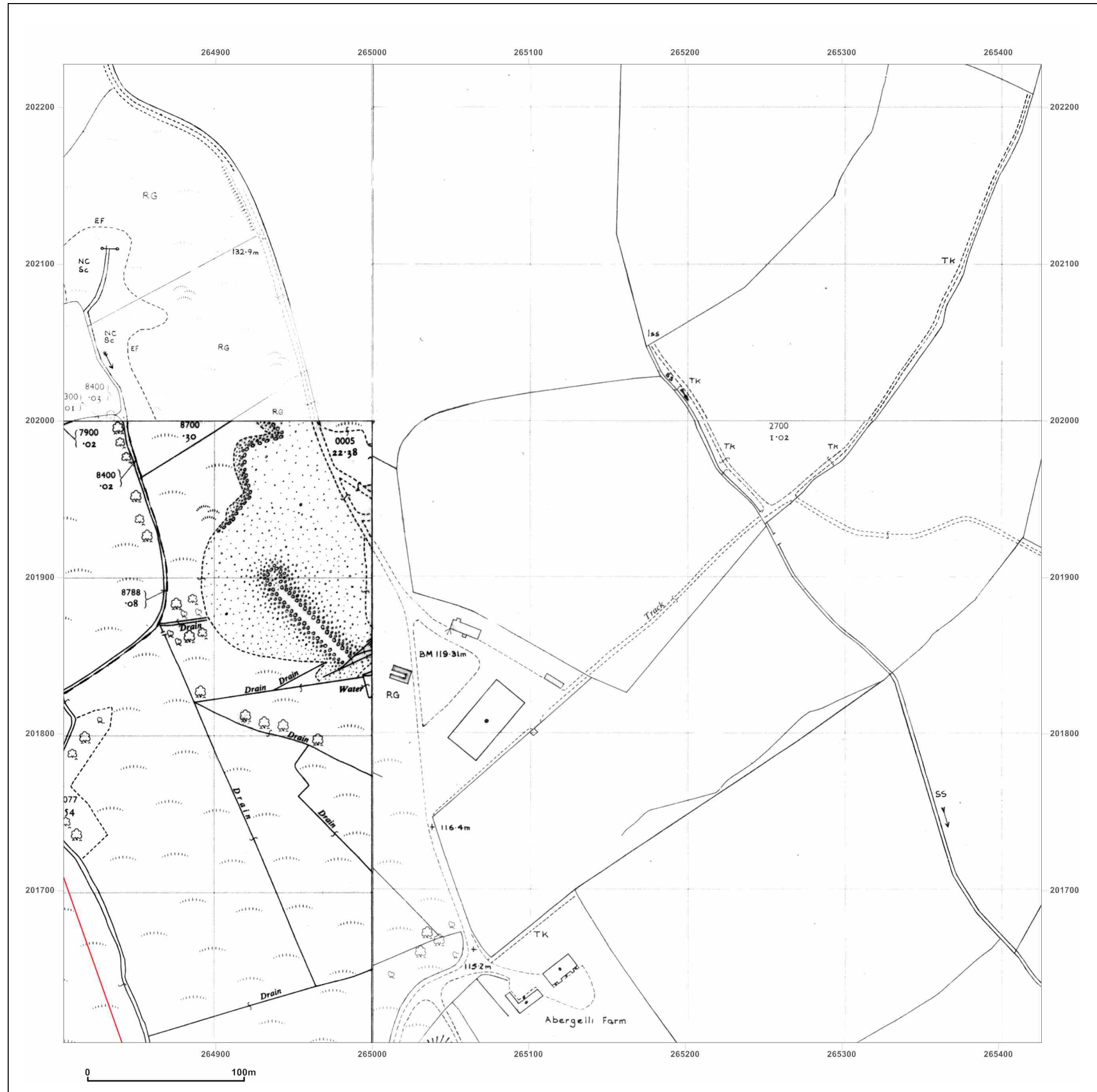


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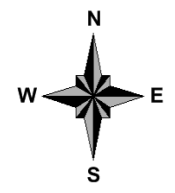
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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_4
Grid Ref: 265115, 201915

Map Name: National Grid
Map date: 1989-1992
Scale: 1:2,500
Printed at: 1:2,500



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Surveyed 1956 Revised 1989 Edition N/A Copyright 1989 Levelled 1956	Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A



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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_4
Grid Ref: 265115, 201915

Map Name: National Grid
Map date: 1993
Scale: 1:2,500
Printed at: 1:2,500



Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A



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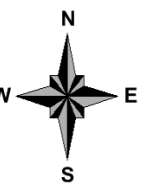
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Grid Ref: 265115, 202545

Map Name: County Series

Map date: 1876

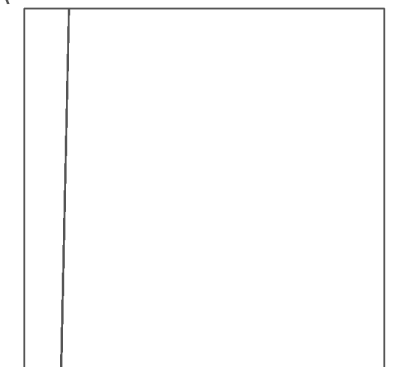
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Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

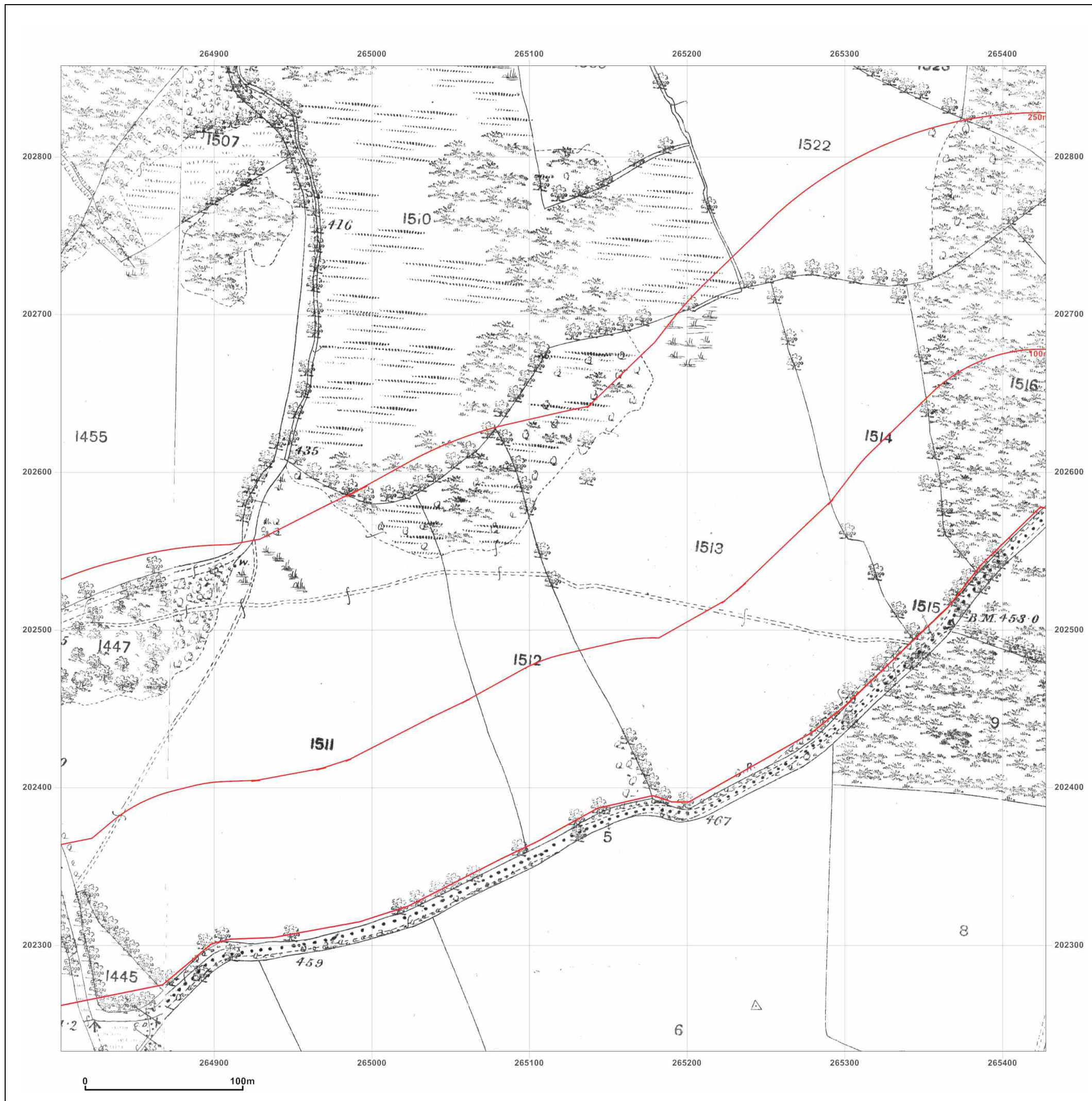


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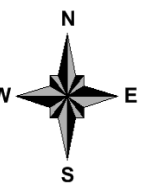
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Map Name: County Series

Map date: 1898-1899

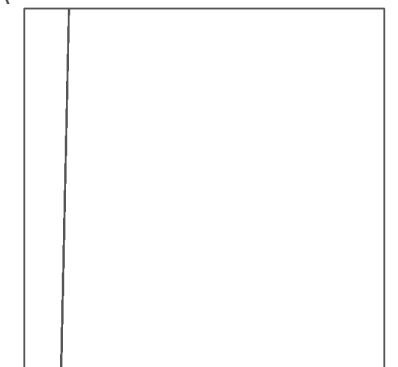
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Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1898
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

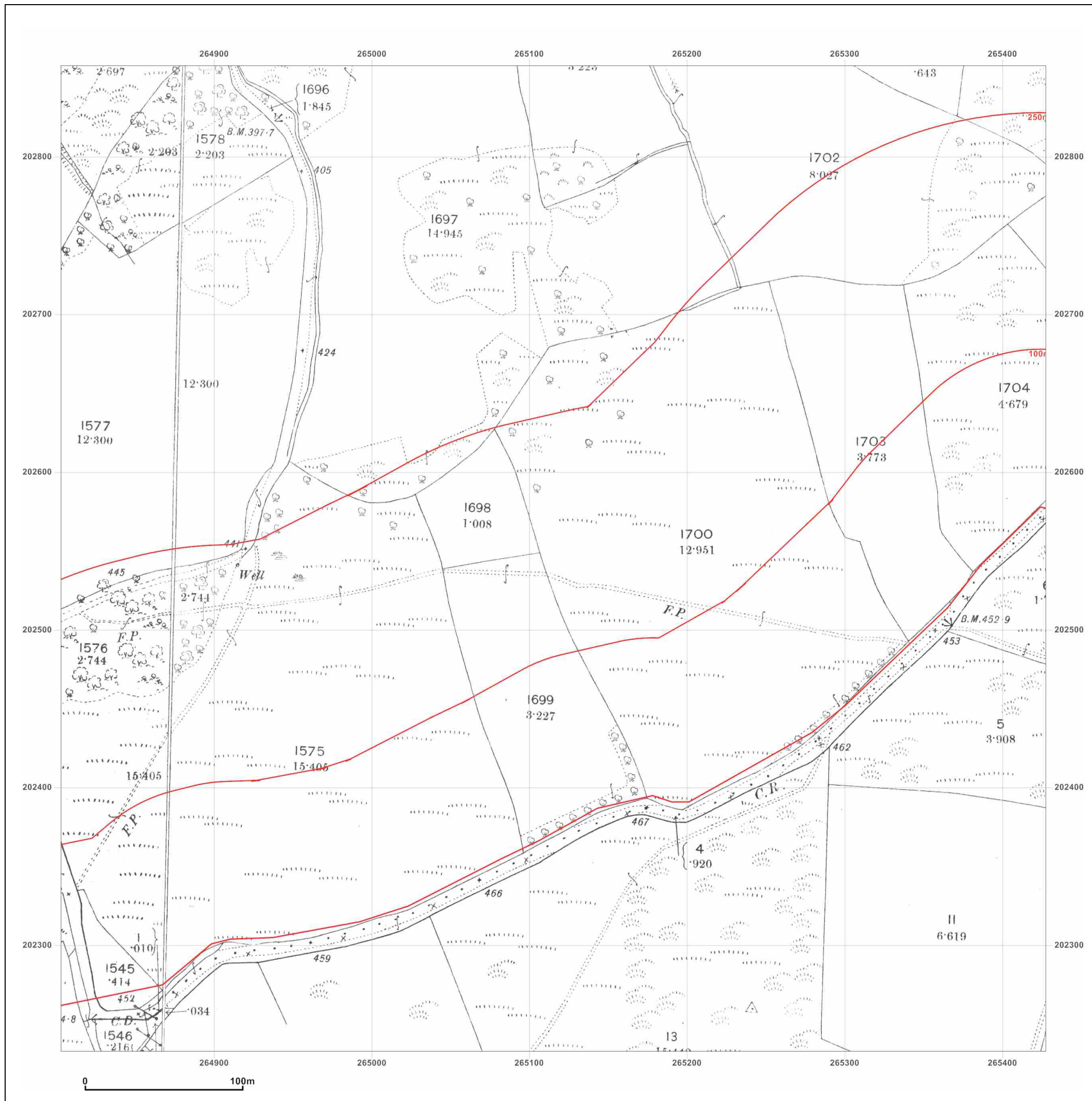


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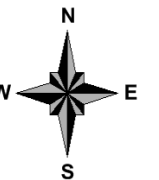
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Map Name: County Series

Map date: 1913-1916

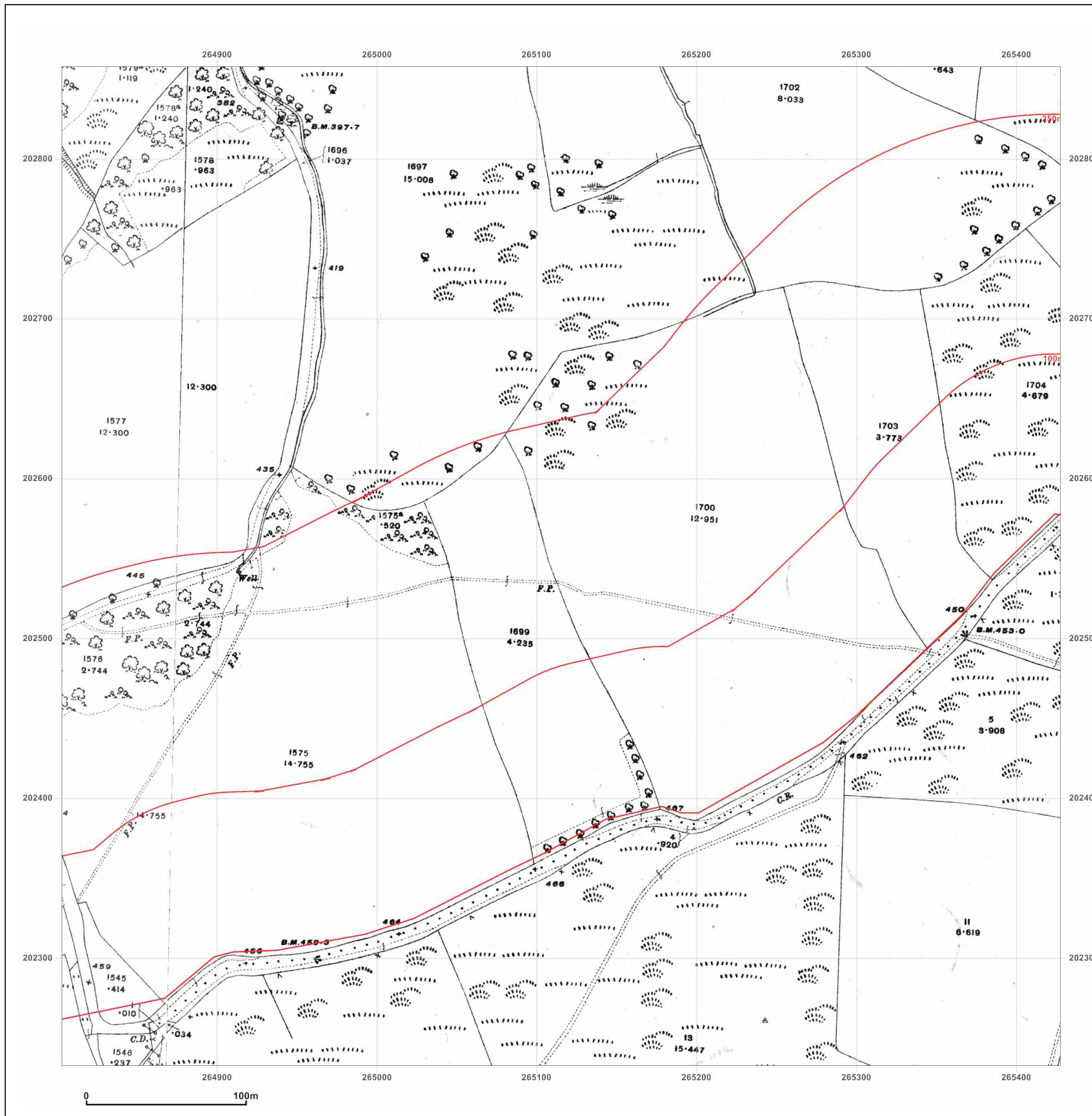
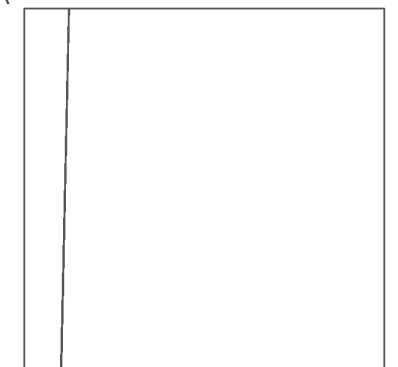
Scale: 1:2,500

Printed at: 1:2,500



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Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1913
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

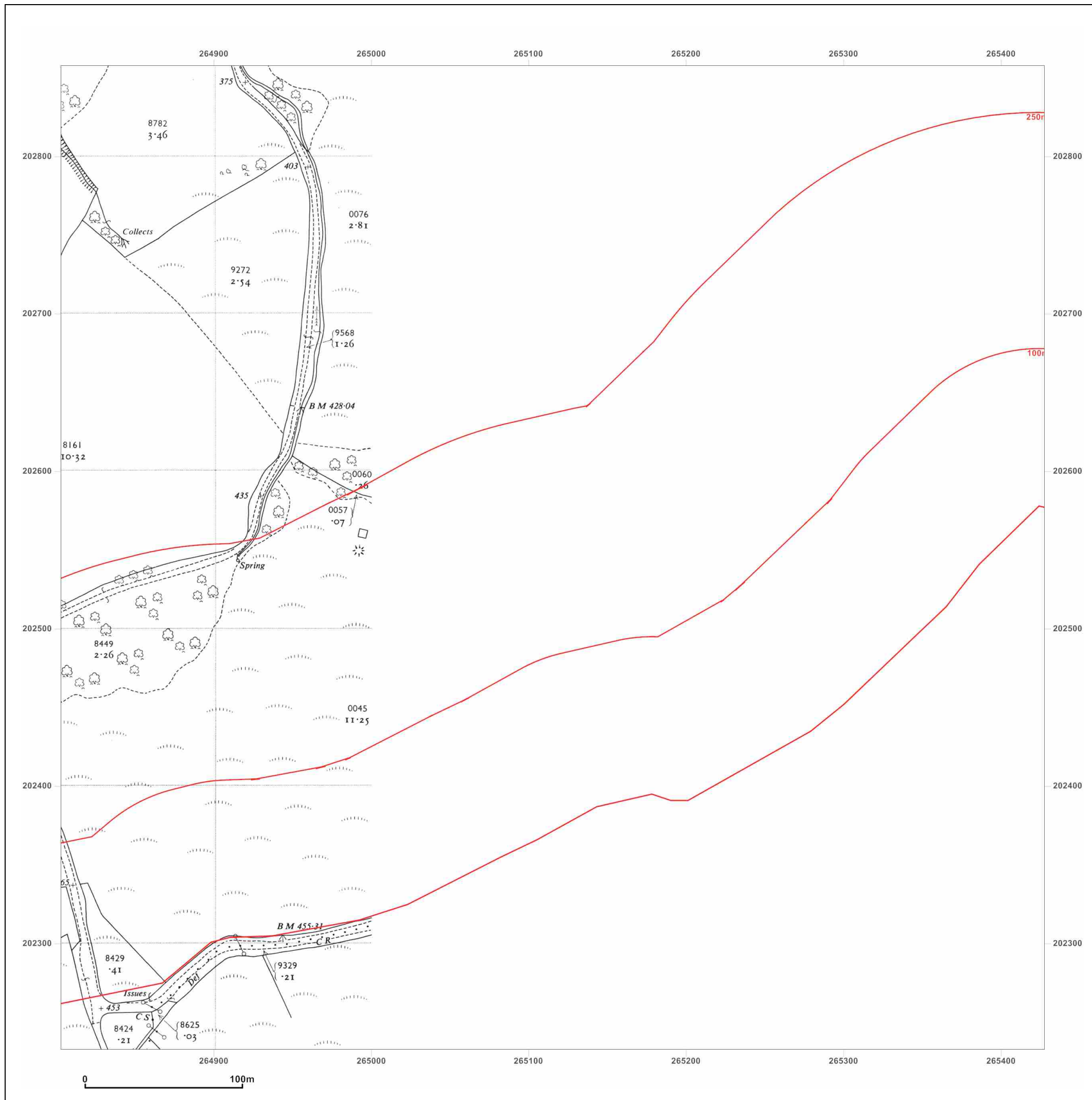


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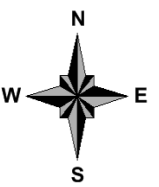
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Grid Ref: 265115, 202545

