



## LOXWOOD CLAY PITS

### GEOTECHNICAL DESK STUDY

Prepared for N. DANHASH & S. IBISHI

Report Ref: 32637/01

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Report Ref: 32637/01

PROJECT: Feasibility assessment for clay extraction

CONSULTANT: ProTreat Ltd

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## CONTENTS

REPORT	PAGE
EXECUTIVE SUMMARY	
1. INTRODUCTION .....	1
1.1 Methodology .....	2
2. SITE SETTING .....	4
2.1 Site Location .....	4
2.2 Site Description .....	4
2.3 General Surroundings .....	6
2.4 Proposed Works .....	6
2.5 Regional Geology .....	6
2.6 Regional Hydrogeology .....	8
2.7 Hydrology .....	9
3. PREVIOUS SITE INVESTIGATION .....	11
4. SITE HISTORY .....	12
4.1 Historical Map Review .....	12
4.2 Evidence of Historical Brick Making .....	14
5. REGULATORY ENQUIRIES .....	16
5.1 Environment Agency .....	17
5.2 Local Authority .....	17
6. DISCUSSION .....	18
6.1 Current Clay Reserves .....	18
6.2 Clay Properties for Brick Making .....	19
7. CONCLUSIONS AND RECOMMENDATIONS .....	21



8. REFERENCES .....	23
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FIGURES	Nos.
LOCATION PLAN	1
SITE PLAN	2

## APPENDICES

APPENDIX A	GROUNDSURE REPORTS
APPENDIX B	SITE PHOTOGRAPHS
APPENDIX C	HISTORICAL MAPS



## EXECUTIVE SUMMARY

Site Address	Land north of Loxwood Road, Loxwood, Billingshurst, West Sussex, RH14 0RW.
NGR, Site area	<b>TQ 50552 13199</b> , approximately 122Ha.
Current Use	The site comprised a mix of ancient and semi-ancient (replanted) woodland, and conifer plantations used for forestry activities.
Geography	The site is approximately between 35m and 45m above Ordnance Datum (AOD) and gently undulates, with a general upwards slope to the northeast.
Geology	The site is recorded as being underlain by Weald Clay Formation (mudstone and local sandstone bands). Superficial deposits are largely absent other than a tract of Alluvium along the western edge of the site. Made Ground is anticipated locally across the site from previous clay pits/brick making/forestry work. Three faults are shown to cross the site.
Hydrogeology	The underlying bedrock is largely designated as unproductive strata, with locally confined Secondary A Aquifers associated with the sandstone bands. The Alluvium is also shown as a Secondary A Aquifer. No Groundwater Source Protection Zones or potable water abstractions are located within 500m of the site.
Hydrology	Nine surface water features and a culvert are recorded within 250m of the site. No Environment Agency GQA Classifications for chemical quality are located within 500m of the site. No floodplains are recorded within 250m of the site.
Site History	From the earliest map extract (1871) the site has been occupied by woodland. A small brick making operation with “kiln” and “clay pits” was present in the eastern plot until at least 1912. The present layout was shown on maps from 1973 onwards.
Current Surrounding Land Use	The area surrounding the site is generally rural with isolated houses.
Conclusions and recommendations	<p>The geology of the site is recorded as the Weald Clay Formation which is a known brick clay resource. There is past evidence of brick making both on and near the site that gives precedence to the suitability of the ground conditions to supply such activities. An intrusive ground investigation and testing is recommended to confirm that there is a suitable thickness of clay available for initial extraction with properties that are in line with those local brick makers would find desirable.</p> <p>A geoenvironmental risk assessment has not been undertaken at this time.</p>



## **1. INTRODUCTION**

It is proposed to assess the potential for clay extraction to take place in two adjacent areas of woodland near Loxwood, West Sussex. Geotechnical Engineering Limited (GEL) was instructed by ProTreat Ltd (Consultant) acting on behalf of Mr N Danhash & Mr S Ibishi (Client) to carry out a desk study to determine the ground conditions at the site to inform the feasibility for clay extraction.

The scope of work was defined in correspondence by GEL, reference T25069 dated 23<sup>rd</sup> November 2016.

The purpose of the study is to identify the ground conditions likely to be present, hydrological and hydrogeological conditions, and historical land usage on or adjacent to the site, with reference to public information sources and visual inspection. This report describes the findings of the study and comments accordingly. This report does not comprise a Phase 1 geoenvironmental risk assessment but does highlight relevant risks that may need to be assessed as part of any future work.

The comments given in this report and the opinions expressed are based on a variety of sources which GEL believes to be reliable but cannot guarantee their authenticity or accuracy. There may also be information for the site and its surrounding area that has not been disclosed by this study and therefore has not been considered in this report. Accordingly, a careful watch should be maintained during any future development and the recommendations of this report reviewed as necessary.

It should be appreciated that any Desk Study information is not necessarily exhaustive and that further information relevant to the proposed site usage may be available. The accuracy of any map extracts cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map surveys.



The recommendations given in this report should not be used for any other schemes on or adjacent to this site without further reference to GEL.

It is advised that acceptability of the recommendations be confirmed in writing by representatives of the Local Authority prior to commencing any development on the site.

## **1.1 Methodology**

The methodology adopted for the desk study comprised the following:

- A visual reconnaissance by GEL on 13<sup>th</sup> and 24<sup>th</sup> January 2017, to include an inspection of the site, identifying surface features indicative of possible historical workings or site contamination, which may present environmental liabilities for the site.
- An assessment of environmental records from local, regional, and national agencies. The information is derived from Groundsure GeoInsight Reports, Ref. CMAPS-AAC-589029-38143-060117GEO, CMAPS-AAC-588992-38143-060117GEO, and Groundsure EnviroInsight Reports, Ref. CMAPS-AAC-589029-38143-060117EDR and CMAPS-AAC-588992-38143-060117EDR, provided by Centremaps. Please note the terms and conditions attached to the supply of data from Centremaps.
- An assessment of past land uses and historical evidence of clay extraction/brick making on and surrounding the site, from a historical review of maps dated from 1871 to 2014; and information sourced from online resources including local historical groups.
- The production of a report, collating and summarising information gathered for this desk study.



It should be noted that no intrusive investigation, testing of soil, building materials, surface water or groundwater has been carried out within this assessment. Dependent on the findings of this study, recommendations for further studies by means of an intrusive investigation may be advised.



## **2. SITE SETTING**

### **2.1 Site Location**

The site is situated on land immediately north of Loxwood Road, Loxwood, Billingshurst, West Sussex, RH14 0RW and may be located by its National Grid co-ordinates TQ 5055 1320, see Figure 1. The site comprises two adjacent, irregularly shaped plots of woodland comprising a total area of approximately 122Ha and is positioned at an estimated elevation of between 35m and 45m above Ordnance Datum (AOD). The site is gently undulating but broadly rises to the northeast.

### **2.2 Site Description**

A site inspection was undertaken by a representative of GEL on the 13<sup>th</sup> January 2017 accompanied by the Consultant, the Client and the Client's woodland manager. A follow-up visit was undertaken on 24<sup>th</sup> January 2017 to look for specific features; photographs taken during the site reconnaissance visits are presented in Appendix B. A plan of the site, with notes, is presented in Figure 2.

At the time of the site reconnaissance, the site comprised two areas of woodland located adjacent to each other, connected by a bridleway, understood to have Right of Way access between the woodlands for "forestry activities". Due to the large size of the whole site and the fact there are two distinct plots of woodland, these are distinguished as the "western" plot and "eastern" plot henceforth.

The western plot was the larger of the two at 87.5Ha, while the eastern plot was smaller at 34.5Ha. Both plots contained a mix of woodland types: mature broadleaf woodland or "ancient" woodland; mixed "ancient and semi-natural" woodland that included conifer



growth from historical forestry work; and areas that had been cleared as part of forestry activities and frequently replanted with saplings (Photograph 1, 5 and 6).

The soil surface was generally observed to be “clayey” in nature. The Client reported that the forestry tracks were often difficult to traverse during winter or after heavy rainfall.

On the western plot, surface watercourses were observed that had cut wide channels up to 4m deep into the ground with culverts present to maintain access. One such culvert was observed to be severely damaged (Photograph 4). On the eastern plot, water was observed flowing across the ground surface in shallow drains.

The southwest corner of the eastern plot was notable by a number of large, shallow (approximately 1m deep) depressions (Photograph 2) surrounding a clearing that contained some evidence of hardstanding. Some depressions were water-filled. These features were in an area recorded to have been used for clay extraction and brick making in the past (see Chapter 4 for further details).

Low earth bunds, possibly related to excavated soils, were occasionally noted on both plots.

A mound of earth, embedded with various wastes including unlabelled metallic drums, was noted in the southwest corner of the eastern plot (Photograph 3).

Loxwood Road provided the main local access to the site. The road was undesignated but sufficiently wide to accommodate two-way traffic.





## **2.3 General Surroundings**

The surrounding area was predominantly rural in nature, comprising isolated houses and farms and a local road network. The land appeared to comprise a mix of open fields used as paddocks and pasture, and small woodland areas similar to those that comprise the site.

The village of Loxwood was located approximately 500m west of the site.

## **2.4 Proposed Works**

At the time of writing, specific proposals for the site have not been determined. The main option under consideration is the extraction of clay across some or all of the site to supply local brick making operations in West Sussex. Further to this, the Client has indicated they would also consider the installation of a waste processing/transfer station in part of the site.

## **2.5 Regional Geology**

British Geological Survey (BGS) England and Wales (Sheet No. 301 - Haslemere, 1:50,000 dated 1981) and the BGS online geology (1:50,000) indicate the site is underlain by the Weald Clay Formation comprising mudstone with discrete sandstone beds. Superficial deposits are only recorded on the western plot, comprising a tract of Alluvium associated with a watercourse along its western boundary.

The Weald Clay Formation is understood to comprise a principal brick clay resource. The Wadhurst Clay Formation, present at the eastern end of the county is also classed as a key brick clay but is far less extensive than the Weald Clay.



Made Ground is anticipated across the site associated with past brick making and forestry activities, however such occurrences are anticipated to be localised.

The following information is derived from the Groundsure reports presented in Appendix A.

The Health Protection Agency indicates that the site is located within an area where less than 1% of homes are above the Action Level for radon. Radon protective measures are not considered necessary by the Building Research Establishment, BR211 (2007). The required radon protection should be agreed with the Local Authority.

Eight historical surface ground workings are recorded within 250m of the site. On the western plot, two features recorded as “Fish Ponds” are located on site along the western boundary. On the eastern plot, four features in the southwest corner are recorded on site as being “Brick Works” and associated “Clay Pits”, with a “Sand Pit” also recorded towards the east of the site. No historical underground workings are recorded within 1km of the site. Six “current” ground workings are shown within 1000m of the site; four of these are shown on the eastern plot relating to the “Pephurst Wood Brick Works” and the “Bullham’s Wood Sand Pit”. The status of these records is “ceased”.

The site is located in an area that is not considered to be affected by coal mining, assessed on a 1km buffer zone from the site boundary. A “rare” possibility of non-coal mining activities is recorded on-site in relation to iron ore, although there is no data pertaining to the presence of non-coal mining cavities beneath the site; the local geology is not particularly favourable for such mining and the risk of this being present on site is therefore considered to be remote. Brine or gypsum extraction is not recorded within 1km of the site.

With regards to natural subsidence on site, a negligible hazard risk relates to ground dissolution of soluble rocks, a very low hazard risk relates to landslides and collapsible



deposits, a low risk relates to shrink-swell clays and running sands, and a moderate risk relates to compressible deposits. The hazard risks for running sands and compressible deposits both correspond to the tract of Alluvium in the western plot and are not characteristic of the site as a whole, otherwise being of a negligible hazard risk in both cases.

No British Geological Survey (BGS) boreholes are recorded within 50m of the site. The closest accessible borehole log is approximately 900m to the south of the site, too far away to be considered relevant.

## **2.6 Regional Hydrogeology**

The following information is derived from the Groundsure reports presented in Appendix A.

The EA have classified the superficial deposits (Alluvium) at the site as a Secondary A Aquifer, comprising 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. Records relating to the permeability of the superficial deposits indicate a very low to high permeability. The EA have classified the underlying bedrock (Weald Clay Formation) at the site as generally unproductive strata comprising rock layers with low permeability that have negligible significance for water supply or river base flow. This classification relates to the dominant clays and mudstones, however the discrete beds of sandstone with the bedrock are separately classified as Secondary A Aquifers, comprising 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. Records relating to the permeability of the bedrock indicate a very low to low permeability in the clays and mudstones, and a moderate permeability in the discrete sandstone units.



There are no groundwater abstraction licences recorded within 1km of the site. The closest recorded as 1383m to the north for “general farming and domestic” use at Pallinghurst Farm, Rudgwick.

There are no potable groundwater abstraction licences recorded within 2km of the site.

The site is not located within 500m of a Source Protection Zone (SPZ).

A single Environment Agency List 1 or List 2 pollution incident is recorded within 250m of the site. The incident is recorded at 153m to the southwest for household waste resulting in a Category 3 (minor) impact to land.

There are two licensed discharge consents to groundwater recorded within 500m of the site. The closest is recorded as being immediately adjacent to the southwest corner of the eastern plot relates to “sewage discharge – final/treated effluent” into land at Ivyhurst Cottage and appears to be active.

The maximum BGS groundwater flood susceptibility on site and within 50m is recorded as “potential at surface” due to superficial deposits flooding. The BGS confidence rating is recorded as “moderate”.

The site is located within a Nitrate Vulnerable Zone (NVZ), as classified by DEFRA under the Nitrates Directive (91/676/EC) or within a Nitrate Sensitive Area.

## **2.7 Hydrology**

The following information is derived from the Groundsure reports presented in Appendix A.



Four surface water features are recorded within 250m of the eastern plot. The nearest surface water feature is a “drain”, classified as a tertiary river, that originates on site. Twenty surface water features are recorded within 250m of the western plot, broadly corresponding to nine unique water courses and a culvert. Five of the surface water features and the culvert pass through the site. The culvert is approximately 600m long. No Environment Agency GQA Classifications for chemical quality are located within 500m of the site.

Two licensed surface water abstractions are recorded within 1km of the site. These are located at 985m southeast and 901m south, both relating to “make-up” or “top up” water used by the Wey & Arun Canal Trust Ltd. Both abstraction licenses appear to be active.

Eight licensed discharge consents to surface water are recorded within 500m of the site. The closest recorded at 138m to the southwest of the eastern plot is for sewage discharges of final/treated effluent and appears to be active.

There are no Water Industry Act Referrals for the discharge of Trade Effluents under the Water Industry Act 1991 recorded within 500m of the site.

A Zone 2/3 floodplain is not recorded within 250m of the site.



### **3. PREVIOUS SITE INVESTIGATION**

No records of previous ground investigations have been found relating to the site.



## **4. SITE HISTORY**

### **4.1 Historical Map Review**

A review of historical mapping has been carried out with the aim of identifying potentially significant historical features at or near to the site. This review included large scale (1:1,250 and 1:2,500) and small scale (1:10,000 [historically 1:10,560]) Ordnance Survey mapping presented with the GroundSure MapInsight report (Appendix C).

Historical mapping is a useful tool in determining the presence of suitable large scale features present during map production and revision periods. It should be noted that certain features and details may not be readily determined from historical mapping; either due to the size or presence of features during the map production and revision periods.

A summary of relevant information from the review is detailed in the table below. For convenience and for ease of hard copy reproduction historical maps have been reduced from A3 to A4.

Unless otherwise stated, the site comprised of woodland from the earliest maps to the present day.



Date of Map:	Observations
1871-76	<p>On site – <b>“Kiln”</b> and <b>“Brick Works”</b> located in southwest corner of eastern plot, <b>“Saw Pit”</b> located on eastern edge of western plot, an <b>“Old Limekiln”</b> is shown on the western edge of the western plot, several areas of the western plot are clear of trees.</p> <p>Surroundings – <b>“Clay Pit”</b> located immediately southwest of the eastern plot, old <b>“Limekiln”</b> located 100m east of eastern plot, <b>“Smithy”</b> located 373m east of eastern plot.</p>
1895-98	<p>On site – <b>“Kiln”</b> not labelled but still present, <b>“Brick Works”</b> have altered in layout with a new <b>“Clay Pit”</b> located 100m east, <b>“Sand Pit”</b> located in northeast corner of eastern plot, <b>“Saw Pit”</b> is absent.</p> <p>Surroundings – An earthwork feature with pond (possible clay pit) appears between the western plot and <b>“Brickkiln Farm”</b> (latter located 80m east).</p>
1912	<p>On site – the original <b>“Kiln”</b> is again identified along with a second <b>“Kiln”</b> (the latter appeared to be present as an unidentified feature on the previous map), a new unidentified <b>“Clay Pit”</b> is located 50m east with no sign of the previous clay pit, a small pond (unidentified but outline still shown) is located north of the <b>“Brick Works”</b>, <b>“Sand Pit”</b> is unidentified but outline still shown, <b>“Fish Ponds”</b> shown along western edge of western plot.</p> <p>Surroundings – <b>“Clay Pit”</b> is shown as an earthwork feature but no longer identified, <b>“Smithy”</b> is absent.</p>
1973-80	<p>On site – <b>“Brick Works”</b>, <b>“Kilns”</b>, <b>“Sand Pit”</b>, and <b>“Fish Ponds”</b> absent, previously clear areas of the western plot are shown with tree cover.</p> <p>Surroundings – old <b>“Clay Pit”</b> no longer visible due to road realignment over that location, site of historical <b>“Glass Works”</b> located 600m east of western plot.</p>
1994	<p>On site – no significant change.</p> <p>Surroundings – no significant change.</p>
2002	<p>On site – no significant change.</p> <p>Surroundings – <b>“Brickkiln Farm”</b> is absent.</p>





Date of Map:	Observations
2010-14	On site – no significant change. Surroundings – no significant change.

The two “Lime Kilns” on or close to the site are worth noting since there are no mapped limestone outcrops in the vicinity. The Weald Clay Formation does include subordinate calcareous sandstones and shelly limestones that could have provided a source of lime.

#### 4.2 Evidence of Historical Brick Making

A review of historical brick making activity on or near the site has been undertaken to ascertain the likelihood of the geology being suitable to supply suitable brick-making clay, and also to demonstrate any local precedence for such activities that could be favourable in terms of local planning.

There are two confirmed occurrences of brick making locally. The first lies on site in the “Brick Works” and “Kilns” recorded on the eastern plot in the late 1800’s and early 1900’s. This operation appeared to be small scale but persisted over a number of years. An anecdotal reference sourced from the Rudgwick Preservation Society identifies this as the “Pephurst Brick & Tile Works”. It describes the brick works as the first “deep” pit in the area, although the term “deep” is believed to be relative to older extremely shallow workings in the surrounding area.

The second confirmed occurrence of brick making is the “Rudgwick Brickworks”, formerly “Hobbs Brickworks”, located approximately 3km northeast of the site. The former brick works have been largely redeveloped for commercial purposes in recent years but were originally established in 1928-29 (with anecdotal references to brick making as far back as 1865). The site reached a maximum size of 36 acres but closed during the recent recession.



The Rudgwick Preservation Society identify further anecdotal evidence of brick making on the Loxwood site itself. Brickkiln Farm, and the adjacent woodlands, were apparently used for small scale brick making from around 1842. “Shallow delves”, understood to be localised shallow excavations for clay, are described as being present in area as a result. The site inspection undertaken by GEL was unable to identify such features, however the shallow nature of these excavations and the time elapsed means they may have been largely lost.

A final reference is made to Lynwick Farm, located approximately 2km northeast of the site, which the Rudgwick Preservation Society cite as having operated a brick kiln from at least 1844 to 1876.

Local place names are also useful indicators of historical brick making activities in the area, places often taking their names from local features. “Brickkiln Farm” is the most obvious of these, being located adjacent to the site and having anecdotal references to brick making as described above. The northern part of the western plot is given the local name of “Songhurstkiln Copse” and contains one of the areas that had been historically cleared of trees. The name “Songhurst” is also attributed to a nearby farm but does not include the “kiln” suffix, suggesting that the latter was added later. “Songhurstkiln Copse” can be traced back to the earliest 1876 map and would therefore presumably relate to an earlier feature – given that brick making activities associated with Brickkiln Farm are said to have been taking place from at least 1842, this would appear plausible.



## 5. REGULATORY ENQUIRIES

Details provided by general searches of accessible databases of Local Authority (LA), BGS, Environment Agency (EA) and Statutory Authorities' records, together with commercial archives (Groundsure Report - Appendix A), have been reviewed to determine potentially contaminative activities. Salient details are presented in the table below:

<b>Integrated Pollution Control (IPC) and Integrated Pollution Prevention and Control (IPPC) Process Authorisations, Parts A and B</b> (legislation governing certain industrial activities and their impact on the environment)	No IPC Authorisations or IPPC Authorised Activities are recorded within 500m of the site.
<b>Water Industry Referrals</b> (potentially harmful discharges to public sewers)	No Water Industry Referrals within 500m of the site.
<b>List 1/2 Dangerous Substances Inventory Sites</b>	No List 1 or List 2 Dangerous Substance Sites are recorded within 500m of the site.
<b>Records of Part A(2) and Part B Activities and Enforcements</b>	No Part A(2) or Part B activities or enforcements recorded within 500m of the site.
<b>Radioactive Substances Act, 1993</b>	No Radioactive Substance Authorisations are registered within 500m of the site.
<b>Planning Hazardous Substance Consents/Enforcements</b>	No Planning Hazardous Substance Consents or enforcements recorded within 500m of the site.
<b>COMAH/NIHHS Sites (Dangerous or Hazardous Sites)</b>	No COMAH sites are recorded within 500m of the site.  No Planning Hazardous Substance Consents are recorded within 500m of the site.
<b>EA Recorded Pollution Incidents</b> (National Incident Recording System, List 1 & 2)  [Surface and groundwater included in sections 2.6 & 2.7]	One Environment Agency Recorded Pollution incident is recorded within 250m of the site relating to "household waste" resulting in a Category 3 (Minor) land impact.
<b>Part IIA EPA 1990</b> (sites determined as Contaminated Land)	No records under the Contaminated Land Register (under the Environment Protection Act (EPA, 1990) Part Ila) are recorded within 500m of the site.



<b>Landfill and other Waste Sites</b> EA landfill data EA historic landfills BGS/DoE non-operational landfill sites Local Authority landfill sites Waste treatment, transfer or disposal sites EA licensed waste sites	No Environment Agency Registered Landfill and historic landfill Sites, BGS/DoE Non-Operational Landfill sites, and/or Local Authority landfill sites are recorded within 1km of the site.  No waste treatment, transfer and disposal sites, or Environment Agency Licensed waste sites are recorded within 500m of the site.
<b>Potentially Contaminative Activities</b> (list of commercial/industrial premises close to site)	Twelve potentially contaminative industrial sites are recorded up to 250m from the site; eight of these are located on site, many of these being associated with the clay pits and brick kilns in the eastern plot.  No fuel stations are recorded within 500m of the site.
<b>Designated Environmentally Sensitive Sites</b>	The site is recorded as being within an area designated as Environmentally Sensitive.  There are sixteen records on site designating areas as Ancient Woodlands.  The site is recorded as being within a Nitrate Vulnerable Zone.

## 5.1 Environment Agency

The Environment Agency (EA) was not contacted as part of this exercise.

## 5.2 Local Authority

West Sussex County Council and Horsham District Council were not contacted as part of this exercise.



## 6. DISCUSSION

### 6.1 Current Clay Reserves

Under the National Planning Policy Framework (NPPF), West Sussex County Council is required to maintain a landbank of accessible brick clay reserves capable of sustaining brick manufacturing typically at least 25 years. This reserve may include existing commercial operations, and it is understood that West Sussex County Council recognises five active brickworks site in its area:

- Freshfield Lane – located within the High Weald AONB\* on the Wadhurst Clay Formation;
- Laybrook – located in the south of the county on the Weald Clay Formation;
- Pitsham – located within the South Downs National Park on the Gault Clay Formation;
- Warnham and Wealden – located in the north of the county on the Weald Clay Formation;
- West Hoathly – located within the High Weald AONB\* on the Wadhurst Clay Formation.

\* AONB: Area of Outstanding Natural Beauty

The Gault Clay Formation is not recognised as a principal brick clay resource and the Pitsham site is therefore presumed to be a low priority site. The Freshfield Lane and West Hoathly sites are located on the Wadhurst Clay Formation which is understood to be the preferred material for local brick making; however, the Wadhurst Clay Formation is much less extensive meaning these sites have a limited supply of clay. These sites are also located within an environmentally sensitive area making it more difficult to justify expanding these operations. The Minerals Local Plan has recommended a small extension to clay extraction at West Hoathly but this is only sufficient for 2-3 years of supply.



The sites at Laybrook and Warnham are located at opposite ends of the Weald Clay Formation but located outside of any designated environmentally sensitive areas. It is unknown how large the permitted reserves at either site are, but based on the apparent size of the sites on maps and aerial photography, they appear to comprise approximate areas of up to 60 acres, around one fifth the size of the Loxwood site.

Historically, it is apparent that the Loxwood site itself has been the site of small-scale brick making activities for many years through the 1800's and early 1900's before large scale commercial kilns became the dominant method of manufacturing. The presence of a larger operation at Rudgwick is a good indicator of the suitability of the clay resource at the site.

## **6.2 Clay Properties for Brick Making**

Informal queries with a local brick maker operating in the Weald Clay Formation have indicated that in order to be suitable for brick making, the following clay properties would need to be determined:

- Particle size;
- X-ray Fluorescence;
- Soluble sulphates content;
- Carbon content; and
- Sulphur content.

In addition, discs would need to be formed from ground samples of the clay which would be fired to determine:

- dried and fired shrinkages;
- ignition loss; and
- water absorption.



The colour and shape of the fired discs would be recorded. With reference to colour, the Weald Clay would be expected to produce vibrant red discs.

If the initial results appear reasonable, the last stage of assessment would be a small-scale works trial to determine the durability of bricks that could be produced with the clay. This would involve a representative 20 tonne sample of the clay being transported to a brick maker who would put the material through the brick making process. A small amount of the bricks produced would be placed in a “durability rig” for testing.



## 7. CONCLUSIONS AND RECOMMENDATIONS

There are a number of factors that are considered to be positive in terms of the suitability of the site for brick clay extraction.

- The local geology comprising the Weald Clay Formation is considered to be a key brick clay resource for the county of West Sussex. While not as highly sought after as the Wadhurst Clay Formation, it is nevertheless similar in nature and much more abundant. The entirety of the site appears to be underlain by the Weald Clay with limited superficial cover and local bands of hard rock (sandstone).
- The site has a proven history of being used for brick making, with additional anecdotal evidence suggesting such activities have occurred on or near the site for at least 175 years.

In order to confirm the feasibility and practicality of utilising the site for brick making, a number of factors will need to be addressed:

- The suitability of the clay on site will require physical confirmation through ground investigation. The Weald Clay Formation could be significantly in excess of 100m thickness at the site, although it is unlikely any clay extraction would take place to such depths. For initial feasibility purposes, it is assumed that proving a minimum thickness of extractable clay (e.g. 8-10m) without obstructions (e.g. sandstone bands) would be sufficient.
- The clay properties would need to be tested against those parameters identified by local brick manufacturers.





- The whole site covers a substantial area and it is expected that there would be environmental concerns over the associated loss of woodland cover. However, the large size of the site offers scope for the refinement of clay extraction areas in order to retain and preserve woodland. It is noted that some areas of the woodland are of low value, being comprised of immature, replanted tree stock and/or land that has been cleared as part of forestry work.

In addition, areas of past clay extraction could also be considered an important factor in the sense of recommencing an activity that has previously taken place.

It is recommended that intrusive ground investigation works focus on these areas (old clay pits and lower value woodland) where the impact on adjacent mature woodland can be minimised and clay extraction can be supported through past precedence of similar activities.

The ground investigation would be able to accommodate the material testing and disc tests referenced in Chapter 6. The works trial is typically too large to be undertaken as part of any standard ground investigation and would be expected to take place as part of detailed discussions with a brick maker who may be subsequently interested in the clay reserve.

## **GEOTECHNICAL ENGINEERING LIMITED**



## 8. REFERENCES

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<https://rudgwick.files.wordpress.com>

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## LOCATION PLAN

CLIENT N. DANHASH & S. IBISHI  
SITE LOXWOOD CLAY PITS  
SCALE Approximately 1:50,000

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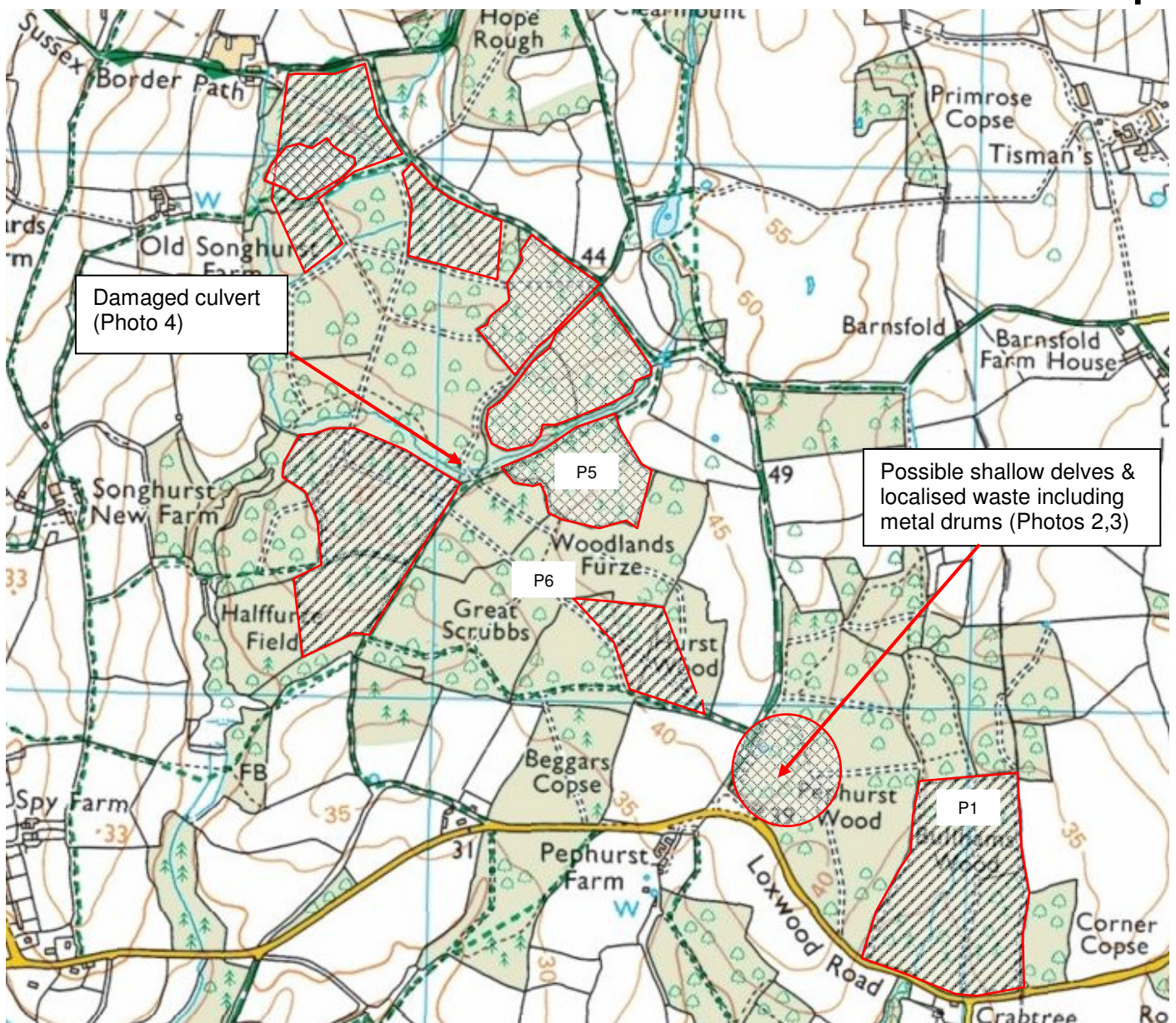
CONTRACT

**32637**

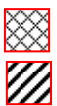
FIGURE

**1**





Key:



Areas of recorded or suspected clay extraction / brick making.