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1956

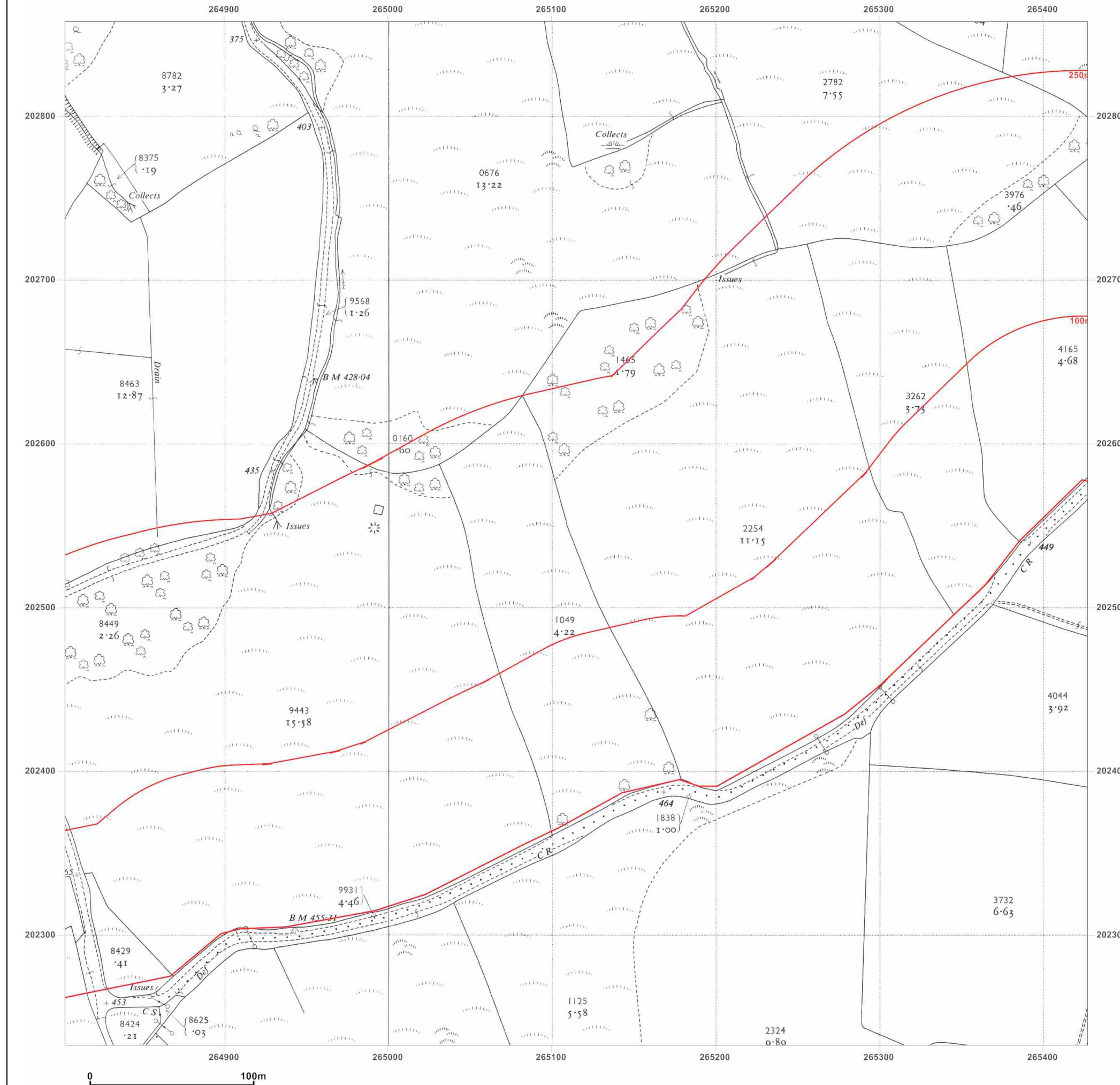


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Client Ref: PB84891
Report Ref: GS-1587646_LS_4_5
Grid Ref: 265115, 202545

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1956

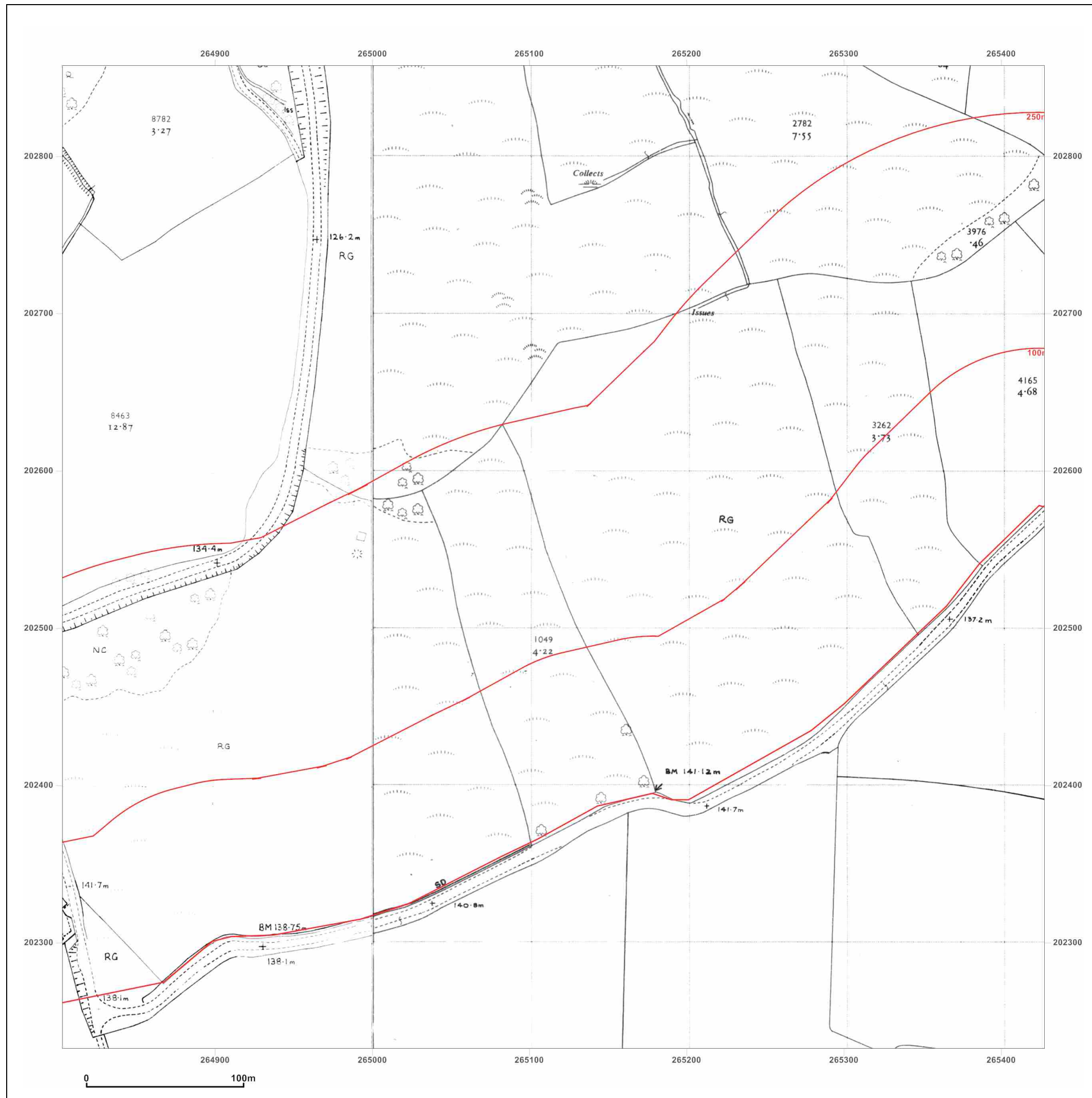


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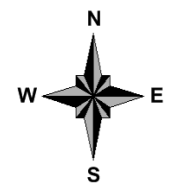
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Grid Ref: 265115, 202545

Map Name: National Grid

Map date: 1989-1992

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1992
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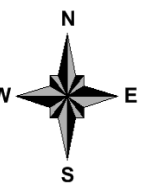
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Grid Ref: 265115, 202545

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

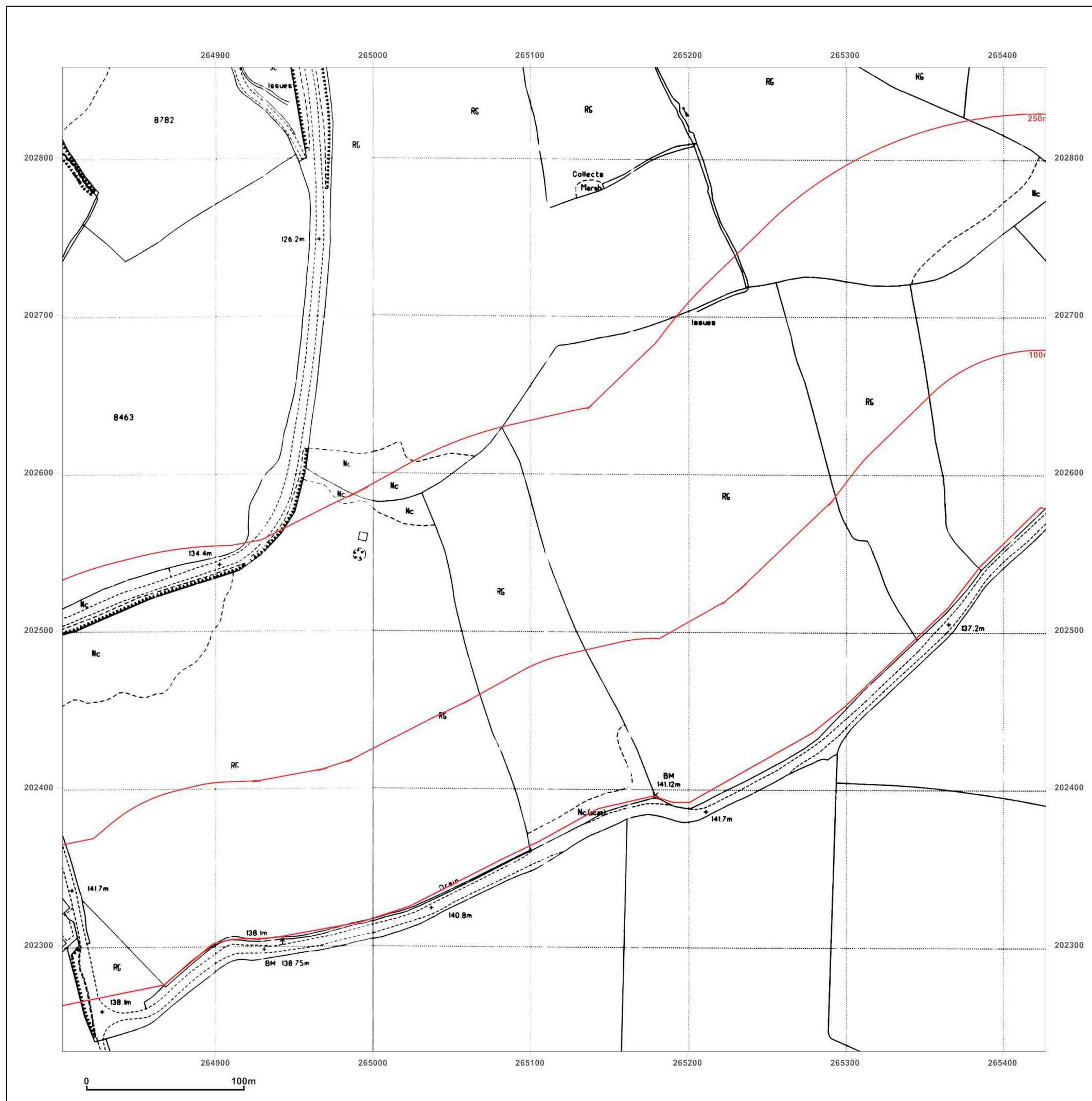


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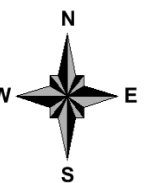
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Grid Ref: 265745, 200655

Map Name: County Series

Map date: 1876

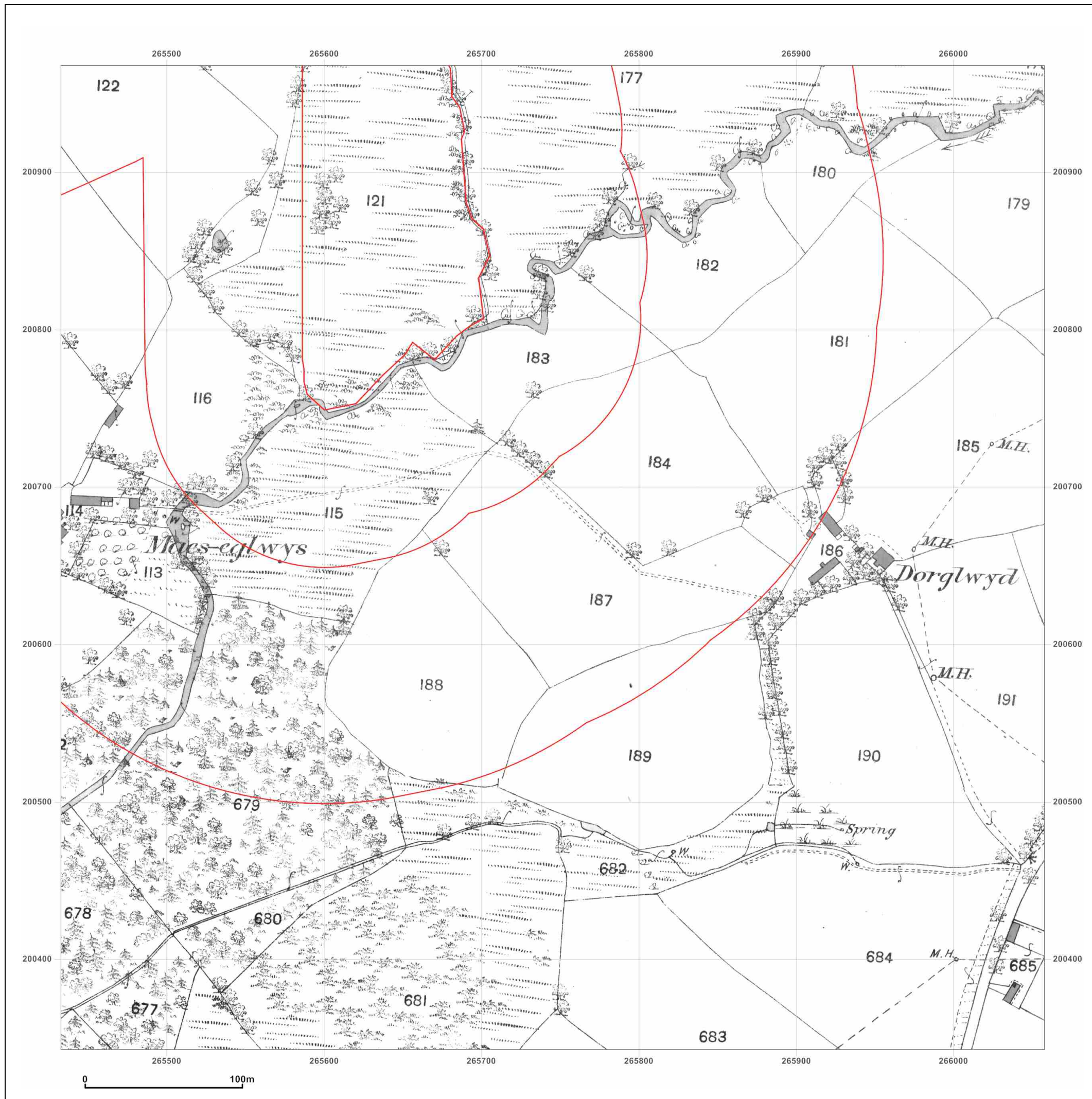
Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

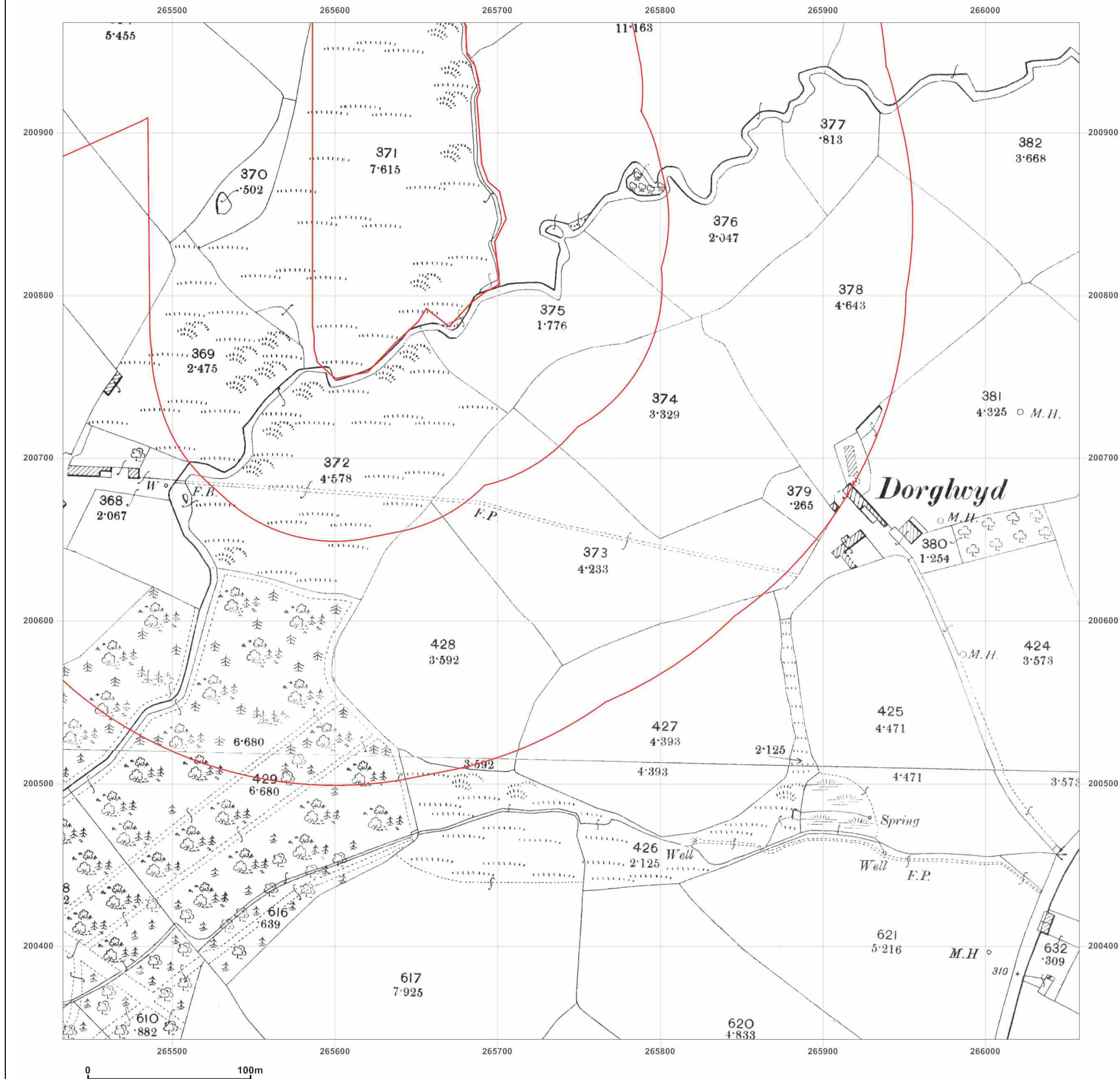


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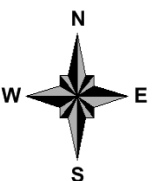
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Grid Ref: 265745, 200655

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1899
Revised 1899
Edition N/A
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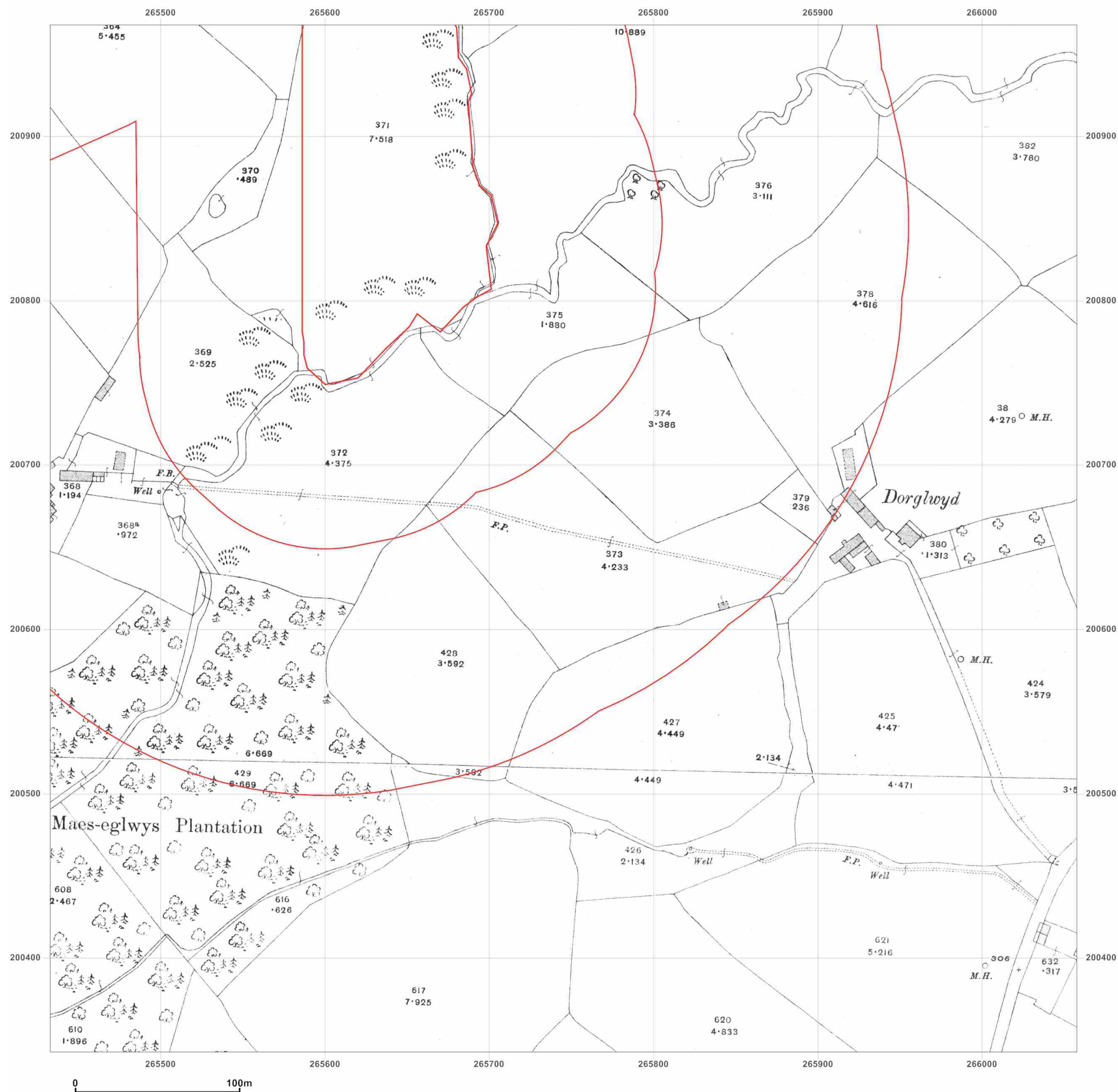
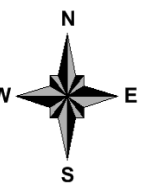
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Grid Ref: 265745, 200655

Map Name: County Series

Map date: 1917-1918

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Surveyed 1917
Revised 1917
Edition N/A
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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_2
Grid Ref: 265745, 200655

Map Name: County Series

Map date: 1935

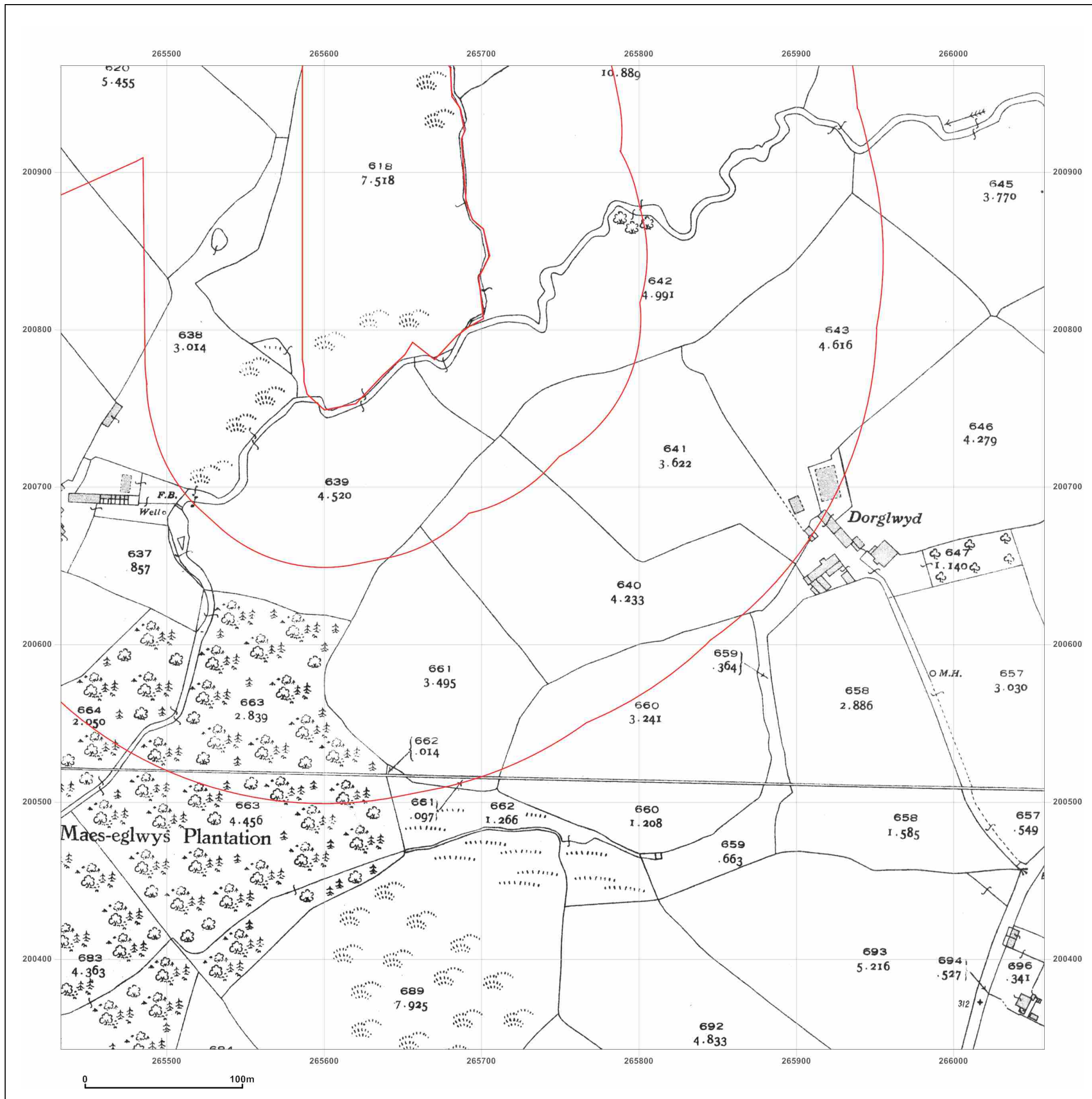
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Printed at: 1:2,500



Surveyed 1935
 Revised 1935
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1935
 Revised 1935
 Edition N/A
 Copyright N/A
 Levelled N/A



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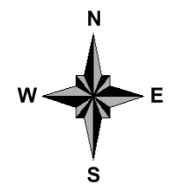
Production date: 30 July 2014

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Site Details:
 ABERGELLI FACH FARM, FELINDRE, ABERTAWE, SA5 7NN

Client Ref: PB84891
Report Ref: GS-1587646_LS_5_2
Grid Ref: 265745, 200655

Map Name: National Grid
Map date: 1960
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1960
 Revised 1960
 Edition N/A
 Copyright 1962
 Levelled 1956

Surveyed 1960
 Revised 1960
 Edition N/A
 Copyright 1961
 Levelled 1956

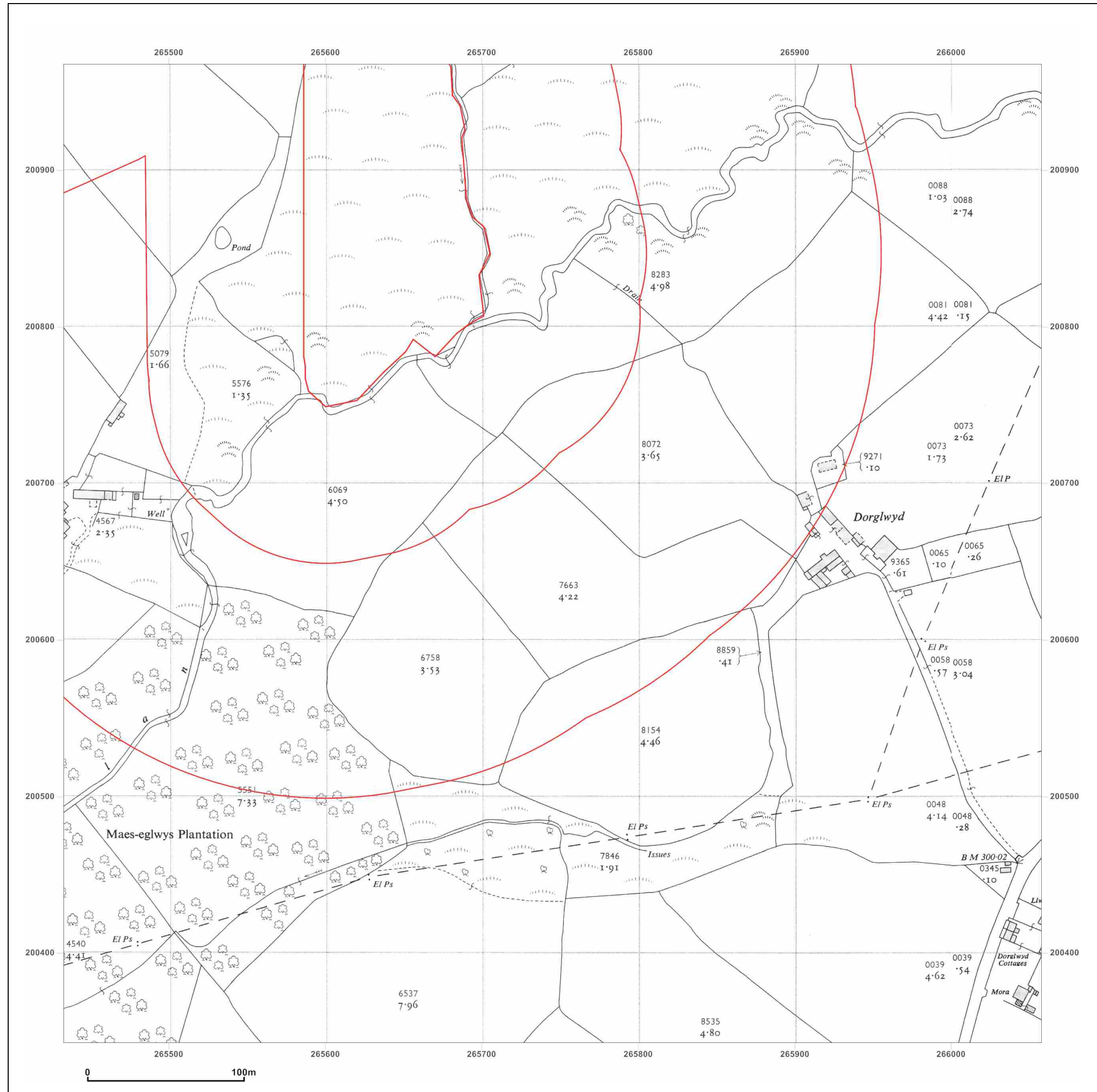
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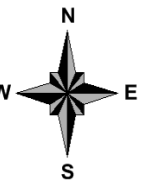
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Grid Ref: 265745, 200655

Map Name: National Grid

Map date: 1974

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1963

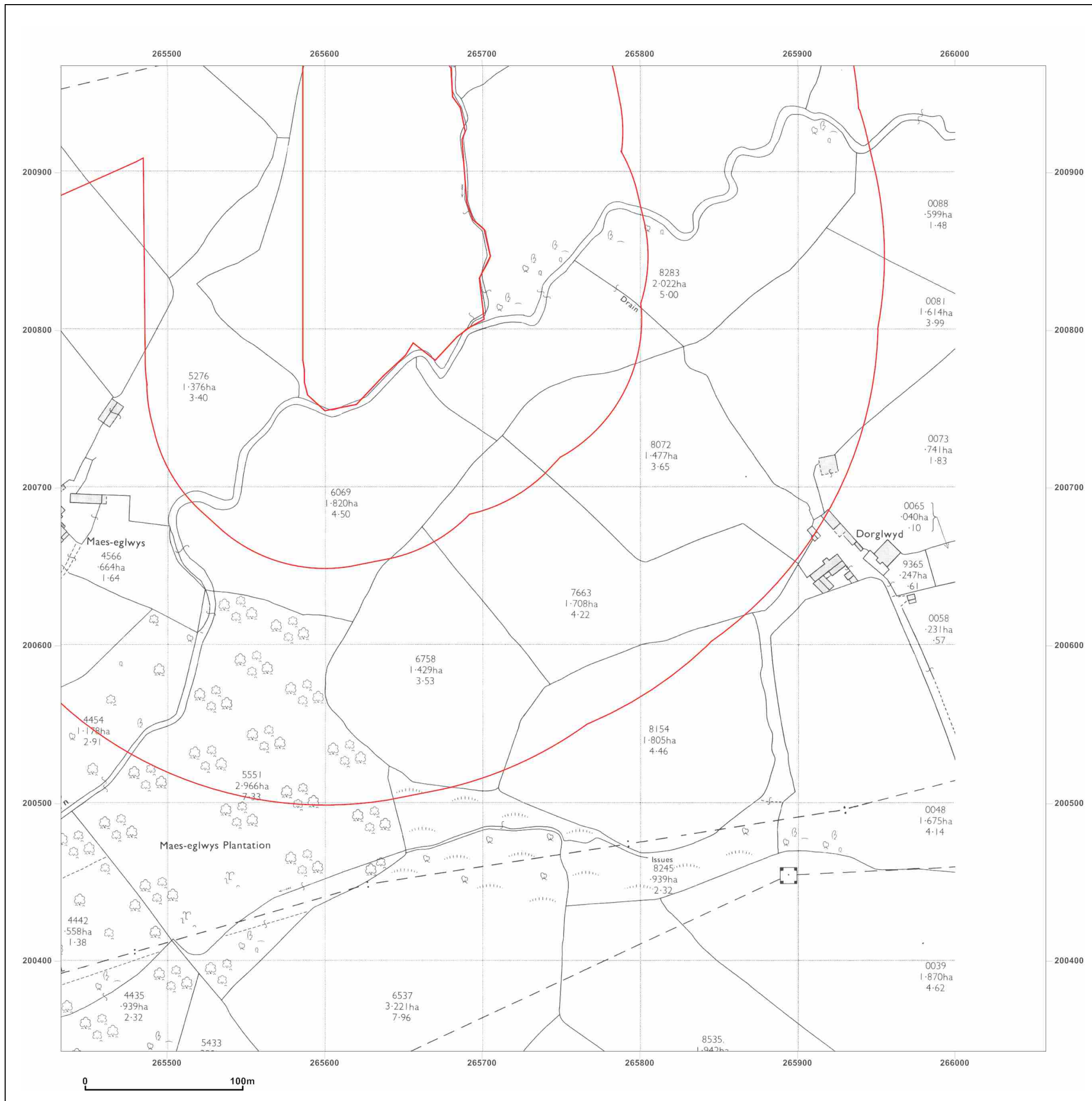


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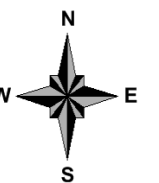
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Grid Ref: 265745, 200655