Areas of cleared / replanted woodland.

P1

Photograph location.

Geotechnical Engineering Limited

## SITE PLAN

CLIENT N. DANHASH & S. IBISHI  
SITE LOXWOOD CLAY PITS  
SCALE Approximately 1:50,000

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CONTRACT

**32637**

FIGURE

**2**



## **APPENDIX A**

### **GROUNDSURE REPORTS**



CENTREMAPS

Open Space, Upper Interfields,  
Worcester, WR14 1UT

Report Reference: CMAPS-AAC-588992-38143-  
060117GEO

Your Reference: 38143

Report Date 6 Jan 2017

Report Delivery Email - pdf  
Method:

## Groundsure Geo Insight

Address: Loxwood Chichester, RH14 0RW

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.  
Groundsure Geoinsight



# Groundsure Geo Insight

**Address:** Loxwood Chichester, RH14 0RW  
**Date:** 6 Jan 2017  
**Reference:** CMAPS-AAC-588992-38143-060117GEO  
**Client:** CENTREMAPS



Aerial Photograph Capture date: 30-Jun-2015  
Grid Reference: 505883,131888  
Site Size: 34.60ha



# Contents Page

Overview of Findings.....	5
1 Geology.....	8
1.1 Artificial Ground Map.....	8
1 Geology.....	9
1.1 Artificial Ground.....	9
1.1.1 Artificial/ Made Ground.....	9
1.1.2 Permeability of Artificial Ground.....	9
1.2 Superficial Deposits and Landslips Map.....	10
1.2 Superficial Deposits and Landslips.....	11
1.2.1 Superficial Deposits/ Drift Geology.....	11
1.2.2 Permeability of Superficial Ground.....	11
1.2.3 Landslip.....	11
1.2.4 Landslip Permeability.....	12
1.3 Bedrock and Faults Map.....	13
1.3 Bedrock, Solid Geology & Faults.....	14
1.3.1 Bedrock/ Solid Geology.....	14
1.3.2 Permeability of Bedrock Ground.....	14
1.3.3 Faults.....	14
1.4 Radon Data.....	16
1.4.1 Radon Affected Areas.....	16
1.4.2 Radon Protection.....	16
2 Ground Workings Map.....	17
2 Ground Workings.....	18
2.1 Historical Surface Ground Working Features derived from Historical Mapping.....	18
2.2 Historical Underground Working Features derived from Historical Mapping.....	19
2.3 Current Ground Workings.....	19
3 Mining, Extraction & Natural Cavities Map.....	20
3 Mining, Extraction & Natural Cavities.....	21
3.1 Historical Mining.....	21
3.2 Coal Mining.....	21
3.3 Johnson Poole and Bloomer.....	21
3.4 Non-Coal Mining.....	21
3.5 Non-Coal Mining Cavities.....	22
3.6 Natural Cavities.....	22
3.7 Brine Extraction.....	22
3.8 Gypsum Extraction.....	22
3.9 Tin Mining.....	22
3.10 Clay Mining.....	23
4 Natural Ground Subsidence.....	24
4.1 Shrink-Swell Clay Map.....	24
4.2 Landslides Map.....	25
4.3 Ground Dissolution Soluble Rocks Map.....	26
4.4 Compressible Deposits Map.....	27
4.5 Collapsible Deposits Map.....	28
4.6 Running Sand Map.....	29
4 Natural Ground Subsidence.....	30
4.1 Shrink-Swell Clays.....	30
4.2 Landslides.....	30
4.3 Ground Dissolution of Soluble Rocks.....	31

4.4 Compressible Deposits.....	31
4.5 Collapsible Deposits.....	31
4.6 Running Sands.....	31
5 Borehole Records Map.....	32
5 Borehole Records.....	33
6 Estimated Background Soil Chemistry.....	34
7 Railways and Tunnels Map.....	36
7 Railways and Tunnels.....	37
7.1 Tunnels .....	37
7.2 Historical Railway and Tunnel Features .....	37
7.3 Historical Railways.....	38
7.4 Active Railways.....	38
7.5 Railway Projects.....	38

# Overview of Findings

The Groundsure Geo Insight 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?	No
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	No
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	Yes
	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 not in a Radon Affected Area, as less than 1% 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?	No 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	12	7	2	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
2.3 Current Ground Workings	4	1	0	0	1

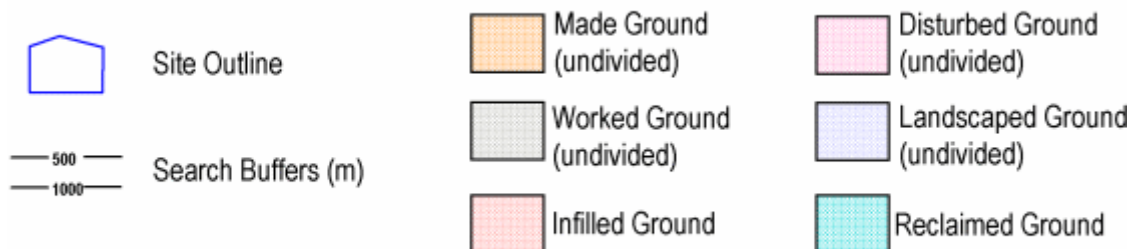
Section 3: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	0
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	1	0	0	0	1
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 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	Low				
4.2 Landslides	Very Low				
4.3 Ground Dissolution of Soluble Rocks	Negligible				
4.4 Compressible Deposits	Negligible				
4.5 Collapsible Deposits	Very Low				
4.6 Running Sand	Negligible				
Section 5: Borehole Records	On-site	0-50m	51-250		
5 BGS Recorded Boreholes	0	0	0		
Section 6: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
6 Records of Background Soil Chemistry	37	12	21		
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	0	0	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

## 1.1 Artificial Ground Map



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# 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:301

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

Database searched and no data found.

---

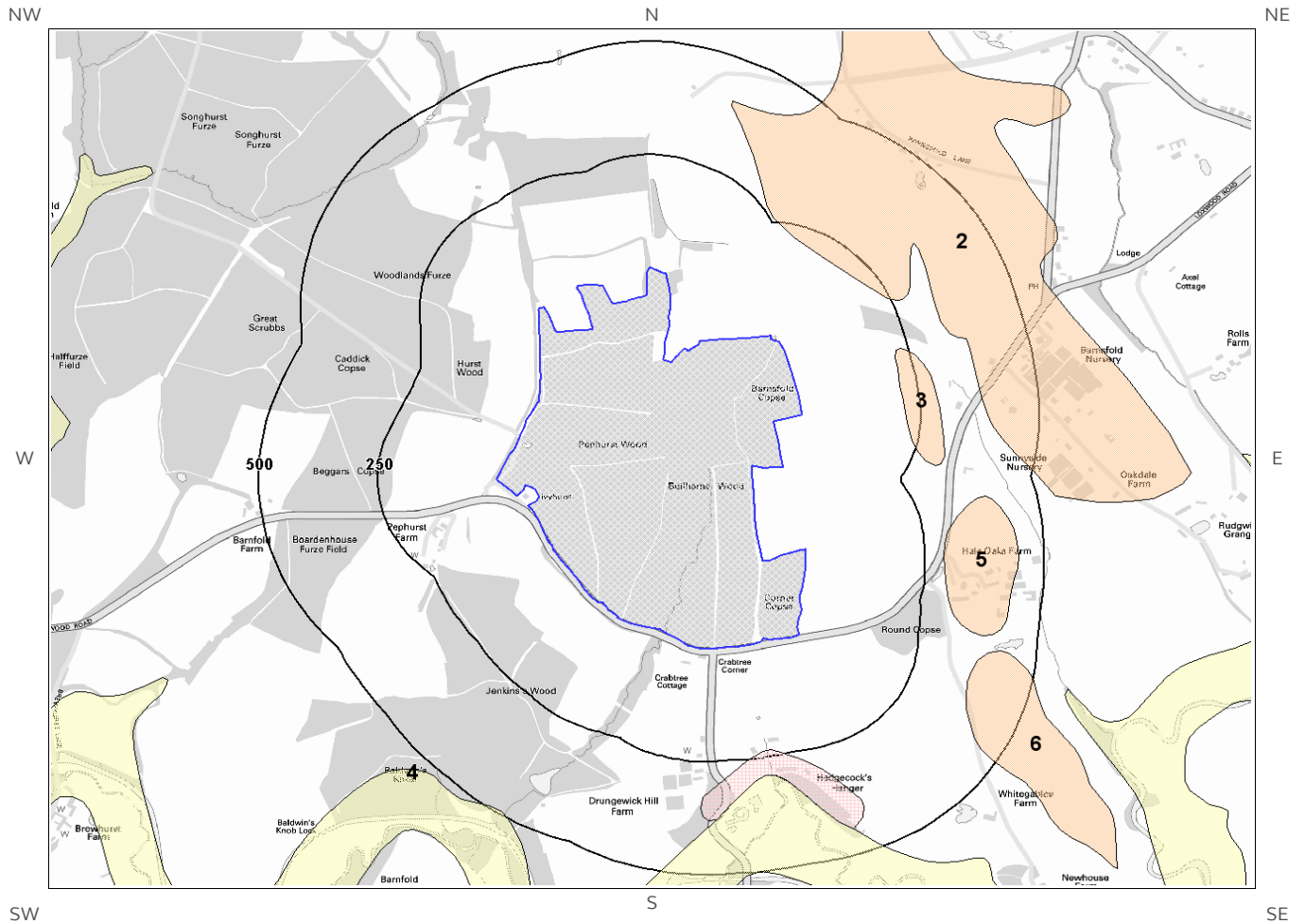
### 1.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

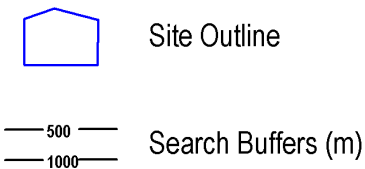
---

# 1.2 Superficial Deposits and Landslips Map



**Superficial Deposits and Landslips Legend**

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# 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
2	203.0	NE	AR4	ARUN TERRACE DEPOSITS, 4 MEMBER	SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
3	213.0	E	AR4	ARUN TERRACE DEPOSITS, 4 MEMBER	SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
4	290.0	S	ALV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
5	291.0	E	AR4	ARUN TERRACE DEPOSITS, 4 MEMBER	SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
6	368.0	E	AR3T4	ARUN RIVER TERRACE DEPOSITS, 3 MEMBER AND ARUN RIVER TERRACE DEPOSITS, 4 MEMBER, UNDIFFERENTIATED	SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]

## 1.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

## 1.2.3 Landslip

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	235.0	S	SLIP/CLAY	LANDSLIDE DEPOSITS	CLAY

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

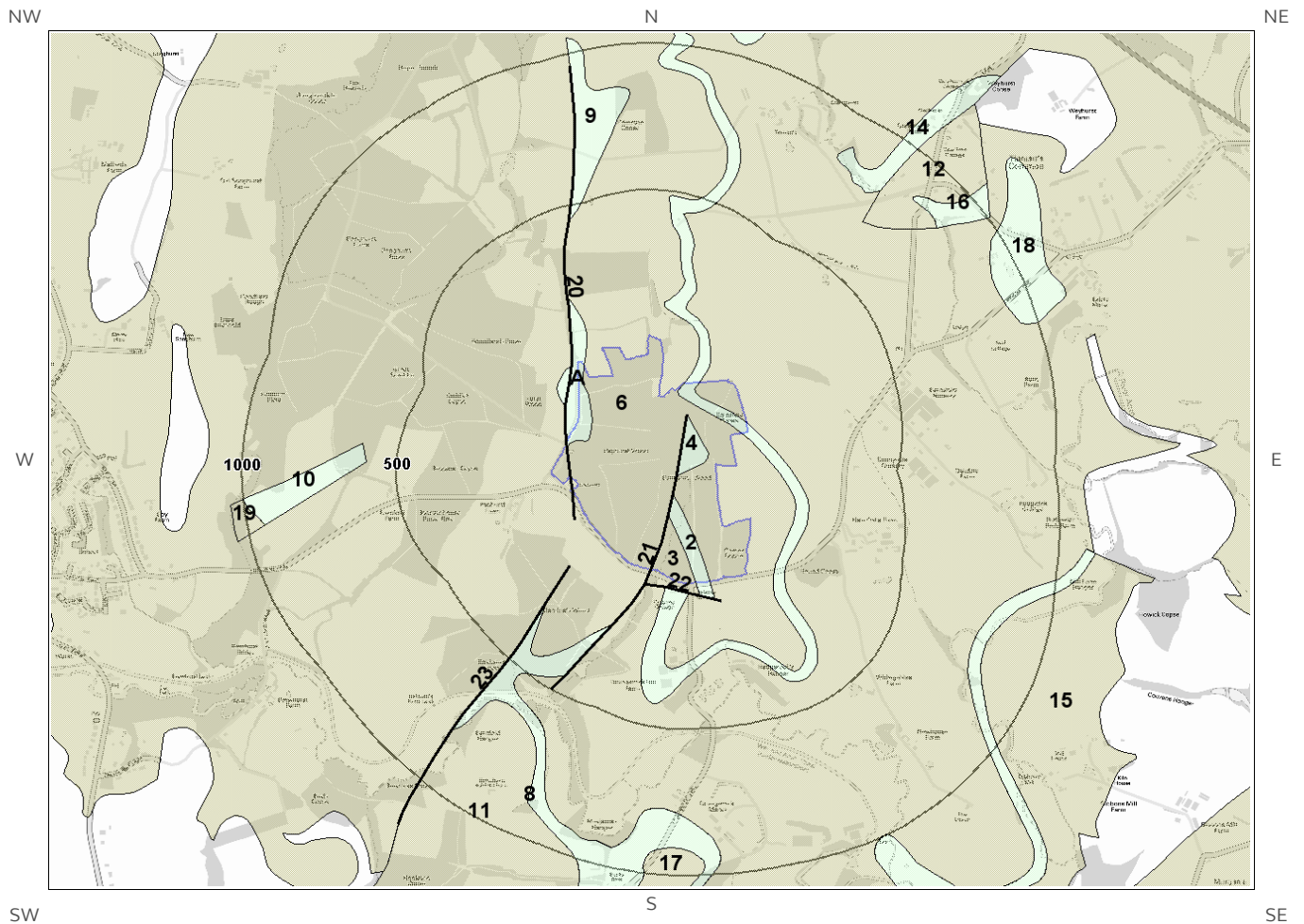
Database searched and no data found.

---

---

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

# 1.3 Bedrock and Faults Map

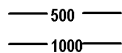


**Bedrock and Faults Legend**

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Site Outline



Search Buffers (m)

## 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:301

### 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	0.0	On Site	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
2	0.0	On Site	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
3	0.0	On Site	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
4	0.0	On Site	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
5A	0.0	On Site	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
6	0.0	On Site	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
7A	20.0	W	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
8	208.0	S	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
9	448.0	N	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian

### 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	Mixed	Moderate	Moderate
0.0	On Site	Fracture	Low	Very Low
0.0	On Site	Mixed	Moderate	Moderate
0.0	On Site	Mixed	Moderate	Moderate
0.0	On Site	Mixed	Moderate	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
20	0.0	On Site	FAULT	Fault, observed, displacement unknown
21	0.0	On Site	FAULT	Fault, observed, displacement unknown
22	28.0	S	FAULT	Fault, inferred, displacement unknown
23	143.0	SW	FAULT	Fault, inferred, displacement unknown

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

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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level

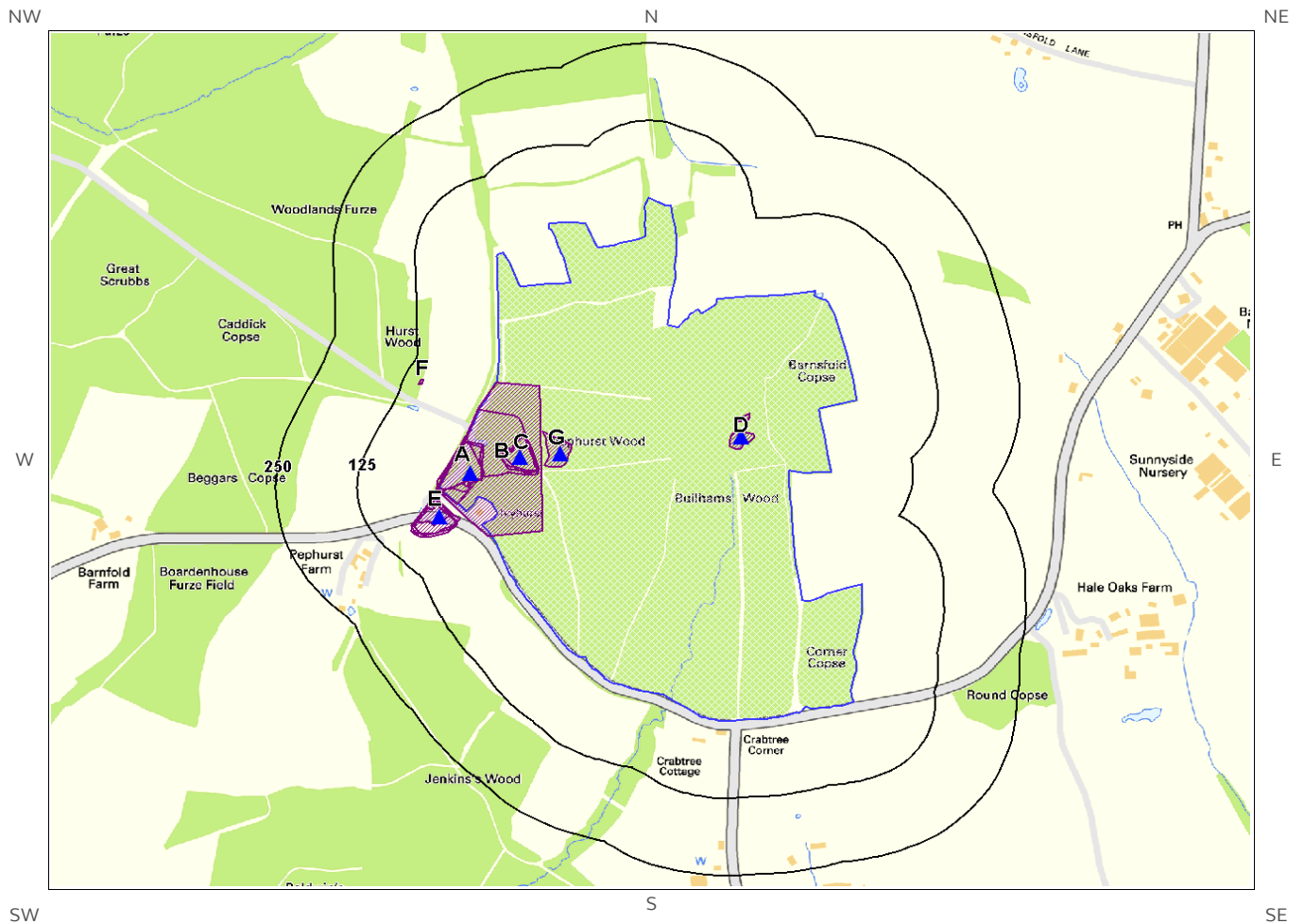
---

## 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?      No radon protective measures are necessary

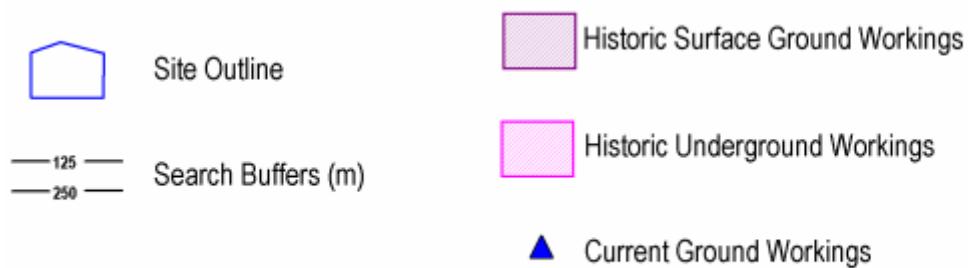
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## 2 Ground Workings Map



Ground Workings Legend

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## 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	505590 131877	Brick Works	1895
2B	0.0	On Site	505637 131888	Brick Works	1920
3A	0.0	On Site	505593 131872	Bricks Works	1876
4A	0.0	On Site	505592 131878	Brick Works	1895
5B	0.0	On Site	505635 131902	Brick Works	1914
6C	0.0	On Site	505683 131897	Unspecified Pit	1920
7C	0.0	On Site	505684 131899	Unspecified Pit	1914
8C	0.0	On Site	505684 131896	Unspecified Pit	1956
9G	0.0	On Site	505739 131905	Clay Pit	1895
10D	0.0	On Site	506024 131920	Sand Pit	1956
11D	0.0	On Site	506026 131956	Sand Pit	1895
12A	0.0	On Site	505593 131872	Bricks Works	1876
13E	14.0	SW	505551 131804	Unspecified Pit	1876
14E	14.0	SW	505551 131804	Unspecified Pit	1876
15E	15.0	SW	505557 131795	Unspecified Pit	1914
16E	15.0	SW	505557 131795	Clay Pit	1895
17E	16.0	SW	505550 131796	Unspecified Pit	1920
18E	16.0	SW	505550 131796	Clay Pit	1895
19E	22.0	SW	505552 131791	Unspecified Pit	1956
20F	96.0	NW	505532 132013	Saw Pit	1876



ID	Distance (m)	Direction	NGR	Use	Date
21F	96.0	NW	505532 132013	Saw Pit	1876

## 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? No

Database searched and no data found.

## 2.3 Current Ground Workings

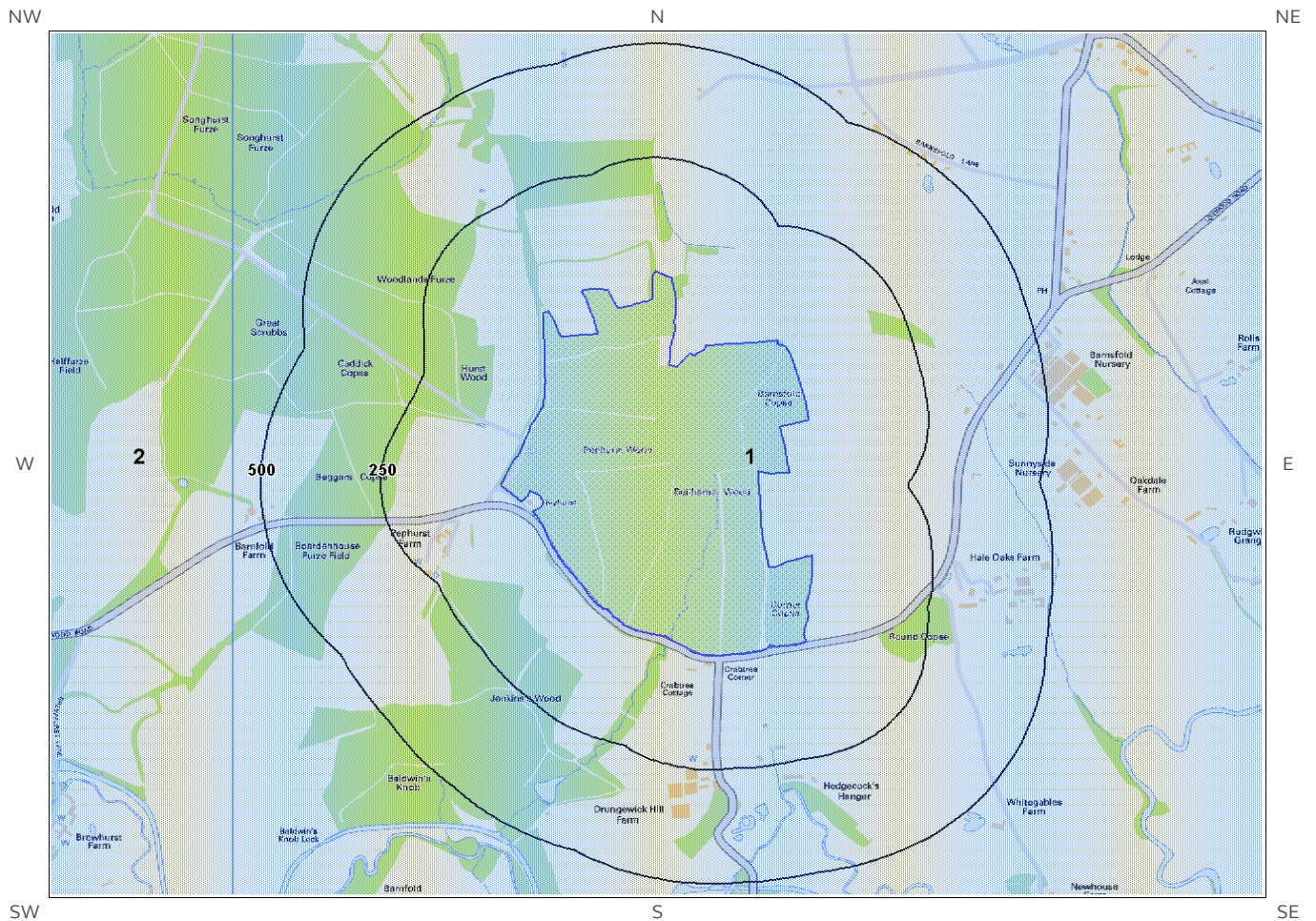
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

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
22D	0.0	On Site	506021 131924	Sand	Bullham's Wood Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
23G	0.0	On Site	505744 131897	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
24C	0.0	On Site	505682 131892	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
25A	0.0	On Site	505606 131865	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
26E	36.0	SW	505559 131795	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	787.0	N	505790 133093	Sand	Primrose Copse Sand Pit	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? No

Database searched and no data found.

## 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? No

Database searched and no data found.

## 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? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	559.0	W	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

---

### 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 data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

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?

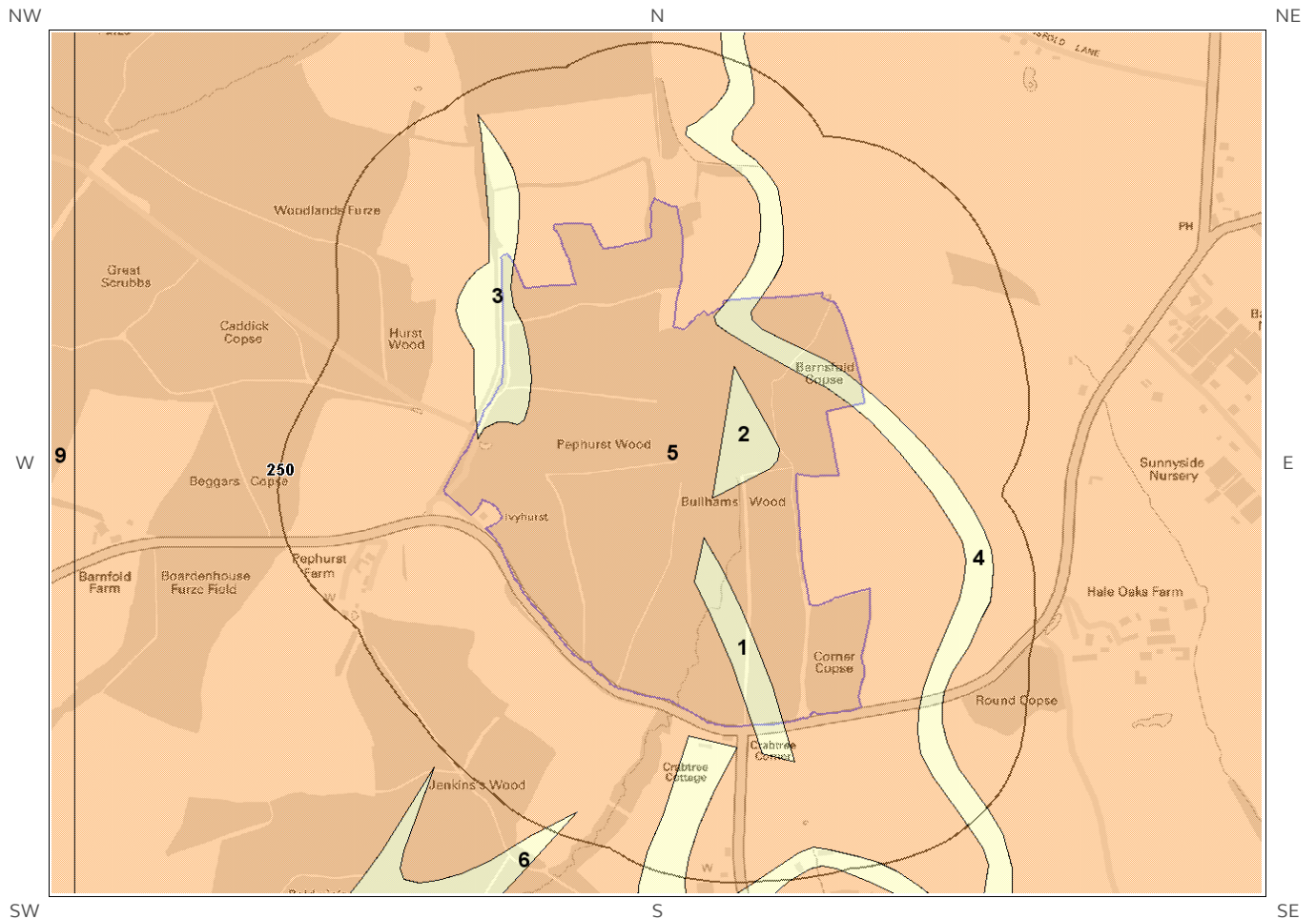
No

Database searched and no data found.

---

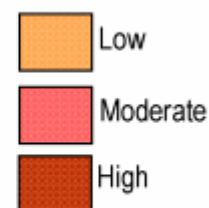
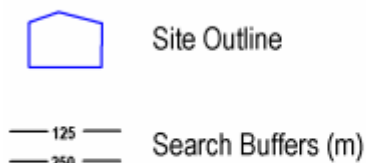
# 4 Natural Ground Subsidence

## 4.1 Shrink-Swell Clay Map



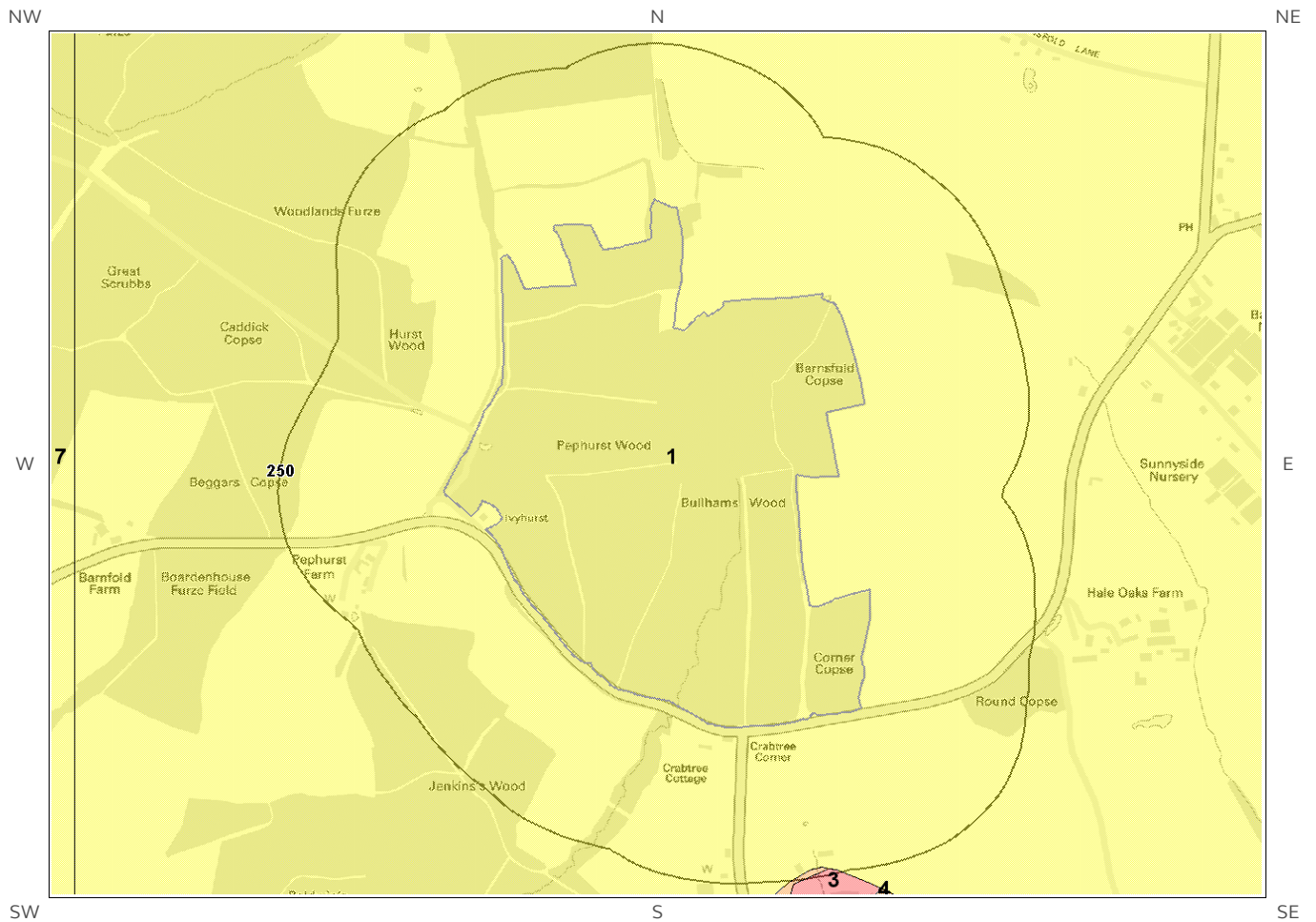
Shrink Swell Clay Legend

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## 4.2 Landslides Map

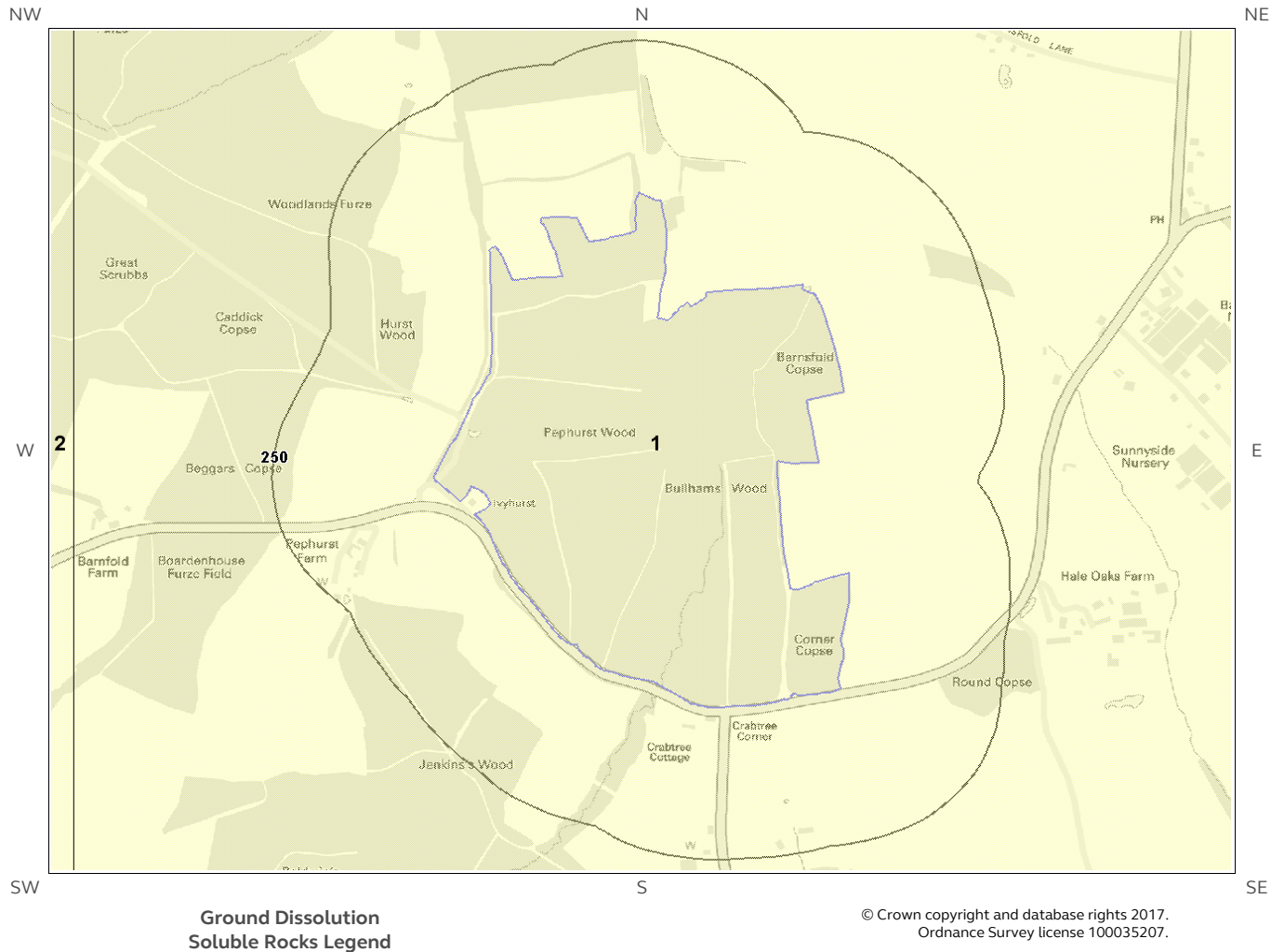


**Landslides Legend**

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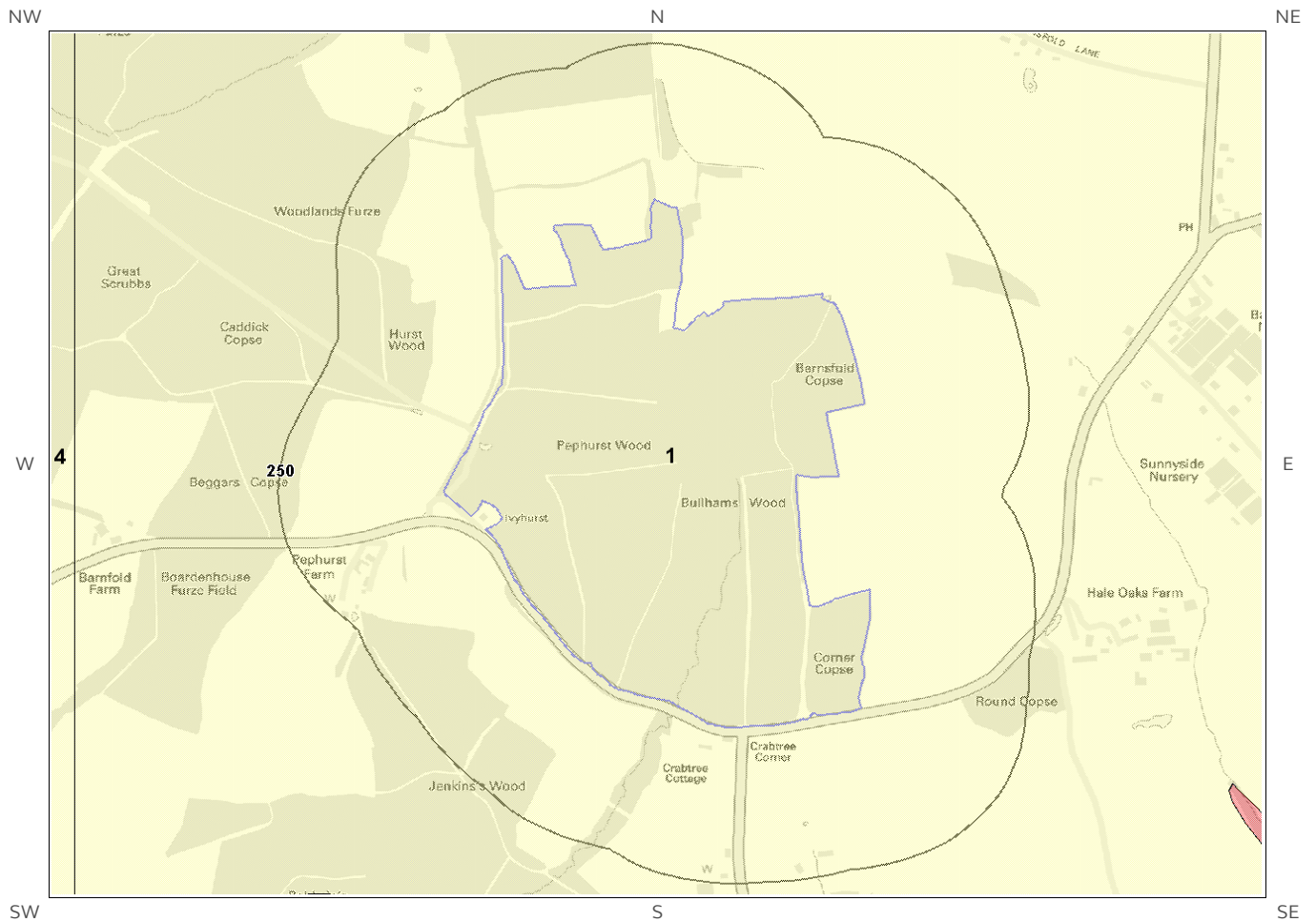


## 4.3 Ground Dissolution Soluble Rocks Map





## 4.4 Compressible Deposits Map

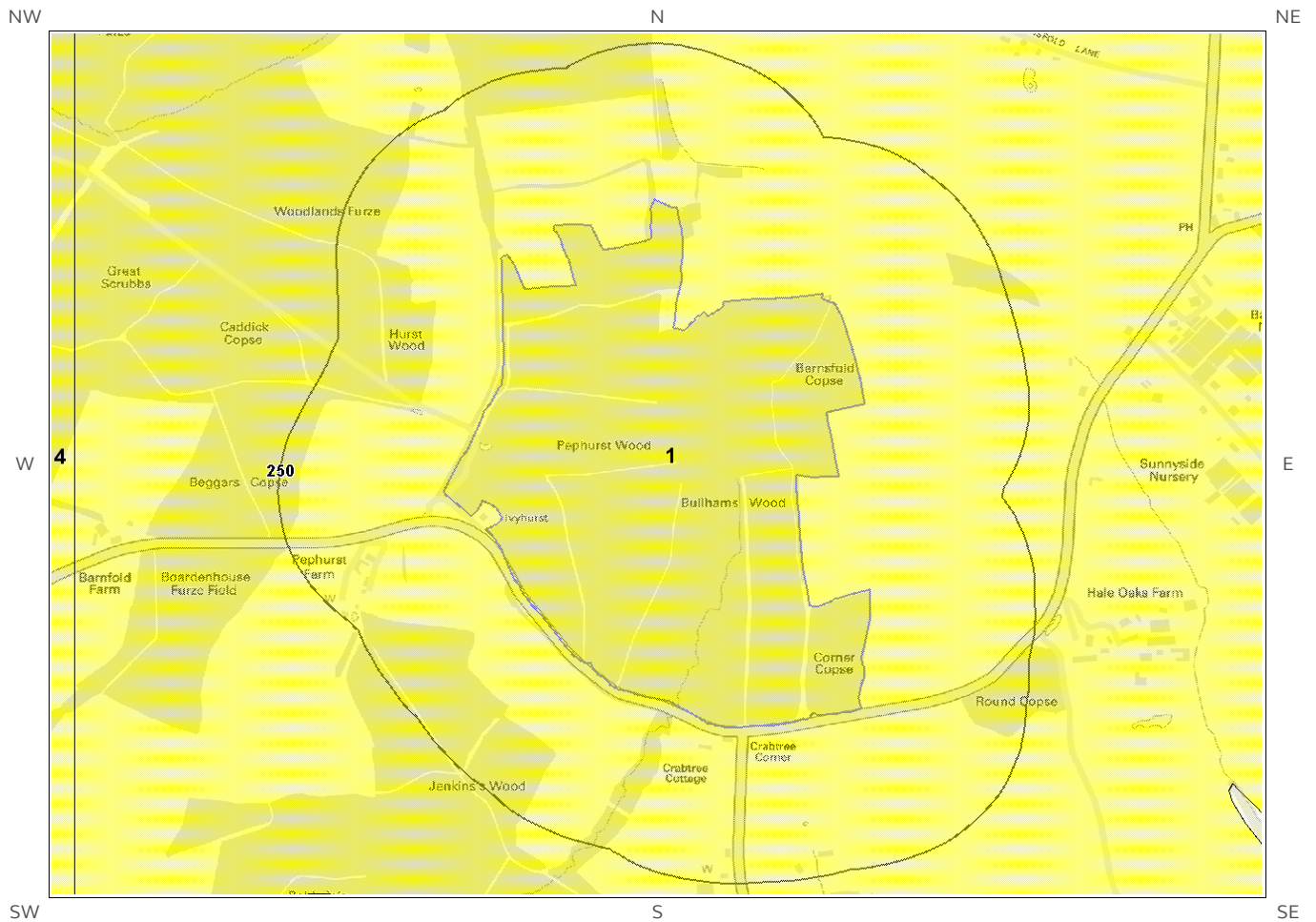


**Compressible Deposits Legend**

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## 4.5 Collapsible Deposits Map



Collapsible Deposits Legend

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 Site Outline
  No Data / Null
  Low

 Search Buffers (m)
  Negligible
  Moderate

 Very Low
  High

## 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? Low

### 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 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 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 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 due to potential problems with shrink-swell clays.
5	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

### 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	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.

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

### 4.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. 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 ground identified. No special actions required to avoid problems due to compressible ground. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible ground.

### 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	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.

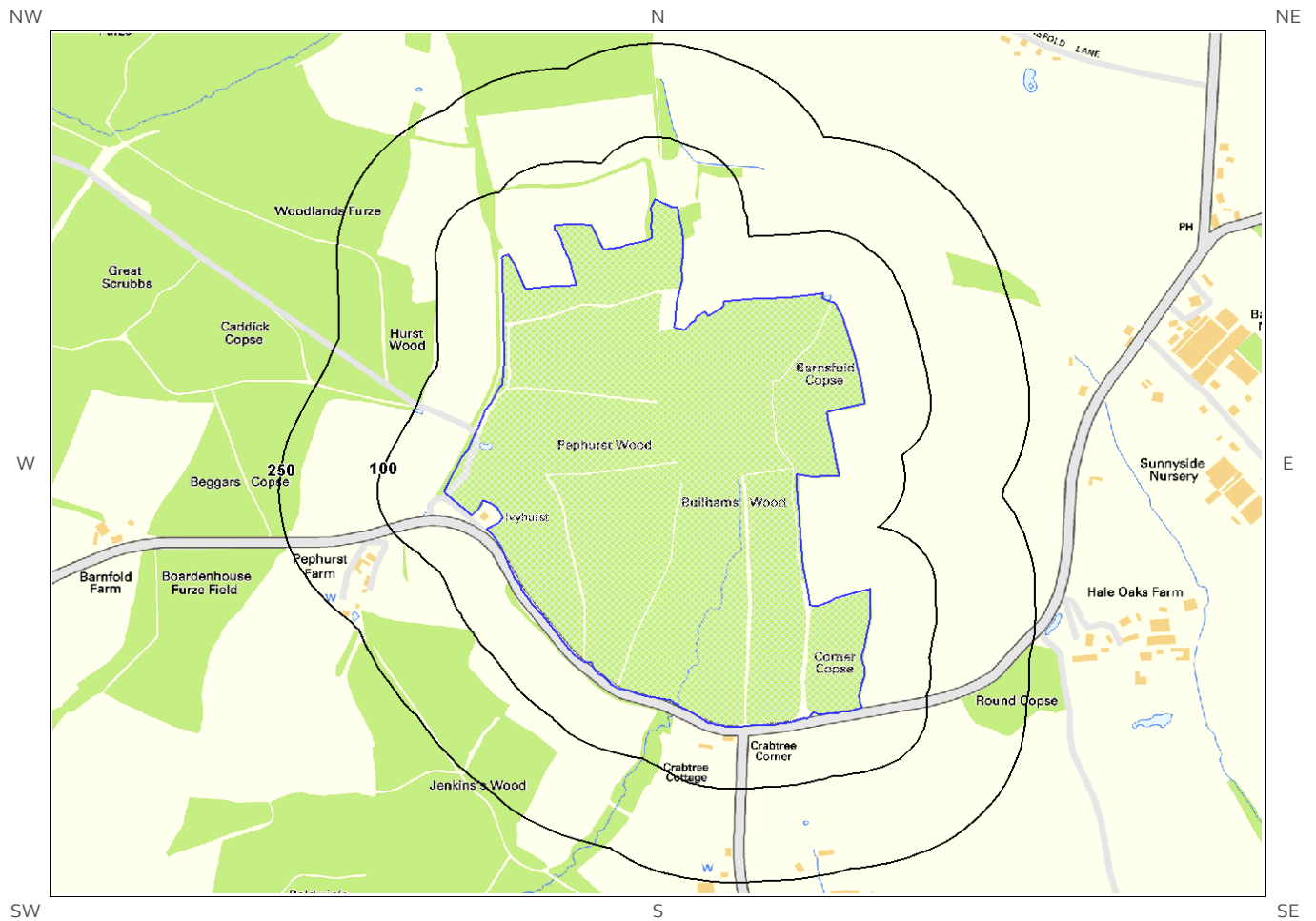
### 4.6 Running Sands

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.

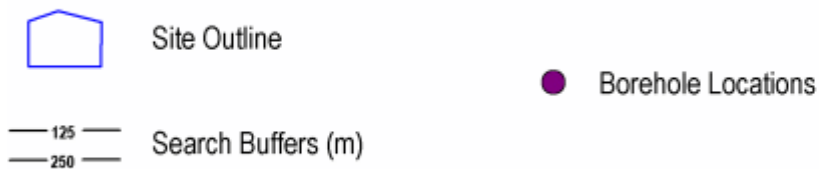


# 5 Borehole Records Map



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: 0

Database searched and no data found.

---

## 6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

70

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

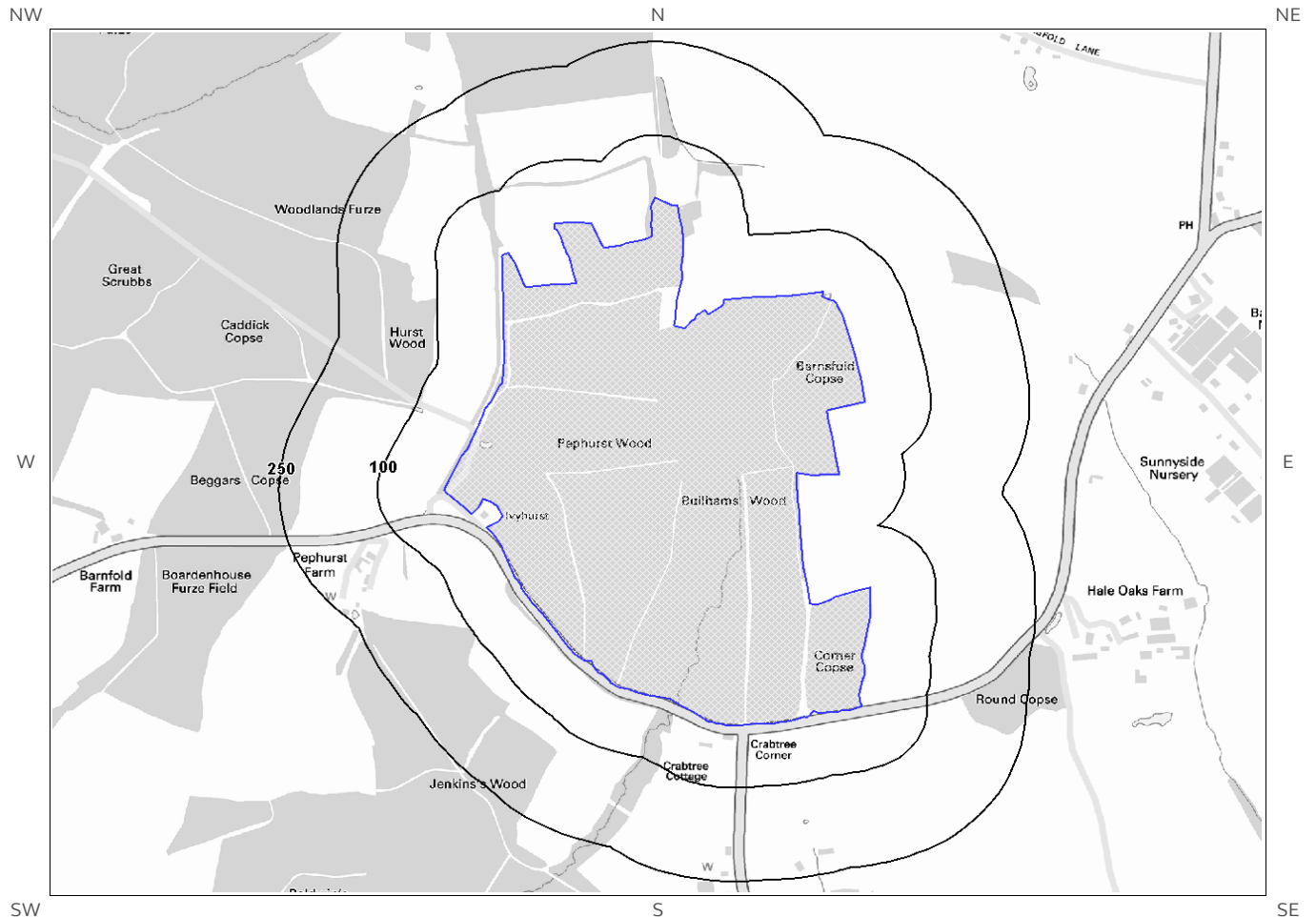
[illegible]



Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
13.0	N	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
13.0	N	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
13.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
20.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
28.0	NW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
28.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
33.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
33.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
44.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
44.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
59.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
87.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
100.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
106.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
122.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
124.0	NW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
124.0	NW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
134.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
134.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
151.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
151.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
189.0	N	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
203.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
208.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
213.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
216.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
216.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
217.0	N	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
220.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
220.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
232.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

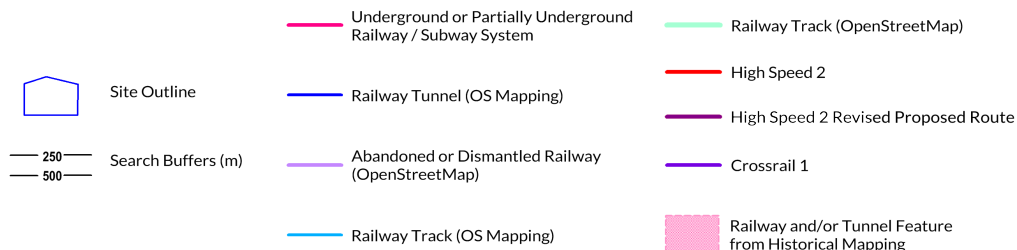
\*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

# 7 Railways and Tunnels Map



**Railways and Tunnels Legend**

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# 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? No

Have any historical railway or tunnel features 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.*

---

### 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 1 .

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 1 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 1 Report.*

---

Crossrail route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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---

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Groundsure's Terms and Conditions can be viewed online at this link:

**<https://www.groundsure.com/terms-and-conditions-sept-2016/>**



CENTREMAPS

Open Space, Upper Interfields,  
Worcester, WR14 1UT

Groundsure      CMAPS-AAC-588992-38143-  
Reference:      060117EDR

Your Reference:    38143

Report Date      6 Jan 2017

Report Delivery    Email - pdf  
Method:

## Groundsure Enviro Insight

Address: Loxwood Chichester, RH14 0RW

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.  
Groundsure Enviroinsight



# Groundsure Enviro Insight

Address: Loxwood Chichester, RH14 0RW  
Date: 6 Jan 2017  
Reference: CMAPS-AAC-588992-38143-060117EDR  
Client: CENTREMAPS



Aerial Photograph Capture date: 30-Jun-2015  
Grid Reference: 505883,131888  
Site Size: 34.60ha

Report Reference: CMAPS-AAC-588992-38143-060117EDR  
Client Reference: 38143

# Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	13
1.3 Additional Information – Historical Energy Features Database	13
1.4 Additional Information – Historical Petrol and Fuel Site Database	13
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	13
1.6 Potentially Infilled Land	13
2. Environmental Permits, Incidents and Registers Map	15
2. Environmental Permits, Incidents and Registers	16
2.1 Industrial Sites Holding Licences and/or Authorisations	16
2.1.1 Records of historic IPC Authorisations within 500m of the study site	16
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	16
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	16
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	16
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	16
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	17
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	17
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	17
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	18
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	18
2.2 Dangerous or Hazardous Sites	19
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents	19
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	19
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	19
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	19
3. Landfill and Other Waste Sites Map	20
3. Landfill and Other Waste Sites	21
3.1 Landfill Sites	21
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site	21
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site	21
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	21
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	21
3.2 Other Waste Sites	21
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	21
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site	22
4. Current Land Use Map	23
4. Current Land Uses	24
4.1 Current Industrial Data	24
4.2 Petrol and Fuel Sites	24
4.3 National Grid High Voltage Underground Electricity Transmission Cables	24
4.4 National Grid High Pressure Gas Transmission Pipelines	24

5. Geology	25
5.1 Artificial Ground and Made Ground.....	25
5.2 Superficial Ground and Drift Geology .....	25
5.3 Bedrock and Solid Geology .....	25
6 Hydrogeology and Hydrology	26
6a. Aquifer Within Superficial Geology	26
6b. Aquifer Within Bedrock Geology and Abstraction Licences	27
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences	28
6d. Hydrogeology – Source Protection Zones within confined aquifer	29
6e. Hydrology – Detailed River Network and River Quality	30
6.Hydrogeology and Hydrology	31
6.1 Aquifer within Superficial Deposits.....	31
6.2 Aquifer within Bedrock Deposits.....	31
6.3 Groundwater Abstraction Licences.....	32
6.4 Surface Water Abstraction Licences.....	32
6.5 Potable Water Abstraction Licences.....	33
6.6 Source Protection Zones.....	33
6.7 Source Protection Zones within Confined Aquifer.....	34
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	34
6.9 River Quality.....	34
6.9.1 Biological Quality:.....	35
6.9.2 Chemical Quality:.....	35
6.10 Detailed River Network.....	36
6.11 Surface Water Features.....	37
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)	38
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS)	39
Map	39
7 Flooding	40
7.1 River and Coastal Zone 2 Flooding.....	40
7.2 River and Coastal Zone 3 Flooding.....	40
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	40
7.4 Flood Defences.....	40
7.5 Areas benefiting from Flood Defences.....	40
7.6 Areas benefiting from Flood Storage.....	41
7.7 Groundwater Flooding Susceptibility Areas.....	41
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No.....	41
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?.....	41
7.8 Groundwater Flooding Confidence Areas.....	41
8. Designated Environmentally Sensitive Sites Map	42
8. Designated Environmentally Sensitive Sites	43
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	43
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	43
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	43
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	43
8.5 Records of Ramsar sites within 2000m of the study site:.....	43
8.6 Records of Ancient Woodland within 2000m of the study site: .....	44
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	47
8.8 Records of World Heritage Sites within 2000m of the study site:.....	48
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site: .....	48



8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: .....	48
8.11 Records of National Parks (NP) within 2000m of the study site: .....	48
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	48
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	48
8.14 Records of Green Belt land within 2000m of the study site:.....	49
<b>9. Natural Hazards Findings</b>	<b>50</b>
9.1 Detailed BGS GeoSure Data.....	50
9.1.1 Shrink Swell.....	50
9.1.2 Landslides.....	50
9.1.3 Soluble Rocks.....	50
9.1.4 Compressible Ground.....	51
9.1.5 Collapsible Rocks.....	51
9.1.6 Running Sand.....	51
9.2 Radon.....	51
9.2.1 Radon Affected Areas.....	51
9.2.2 Radon Protection.....	52
<b>10. Mining</b>	<b>53</b>
10.1 Coal Mining.....	53
10.2 Non-Coal Mining.....	53
10.3 Brine Affected Areas .....	53
<b>Contact Details</b>	<b>54</b>
<b>Standard Terms and Conditions</b>	<b>56</b>

# Overview of Findings

For further details on each dataset, please refer to each individual section in the main 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: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	16	8	1	5
1.2 Additional Information – Historical Tank Database	0	2	0	0
1.3 Additional Information – Historical Energy Features Database	0	0	0	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	15	8	1	6

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	1	0	4	4
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	0	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology				0-500m		
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?				Yes		
6.2 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
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	5
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	2	1	Not searched	Not searched

## Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	No	Yes
6.10 Detailed River Network entries within 500m of the site	1	0	3	10	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

## Section 7: Flooding

7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No					
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No					
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low					
7.4 Are there any Flood Defences within 250m of the study site?	No					
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No					
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No					
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone					
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable					

## Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	5	1	7	6	10	48
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	2
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards	
9.1 What is the maximum risk of natural ground subsidence?	Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 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?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	Yes
10.3 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. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

## 2. 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.

## 3. 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.

## 4. 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 gas pipelines and underground electricity transmission lines.