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

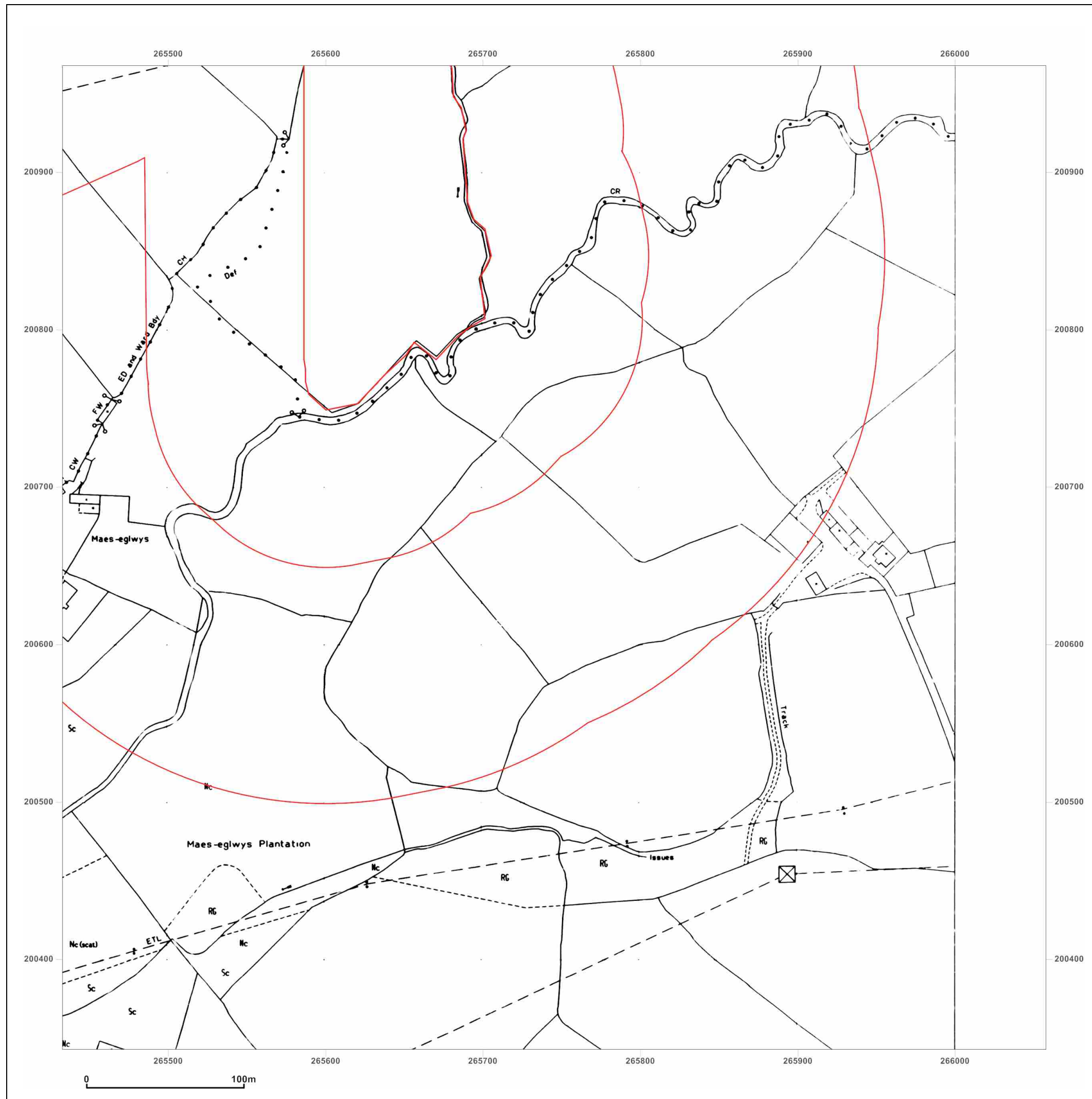


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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_3
Grid Ref: 265745, 201285

Map Name: County Series

Map date: 1876

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

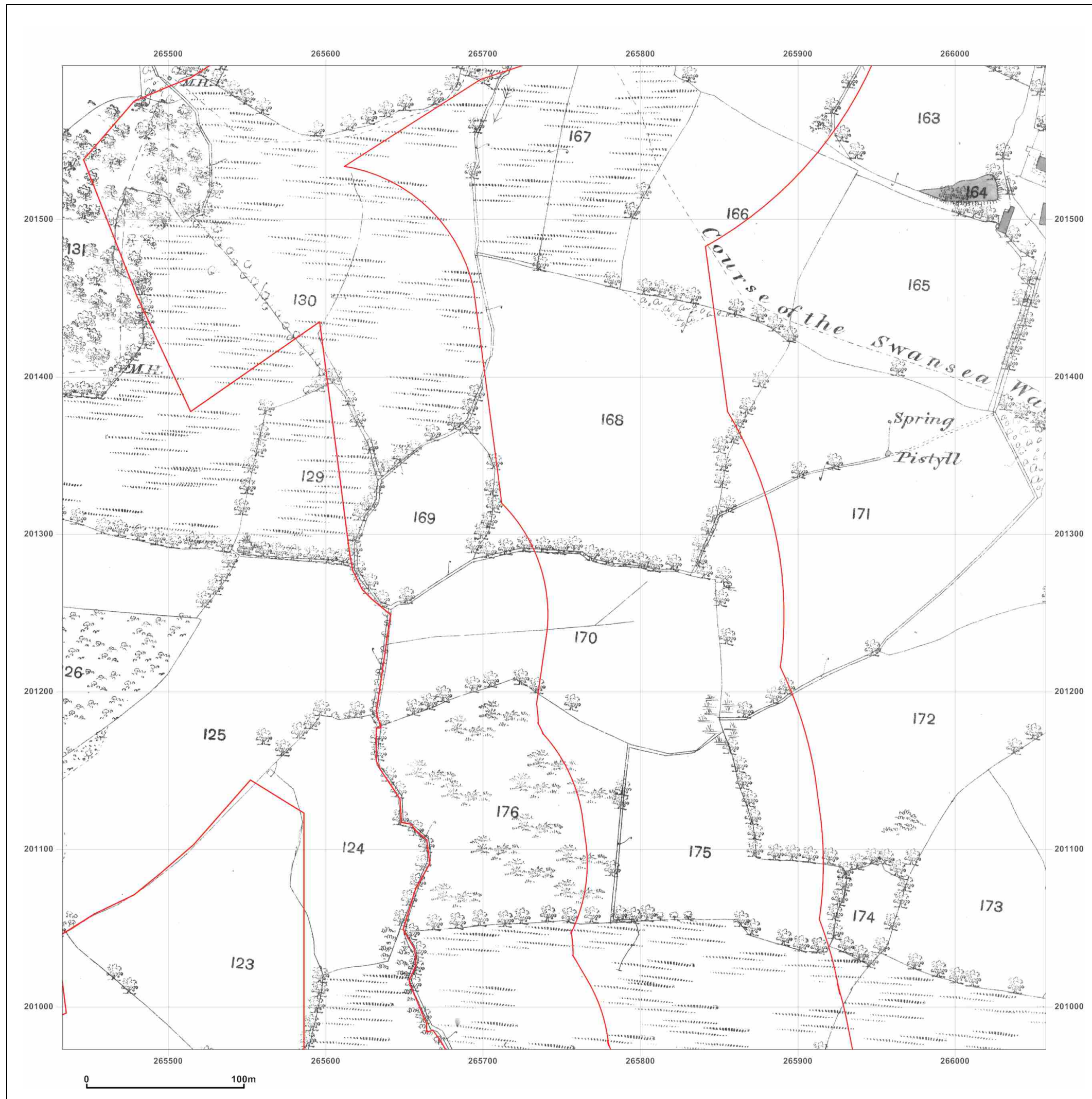


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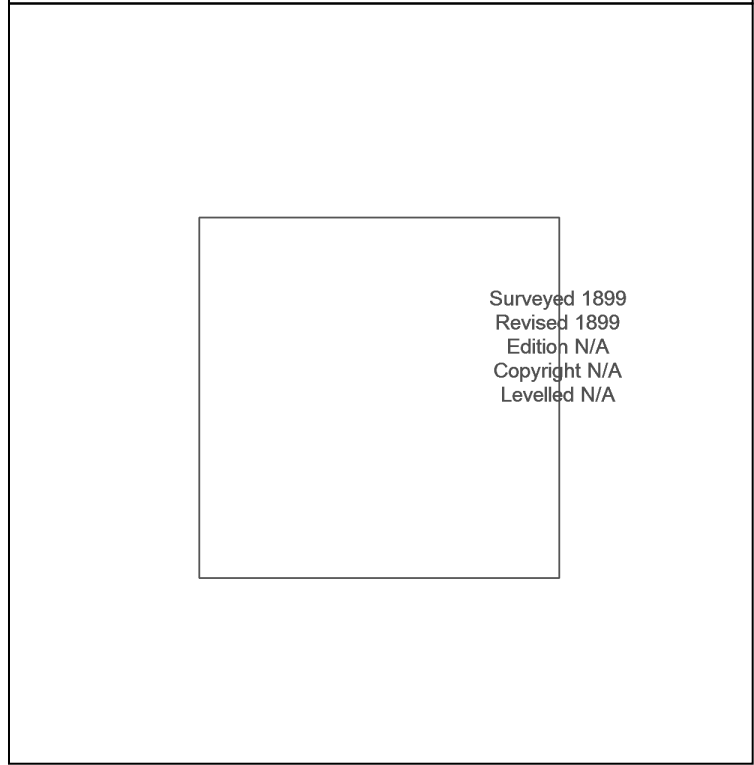
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Report Ref: GS-1587646_LS_5_3
Grid Ref: 265745, 201285

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



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

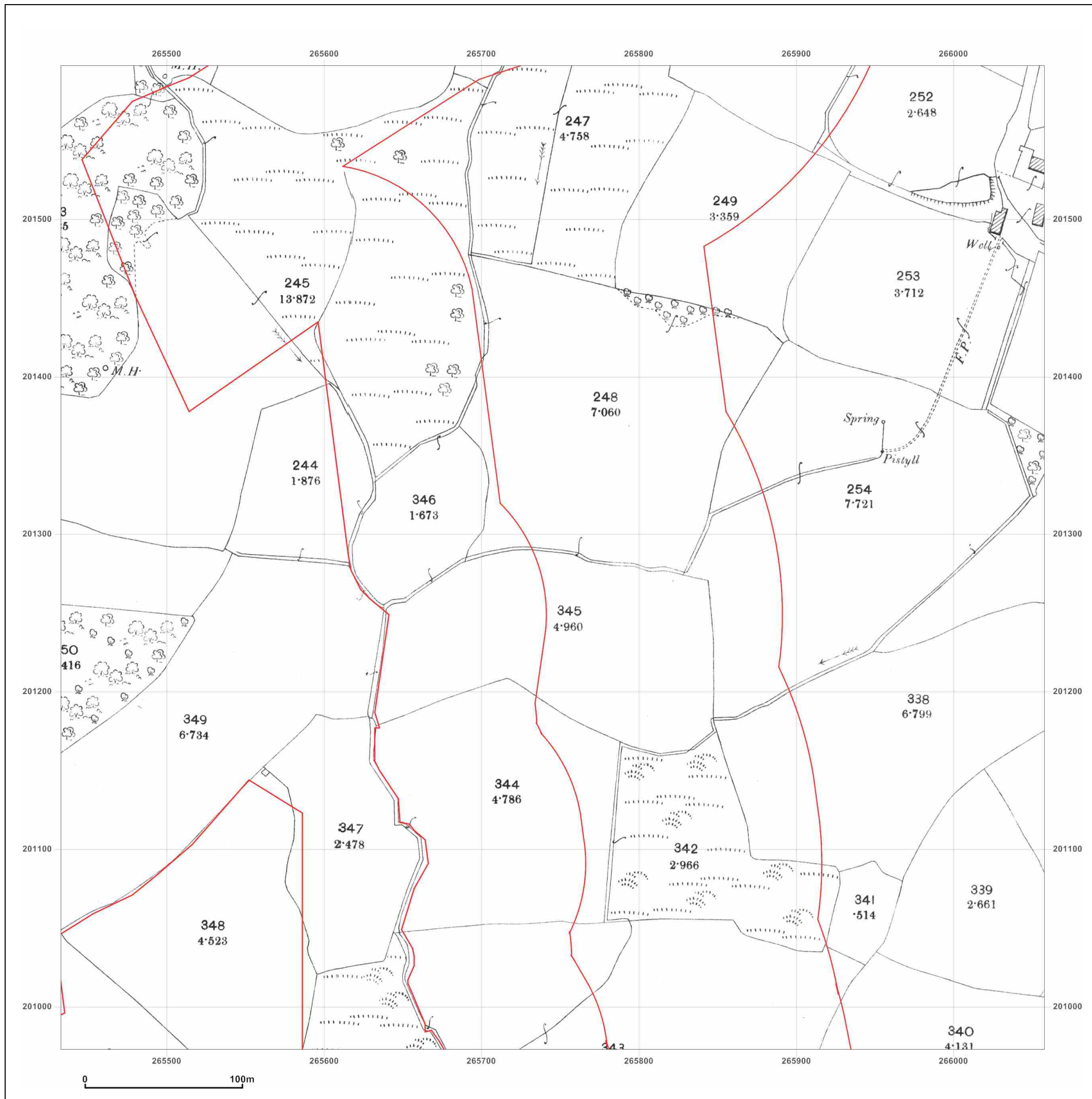


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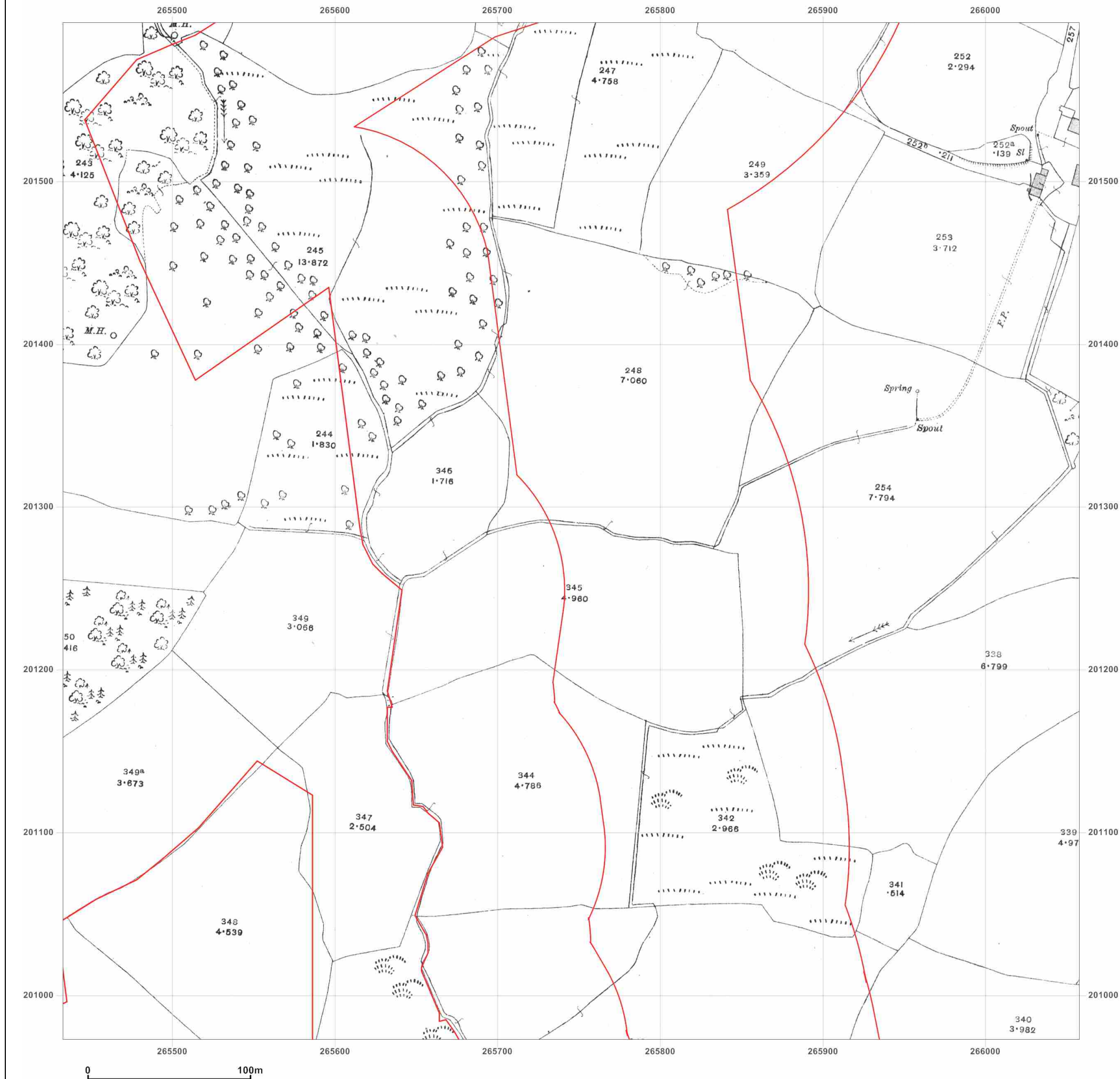
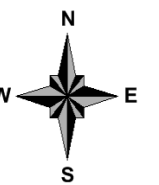
Client Ref: PB84891
Report Ref: GS-1587646_LS_5_3
Grid Ref: 265745, 201285

Map Name: County Series

Map date: 1918

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1918
Revised 1918
Edition N/A
Copyright N/A
Levelled N/A



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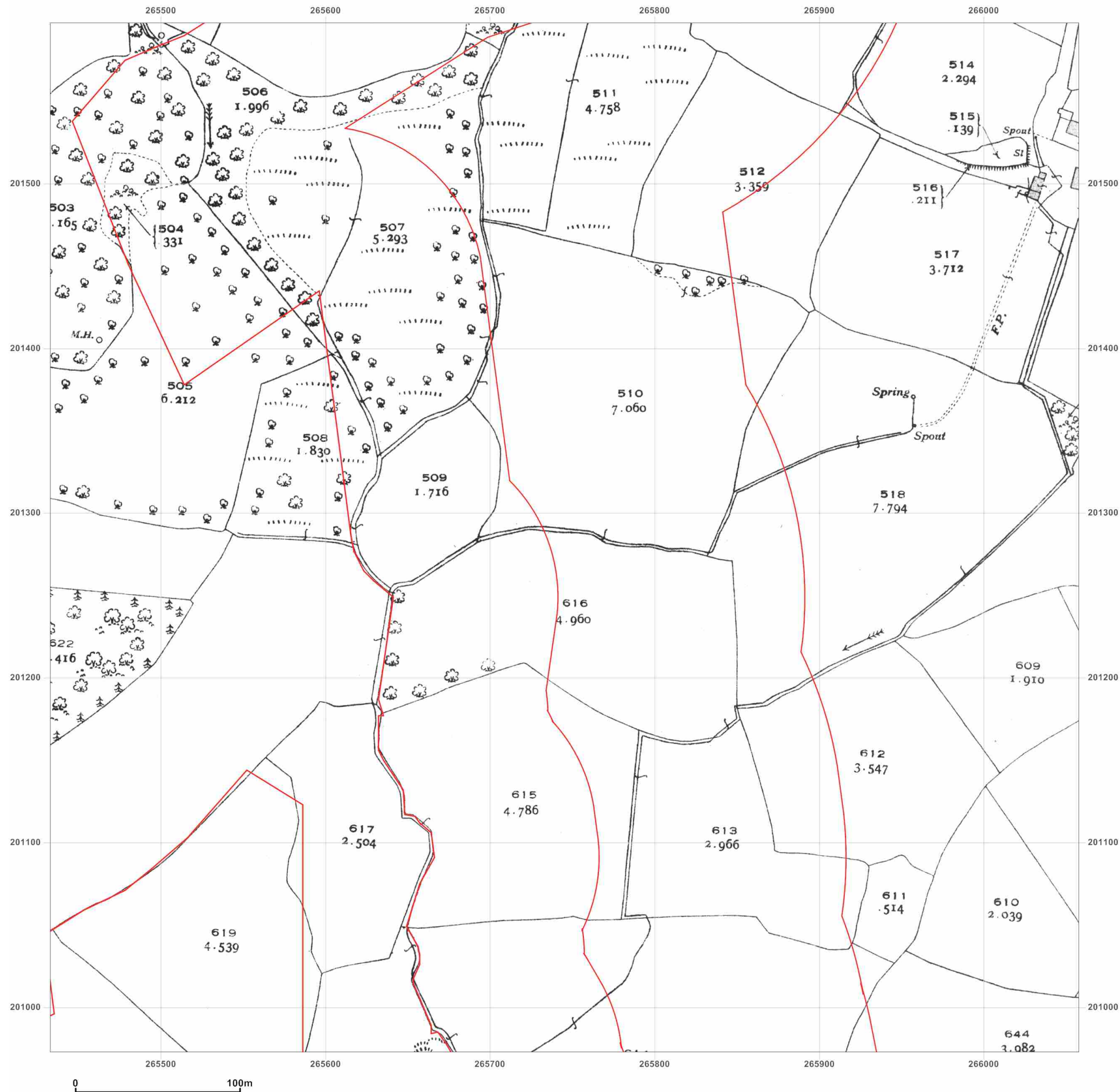
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Grid Ref: 265745, 201285