## 5. Geology

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

## 6. 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.

## 7. Flooding

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

## 8. 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.

## 9. 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 and radon..

## 10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

## 11. 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.

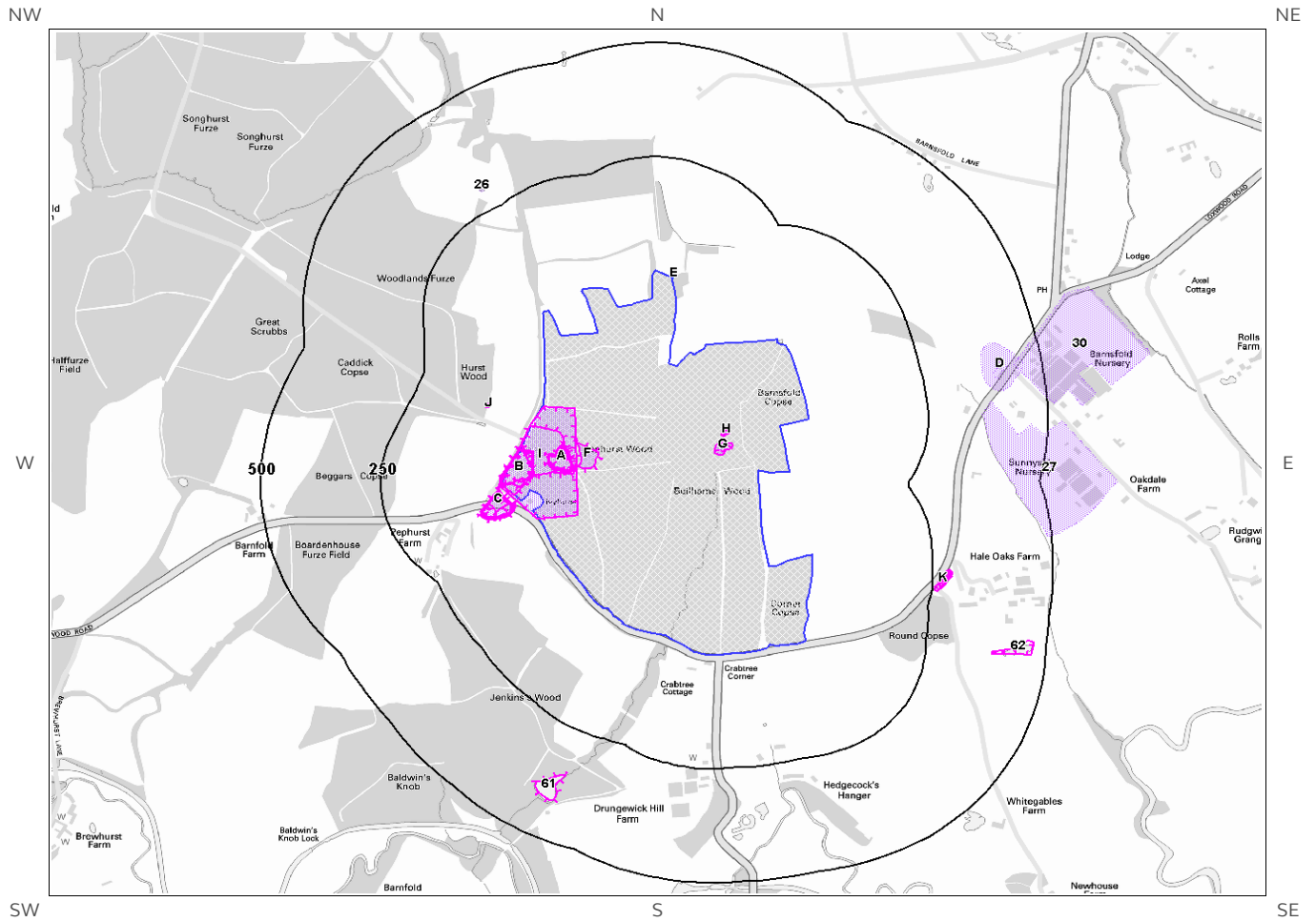
## Note: Maps

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. Historical Land Use



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Historical 1:10,000 and 1:10,560 scale mapping



Site Outline



Industrial Land Use



Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping



Search Buffers (m)



Energy Features



Petrol Stations



Tanks



Garages

# 1. Historical Industrial Sites

## 1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 30

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Pit	1914
2B	0	On Site	Brick Works	1914
3A	0	On Site	Unspecified Pit	1914
4B	0	On Site	Brick Works	1914
5B	0	On Site	Bricks Works	1876
6B	0	On Site	Unspecified Kiln	1876
7H	0	On Site	Sand Pit	1895
8G	0	On Site	Sand Pit	1956
9F	0	On Site	Clay Pit	1895
10A	0	On Site	Unspecified Pit	1914
11A	0	On Site	Unspecified Pit	1920
12A	0	On Site	Unspecified Pit	1956
13I	0	On Site	Brick Works	1914
14A	0	On Site	Brick Works	1920
15B	0	On Site	Brick Works	1895
16B	0	On Site	Brick Works	1895
17C	14	SW	Unspecified Pit	1876
18C	15	SW	Clay Pit	1895
19C	15	SW	Unspecified Pit	1914
20C	16	SW	Unspecified Pit	1920
21C	16	SW	Clay Pit	1895
22C	18	SW	Unspecified Pit	1914
23C	18	SW	Unspecified Pit	1914
24C	22	SW	Unspecified Pit	1956
25J	96	NW	Saw Pit	1876
26	294	NW	Unspecified Tank	1979
27	362	E	Nursery	1979
28D	373	E	Smithy	1876
29D	395	E	Smithy	1895
30	441	E	Nurseries	1979

## 1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

2

ID	Distance (m)	Direction	Use	Date
31E	2	E	Unspecified Tank	1996
32E	3	E	Unspecified Tank	1973

## 1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

0

Database searched and no data found.

## 1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

## 1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

0

Database searched and no data found.

## 1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site:

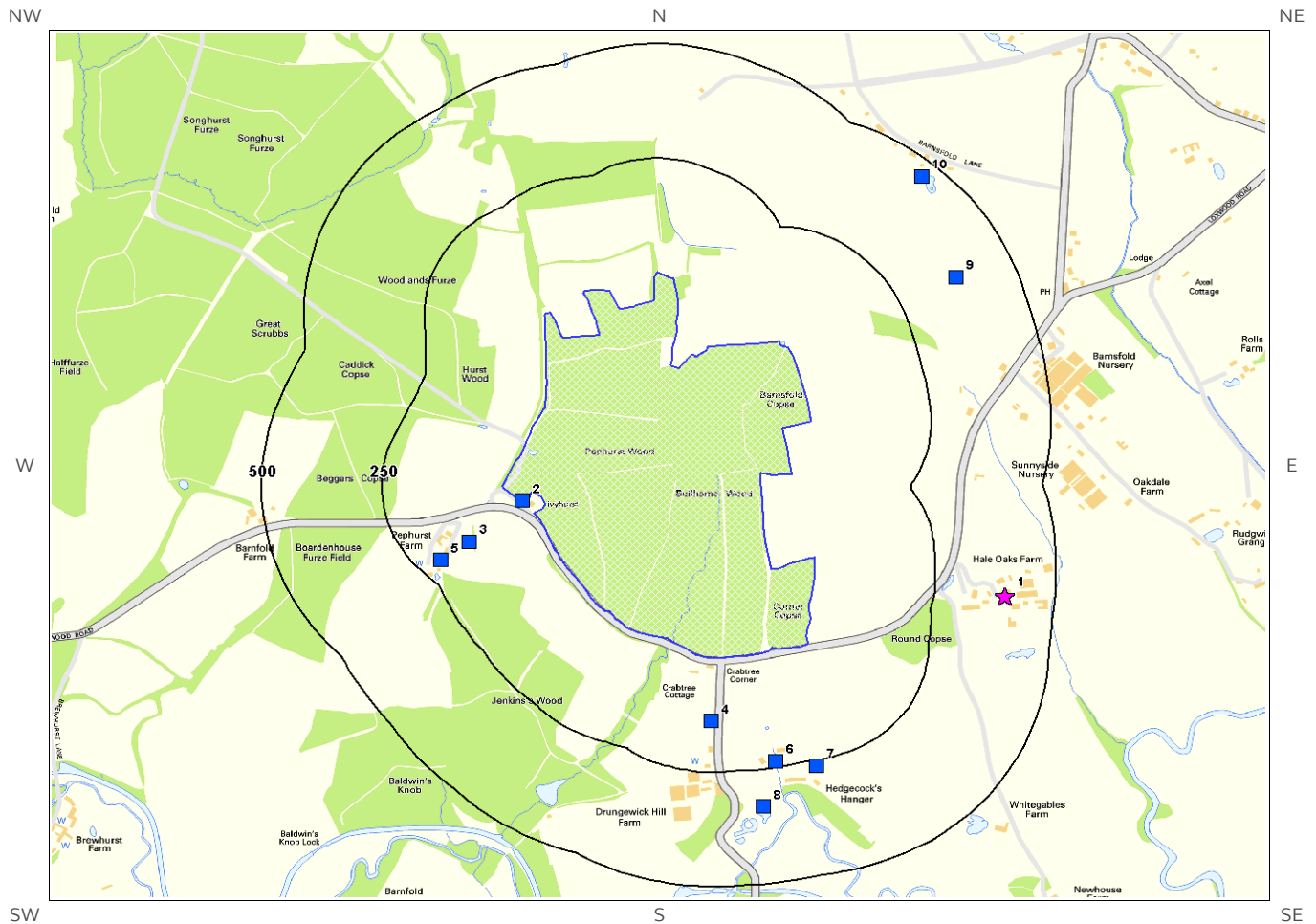
30

The following Historical Potentially Infilled Features derived from the Historical Mapping information is

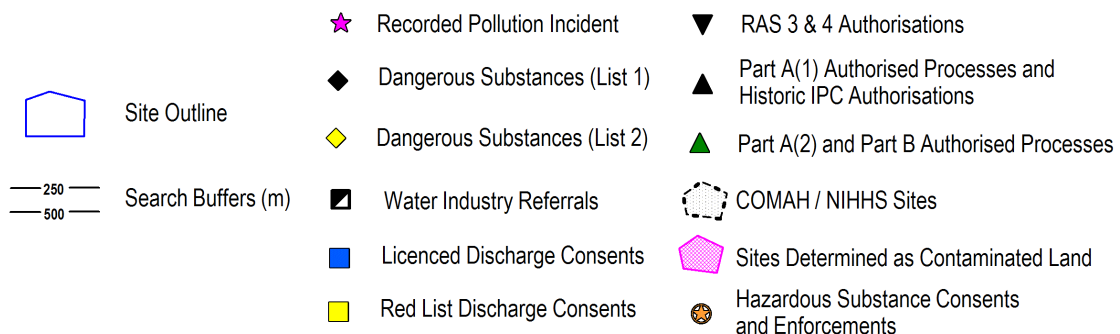
provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
33B	0	On Site	Bricks Works	1876
34B	0	On Site	Brick Works	1914
35B	0	On Site	Brick Works	1914
36B	0	On Site	Brick Works	1895
37F	0	On Site	Clay Pit	1895
38G	0	On Site	Sand Pit	1956
39A	0	On Site	Unspecified Pit	1914
40A	0	On Site	Unspecified Pit	1914
41H	0	On Site	Sand Pit	1895
42B	0	On Site	Brick Works	1895
43A	0	On Site	Unspecified Pit	1956
44I	0	On Site	Brick Works	1914
45A	0	On Site	Unspecified Pit	1914
46I	0	On Site	Brick Works	1920
47A	0	On Site	Unspecified Pit	1920
48C	14	SW	Unspecified Pit	1876
49C	15	SW	Clay Pit	1895
50C	15	SW	Unspecified Pit	1914
51C	16	SW	Clay Pit	1895
52C	16	SW	Unspecified Pit	1920
53C	18	SW	Unspecified Pit	1914
54C	18	SW	Unspecified Pit	1914
55C	22	SW	Unspecified Pit	1956
56J	96	NW	Saw Pit	1876
57K	256	E	Pond	1956
58K	260	E	Pond	1895
59K	262	E	Pond	1979
60K	265	E	Pond	1876
61	352	S	Pond	1979
62	389	E	Pond	1876

## 2. Environmental Permits, Incidents and Registers Map



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## 2. Environmental Permits, Incidents and Registers

### 2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

#### 2.1.3 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.

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

## 2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

9

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

ID	Distance (m)	Direction	NGR	Details
2	0	On Site	505600 131810	<p>Address: IVYHURST, IVYHURST, LOXWOOD LANE, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P05756</p> <p>Permit Version: 1</p> <p>Receiving Water: INTO LAND</p> <p>Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY)</p> <p>Issue date: 03/05/1995</p> <p>Effective Date: 03-May-1995</p> <p>Revocation Date: -</p>
3	138	SW	505490 131720	<p>Address: PEPHURST FARM, PEPHURST FARM, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P07950</p> <p>Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER</p> <p>Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995)</p> <p>Issue date: 03/12/1999</p> <p>Effective Date: 03-Dec-1999</p> <p>Revocation Date: -</p>
4	138	S	505992 131328	<p>Address: CRABTREE COTTAGE, DRUNGWICK LANE, LOXWOOD, WEST SUSSEX, ,, RH14 0RP</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: NPSWQD007454</p> <p>Permit Version: 1</p> <p>Receiving Water: TRIBUTARY OF RIVER LOX</p> <p>Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995)</p> <p>Issue date: 03/04/2009</p> <p>Effective Date: 03-Apr-2009</p> <p>Revocation Date: -</p>
5	207	SW	505430 131680	<p>Address: BOARDENHOUSE BARN, BOARDENHOUSE BARN, LOXWOOD ROAD, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P05642</p> <p>Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER</p> <p>Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY)</p> <p>Issue date: 25/01/1995</p> <p>Effective Date: 25-Jan-1995</p> <p>Revocation Date: -</p>



ID	Distance (m)	Direction	NGR	Details
6	237	S	506125 131240	<p>Address: WEAVERS COTTAGE &amp; HEDGECKOCKS, DRUNGWICK LANE, LOXWOOD, WEST SUSSEX, RH14 0RP Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: NPSWQD010946 Permit Version: 1</p> <p>Receiving Water: TRIB OF RIVER LOX Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 01/04/2010 Effective Date: 01-Apr-2010 Revocation Date: -</p>
7	263	S	506210 131230	<p>Address: HEDGECKOCKS HANGER, HEDGECKOCKS HANGER, DRUNGWICK LANE, LOXWOOD WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: P01714 Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE &lt; 01-SEP-89 (HISTORIC ONLY) Issue date: 01/09/1988 Effective Date: 01-Sep-1988 Revocation Date: -</p>
8	332	S	506100 131140	<p>Address: WILLOW PONDS, WILLOW PONDS, DRUNGWICK LANE, LOXWOOD WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: P01965 Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER Status: PRE NRA LEGISLATION WHERE ISSUE DATE &lt; 01-SEP-89 (HISTORIC ONLY) Issue date: 30/01/1989 Effective Date: 30-Jan-1989 Revocation Date: -</p>
9	379	NE	506500 132300	<p>Address: FARRIERS, FARRIERS, LOXWOOD ROAD, TISMANS COMMON, RUDGWICK WEST SUSSEX Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P07178 Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 12/06/1998 Effective Date: 12-Jun-1998 Revocation Date: -</p>
10	465	NE	506430 132520	<p>Address: 1 BARNSFOLD COTTAGES, 1 BARNSFOLD COTTAGES, BARNSFOLD, TISMANS COMMON, RUDGWICK, WEST SUSSEX, RH12 3BN Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: N02667 Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 11/04/1983 Effective Date: 11-Apr-1983 Revocation Date: 31/03/1997</p>

#### 2.1.9 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.

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

0

Database searched and no data found.

## 2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

## 2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

1

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

ID	Distance (m)	Direction	NGR	Details
1	394	E	506600 131600	Incident Date: 30-Jan-2003 Incident Identification: 134141 Pollutant: Sewage Materials Pollutant Description: Crude Sewage Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

0

Database searched and no data found.

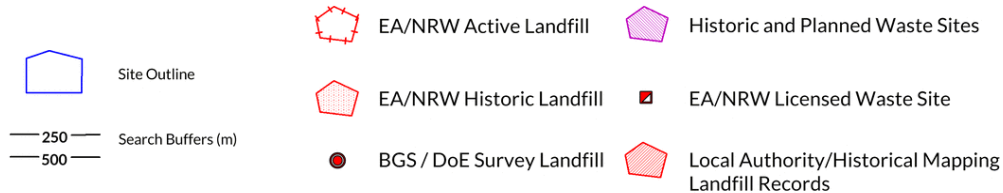
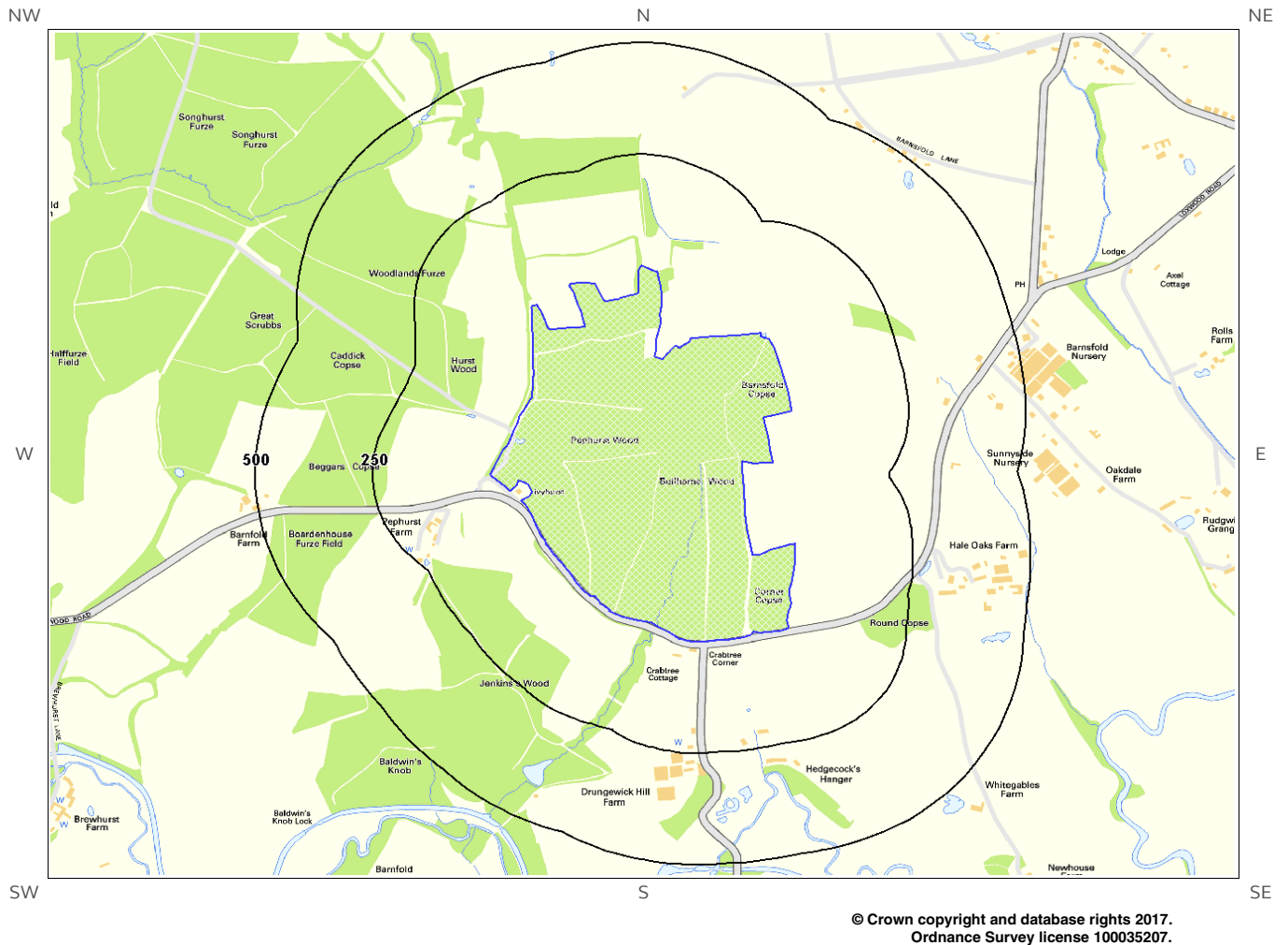
## 2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

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.

# 3. Landfill and Other Waste Sites Map



# 3. Landfill and Other Waste Sites

## 3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

---

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

---

## 3.2 Other Waste Sites

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

0

Database searched and no data found.

---

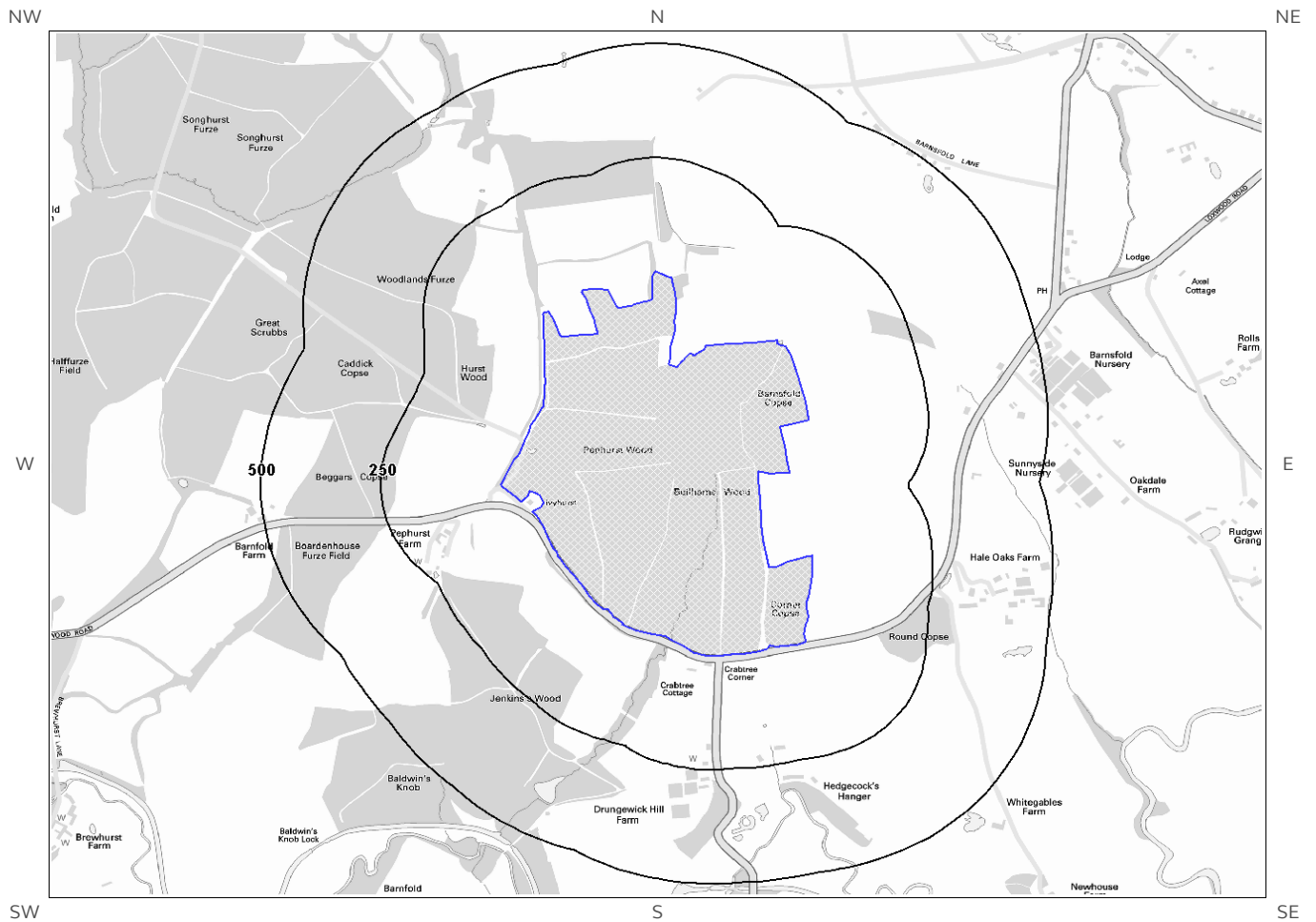
### 3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

---

# 4. Current Land Use Map



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## 4. Current Land Uses

### 4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 0

Database searched and no data found.

---

### 4.2 Petrol and Fuel Sites

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

Database searched and no data found.

---

### 4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

---

### 4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---



# 5. Geology

## 5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

---

## 5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

---

## 5.3 Bedrock and Solid Geology

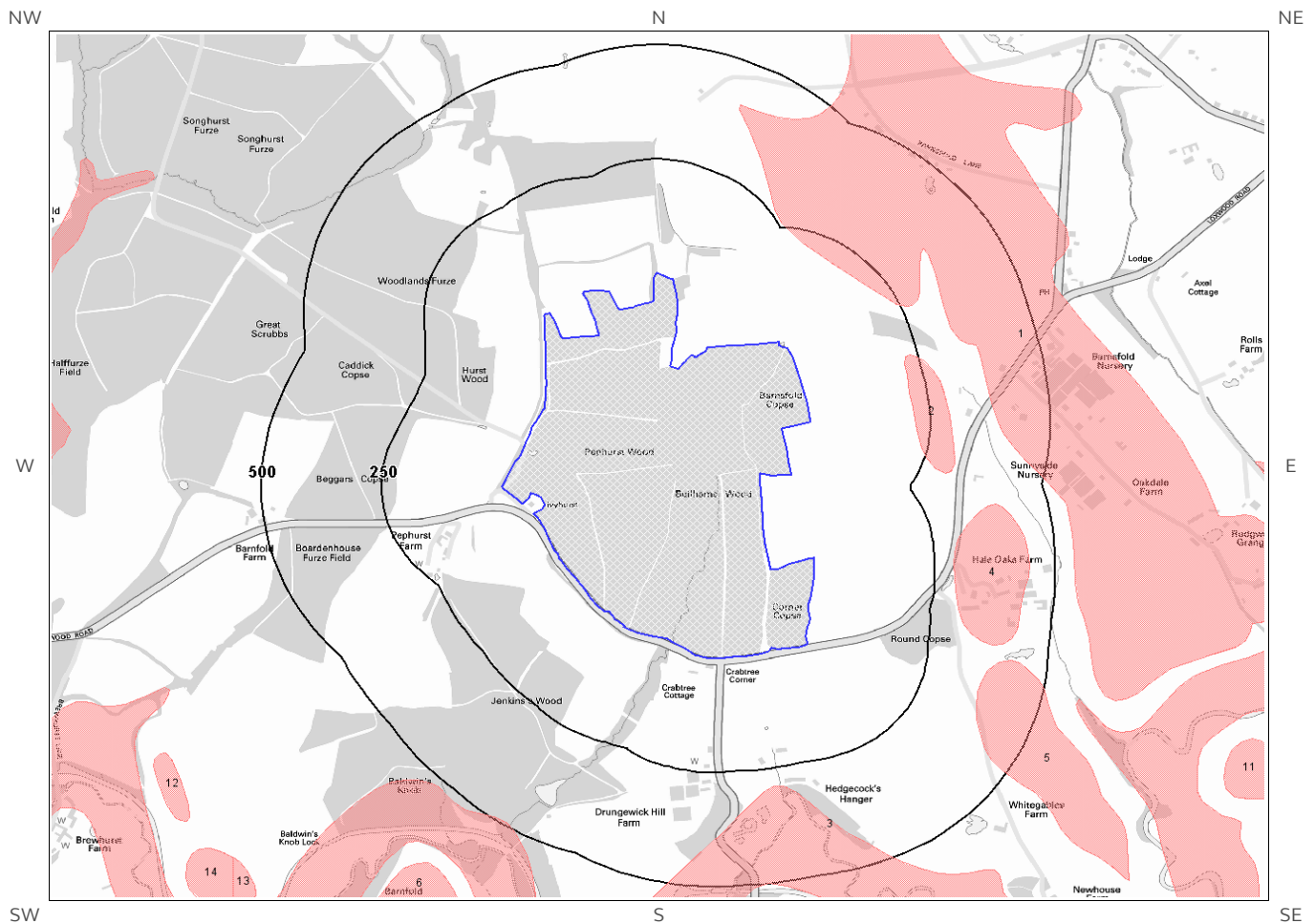
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WC-SDST	WEALD CLAY FORMATION	SANDSTONE
WC-SDST	WEALD CLAY FORMATION	SANDSTONE
WC-MDST	WEALD CLAY FORMATION	MUDSTONE
WC-SDST	WEALD CLAY FORMATION	SANDSTONE
WC-SDST	WEALD CLAY FORMATION	SANDSTONE
WC-MDST	WEALD CLAY FORMATION	MUDSTONE
WC-SDST	WEALD CLAY FORMATION	SANDSTONE

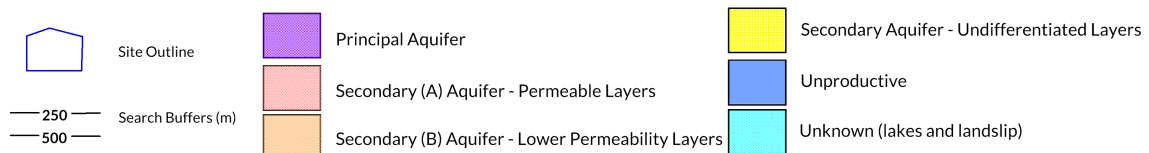
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

# 6 Hydrogeology and Hydrology

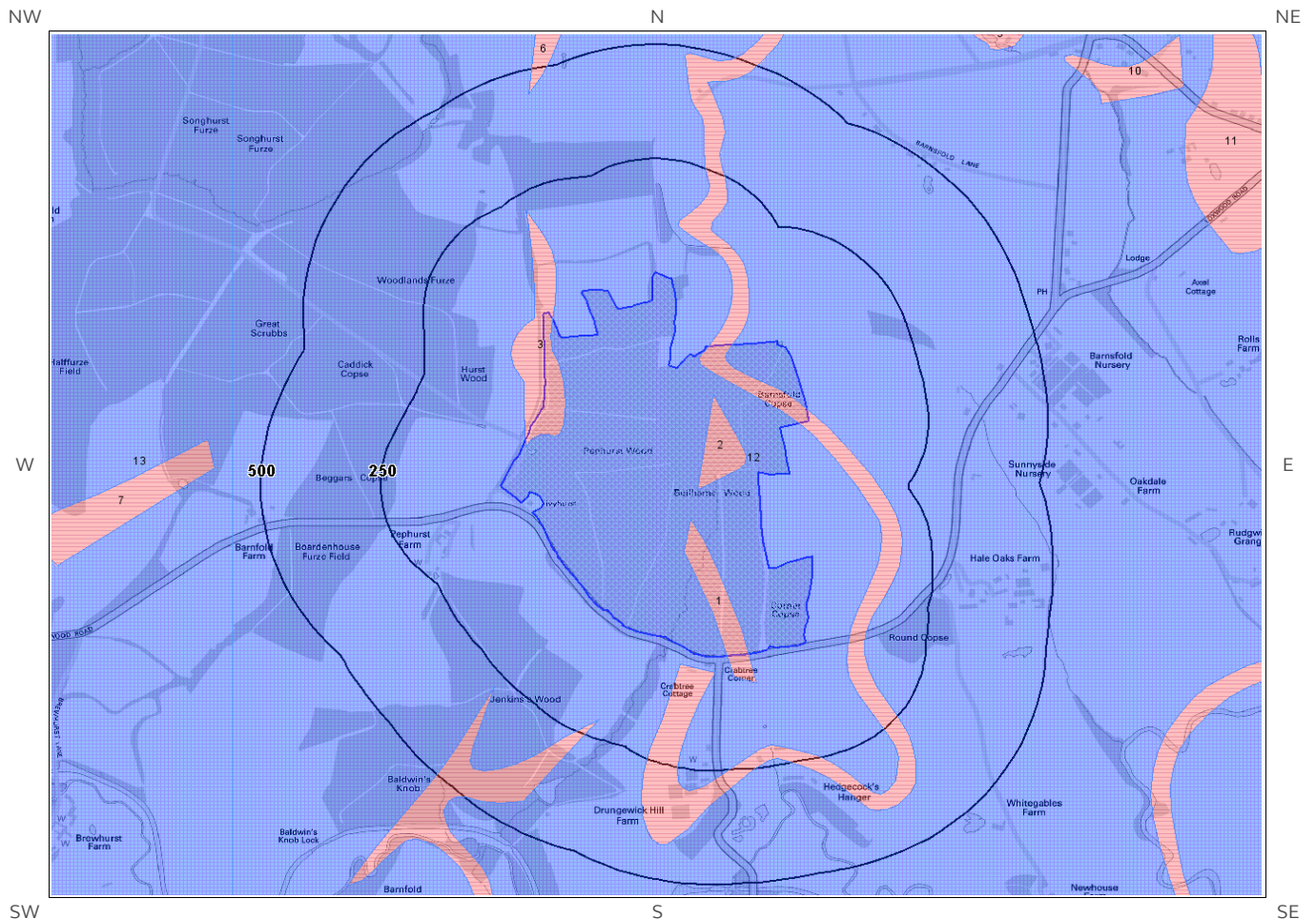
## 6a. Aquifer Within Superficial Geology



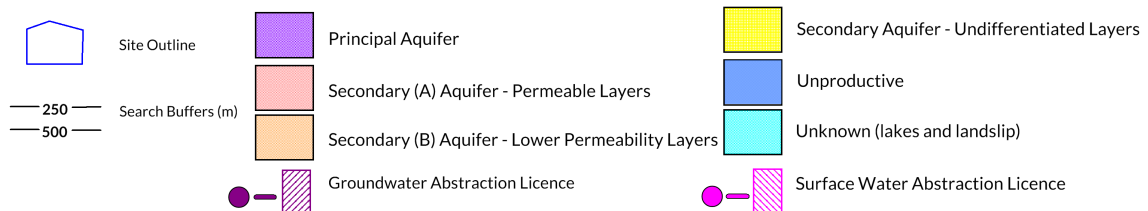
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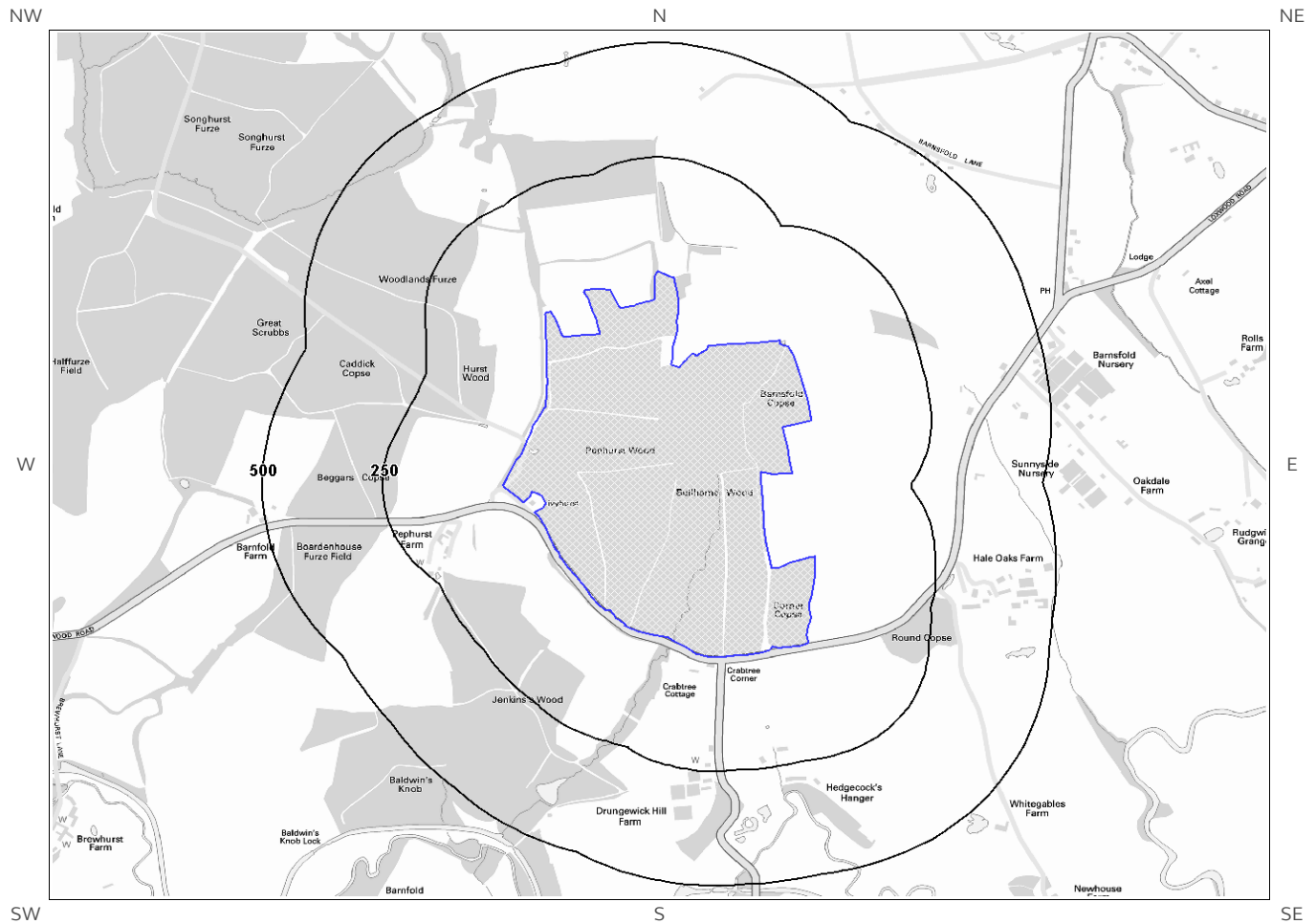
# 6b. Aquifer Within Bedrock Geology and Abstraction Licenses



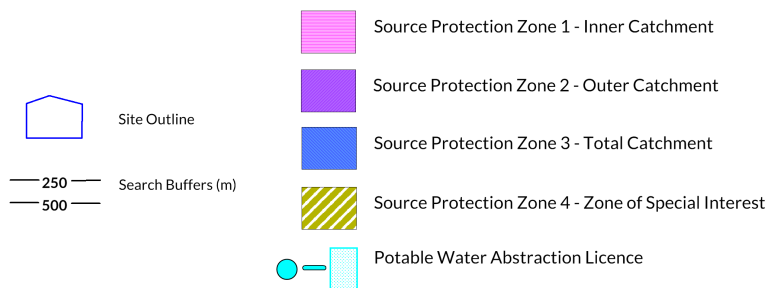
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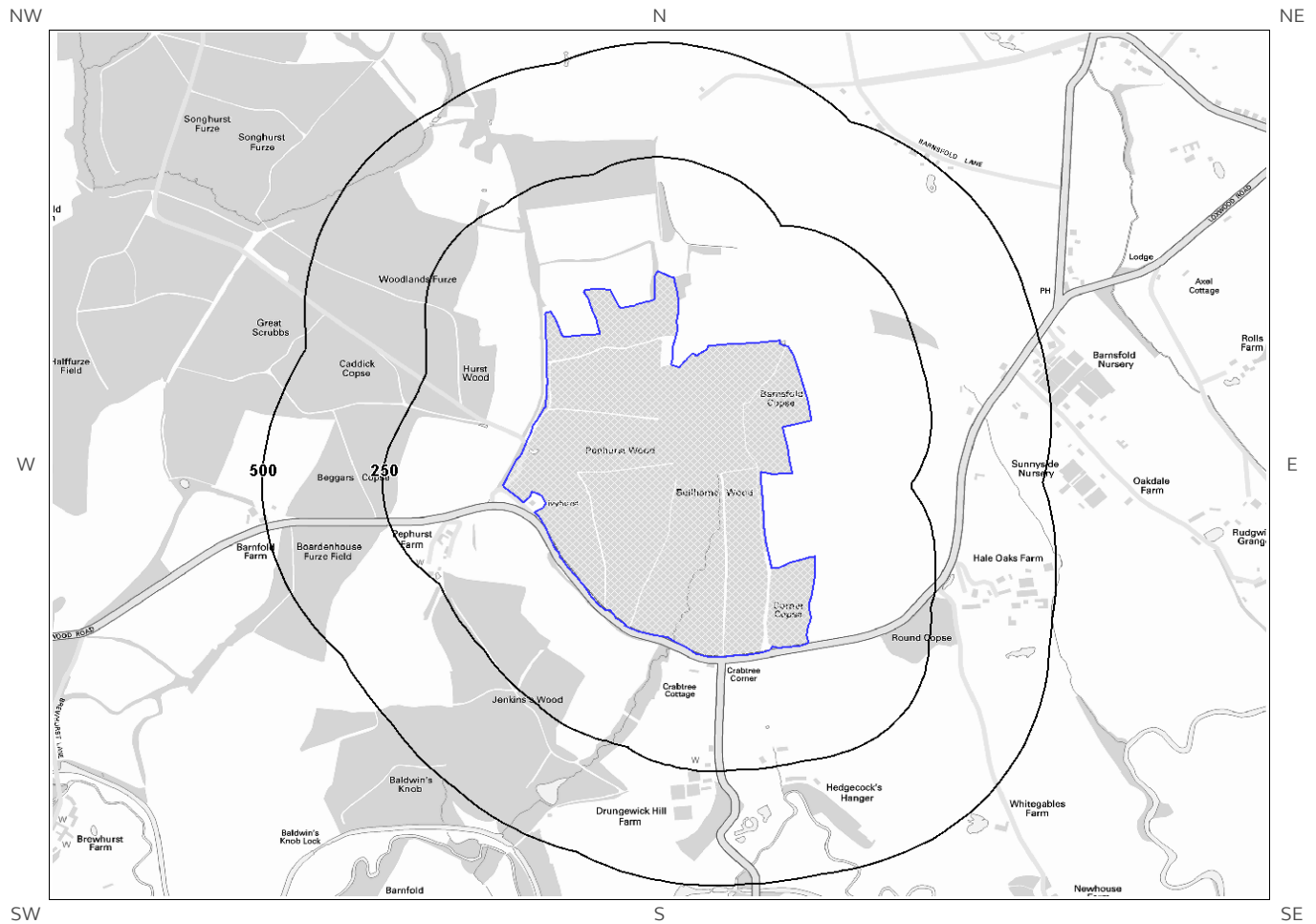
# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



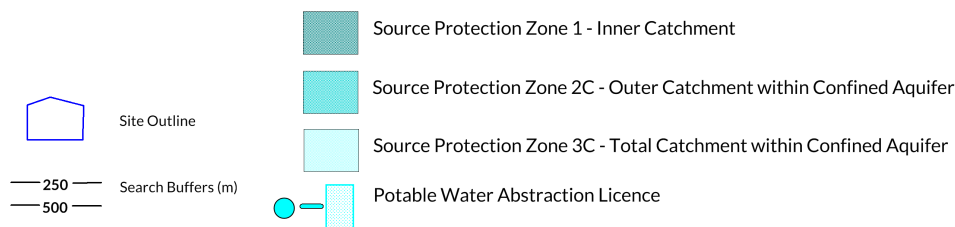
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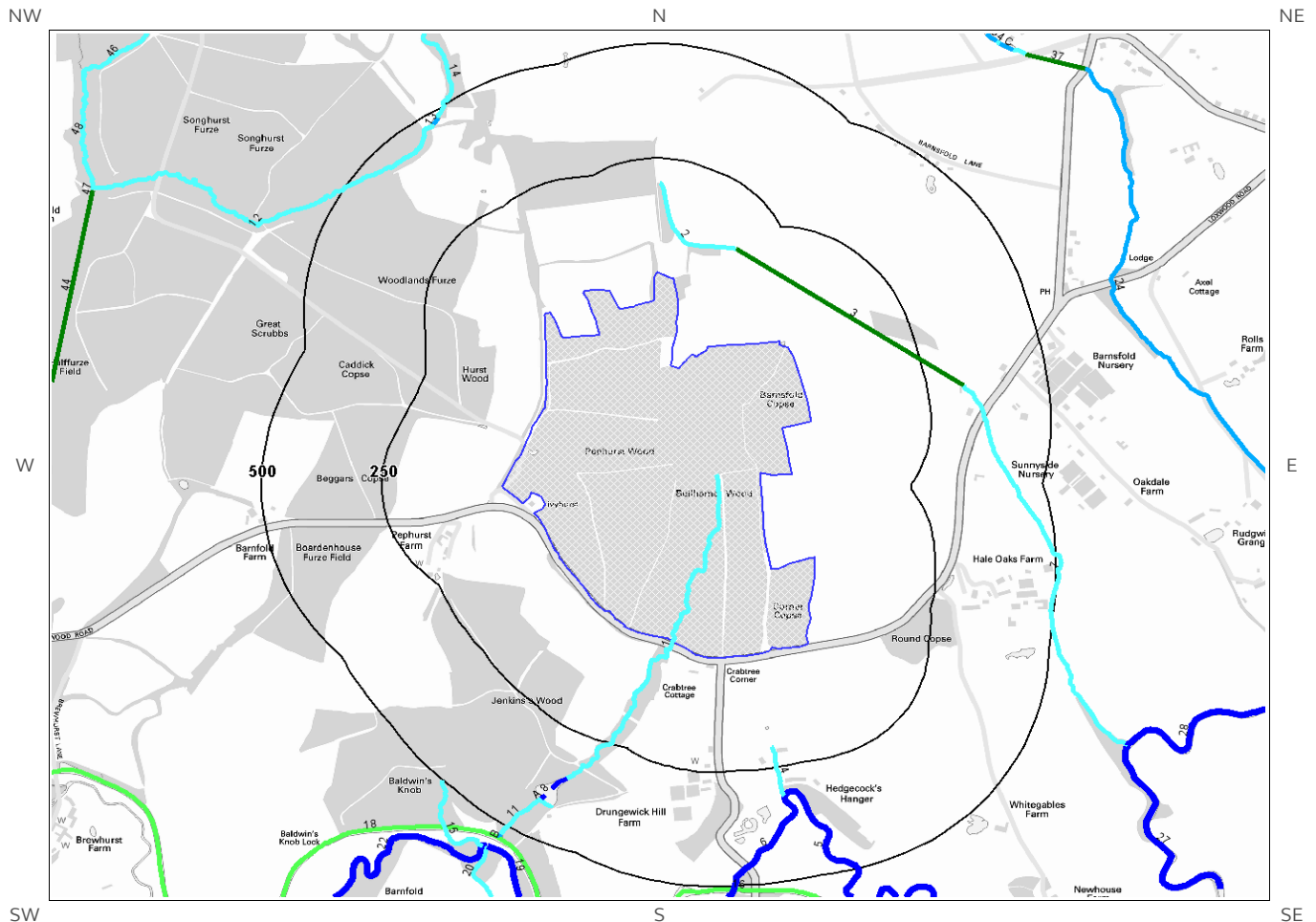
# 6d. Hydrogeology – Source Protection Zones within confined aquifer



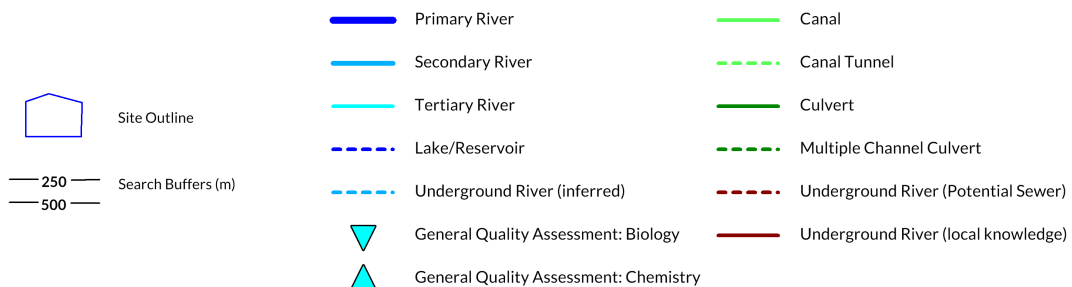
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# 6e. Hydrology – Detailed River Network and River Quality



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# 6. Hydrogeology and Hydrology

## 6.1 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/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	203	NE	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	213	E	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	290	S	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	291	E	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	368	E	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

## 6.2 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/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

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



ID	Distance (m)	Direction	Designation	Description
4	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
12	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
5	208	S	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
6	448	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

### 6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

### 6.4 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 (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	985	SE	506600 130600	Status: Historical Licence No: 10/41/423006 Details: Make-Up or Top Up Water Direct Source: Southern Region Surface Waters Point: Wisborough Green (point B) Data Type: Point Name: Wey & Arun Canal Trust Ltd Annual Volume (m³): - Max Daily Volume (m³): - Application No: 169/0894 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 15/1/1991 Version End Date:
Not shown	1094	SW	504900 130900	Status: Active Licence No: 25/080 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Loxwood Stream At Flitchfold Farm Data Type: Point Name: Wey & Arun Canal Trust Ltd Annual Volume (m³): 136364 Max Daily Volume (m³): 1344 Application No: 169/1245 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 16/6/2009 Version End Date:
Not shown	1101	S	506568 130461	Status: Active Licence No: 10/41/423006/R01 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Drungewick (point A) Data Type: Point Name: Wey & Arun Canal Trust Ltd Annual Volume (m³): 45500 Max Daily Volume (m³): 682 Application No: NPS/WR/019136 Original Start Date: 1/4/2016 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 1/4/2016 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1112	S	506570 130450	Status: Historical Licence No: 10/41/423006 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Drungewick (point A) Data Type: Point Name: Wey & Arun Canal Trust Ltd Annual Volume (m³): 45500 Max Daily Volume (m³): 682 Application No: 169/894 Original Start Date: 15/1/1991 Expiry Date: 31/3/2016 Issue No: 101 Version Start Date: 8/6/2009 Version End Date:
Not shown	1143	SE	507100 130800	Status: Active Licence No: 25/078 Details: Hydroelectric Power Generation Direct Source: Southern Region Surface Waters Point: Mill Stream Of Arun Data Type: Point Name: Adorian Annual Volume (m³): 37843200 Max Daily Volume (m³): 103680 Application No: 25/078 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 5/8/1992 Version End Date:
Not shown	1165	E	507370 131530	Status: Active Licence No: 10/41/425005 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: Gibbons Mill Farm, Billingshurst Data Type: Line Name: Adorian Annual Volume (m³): 18184 Max Daily Volume (m³): 363.7 Application No: WR.0182 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 8/6/2009 Version End Date:

## 6.5 Potable Water Abstraction Licences

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

No

Database searched and no data found.

## 6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

No

Database searched and no data found.

## 6.7 Source Protection Zones within Confined Aquifer

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

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

## 6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
126	NE	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.
228	E	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.
362	SW	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.

## 6.9 River Quality

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

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 (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1142	SE	506650 130450	River Name: Loxwood Stream Reach: R. Arun Conf - Loxwood Stw End/Start of Stretch: End of Stretch NGR	B	B	B	B	B
Not shown	1142	SE	506650 130450	River Name: Arun Reach: R. Kird Conf - Loxwood Stream Conf End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1142	SE	506650 130450	River Name: Arun Reach: Loxwood Stream Conf - North River Conf End/Start of Stretch: End of Stretch NGR	B	B	B	B	B
Not shown	1292	SW	504650 130900	River Name: Loxwood Stream Reach: R. Arun Conf - Loxwood Stw End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B

## 6.9.2 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 (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1142	SE	506650 130450	River Name: R. Arun Reach: R. Kird Conf - Loxwood Stream Conf End/Start of Stretch: Start of Stretch NGR	C	C	B	B	B
Not shown	1142	SE	506650 130450	River Name: R. Arun Reach: Loxwood Stream Conf - North River Conf End/Start of Stretch: End of Stretch NGR	C	B	B	B	A
Not shown	1292	SW	504650 130900	River Name: Loxwood Stream Reach: Loxwood Stw - Blacknest Farm End/Start of Stretch: End of Stretch NGR	D	D	C	B	C

## 6.10 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 (6e):

ID	Distance (m)	Direction	Details
1	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
2	80	N	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
3	122	NE	River Name: - Welsh River Name: - Alternative Name: -  River Type: Culvert Main River Status: Currently Undefined
4	204	S	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
5	308	S	River Name: River Lox Welsh River Name: - Alternative Name: -  River Type: Primary River Main River Status: Currently Undefined
6	314	S	River Name: River Lox Welsh River Name: - Alternative Name: -  River Type: Primary River Main River Status: Currently Undefined
7	326	E	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
8	351	S	River Name: - Welsh River Name: - Alternative Name: -  River Type: Lake/Reservoir Main River Status: Currently Undefined
9A	412	SW	River Name: - Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
10A	418	SW	River Name: - Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
11	418	SW	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
12	445	NW	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined
13	475	NW	River Name: - Welsh River Name: - Alternative Name: -  River Type: Secondary River Main River Status: Currently Undefined
14	482	NW	River Name: Drain Welsh River Name: - Alternative Name: -  River Type: Tertiary River Main River Status: Currently Undefined

## 6.11 Surface Water Features

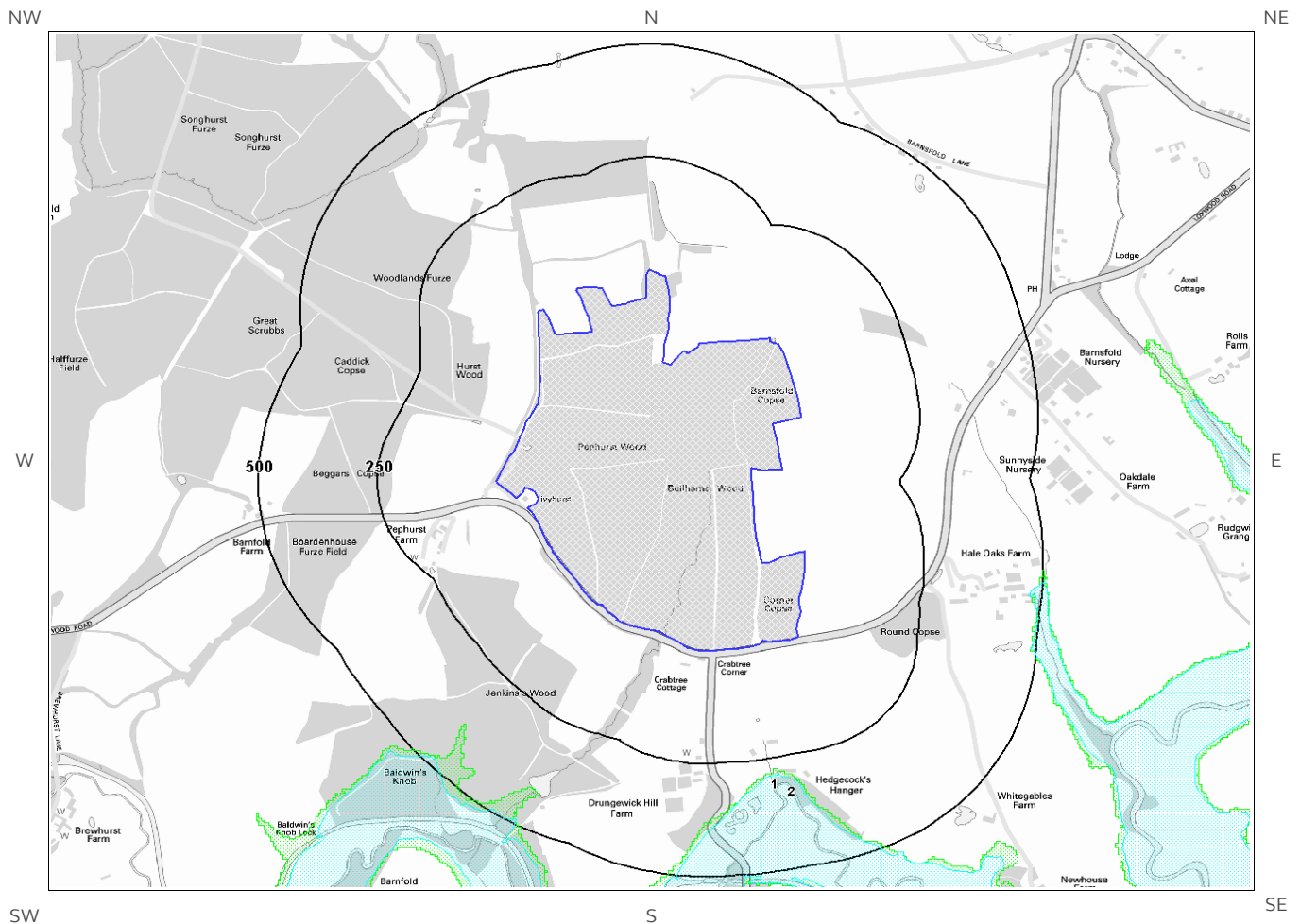
Are there any surface water features within 250m of the study site?

Yes

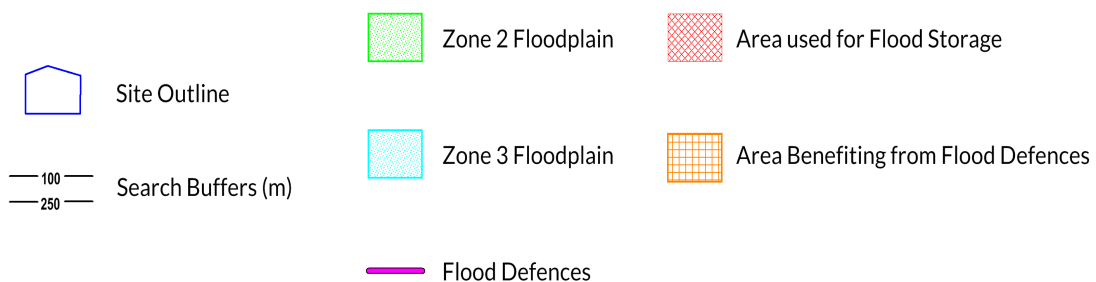
The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
14	SW
42	SW
80	N
204	S

# 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

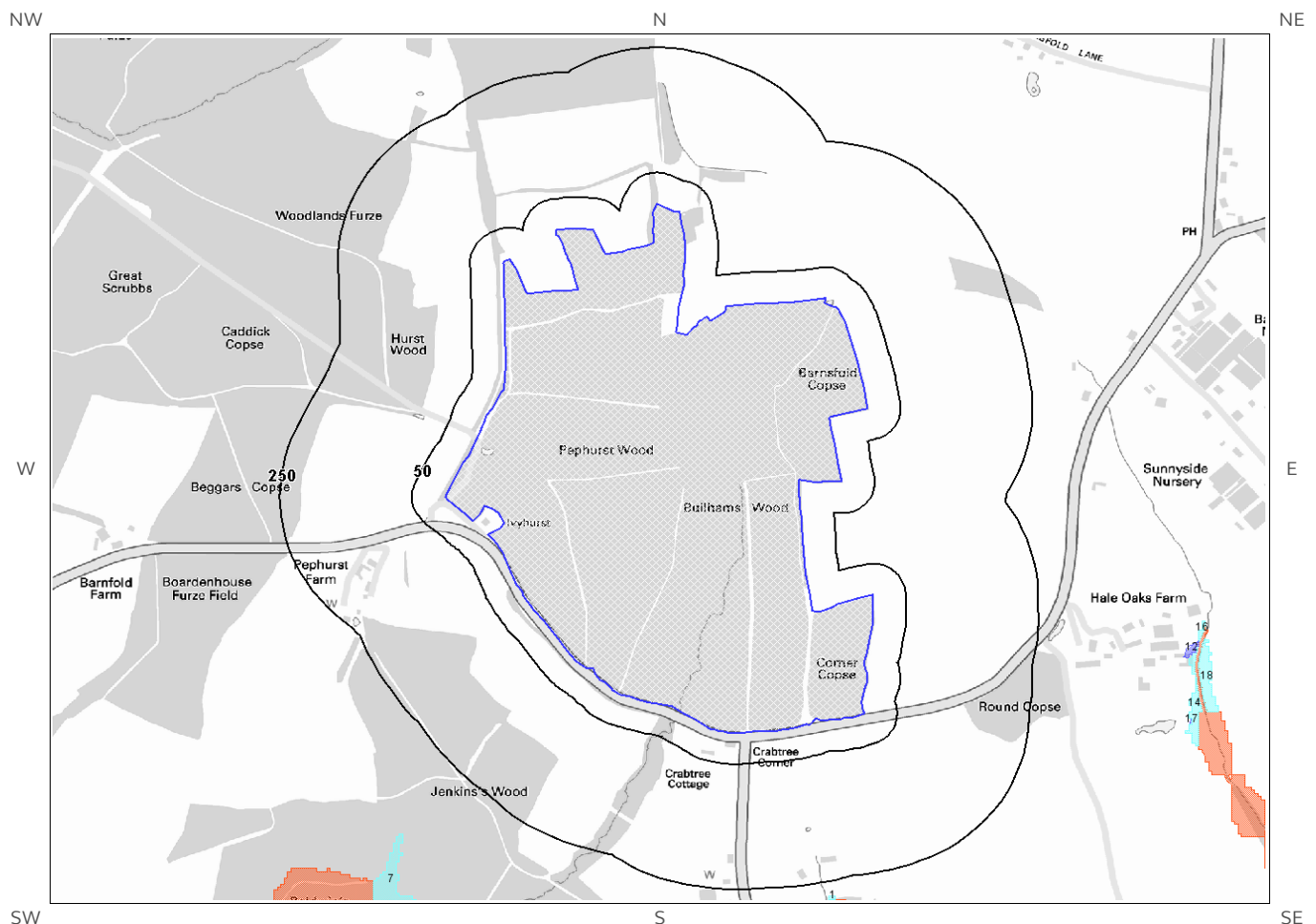


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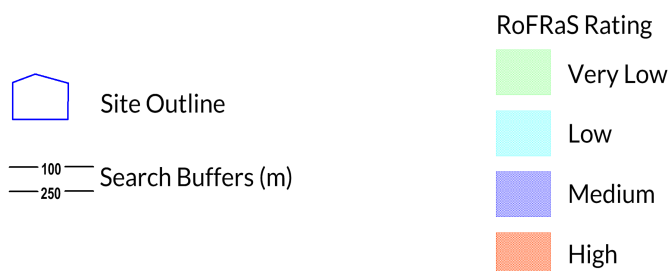




# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

Environment Agency/Natural Resources Wales 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 7a – Flood Map for Planning:

Database searched and no data found.