Map Name: County Series

Map date: 1935

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1935
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

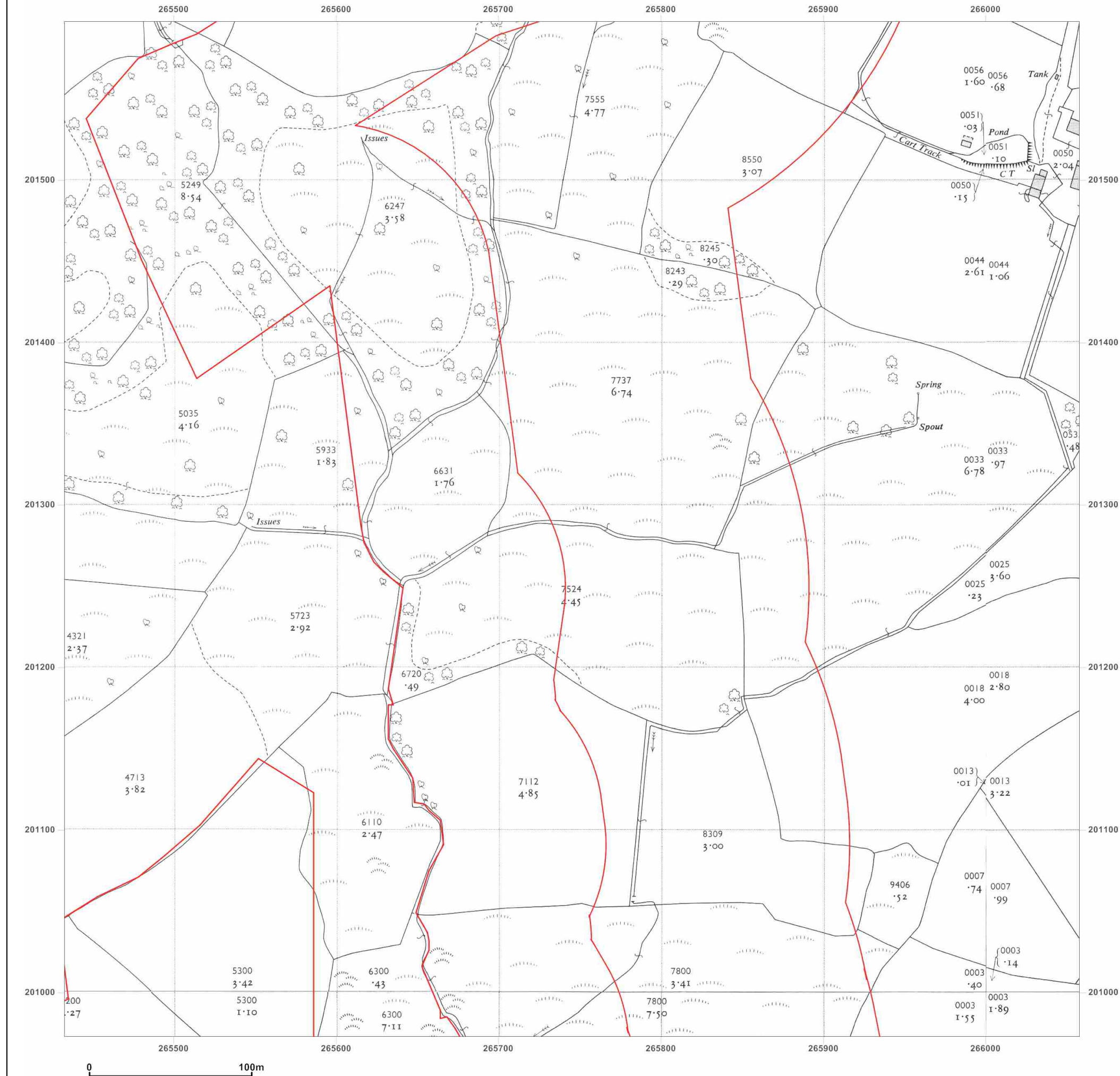


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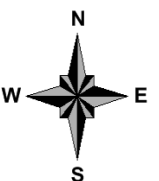
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Grid Ref: 265745, 201285

Map Name: National Grid

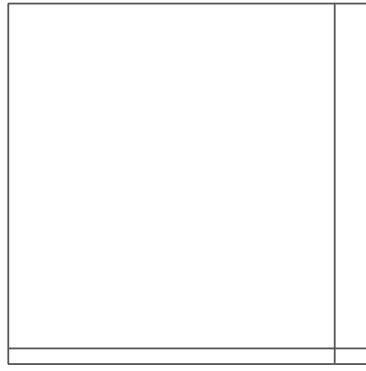
Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1956



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1962
Levelled 1956

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1962
Levelled 1956

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
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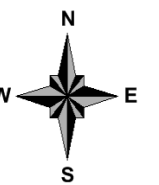
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Grid Ref: 265745, 201285

Map Name: National Grid

Map date: 1974

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1963

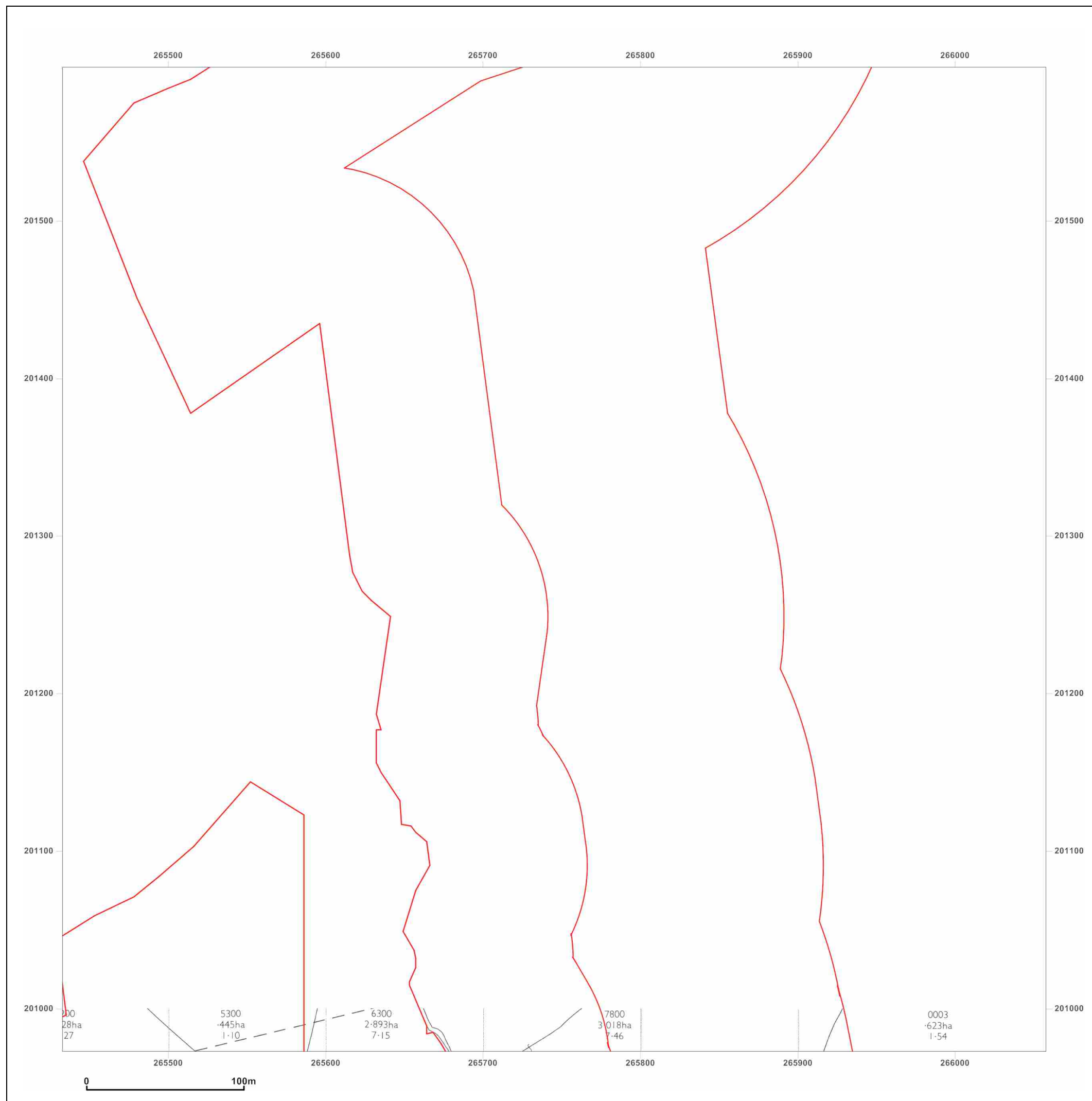


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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_3
Grid Ref: 265745, 201285

Map Name: National Grid

Map date: 1987-1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1992
Revised 1992
Edition N/A
Copyright 1992
Levelled N/A

Surveyed 1962
Revised 1992
Edition N/A
Copyright 1992
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1962
Revised 1987
Edition N/A
Copyright 1987
Levelled 1962

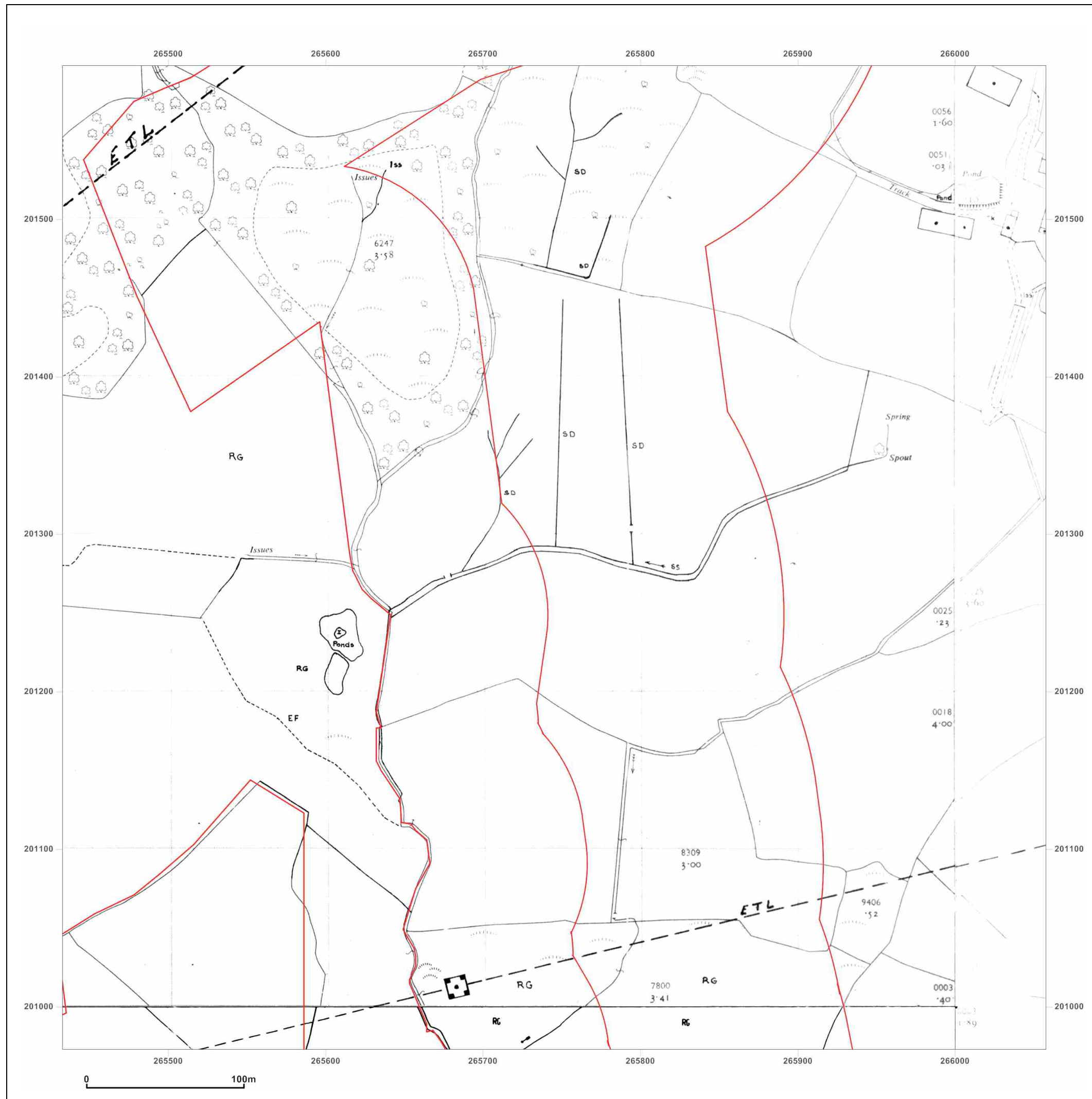


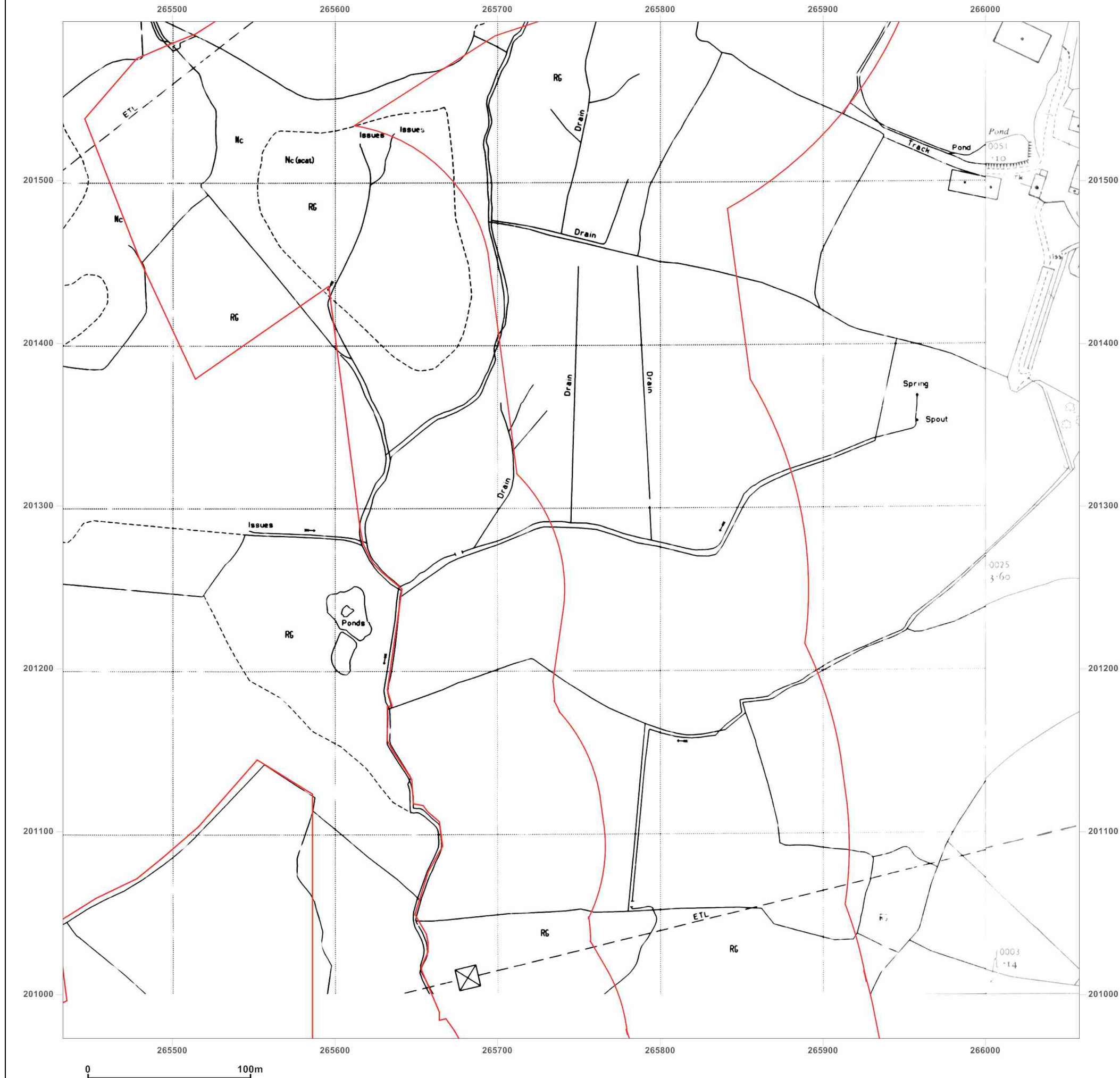
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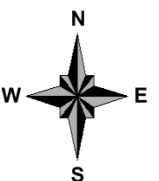
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Grid Ref: 265745, 201285

Map Name: National Grid

Map date: 1992-1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1962
Revised 1992
Edition N/A
Copyright 1992
Levelled 1962



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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_4
Grid Ref: 265745, 201915