---

## 7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

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 7a – Flood Map for Planning.

Database searched and no data found.

---

## 7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

---

## 7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No  
Database searched and no data found.

---

## 7.5 Areas benefiting from Flood Defences

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

---

## 7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

---

## 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No

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).

---

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

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

---

## 7.8 Groundwater Flooding Confidence Areas

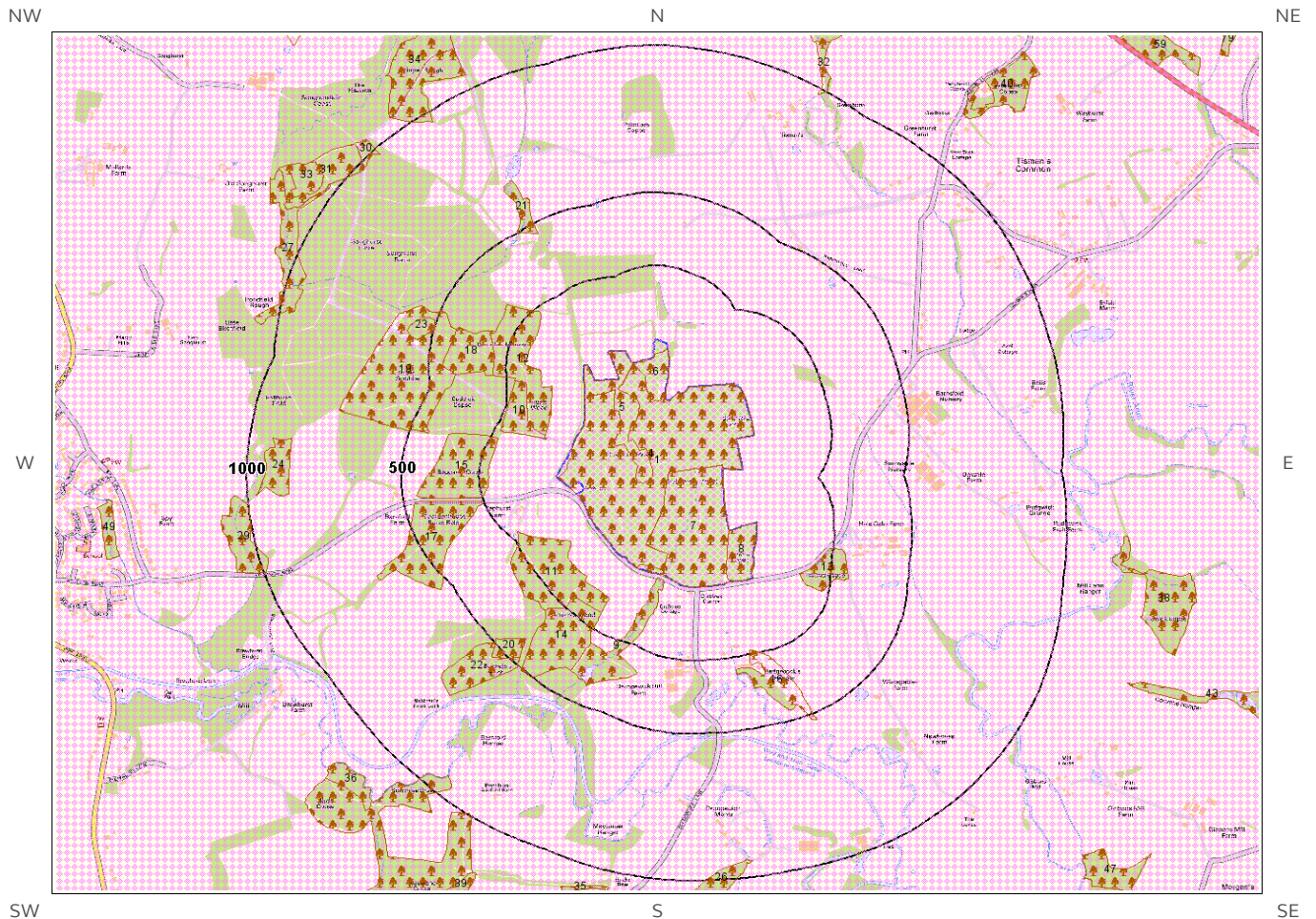
What is the British Geological Survey confidence rating in this result?

Not Applicable

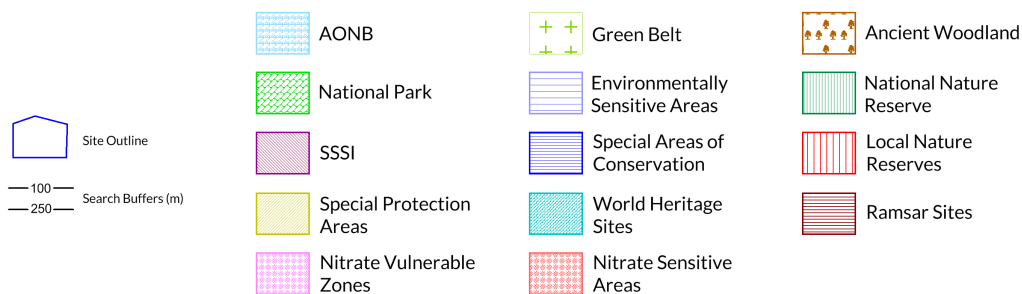
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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.

# 8. Designated Environmentally Sensitive Sites Map



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## 8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?

Yes

---

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

0

Database searched and no data found.

---

### 8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

## 8.6 Records of Ancient Woodland within 2000m of the study site:

77

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
4	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
5	0	On Site	UNKNOWN	Ancient Replanted Woodland
6	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
7	0	On Site	UNKNOWN	Ancient Replanted Woodland
8	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
9	13	S	UNKNOWN	Ancient and Semi-Natural Woodland
10	89	NW	UNKNOWN	Ancient Replanted Woodland
11	97	SW	UNKNOWN	Ancient and Semi-Natural Woodland
12	97	NW	UNKNOWN	Ancient and Semi-Natural Woodland
13	148	E	UNKNOWN	Ancient and Semi-Natural Woodland
14	188	SW	UNKNOWN	Ancient Replanted Woodland
15	219	W	UNKNOWN	Ancient and Semi-Natural Woodland
16	235	S	UNKNOWN	Ancient and Semi-Natural Woodland
17	256	W	UNKNOWN	Ancient and Semi-Natural Woodland
18	290	W	UNKNOWN	Ancient and Semi-Natural Woodland
19	415	W	UNKNOWN	Ancient and Semi-Natural Woodland
20	416	SW	UNKNOWN	Ancient and Semi-Natural Woodland
21	463	NW	UNKNOWN	Ancient and Semi-Natural Woodland
22	474	SW	UNKNOWN	Ancient Replanted Woodland
23	503	W	UNKNOWN	Ancient and Semi-Natural Woodland
24	864	W	UNKNOWN	Ancient and Semi-Natural Woodland
25	930	SW	UNKNOWN	Ancient and Semi-Natural Woodland
26	935	S	UNKNOWN	Ancient and Semi-Natural Woodland
27	943	W	UNKNOWN	Ancient and Semi-Natural Woodland
28	964	NW	UNKNOWN	Ancient Replanted Woodland
29	974	W	UNKNOWN	Ancient Replanted Woodland
30	976	NW	UNKNOWN	Ancient Replanted Woodland
31	977	NW	UNKNOWN	Ancient and Semi-Natural Woodland
32	979	NE	UNKNOWN	Ancient and Semi-Natural Woodland
33	1048	NW	UNKNOWN	Ancient Replanted Woodland



ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
34	1049	NW	UNKNOWN	Ancient and Semi-Natural Woodland
35	1054	S	UNKNOWN	Ancient Replanted Woodland
36	1119	SW	UNKNOWN	Ancient Replanted Woodland
37	1131	NE	UNKNOWN	Ancient and Semi-Natural Woodland
38	1149	E	UNKNOWN	Ancient and Semi-Natural Woodland
39	1162	SW	UNKNOWN	Ancient Replanted Woodland
40	1173	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1229	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1237	S	UNKNOWN	Ancient and Semi-Natural Woodland
43	1261	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1291	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1336	N	UNKNOWN	Ancient Replanted Woodland
Not shown	1390	S	UNKNOWN	Ancient and Semi-Natural Woodland
47	1424	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1434	SW	UNKNOWN	Ancient and Semi-Natural Woodland
49	1438	W	UNKNOWN	Ancient and Semi-Natural Woodland
50	1440	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1454	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1473	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1483	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1543	NW	UNKNOWN	Ancient Replanted Woodland
Not shown	1571	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1572	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1574	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1609	N	UNKNOWN	Ancient Replanted Woodland
59	1711	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1717	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1726	S	UNKNOWN	Ancient and Semi-Natural Woodland



ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1726	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1745	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1749	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1750	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1757	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1770	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1777	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1805	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1824	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1835	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1862	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1880	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1881	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1891	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1908	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1909	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1917	SE	UNKNOWN	Ancient and Semi-Natural Woodland
79	1921	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1969	S	UNKNOWN	Ancient and Semi-Natural Woodland

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

3

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
Not shown	1466	S	Existing	DEFRA
Not shown	1513	N	Existing	DEFRA

---

#### 8.14 Records of Green Belt land within 2000m of the study site:

Database searched and no data found.

---

0

# 9. Natural Hazards Findings

## 9.1 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 Geo Insight, available from our website. The following information has been found:

### 9.1.1 Shrink Swell

What is the maximum Shrink-Swell\* 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
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

### 9.1.2 Landslides

What is the maximum Landslide\* 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
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.

### 9.1.3 Soluble Rocks

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

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

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. 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.

#### 9.1.4 Compressible Ground

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

Negligible

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

Hazard
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.

#### 9.1.5 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.

#### 9.1.6 Running Sand

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

Negligible

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

Hazard
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.

### 9.2 Radon

#### 9.2.1 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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

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? ☐ No radon protective measures are necessary.

# 10. Mining

## 10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

---

## 10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

---

## 10.3 Brine Affected Areas

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

Guidance: No Guidance Required.

---

# Contact Details

## CENTREMAPS

Telephone: 01886 832972  
Groundsure@centremaps.co.uk



## British Geological Survey Enquiries

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Fax: 0115 936 3276.  
Email:

Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)



**British  
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

## Environment Agency

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Rotherham, S60 1BY  
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Web: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

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## Public Health England

Public information access office  
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133-155 Waterloo Road, London, SE1 8UG  
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Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
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Public Health  
England

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DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



The Coal  
Authority

## Ordnance Survey

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505



## Local Authority

Authority: Horsham District Council  
Phone: 01403 215 100

Web: <http://www.horsham.gov.uk/>

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# Standard Terms and Conditions

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<https://www.groundsure.com/terms-and-conditions-sept-2016>



CENTREMAPS

Open Space, Upper Interfields,  
Worcester, WR14 1UT

Report Reference: CMAPS-AAC-589029-38143-  
060117GEO

Your Reference: 38143

Report Date 6 Jan 2017

Report Delivery Email - pdf  
Method:

## Groundsure Geo Insight

Address: Loxwood (Chichester), RH14 0RW

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.  
Groundsure Geoinsight

# Groundsure Geo Insight

**Address:** Loxwood (Chichester), RH14 0RW  
**Date:** 6 Jan 2017  
**Reference:** CMAPS-AAC-589029-38143-060117GEO  
**Client:** CENTREMAPS



Aerial Photograph Capture date: 30-Jun-2015  
Grid Reference: 505001,132479  
Site Size: 87.48ha

# Contents Page

Overview of Findings.....	5
1 Geology.....	8
1.1 Artificial Ground Map.....	8
1 Geology.....	9
1.1 Artificial Ground.....	9
1.1.1 Artificial/ Made Ground.....	9
1.1.2 Permeability of Artificial Ground.....	9
1.2 Superficial Deposits and Landslips Map.....	10
1.2 Superficial Deposits and Landslips.....	11
1.2.1 Superficial Deposits/ Drift Geology.....	11
1.2.2 Permeability of Superficial Ground.....	11
1.2.3 Landslip.....	11
1.2.4 Landslip Permeability.....	11
1.3 Bedrock and Faults Map.....	12
1.3 Bedrock, Solid Geology & Faults.....	13
1.3.1 Bedrock/ Solid Geology.....	13
1.3.2 Permeability of Bedrock Ground.....	13
1.3.3 Faults.....	14
1.4 Radon Data.....	15
1.4.1 Radon Affected Areas.....	15
1.4.2 Radon Protection.....	15
2 Ground Workings Map.....	16
2 Ground Workings.....	17
2.1 Historical Surface Ground Working Features derived from Historical Mapping.....	17
2.2 Historical Underground Working Features derived from Historical Mapping.....	18
2.3 Current Ground Workings.....	18
3 Mining, Extraction & Natural Cavities Map.....	20
3 Mining, Extraction & Natural Cavities.....	21
3.1 Historical Mining.....	21
3.2 Coal Mining.....	21
3.3 Johnson Poole and Bloomer.....	21
3.4 Non-Coal Mining.....	21
3.5 Non-Coal Mining Cavities.....	22
3.6 Natural Cavities.....	22
3.7 Brine Extraction.....	22
3.8 Gypsum Extraction.....	22
3.9 Tin Mining.....	22
3.10 Clay Mining.....	23
4 Natural Ground Subsidence.....	24
4.1 Shrink-Swell Clay Map.....	24
4.2 Landslides Map.....	25
4.3 Ground Dissolution Soluble Rocks Map.....	26
4.4 Compressible Deposits Map.....	27
4.5 Collapsible Deposits Map.....	28
4.6 Running Sand Map.....	29
4 Natural Ground Subsidence.....	30
4.1 Shrink-Swell Clays.....	30
4.2 Landslides.....	31
4.3 Ground Dissolution of Soluble Rocks.....	31

4.4 Compressible Deposits.....	31
4.5 Collapsible Deposits.....	32
4.6 Running Sands.....	32
5 Borehole Records Map.....	33
5 Borehole Records.....	34
6 Estimated Background Soil Chemistry.....	35
7 Railways and Tunnels Map.....	37
7 Railways and Tunnels.....	38
7.1 Tunnels .....	38
7.2 Historical Railway and Tunnel Features .....	38
7.3 Historical Railways.....	39
7.4 Active Railways.....	39
7.5 Railway Projects.....	39



# Overview of Findings

The Groundsure Geo Insight 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 not in a Radon Affected Area, as less than 1% 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?	No 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	6	0	18	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
2.3 Current Ground Workings	0	0	4	1	1

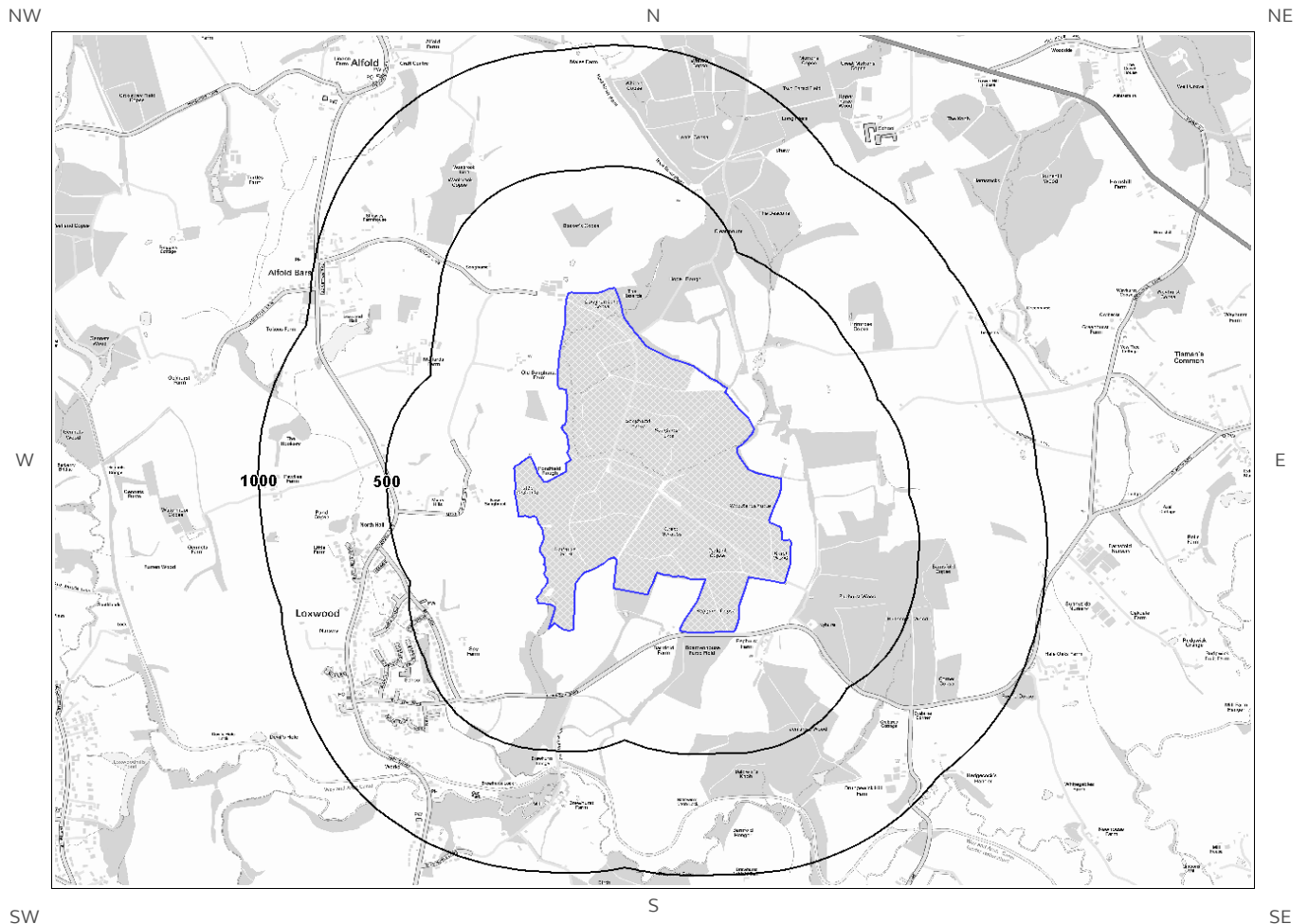
Section 3: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	0
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	2	0	0	0	0
3.5 Non-Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 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	Low				
4.2 Landslides	Very Low				
4.3 Ground Dissolution of Soluble Rocks	Negligible				
4.4 Compressible Deposits	Moderate				
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	0	0	0		
Section 6: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
6 Records of Background Soil Chemistry	25	10	20		
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	0	0	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

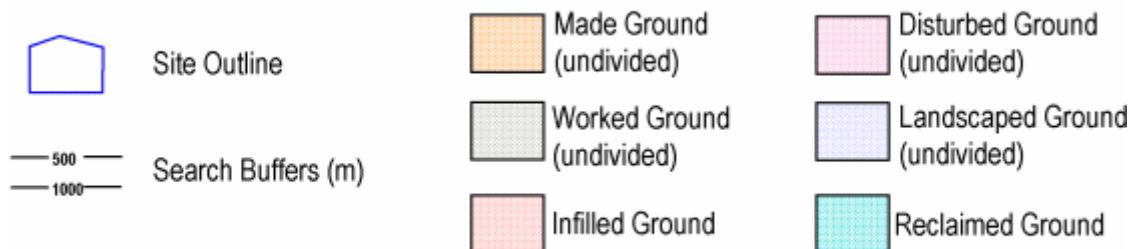
# 1 Geology

## 1.1 Artificial Ground Map



**Artificial Ground Legend**

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# 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:301

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

Database searched and no data found.

---

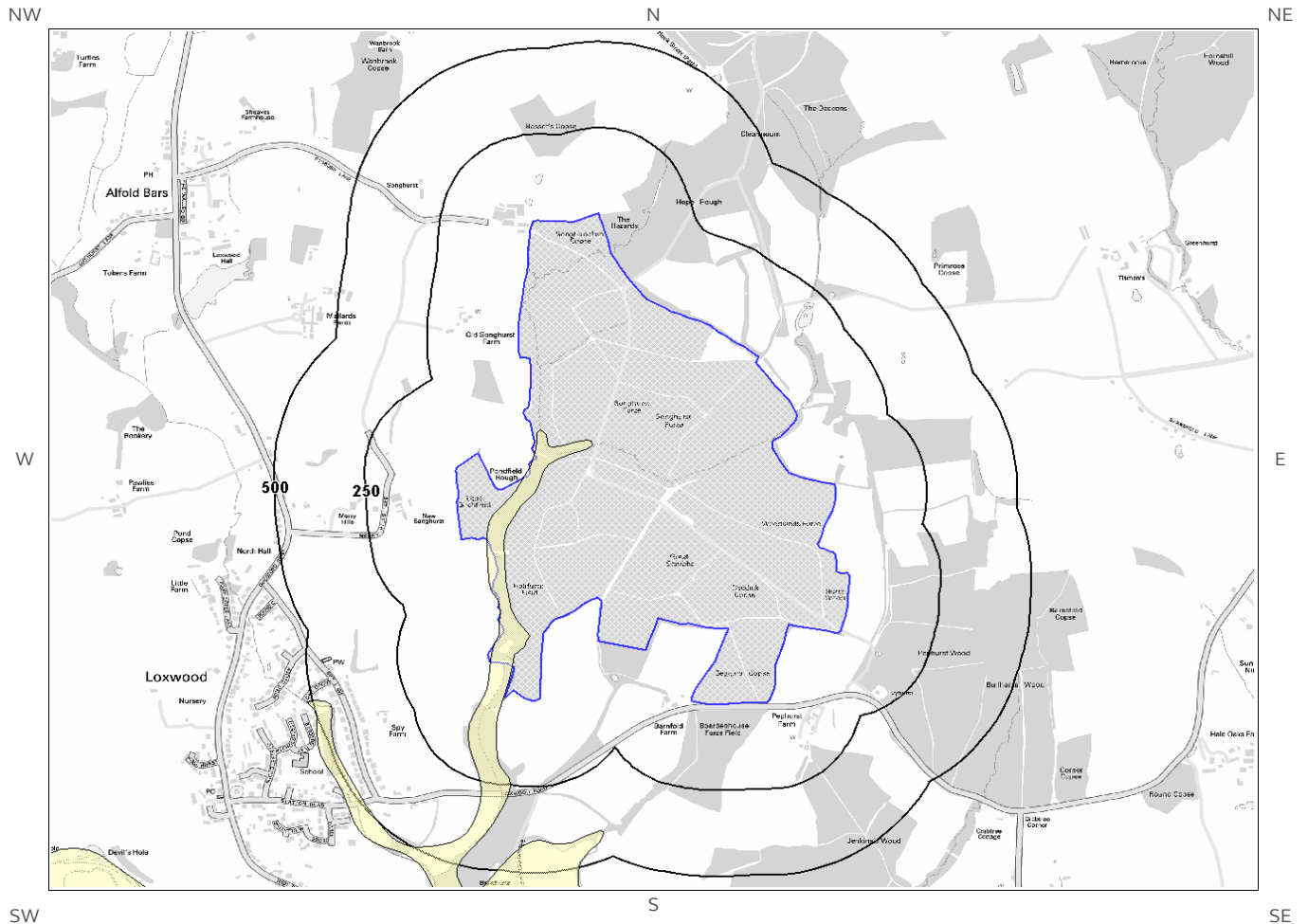
### 1.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

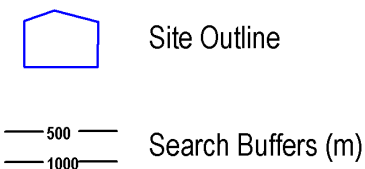
---

# 1.2 Superficial Deposits and Landslips Map



**Superficial Deposits and Landslips Legend**

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# 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	ALV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]

## 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	High	Very 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.

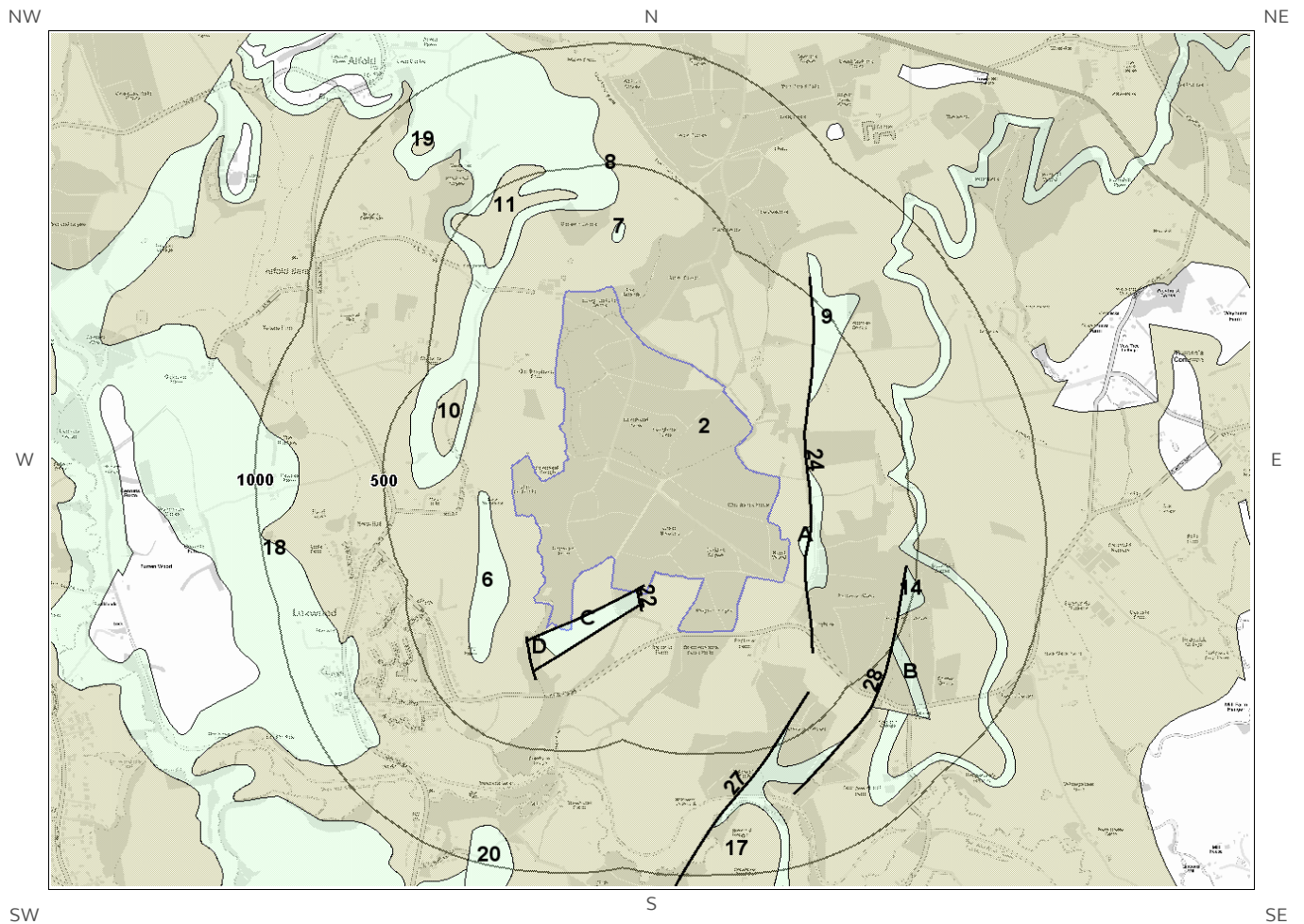
## 1.2.4 Landslip Permeability

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

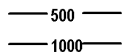


**Bedrock and Faults Legend**

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Site Outline



Search Buffers (m)

## 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:301

### 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
1C	0.0	On Site	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
2	0.0	On Site	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
3A	34.0	E	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
4D	47.0	SW	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
5A	65.0	E	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
6	93.0	W	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
7	182.0	N	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
8	205.0	W	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
9	238.0	NE	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
10	247.0	W	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
11	288.0	NW	WC-MDST	Weald Clay Formation - Mudstone	Barremian / Hauterivian
12	421.0	E	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
13	435.0	SE	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
14	456.0	E	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian
15B	482.0	SE	WC-SDST	Weald Clay Formation - Sandstone	Barremian / Hauterivian

### 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	Low	Very Low
0.0	On Site	Fracture	Low	Very Low
0.0	On Site	Mixed	Moderate	Moderate
34.0	E	Mixed	Moderate	Moderate

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

### 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
21C	0.0	On Site	FAULT	Fault, observed, displacement unknown
22	0.0	On Site	FAULT	Fault, observed, displacement unknown
23C	46.0	S	FAULT	Fault, observed, displacement unknown
24	65.0	E	FAULT	Fault, observed, displacement unknown
25D	84.0	SW	FAULT	Fault, inferred, displacement unknown
26D	89.0	S	FAULT	Fault, inferred, displacement unknown
27	390.0	SE	FAULT	Fault, inferred, displacement unknown
28	456.0	E	FAULT	Fault, observed, displacement unknown

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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level

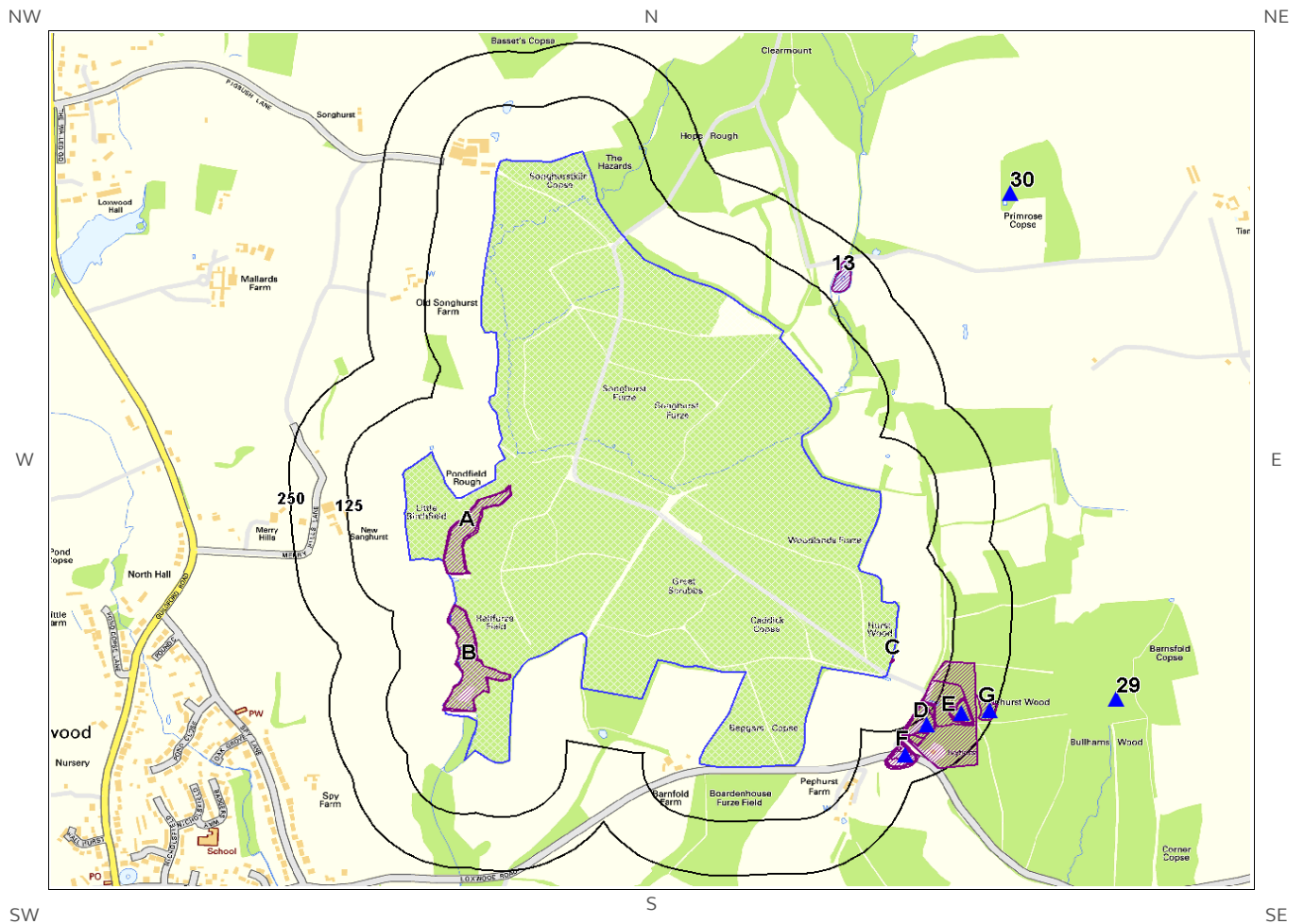
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## 1.4.2 Radon Protection

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?      No radon protective measures are necessary

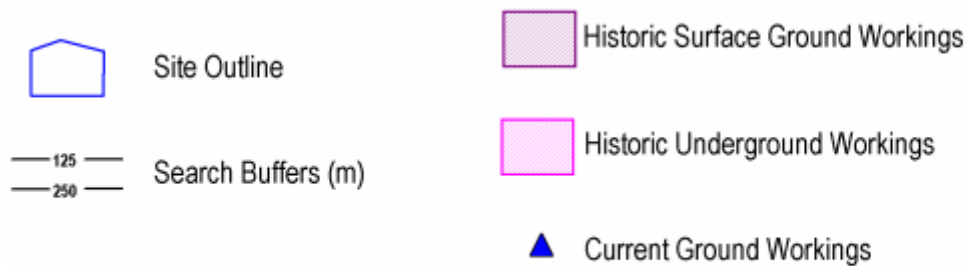
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# 2 Ground Workings Map



Ground Workings Legend

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## 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	504591 132317	Fish Pond	1914
2B	0.0	On Site	504600 132020	Fish Pond	1914
3A	0.0	On Site	504623 132315	Fish Pond	1920
4B	0.0	On Site	504599 132054	Fish Pond	1920
5C	0.0	On Site	505532 132013	Saw Pit	1876
6C	0.0	On Site	505532 132013	Saw Pit	1876
7E	94.0	SE	505637 131888	Brick Works	1920
8D	95.0	SE	505593 131872	Bricks Works	1876
9D	95.0	SE	505593 131872	Bricks Works	1876
10E	95.0	E	505635 131902	Brick Works	1914
11D	98.0	SE	505590 131877	Brick Works	1895
12D	99.0	SE	505592 131878	Brick Works	1895
13	143.0	NE	505424 132904	Pond	1979
14F	153.0	S	505551 131804	Unspecified Pit	1876
15F	153.0	S	505551 131804	Unspecified Pit	1876
16E	155.0	SE	505684 131899	Unspecified Pit	1914
17E	155.0	SE	505683 131897	Unspecified Pit	1920
18E	157.0	SE	505684 131896	Unspecified Pit	1956
19F	157.0	S	505550 131796	Unspecified Pit	1920
20F	157.0	S	505550 131796	Clay Pit	1895

ID	Distance (m)	Direction	NGR	Use	Date
21F	158.0	S	505557 131795	Clay Pit	1895
22F	158.0	S	505557 131795	Unspecified Pit	1914
23F	159.0	S	505552 131791	Unspecified Pit	1956
24G	202.0	E	505739 131905	Clay Pit	1895

## 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? No

Database searched and no data found.

## 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.

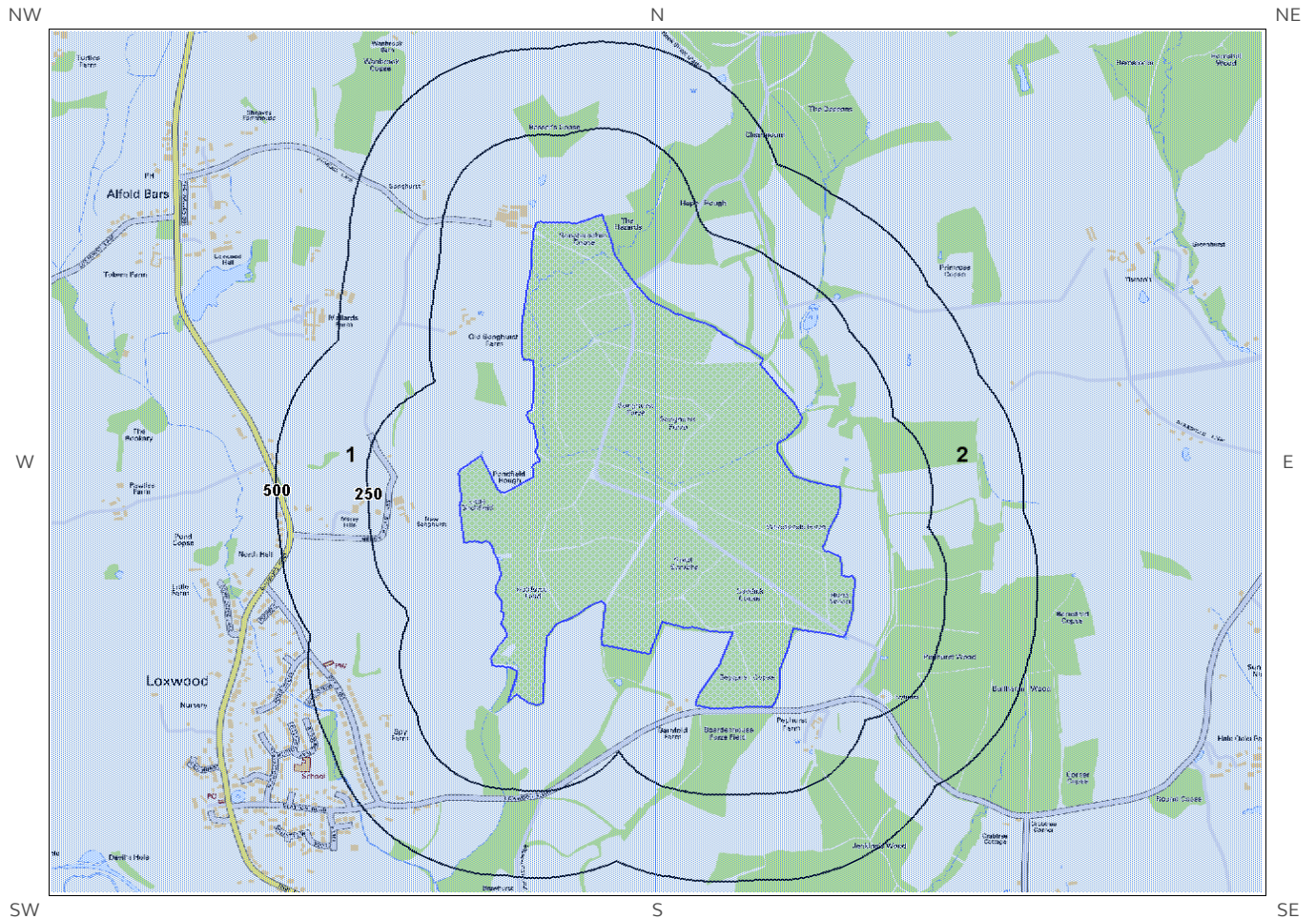
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

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
25D	142.0	SE	505606 131865	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
26E	183.0	SE	505682 131892	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
27F	186.0	S	505559 131795	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
28G	238.0	E	505744 131897	Clay & Shale	Pephurst Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
29	497.0	E	506021 131924	Sand	Bullham's Wood Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
30	589.0	NE	505790 133093	Sand	Primrose Copse Sand Pit	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? No

Database searched and no data found.

## 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? No

Database searched and no data found.

## 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? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

---

### 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 data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

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?

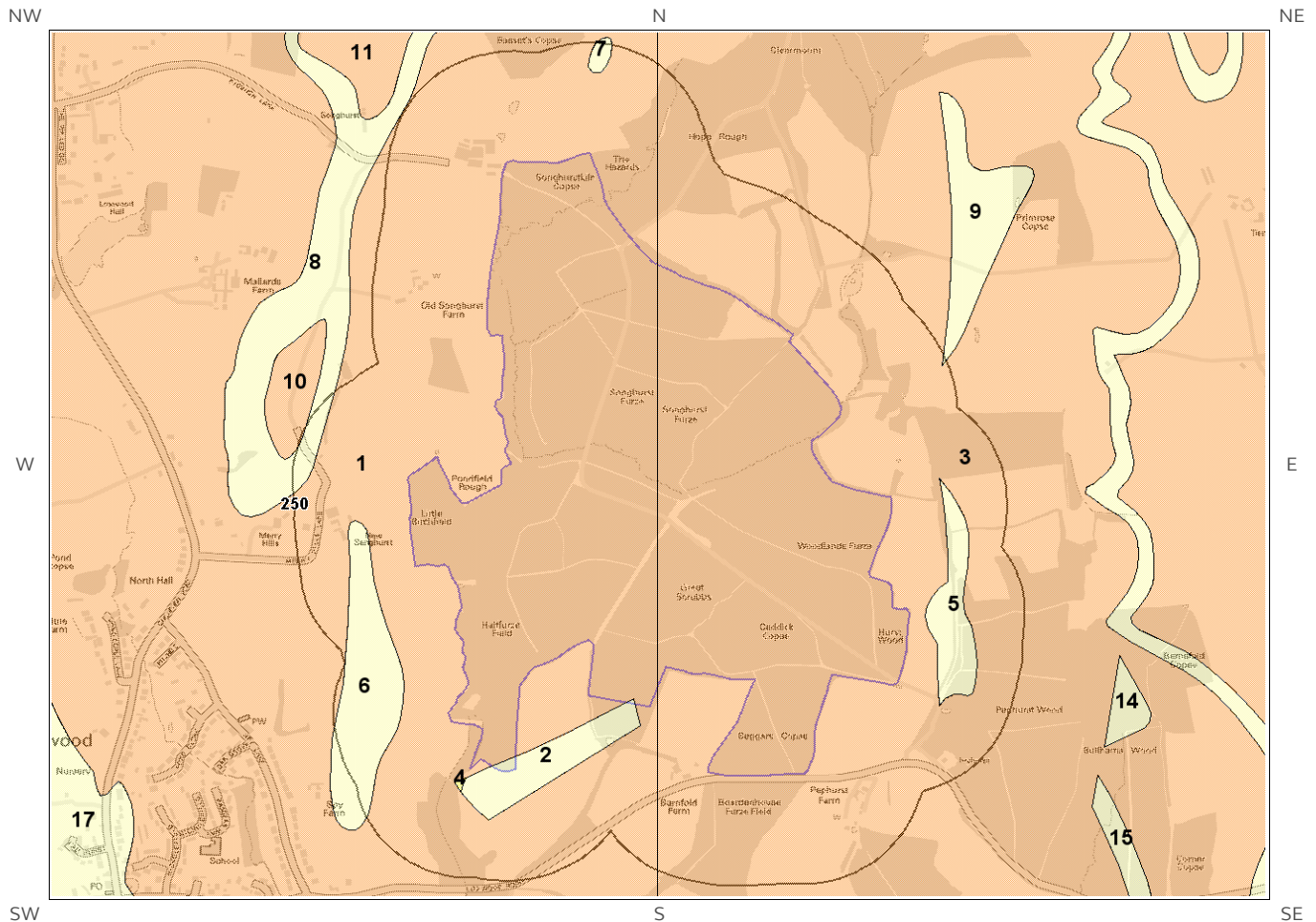
No

Database searched and no data found.

---

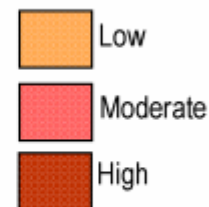
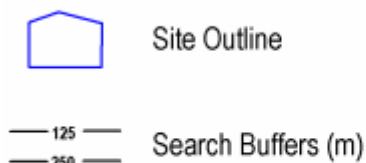
# 4 Natural Ground Subsidence

## 4.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend

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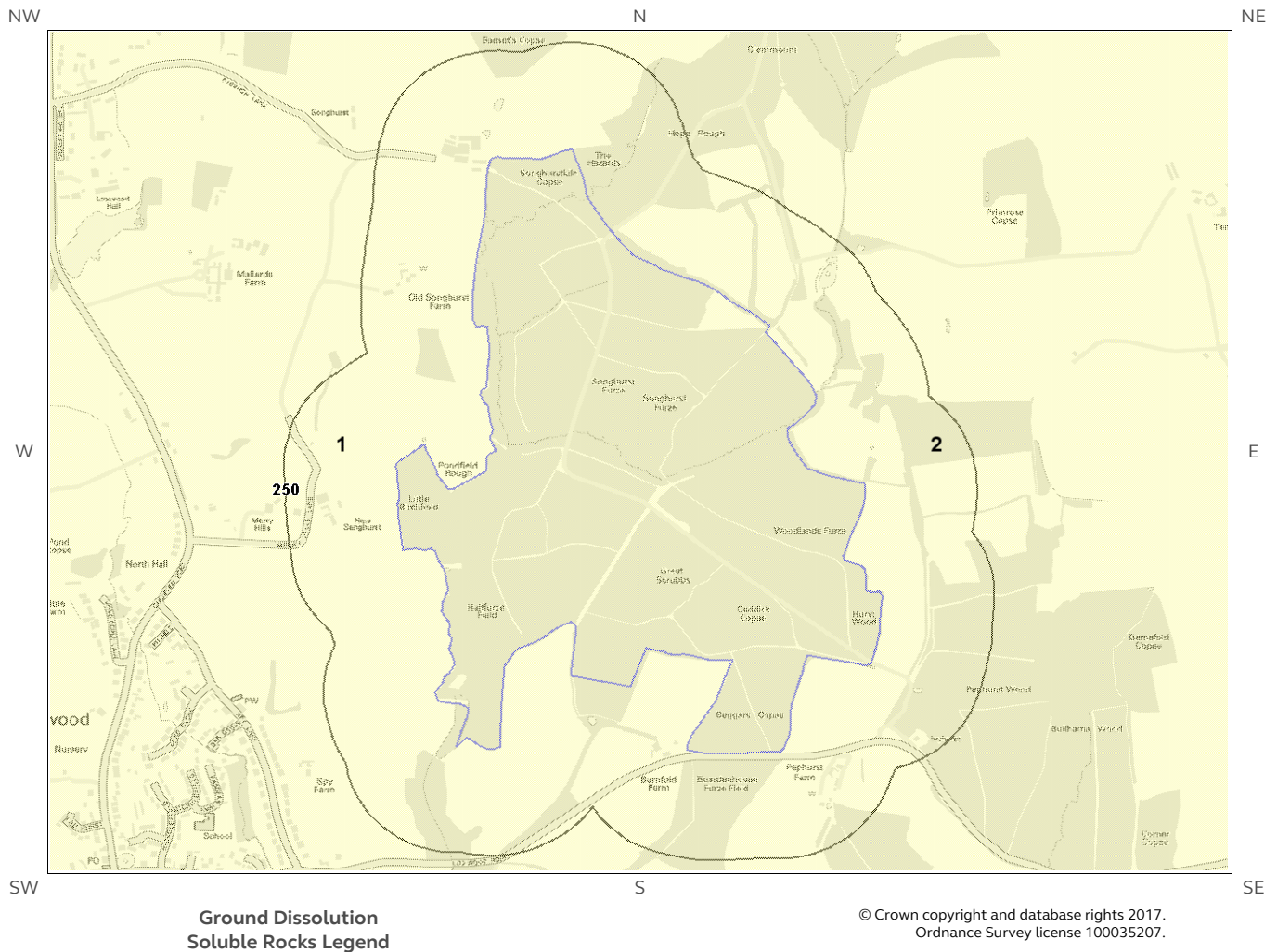


[illegible]

### Landslides Legend

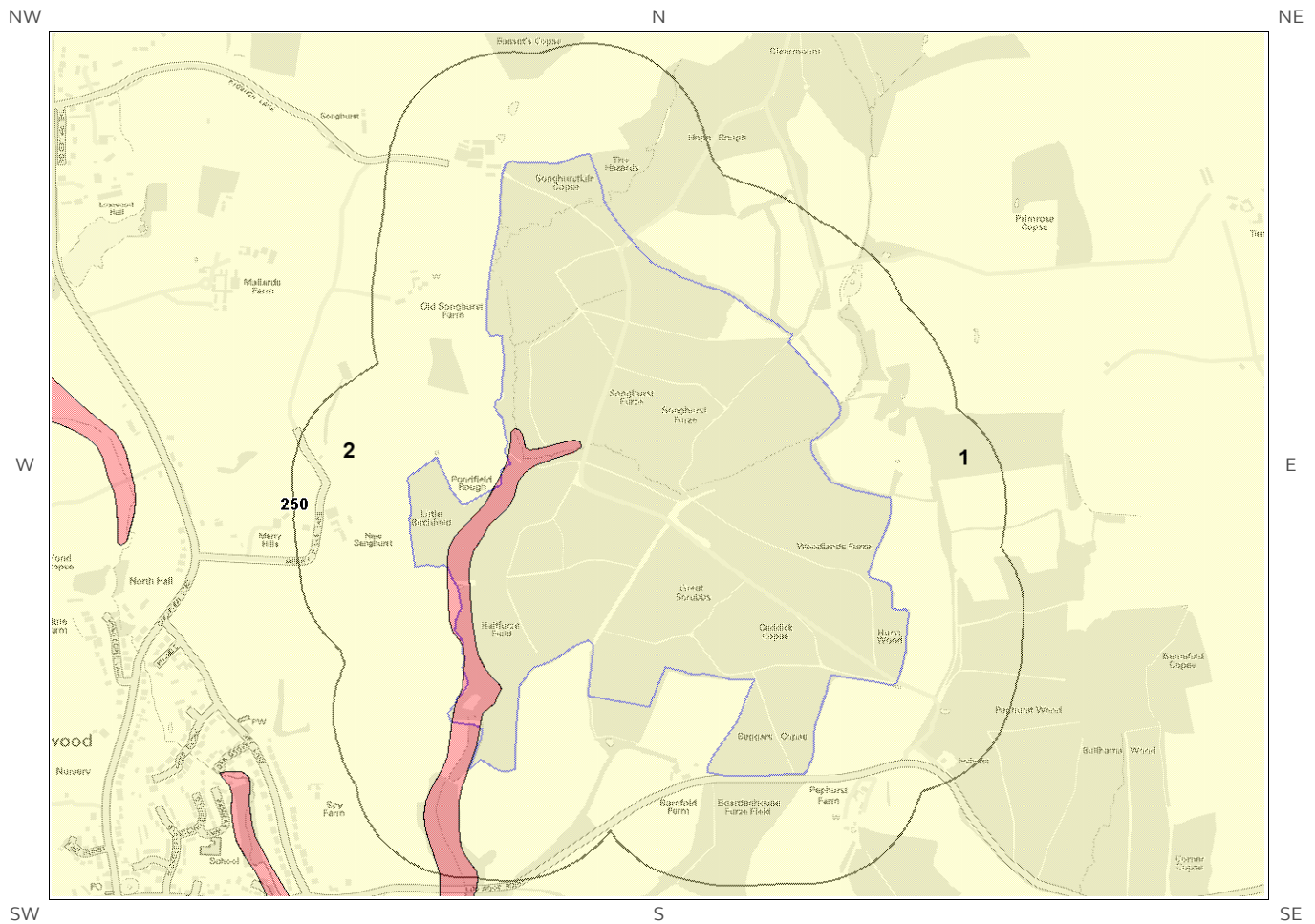


## 4.3 Ground Dissolution Soluble Rocks Map





## 4.4 Compressible Deposits Map



Compressible Deposits Legend

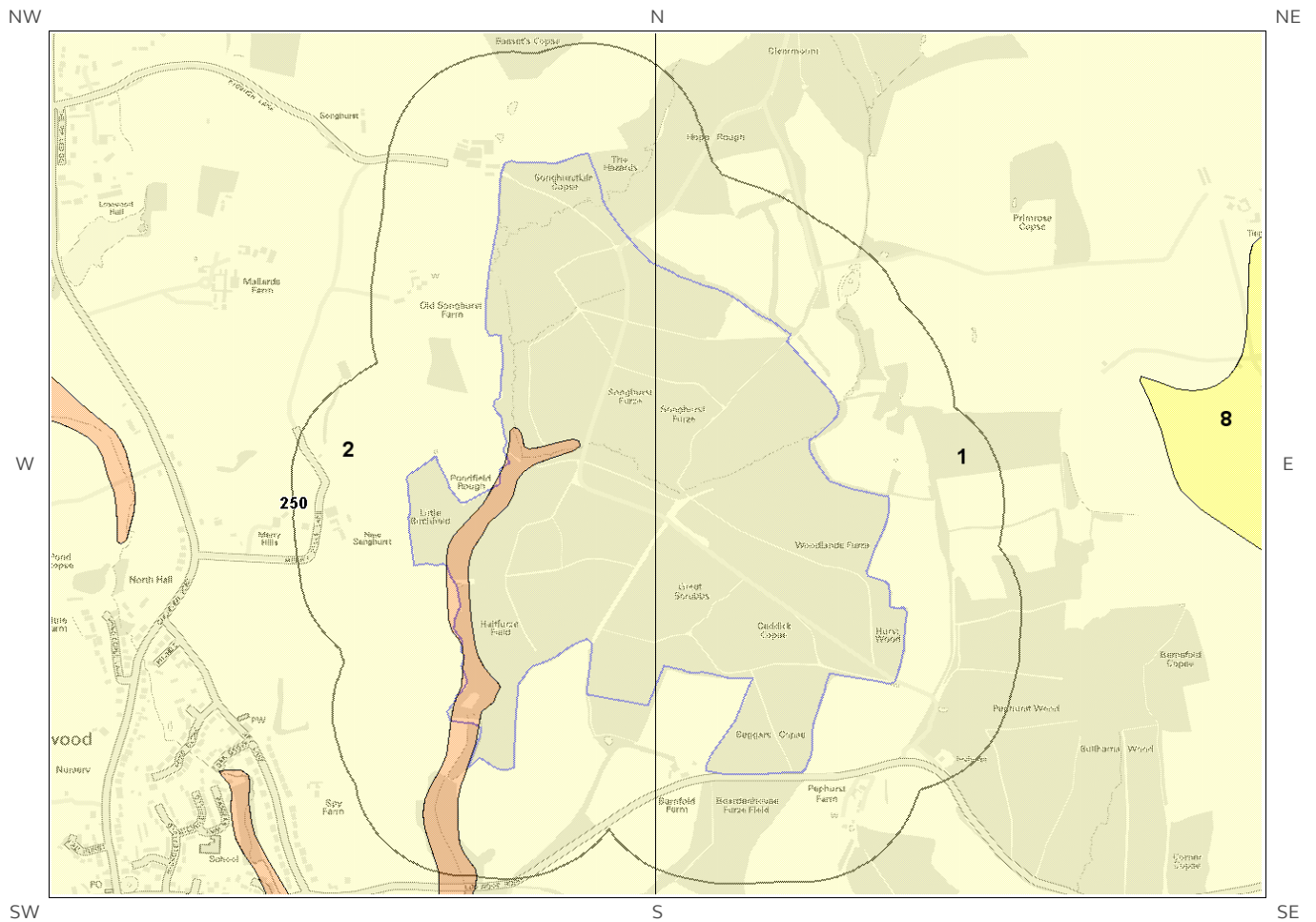
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## 4.6 Running Sand Map



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? **Moderate**

### 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	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.
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 due to potential problems with shrink-swell clays.
3	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.
4	23.0	SW	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.
5	34.0	E	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 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	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.
2	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 Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. 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.
2	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. 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 ground identified. No special actions required to avoid problems due to compressible ground. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible ground.
2	0.0	On Site	Negligible	No indicators for compressible ground identified. No special actions required to avoid problems due to compressible ground. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible ground.
3	0.0	On Site	Moderate	Significant potential for compressibility problems. Do not drain, load 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.

## 4.5 Collapsible Deposits

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

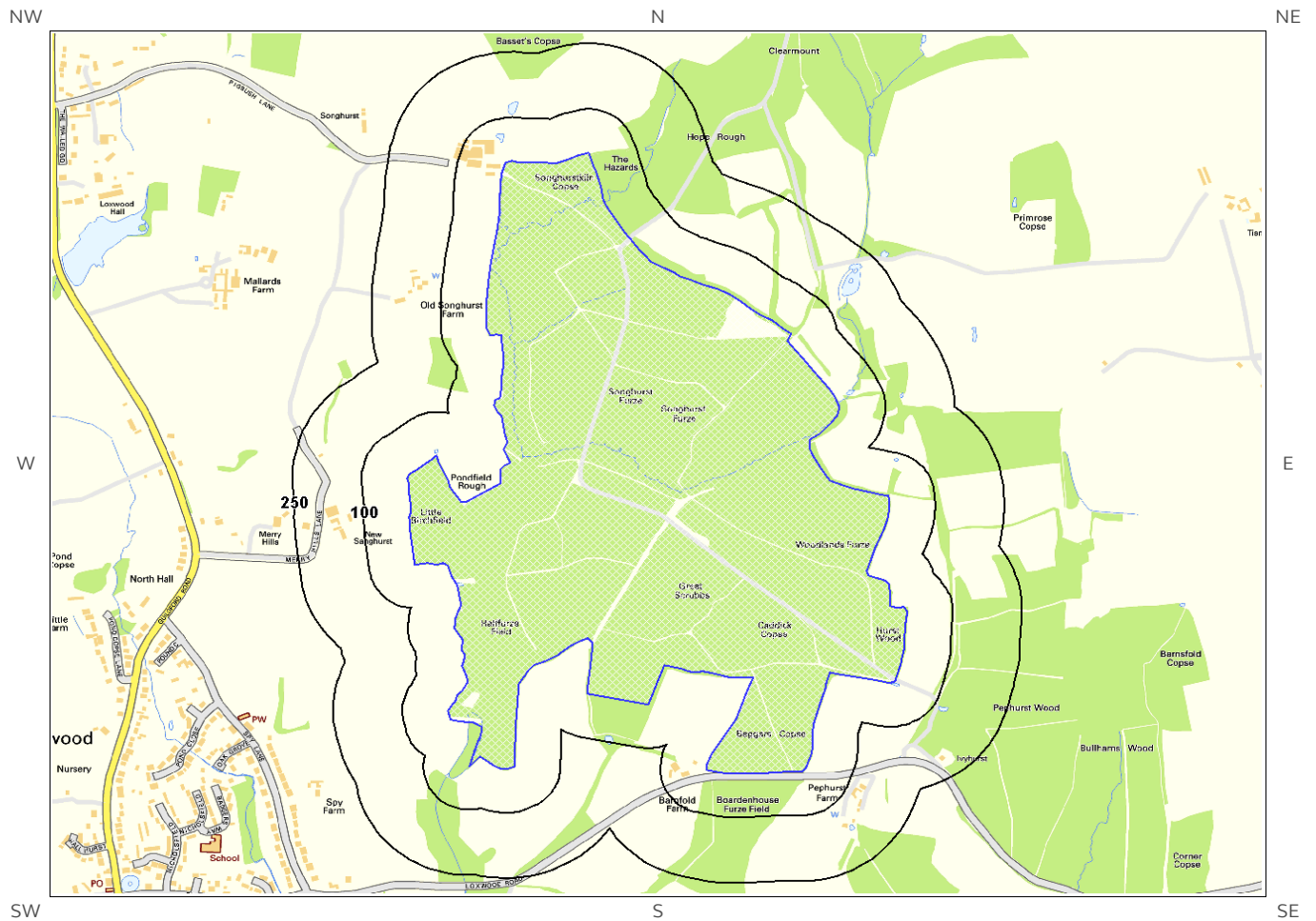
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	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.
3	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:

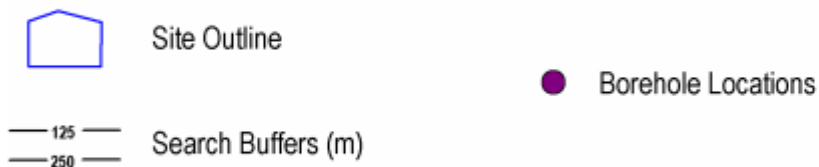
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	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.
3	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: 0

Database searched and no data found.