Map Name: County Series

Map date: 1876

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A

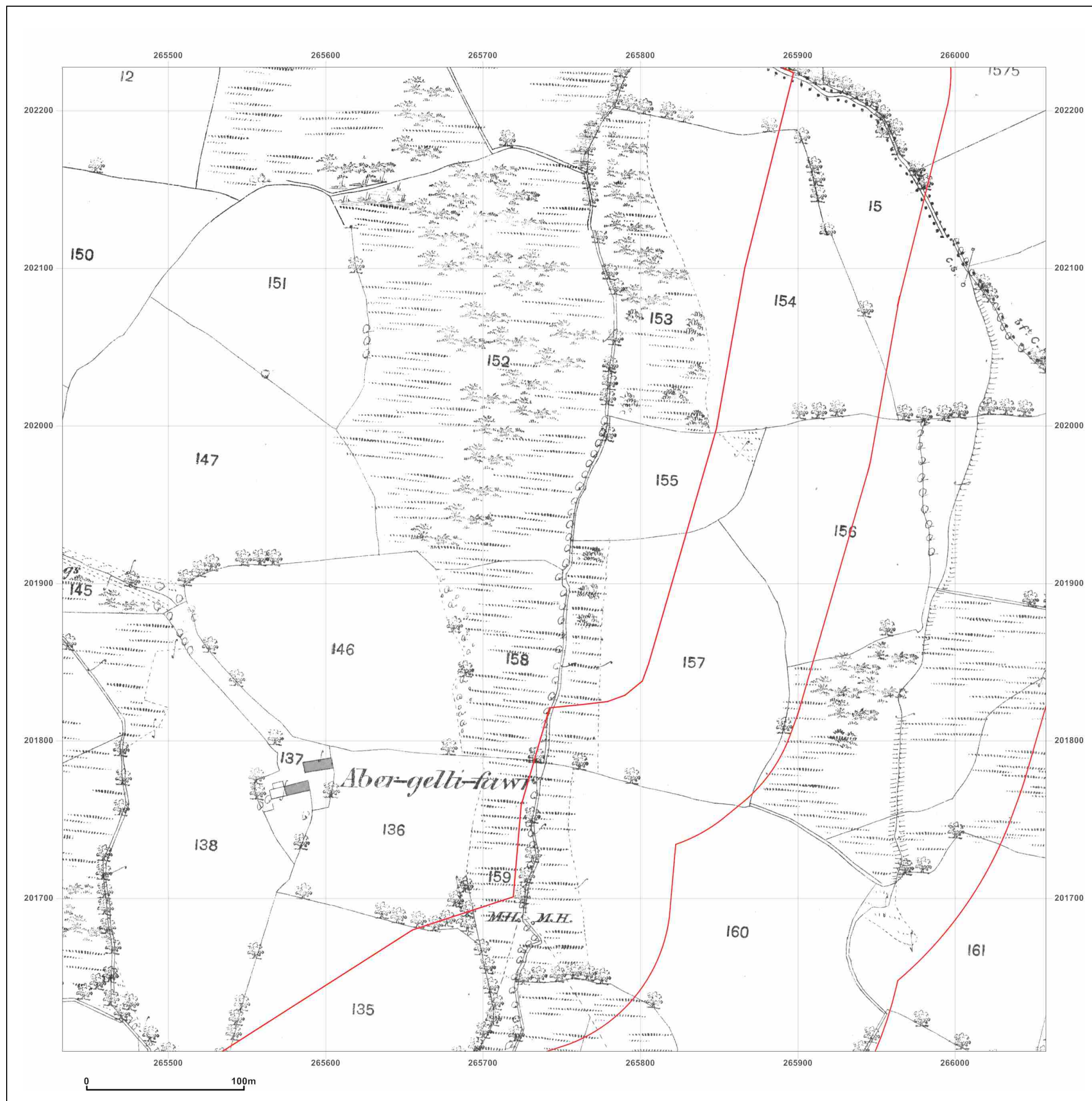


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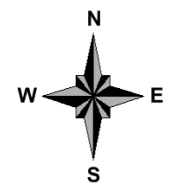
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Site Details:
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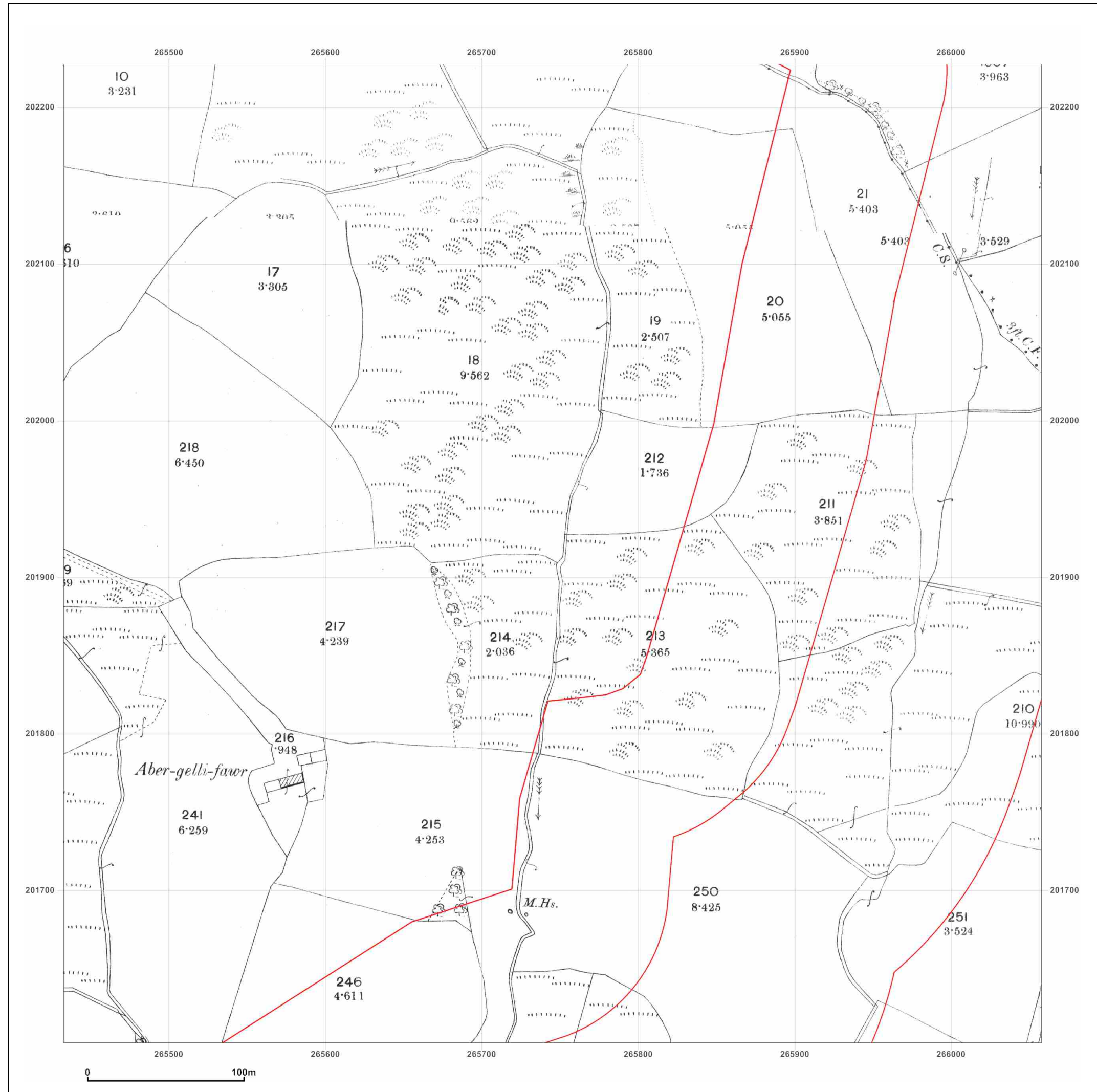
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Report Ref: GS-1587646_LS_5_4
Grid Ref: 265745, 201915

Map Name: County Series
Map date: 1898-1899
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1898
 Revised 1898
 Edition N/A
 Copyright N/A
 Levelled N/A

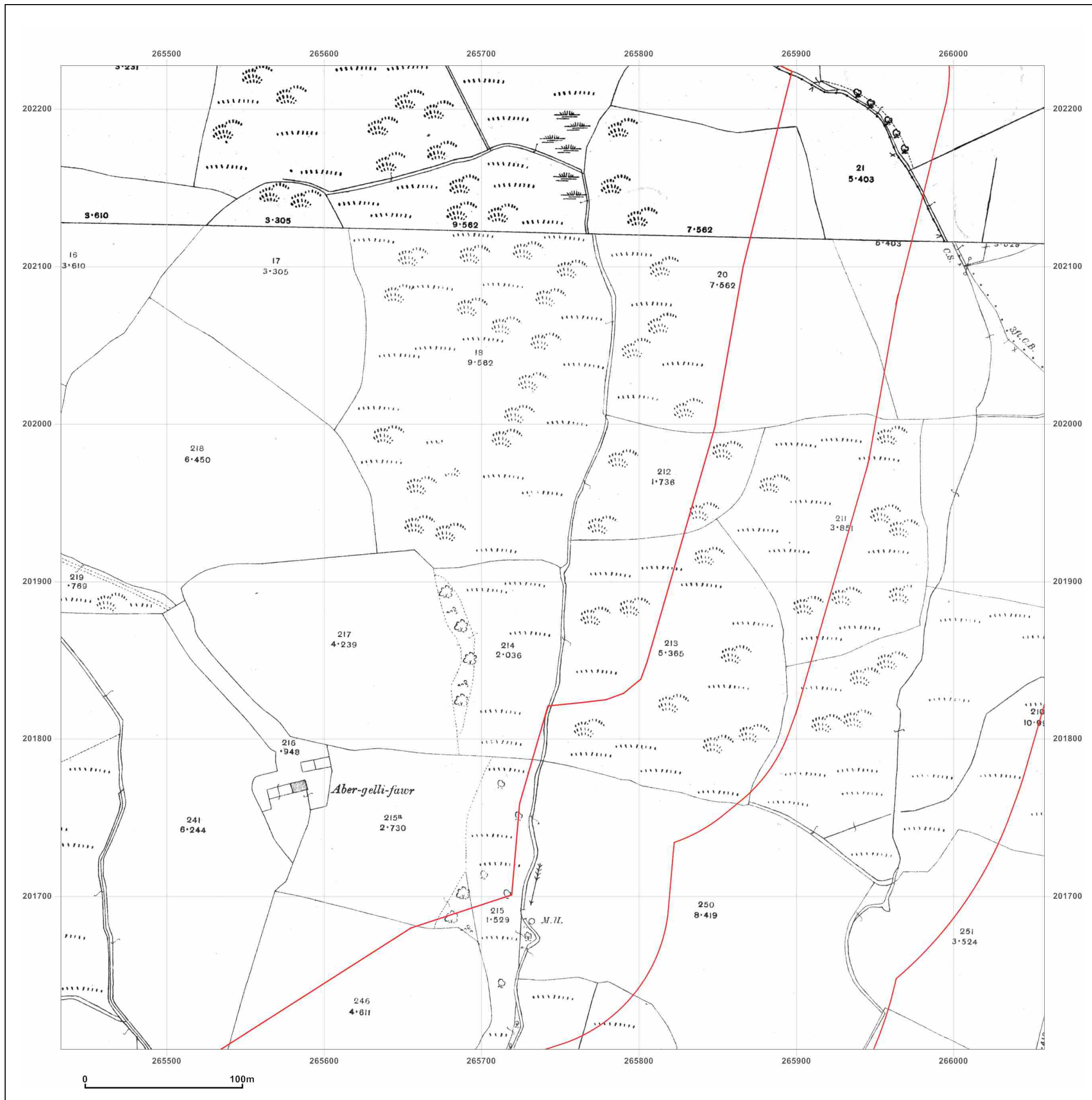
Surveyed 1899
 Revised 1899
 Edition N/A
 Copyright N/A
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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_4
Grid Ref: 265745, 201915

Map Name: County Series

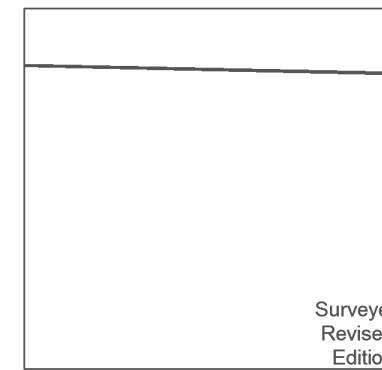
Map date: 1913-1918

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1913
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1918
Revised 1918
Edition N/A
Copyright N/A
Levelled N/A



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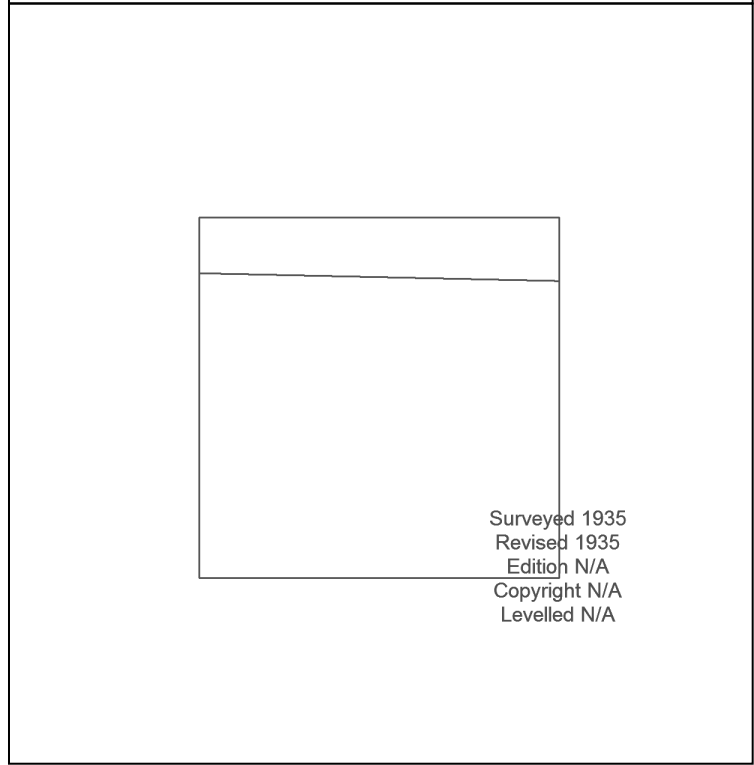
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Grid Ref: 265745, 201915

Map Name: County Series

Map date: 1935

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1935
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

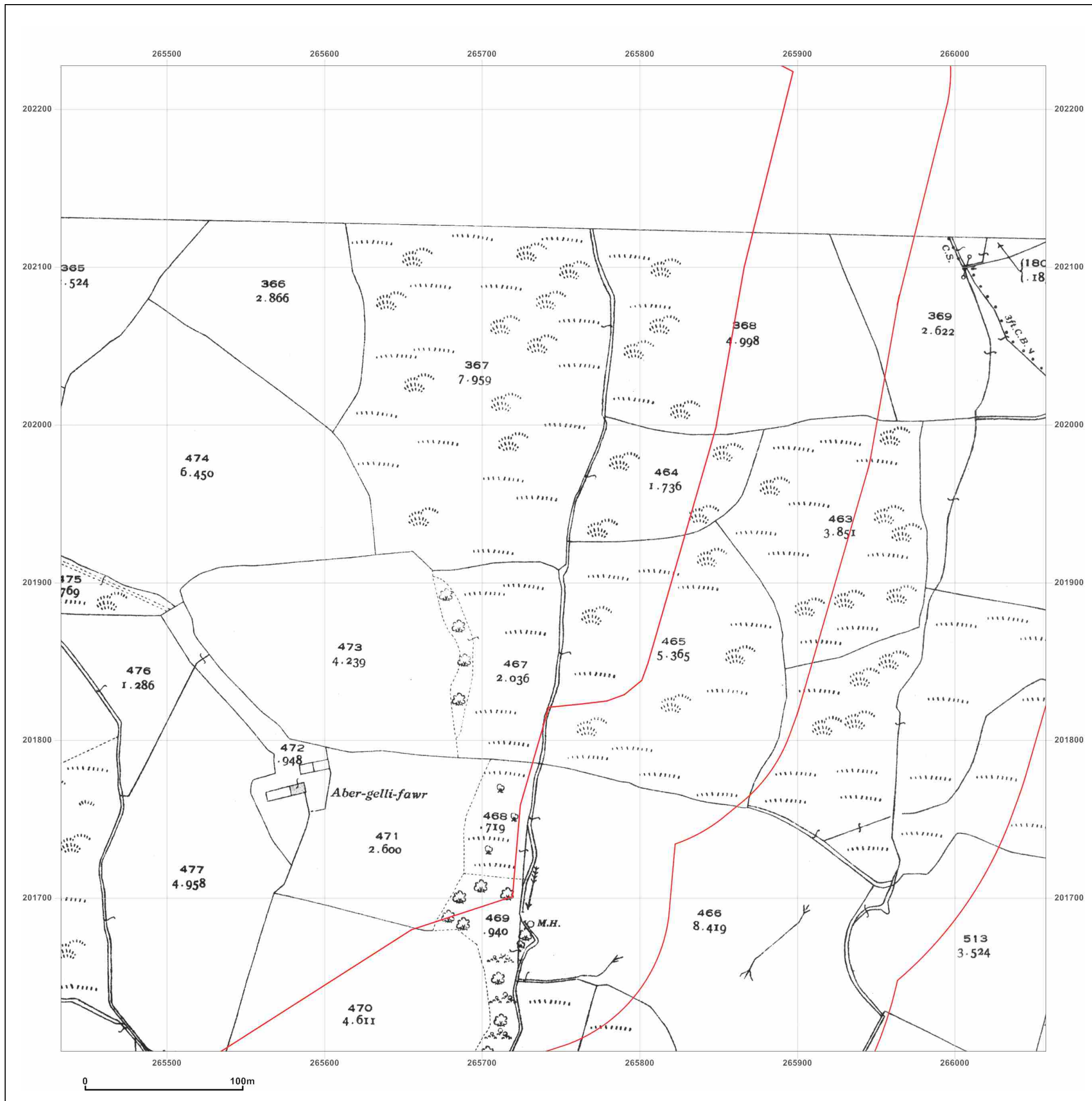


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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_4
Grid Ref: 265745, 201915

Map Name: National Grid
Map date: 1960
Scale: 1:2,500
Printed at: 1:2,500



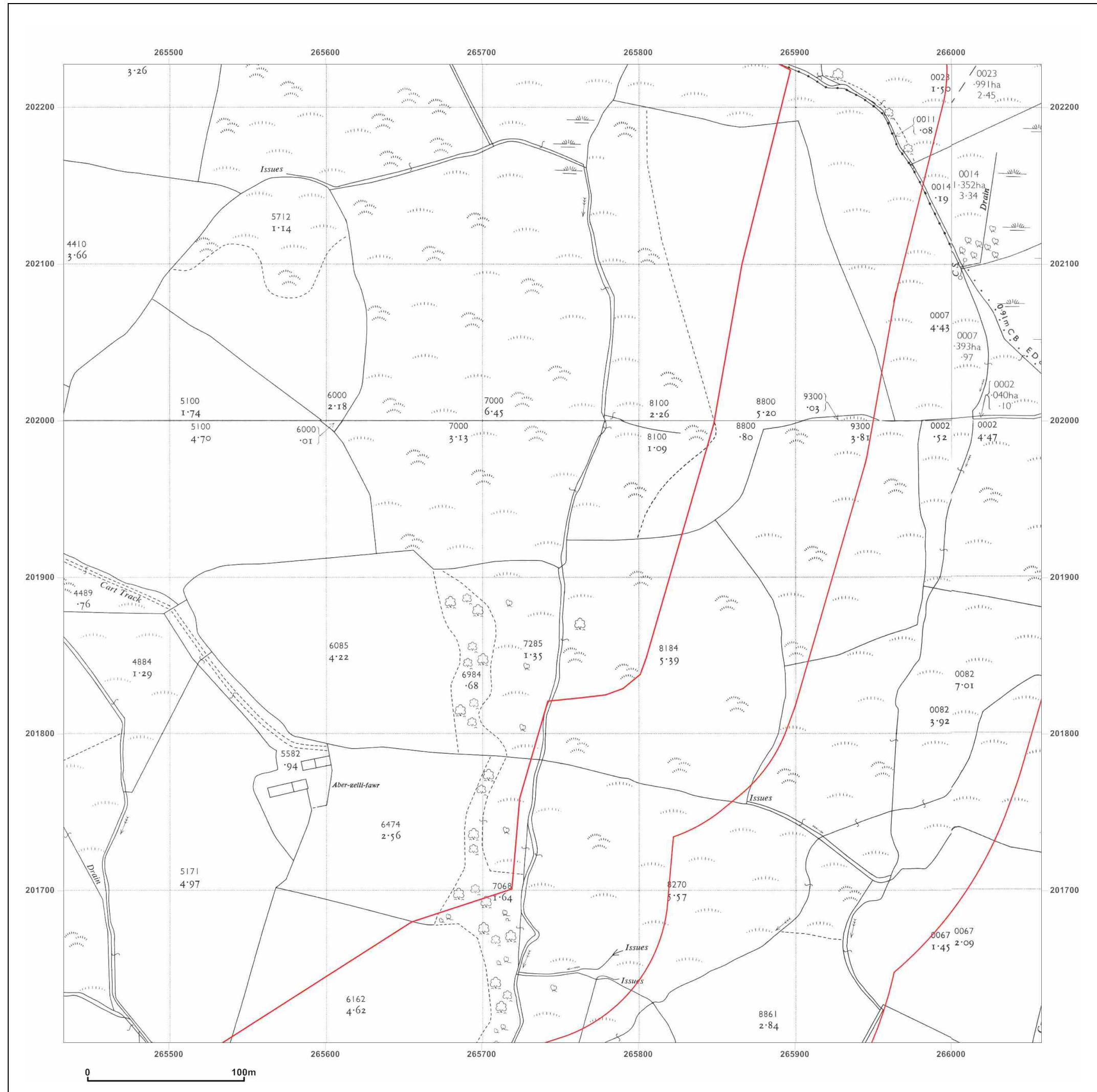
Surveyed 1960 Revised 1960 Edition N/A Copyright 1961 Levelled 1956	Surveyed 1960 Revised 1960 Edition N/A Copyright 1961 Levelled 1956
Surveyed 1960 Revised 1960 Edition N/A Copyright 1961 Levelled 1956	Surveyed 1960 Revised 1960 Edition N/A Copyright 1962 Levelled 1956


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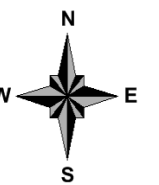
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Map Name: National Grid

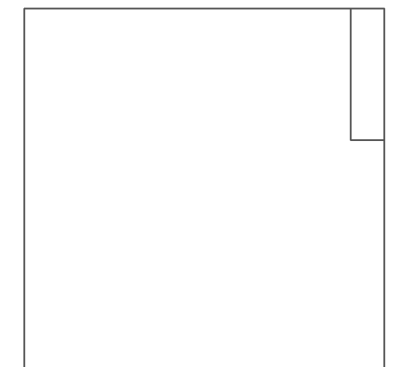
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Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1956

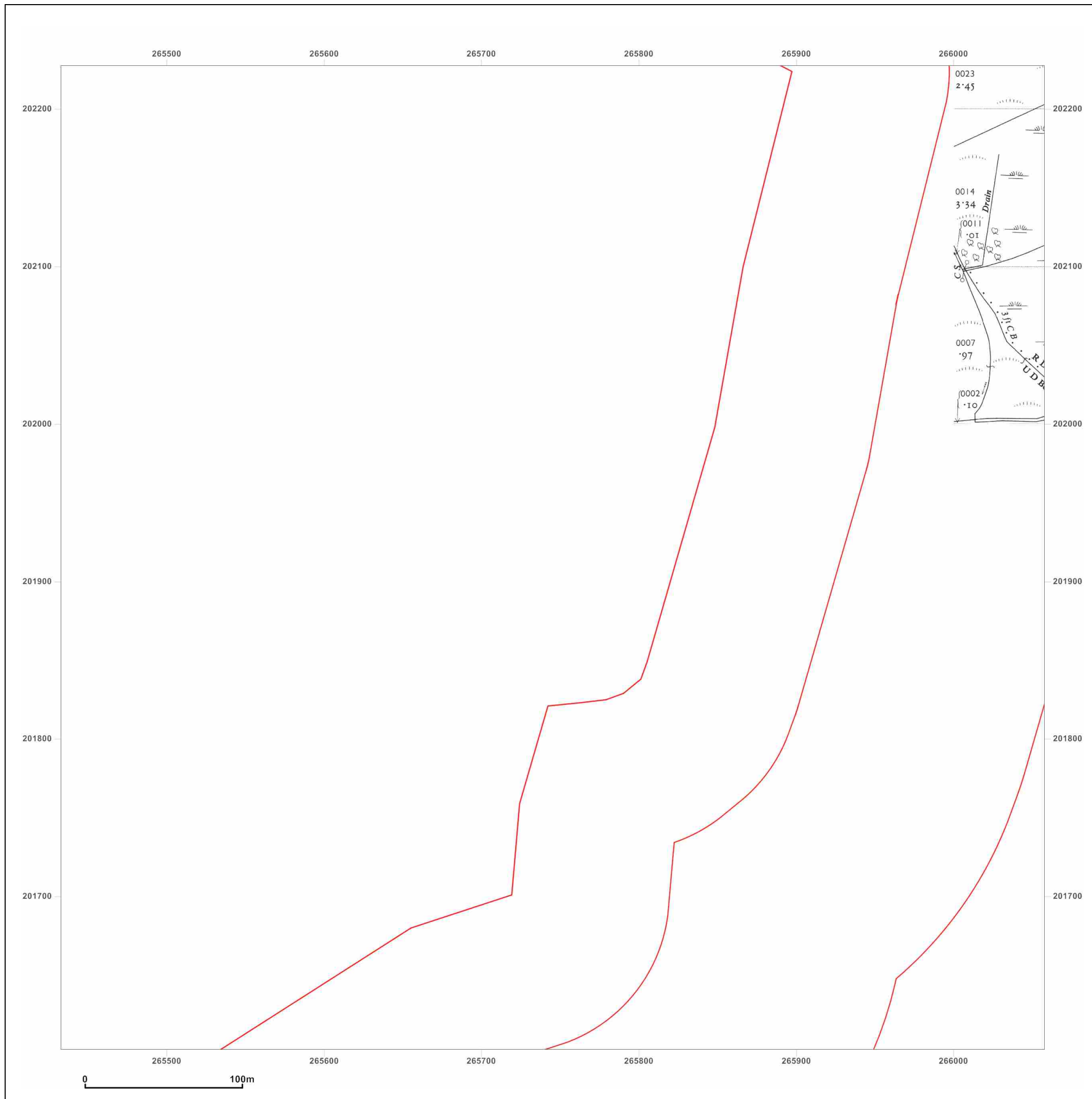


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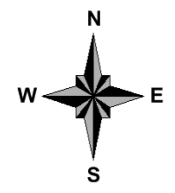
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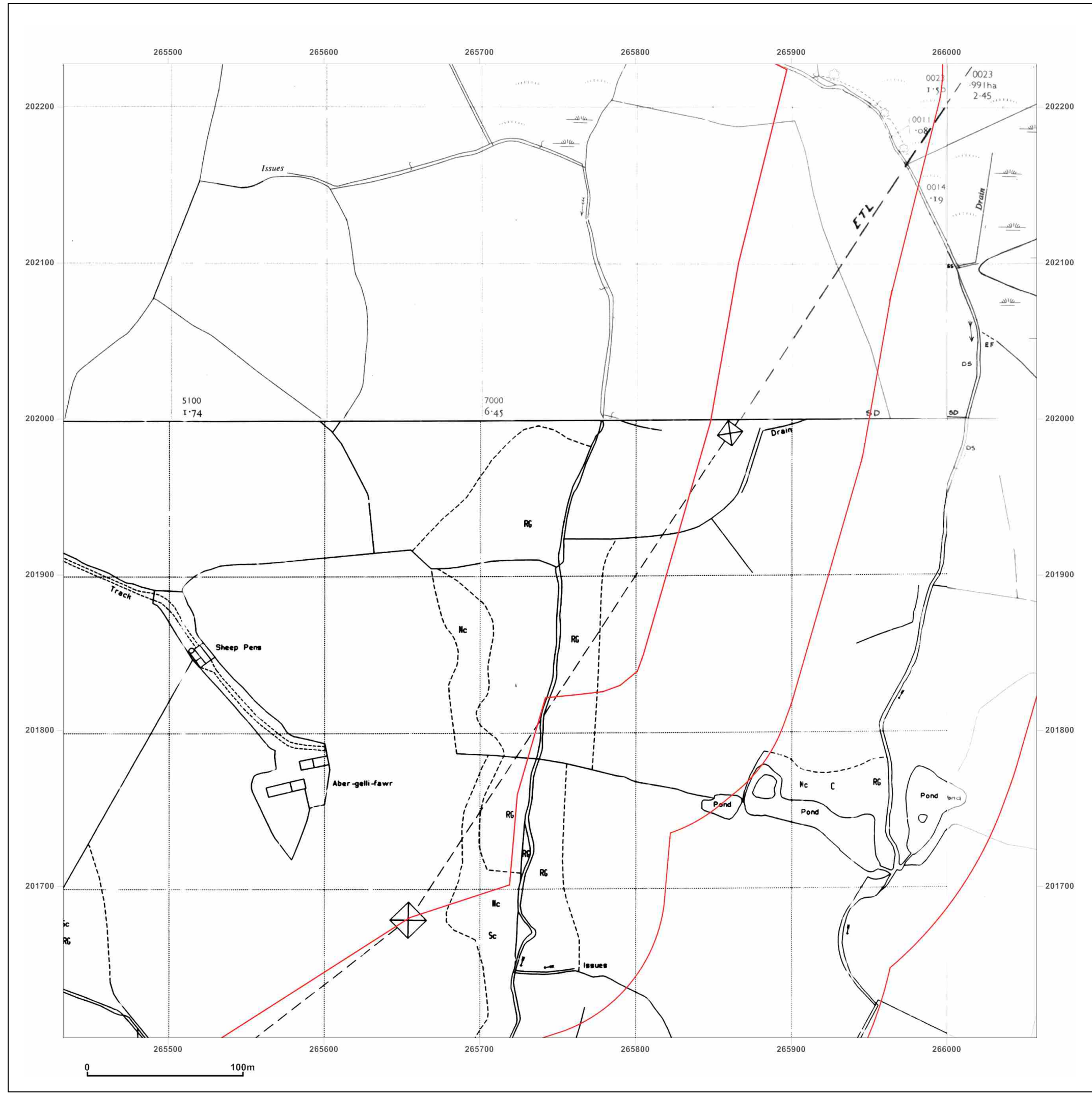
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 FARM, FELINDRE, ABERTAWE,
 SA5 7NN

Client Ref: PB84891
Report Ref: GS-1587646_LS_5_4
Grid Ref: 265745, 201915

Map Name: National Grid
Map date: 1992-1993
Scale: 1:2,500
Printed at: 1:2,500



Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A	Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed 1962 Revised 1992 Edition N/A Copyright 1992 Levelled 1962



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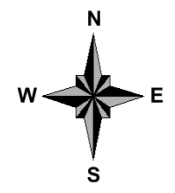
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Site Details:
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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_4
Grid Ref: 265745, 201915

Map Name: National Grid
Map date: 1992-1993
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Printed at: 1:2,500



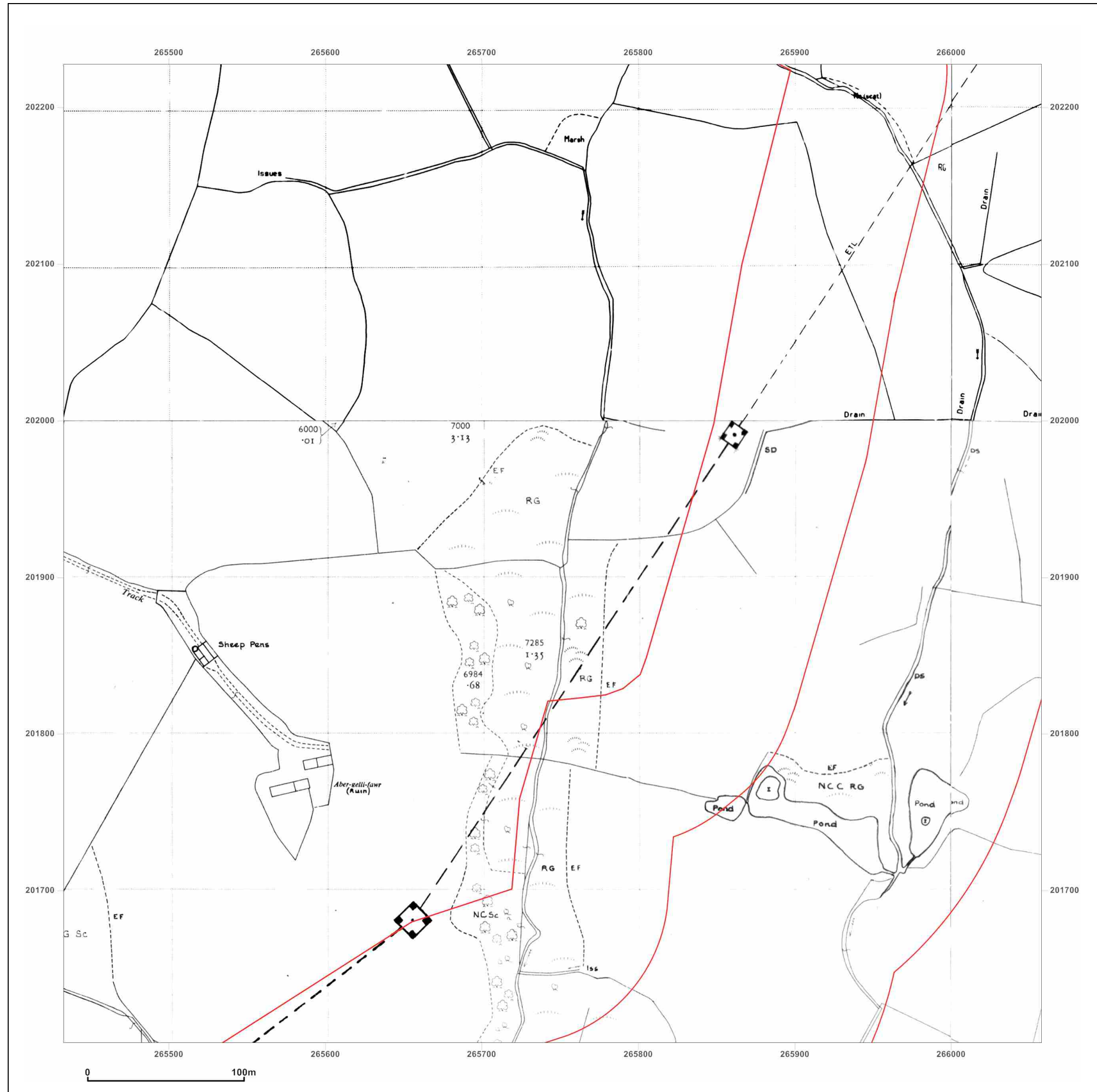
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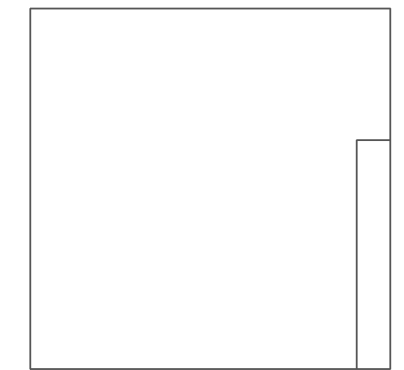
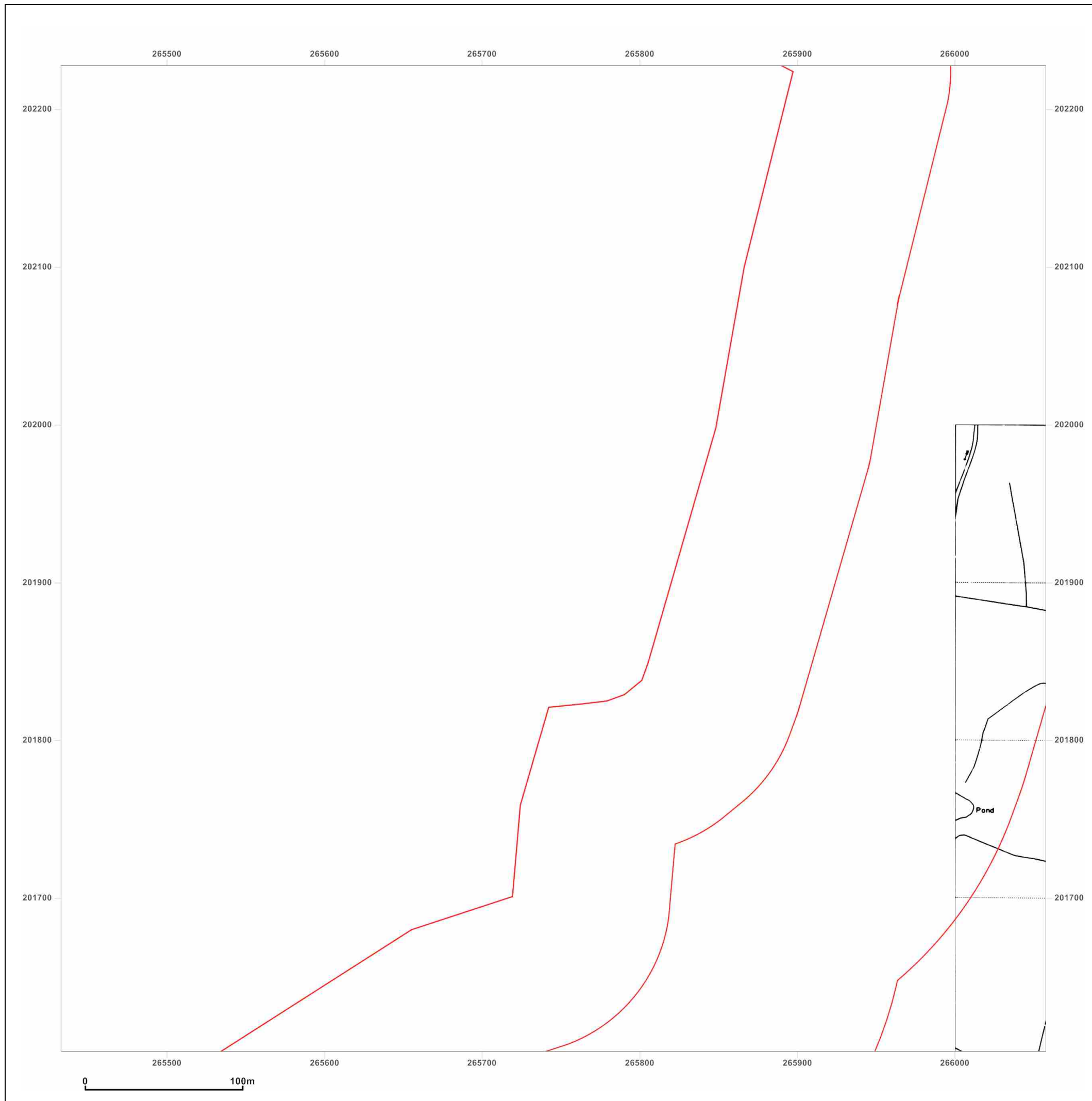
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Grid Ref: 265745, 201915

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: County Series

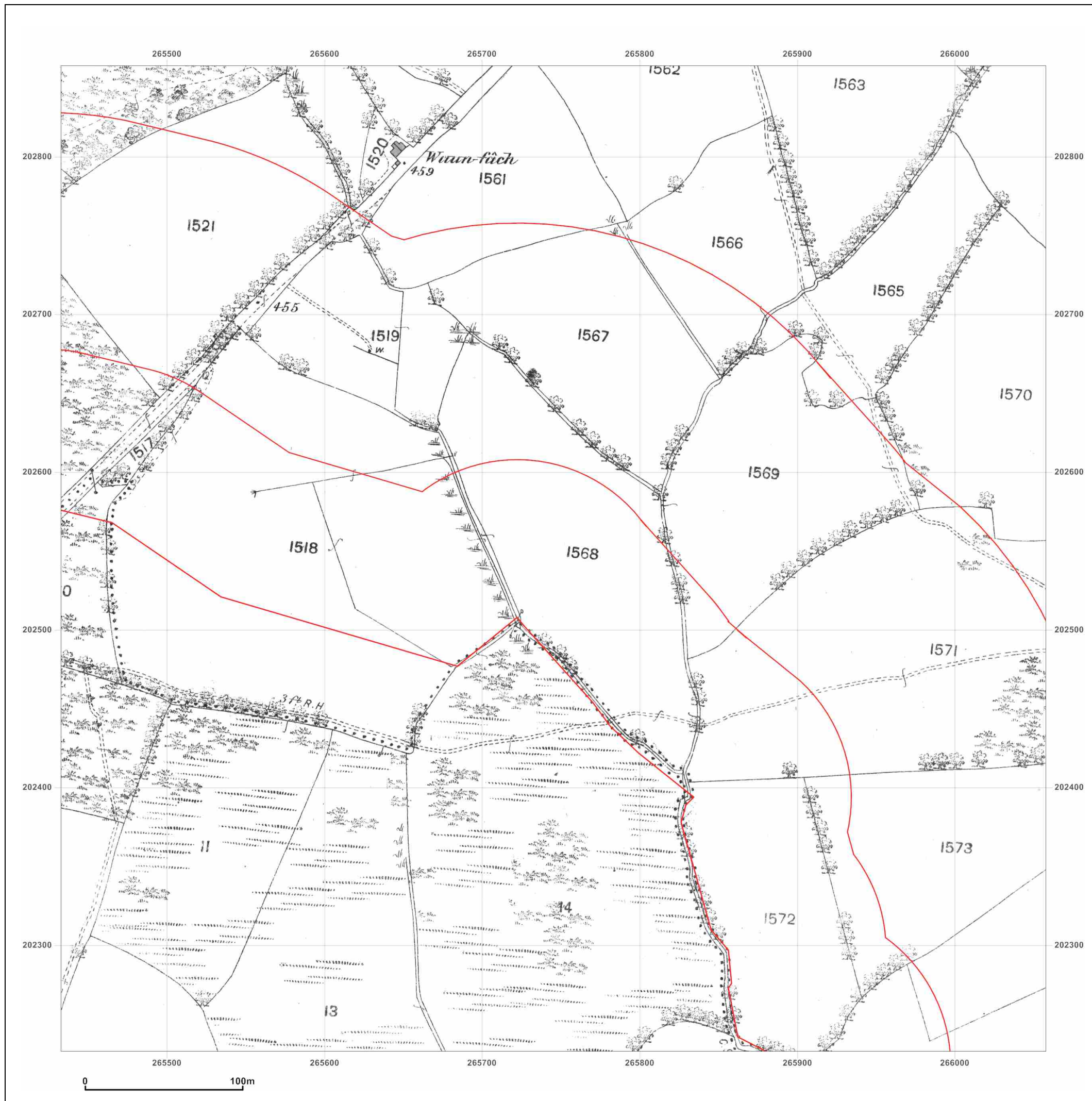
Map date: 1876

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876
Revised 1876
Edition N/A
Copyright N/A
Levelled N/A



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SA5 7NN

Client Ref: PB84891
Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: County Series

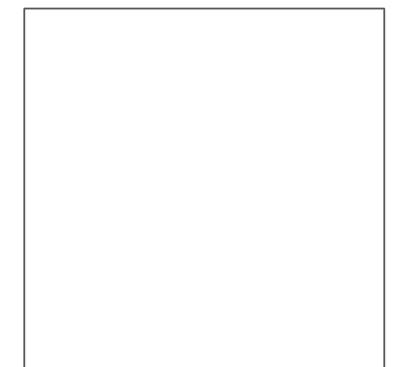
Map date: 1898

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1898
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

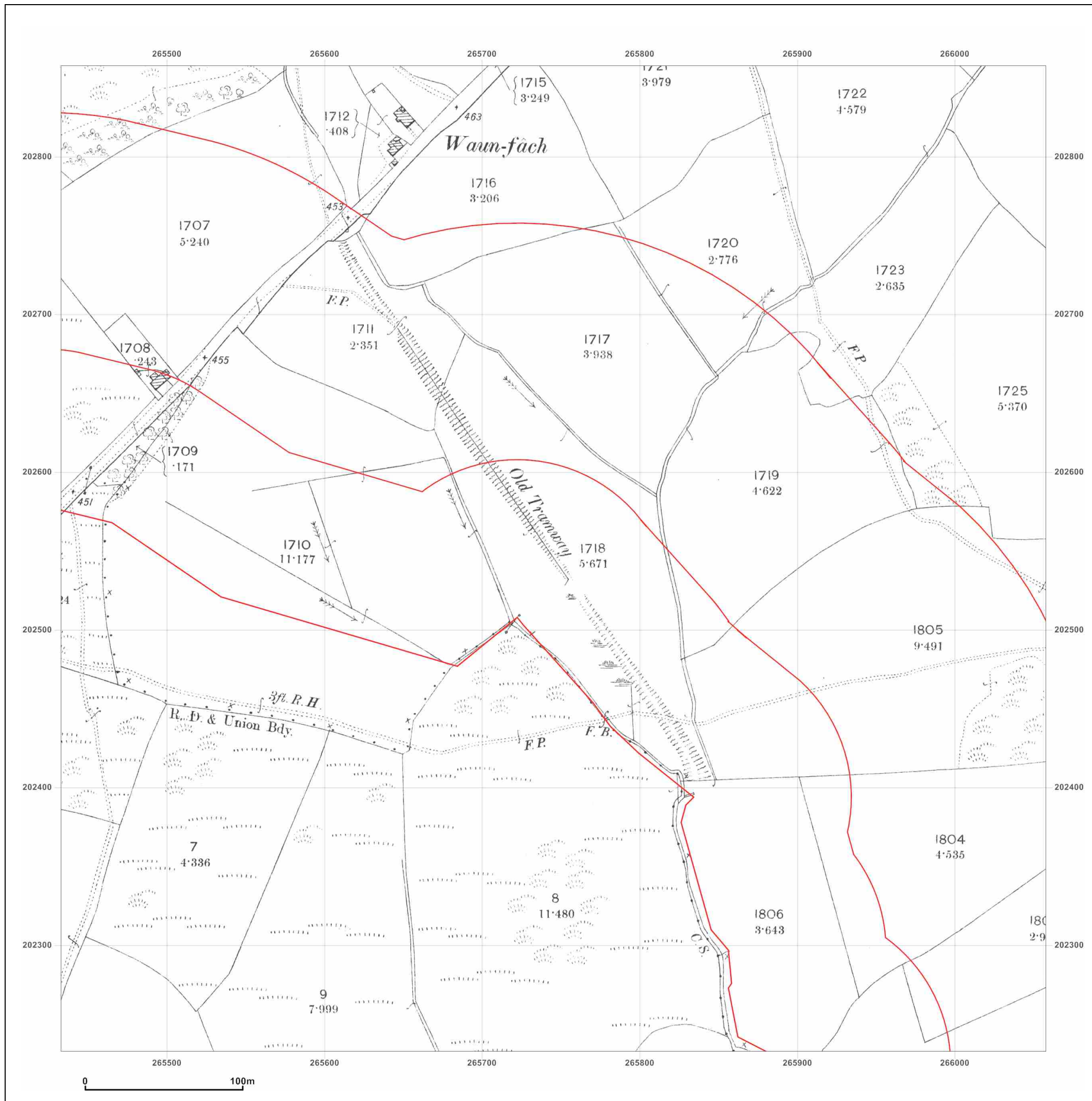


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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: County Series

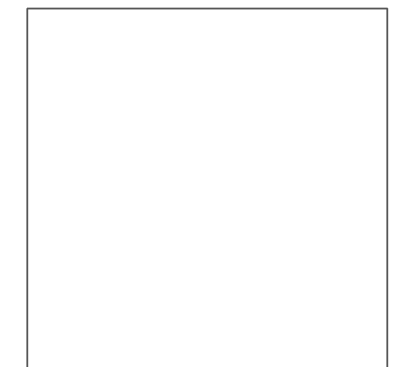
Map date: 1913

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1913
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

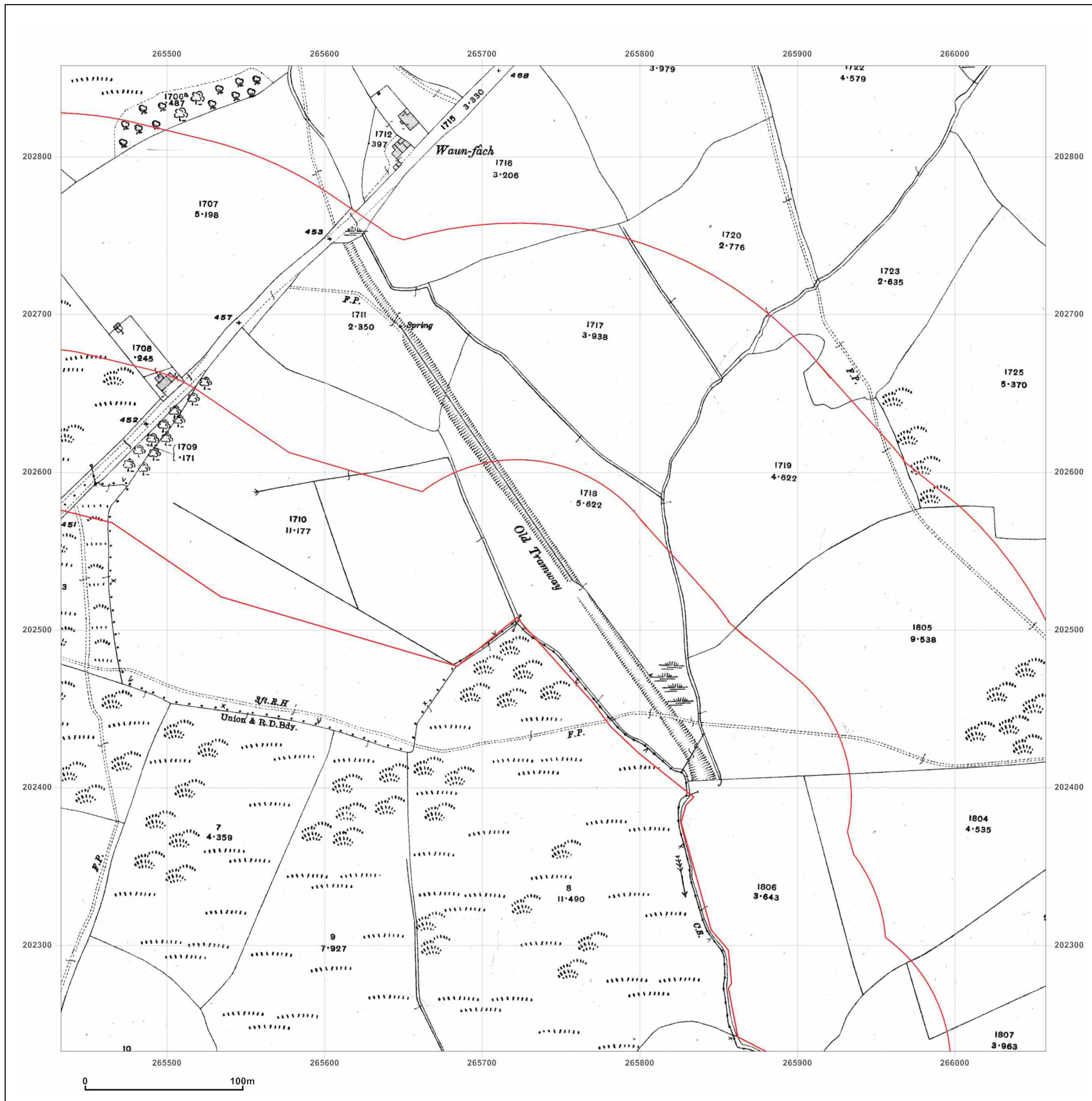


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Client Ref: PB84891
Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: National Grid
Map date: 1960
Scale: 1:2,500
Printed at: 1:2,500



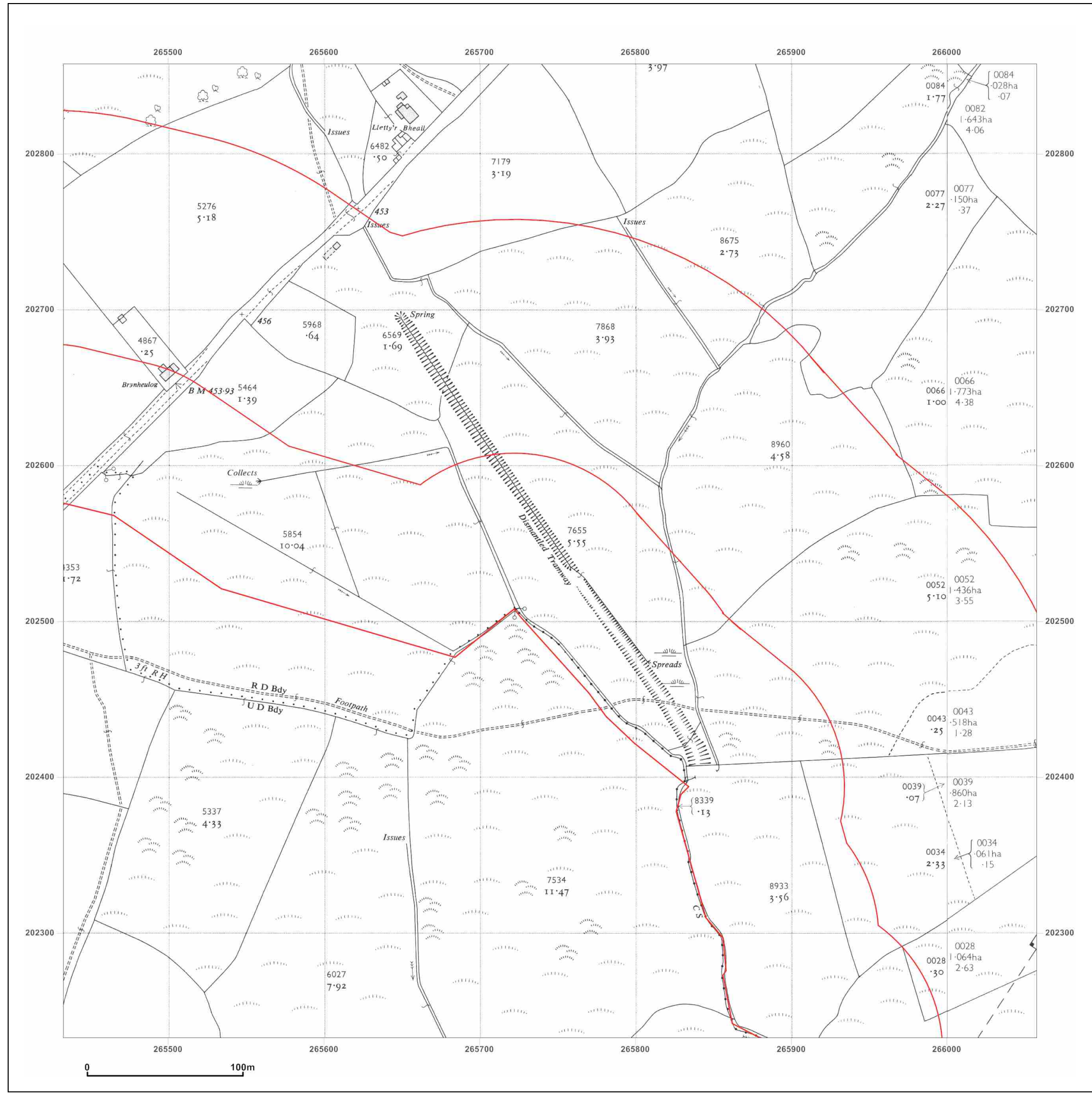
Surveyed 1960
 Revised 1960
 Edition N/A
 Copyright 1961
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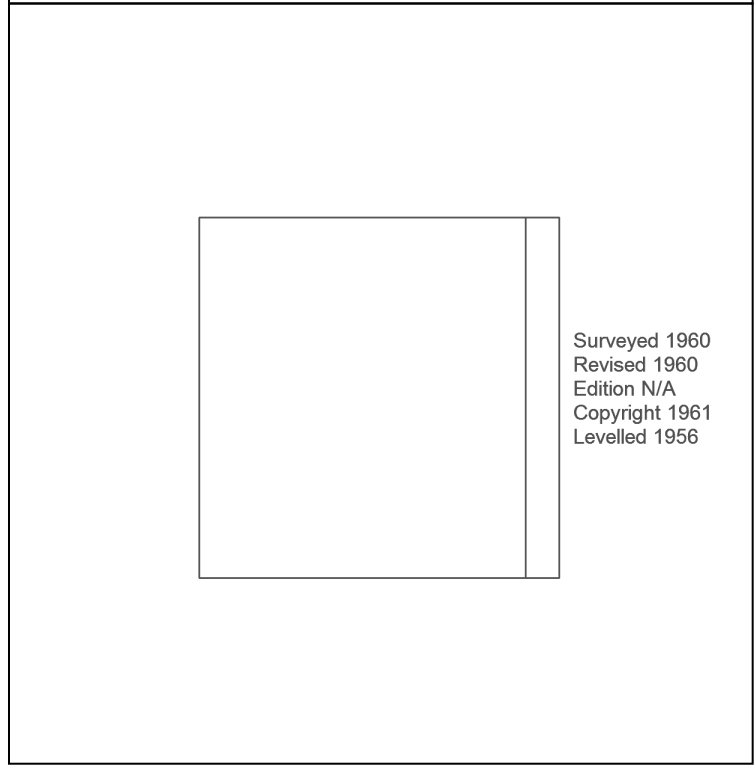
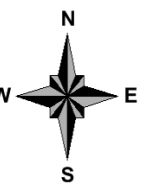
Client Ref: PB84891
Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1960
Revised 1960
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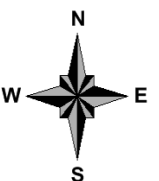
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Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: National Grid

Map date: 1992-1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1992
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Edition N/A
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

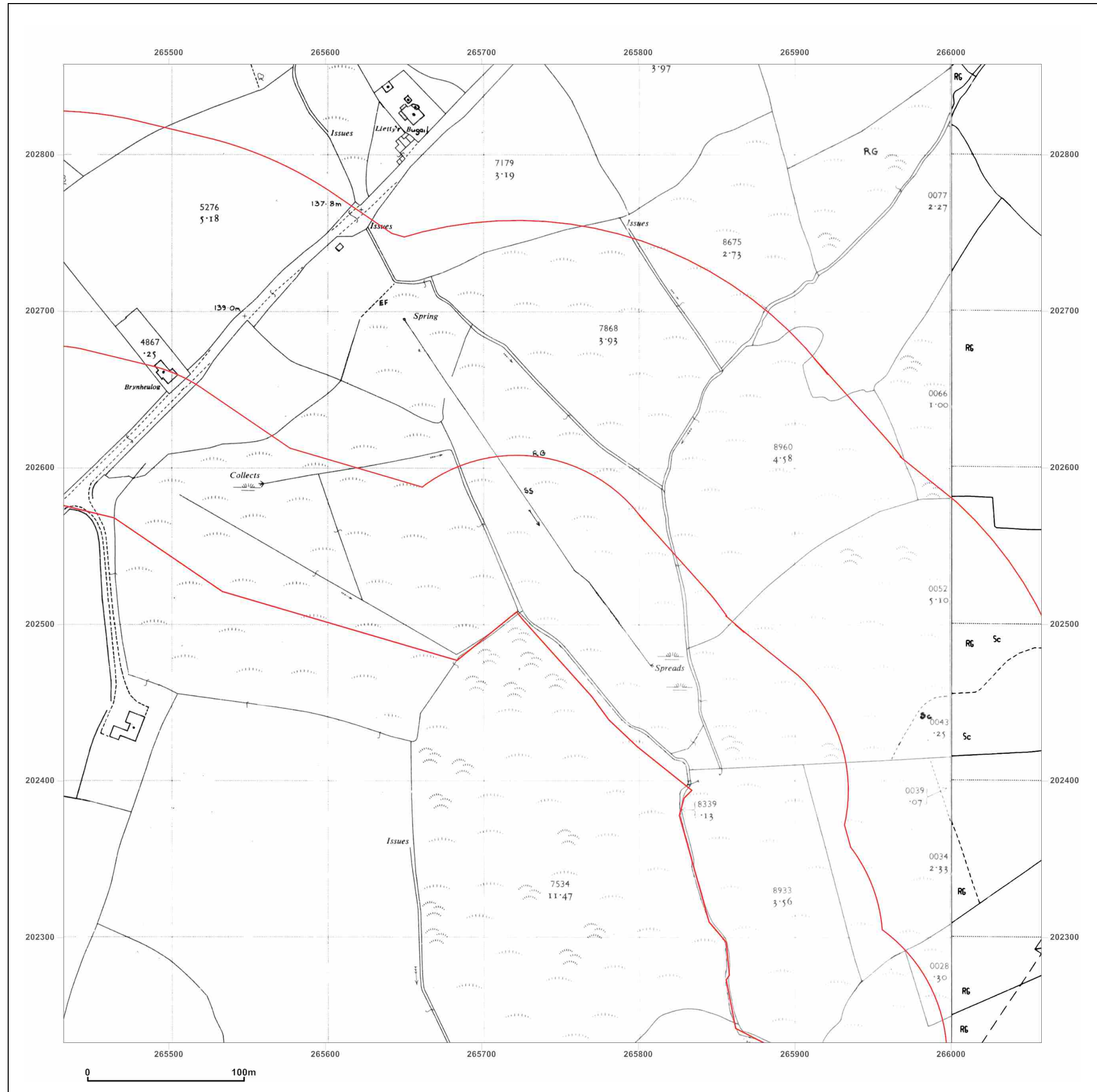


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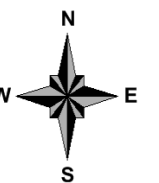
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Report Ref: GS-1587646_LS_5_5
Grid Ref: 265745, 202545

Map Name: National Grid

Map date: 1992-1993

Scale: 1:2,500

Printed at: 1:2,500



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Revised N/A
Edition N/A
Copyright 1993
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