---

# 6 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

55

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
4.0	SW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
16.0	NW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
23.0	SW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
34.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
47.0	SW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
48.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
48.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
48.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
48.0	NE	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
49.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
58.0	S	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
65.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
76.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
76.0	E	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
79.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
93.0	N	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
93.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
102.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
118.0	SW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
130.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
151.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
151.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
159.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
175.0	SW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
182.0	N	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
205.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
205.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
238.0	NE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
244.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
247.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 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

## 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? No

Have any historical railway or tunnel features 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.*

---

### 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 1 .

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 1 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 1 Report.*

---

Crossrail route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

# Contact Details



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**CENTREMAPS**  
Telephone: 01886 832972  
Groundsure@centremaps.co.uk



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## British Geological Survey Enquiries

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Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)



**British Geological Survey**  
NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS Geological Hazards Reports and general geological enquiries

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**The Coal Authority**

---

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**Public Health England**

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CENTREMAPS

Open Space, Upper Interfields,  
Worcester, WR14 1UT

Groundsure      CMAPS-AAC-589029-38143-  
Reference:      060117EDR

Your Reference:    38143

Report Date      6 Jan 2017

Report Delivery    Email - pdf  
Method:

## Groundsure Enviro Insight

Address: Loxwood (Chichester), RH14 0RW

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.  
Groundsure Enviroinsight



# Groundsure Enviro Insight

Address: Loxwood (Chichester), RH14 0RW  
Date: 6 Jan 2017  
Reference: CMAPS-AAC-589029-38143-060117EDR  
Client: CENTREMAPS



Aerial Photograph Capture date: 30-Jun-2015  
Grid Reference: 505001,132479  
Site Size: 87.48ha

Report Reference: CMAPS-AAC-589029-38143-060117EDR  
Client Reference: 38143



# Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	12
1.3 Additional Information – Historical Energy Features Database	13
1.4 Additional Information – Historical Petrol and Fuel Site Database	13
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	13
1.6 Potentially Infilled Land	13
2. Environmental Permits, Incidents and Registers Map	15
2. Environmental Permits, Incidents and Registers	16
2.1 Industrial Sites Holding Licences and/or Authorisations	16
2.1.1 Records of historic IPC Authorisations within 500m of the study site	16
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	16
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	16
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	16
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	16
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	17
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	17
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	17
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	18
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	18
2.2 Dangerous or Hazardous Sites	18
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents	18
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	18
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	19
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	19
3. Landfill and Other Waste Sites Map	20
3. Landfill and Other Waste Sites	21
3.1 Landfill Sites	21
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site	21
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site	21
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	21
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	21
3.2 Other Waste Sites	21
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	21
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site	22
4. Current Land Use Map	23
4. Current Land Uses	24
4.1 Current Industrial Data	24
4.2 Petrol and Fuel Sites	24
4.3 National Grid High Voltage Underground Electricity Transmission Cables	24
4.4 National Grid High Pressure Gas Transmission Pipelines	25

5. Geology	26
5.1 Artificial Ground and Made Ground.....	26
5.2 Superficial Ground and Drift Geology .....	26
5.3 Bedrock and Solid Geology .....	26
6 Hydrogeology and Hydrology	27
6a. Aquifer Within Superficial Geology	27
6b. Aquifer Within Bedrock Geology and Abstraction Licences	28
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences	29
6d. Hydrogeology – Source Protection Zones within confined aquifer	30
6e. Hydrology – Detailed River Network and River Quality	31
6.Hydrogeology and Hydrology	32
6.1 Aquifer within Superficial Deposits.....	32
6.2 Aquifer within Bedrock Deposits.....	32
6.3 Groundwater Abstraction Licences.....	33
6.4 Surface Water Abstraction Licences.....	34
6.5 Potable Water Abstraction Licences.....	35
6.6 Source Protection Zones.....	35
6.7 Source Protection Zones within Confined Aquifer.....	35
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	36
6.9 River Quality.....	36
6.9.1 Biological Quality:.....	36
6.9.2 Chemical Quality:.....	37
6.10 Detailed River Network.....	37
6.11 Surface Water Features.....	39
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)	40
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS)	41
Map	41
7 Flooding	42
7.1 River and Coastal Zone 2 Flooding.....	42
7.2 River and Coastal Zone 3 Flooding.....	42
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	42
7.4 Flood Defences.....	42
7.5 Areas benefiting from Flood Defences.....	42
7.6 Areas benefiting from Flood Storage.....	43
7.7 Groundwater Flooding Susceptibility Areas.....	43
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes.....	43
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?.....	43
7.8 Groundwater Flooding Confidence Areas.....	43
8. Designated Environmentally Sensitive Sites Map	44
8. Designated Environmentally Sensitive Sites	45
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	45
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	45
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	45
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	45
8.5 Records of Ramsar sites within 2000m of the study site:.....	45
8.6 Records of Ancient Woodland within 2000m of the study site: .....	46
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	50
8.8 Records of World Heritage Sites within 2000m of the study site:.....	50
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site: .....	50

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: .....	50
8.11 Records of National Parks (NP) within 2000m of the study site: .....	51
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	51
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	51
8.14 Records of Green Belt land within 2000m of the study site:.....	51
<b>9. Natural Hazards Findings</b>	<b>52</b>
9.1 Detailed BGS GeoSure Data.....	52
9.1.1 Shrink Swell.....	52
9.1.2 Landslides.....	52
9.1.3 Soluble Rocks.....	52
9.1.4 Compressible Ground.....	53
9.1.5 Collapsible Rocks.....	53
9.1.6 Running Sand.....	53
9.2 Radon.....	53
9.2.1 Radon Affected Areas.....	53
9.2.2 Radon Protection.....	54
<b>10. Mining</b>	<b>55</b>
10.1 Coal Mining.....	55
10.2 Non-Coal Mining.....	55
10.3 Brine Affected Areas .....	55
<b>Contact Details</b>	<b>56</b>
<b>Standard Terms and Conditions</b>	<b>58</b>

# Overview of Findings

For further details on each dataset, please refer to each individual section in the main 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: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	1	0	23	3
1.2 Additional Information – Historical Tank Database	0	0	1	2
1.3 Additional Information – Historical Energy Features Database	0	0	0	2
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	7	0	22	9

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	4	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	1	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology				0-500m		
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?				Yes		
6.2 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
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	5
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	2	1	Not searched	Not searched

## Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	Yes	No
6.10 Detailed River Network entries within 500m of the site	10	4	6	8	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

## Section 7: Flooding

7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No					
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No					
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low					
7.4 Are there any Flood Defences within 250m of the study site?	No					
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No					
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No					
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface					
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderate					

## Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	11	2	8	6	19	49
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	2
8.14 Records of Green Belt land	0	0	0	0	0	0

## Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Moderate
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Moderate
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Low
9.2 Radon	
9.2.1 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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 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?	No radon protective measures are necessary.

## Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	Yes
10.3 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. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

## 2. 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.

## 3. 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.

## 4. 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 gas pipelines and underground electricity transmission lines.

## 5. Geology

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

## 6. 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.

## 7. Flooding

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

## 8. 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.

## 9. 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 and radon..

## 10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

## 11. 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.

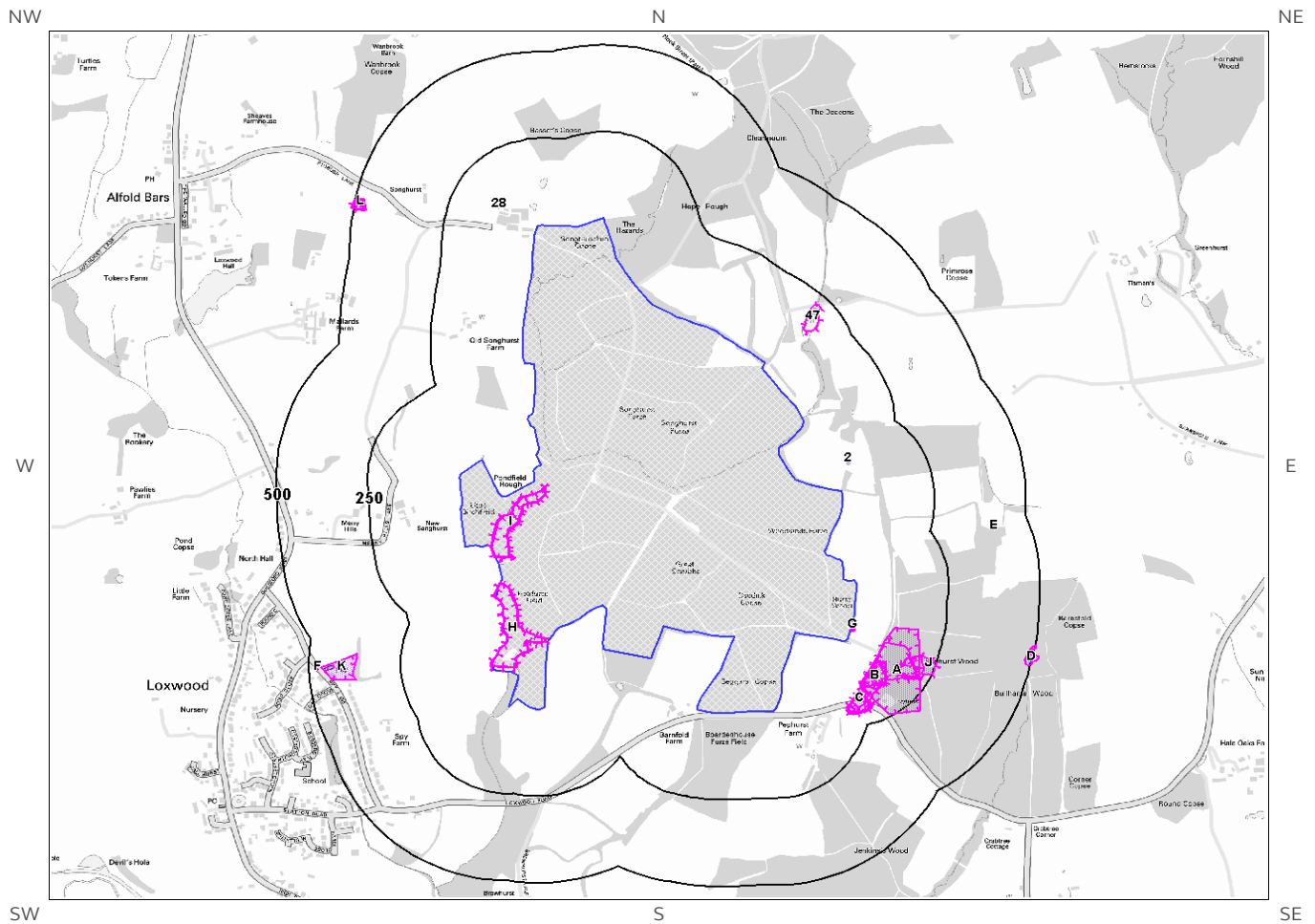
## Note: Maps

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. Historical Land Use



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Historical 1:10,000 and 1:10,560 scale mapping



Site Outline



Industrial Land Use



Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping



Search Buffers (m)



Energy Features



Petrol Stations



Tanks



Garages

# 1. Historical Industrial Sites

## 1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 27

ID	Distance [m]	Direction	Use	Date
1G	0	On Site	Saw Pit	1876
2	82	N	Unspecified Tank	1979
3A	94	SE	Brick Works	1920
4B	95	SE	Bricks Works	1876
5A	95	E	Brick Works	1914
6B	98	SE	Brick Works	1895
7B	98	SE	Brick Works	1914
8B	98	SE	Brick Works	1914
9B	99	SE	Brick Works	1895
10B	116	SE	Unspecified Kiln	1876
11C	153	S	Unspecified Pit	1876
12A	155	SE	Unspecified Pit	1914
13A	155	SE	Unspecified Pit	1920
14A	156	SE	Unspecified Pit	1914
15A	156	SE	Unspecified Pit	1914
16A	157	SE	Unspecified Pit	1956
17C	157	S	Unspecified Pit	1920
18C	157	S	Clay Pit	1895
19C	158	S	Clay Pit	1895
20C	158	S	Unspecified Pit	1914
21C	159	S	Unspecified Pit	1914
22C	159	S	Unspecified Pit	1914
23C	159	S	Unspecified Pit	1956
24J	202	E	Clay Pit	1895
25K	369	W	Grave Yard	1876
26D	482	E	Sand Pit	1956
27D	488	E	Sand Pit	1895

## 1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

3

ID	Distance (m)	Direction	Use	Date
28	116	NW	Unspecified Tank	1973
29E	403	NE	Unspecified Tank	1996
30E	403	NE	Unspecified Tank	1973

### 1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

2

ID	Distance (m)	Direction	Use	Date
31F	475	W	Electricity Substation	1996
32F	475	W	Electricity Substation	1973

### 1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

### 1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

0

Database searched and no data found.

### 1.6 Potentially Infilled Land

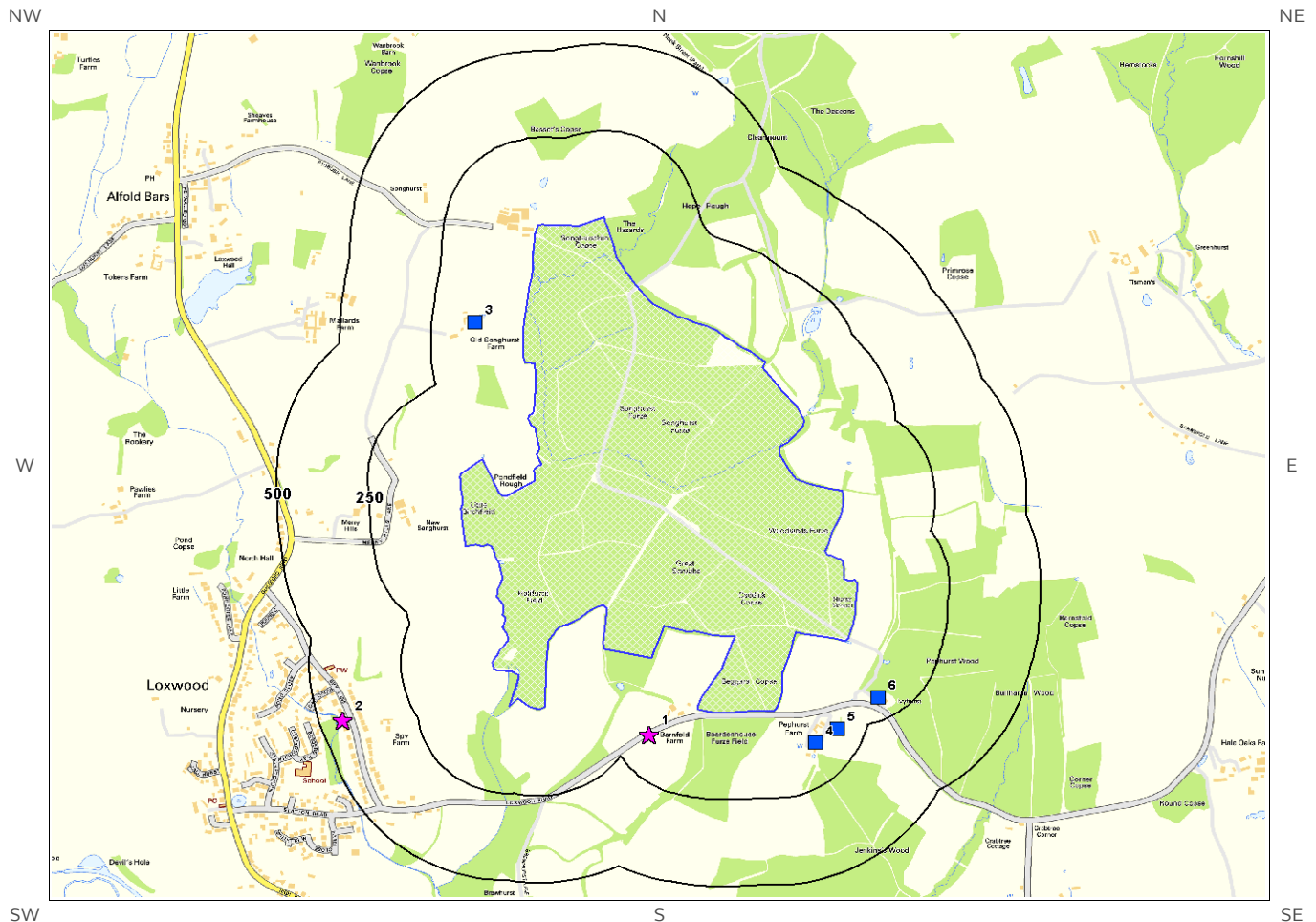
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site:

38

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
33G	0	On Site	Saw Pit	1876
34H	0	On Site	Fish Pond	1920
35H	0	On Site	Fish Pond	1914
36I	0	On Site	Fish Pond	1914
37I	0	On Site	Fish Pond	1920
38I	0	On Site	Fish Pond	1914
39H	0	On Site	Fish Pond	1914
40A	94	SE	Brick Works	1920
41B	95	SE	Bricks Works	1876
42A	95	E	Brick Works	1914
43B	98	SE	Brick Works	1895
44B	98	SE	Brick Works	1914
45B	98	SE	Brick Works	1914
46B	99	SE	Brick Works	1895
47	143	NE	Pond	1979
48C	153	S	Unspecified Pit	1876
49J	155	SE	Unspecified Pit	1914
50A	155	SE	Unspecified Pit	1920
51A	156	SE	Unspecified Pit	1914
52A	156	SE	Unspecified Pit	1914
53A	157	SE	Unspecified Pit	1956
54C	157	S	Clay Pit	1895
55C	157	S	Unspecified Pit	1920
56C	158	S	Clay Pit	1895
57C	158	S	Unspecified Pit	1914
58C	159	S	Unspecified Pit	1914
59C	159	S	Unspecified Pit	1914
60C	159	S	Unspecified Pit	1956
61J	202	E	Clay Pit	1895
62K	369	W	Grave Yard	1876
63L	469	W	Pond	1895
64L	469	W	Pond	1920
65L	469	W	Pond	1876
66L	469	W	Pond	1895
67L	474	W	Pond	1946
68L	474	W	Pond	1910
69D	482	E	Sand Pit	1956
70D	488	E	Sand Pit	1895

## 2. Environmental Permits, Incidents and Registers Map



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

## 2. Environmental Permits, Incidents and Registers

### 2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

#### 2.1.3 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.

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---



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

0

Database searched and no data found.

## 2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

4

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

ID	Distance (m)	Direction	NGR	Details
3	135	W	504500 132890	<p>Address: THE GRANARY, THE GRANARY, OLD SONGHURST FARM, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P05078</p> <p>Permit Version: 1</p> <p>Receiving Water: INTO LAND</p> <p>Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY)</p> <p>Issue date: 15/10/1993</p> <p>Effective Date: 15-Oct-1993</p> <p>Revocation Date: -</p>
4	144	SE	505430 131680	<p>Address: BOARDENHOUSE BARN, BOARDENHOUSE BARN, LOXWOOD ROAD, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P05642</p> <p>Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER</p> <p>Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY)</p> <p>Issue date: 25/01/1995</p> <p>Effective Date: 25-Jan-1995</p> <p>Revocation Date: -</p>
5	175	E	505490 131720	<p>Address: PEPHURST FARM, PEPHURST FARM, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P07950</p> <p>Permit Version: 1</p> <p>Receiving Water: FRESHWATER RIVER</p> <p>Status: NEW CONSENT (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995)</p> <p>Issue date: 03/12/1999</p> <p>Effective Date: 03-Dec-1999</p> <p>Revocation Date: -</p>
6	186	SE	505600 131810	<p>Address: IVYHURST, IVYHURST, LOXWOOD LANE, LOXWOOD, WEST SUSSEX</p> <p>Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY</p> <p>Permit Number: P05756</p> <p>Permit Version: 1</p> <p>Receiving Water: INTO LAND</p> <p>Status: POST NRA LEGISLATION WHERE ISSUE DATE &gt; 31-AUG-89 (HISTORIC ONLY)</p> <p>Issue date: 03/05/1995</p> <p>Effective Date: 03-May-1995</p> <p>Revocation Date: -</p>

### 2.1.9 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.

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

0

Database searched and no data found.

## 2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

## 2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

2

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

ID	Distance (m)	Direction	NGR	Details
1	153	SW	504975 131703	Incident Date: 08-Oct-2002 Incident Identification: 113372 Pollutant: Specific Waste Materials Pollutant Description: Household Waste Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2	440	W	504139 131743	Incident Date: 25-May-2003 Incident Identification: 160675 Pollutant: Other Pollutant Pollutant Description: Natural Ochre Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

0

Database searched and no data found.

---

## 2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

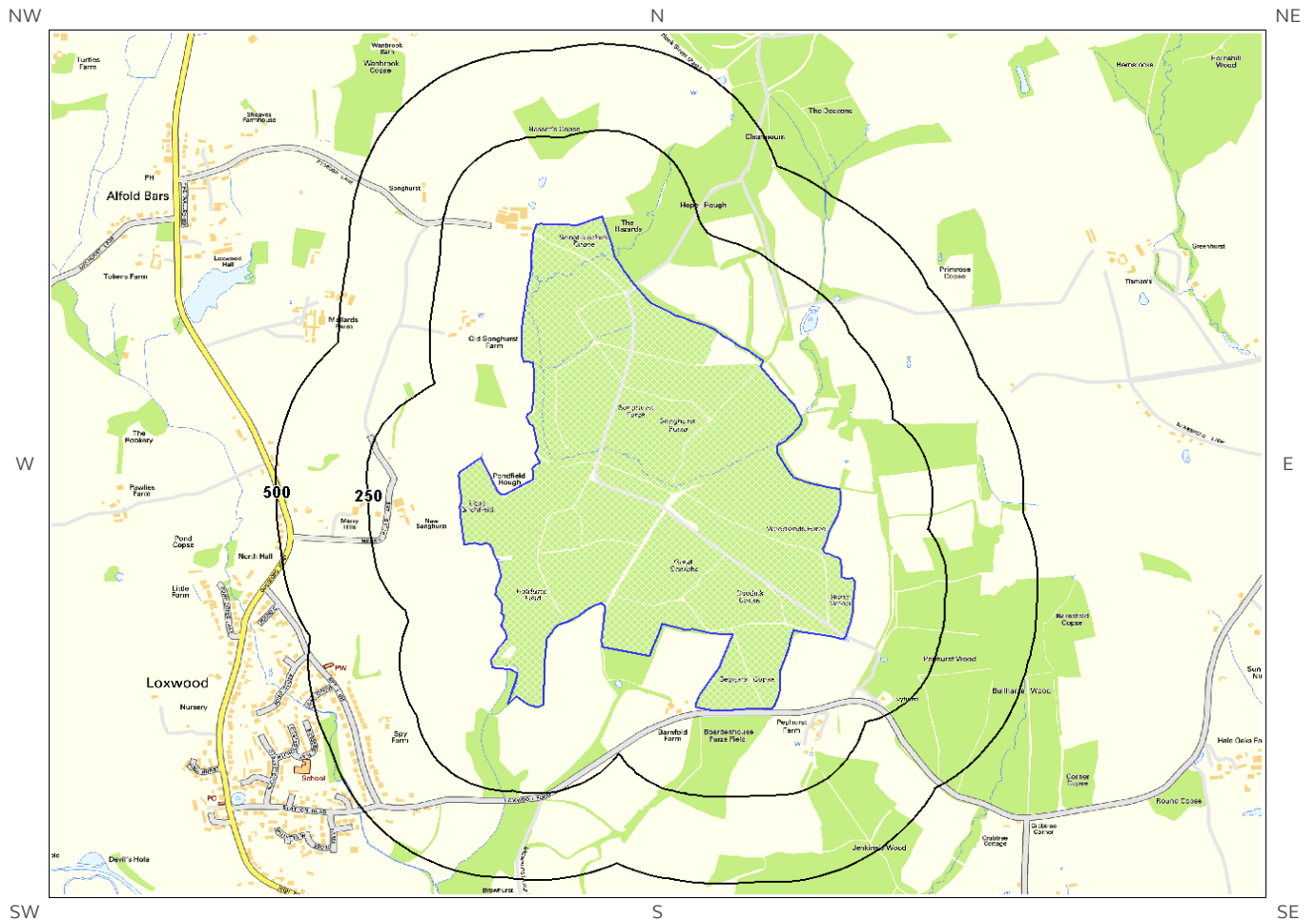
How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

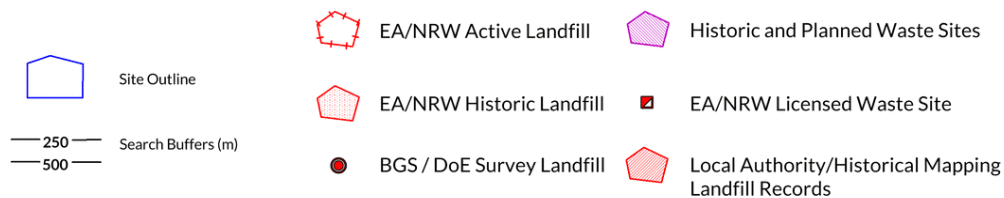
Database searched and no data found.

---

# 3. Landfill and Other Waste Sites Map



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# 3. Landfill and Other Waste Sites

## 3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

---

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

---

## 3.2 Other Waste Sites

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

0

Database searched and no data found.

---

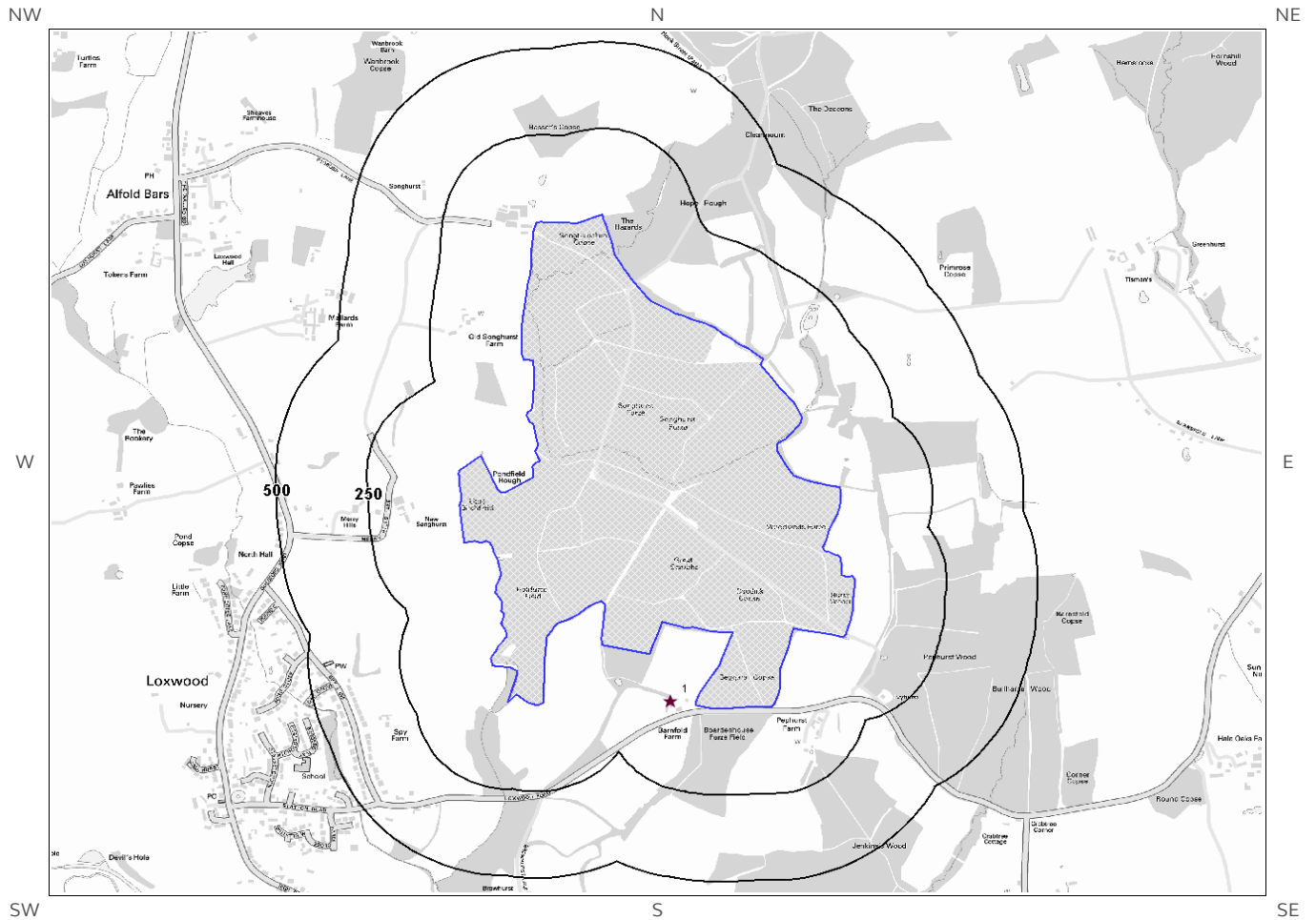
### 3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

---

# 4. Current Land Use Map



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Site Outline

★ Current Industrial Sites

— Electricity Transmission Cables

— 250 —  
— 500 — Search Buffers (m)

● Petrol & Fuel Sites

— Gas Transmission Pipelines



## 4. Current Land Uses

### 4.1 Current Industrial Data

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

1

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	72	W	Indigo Cabinets	505038 131788	Barnsfold Farm, Loxwood, Billingshurst, RH14 0RW	Furniture	Consumer Products

### 4.2 Petrol and Fuel Sites

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

0

Database searched and no data found.

### 4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

#### 4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

# 5. Geology

## 5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

---

## 5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
ALV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]

---

## 5.3 Bedrock and Solid Geology

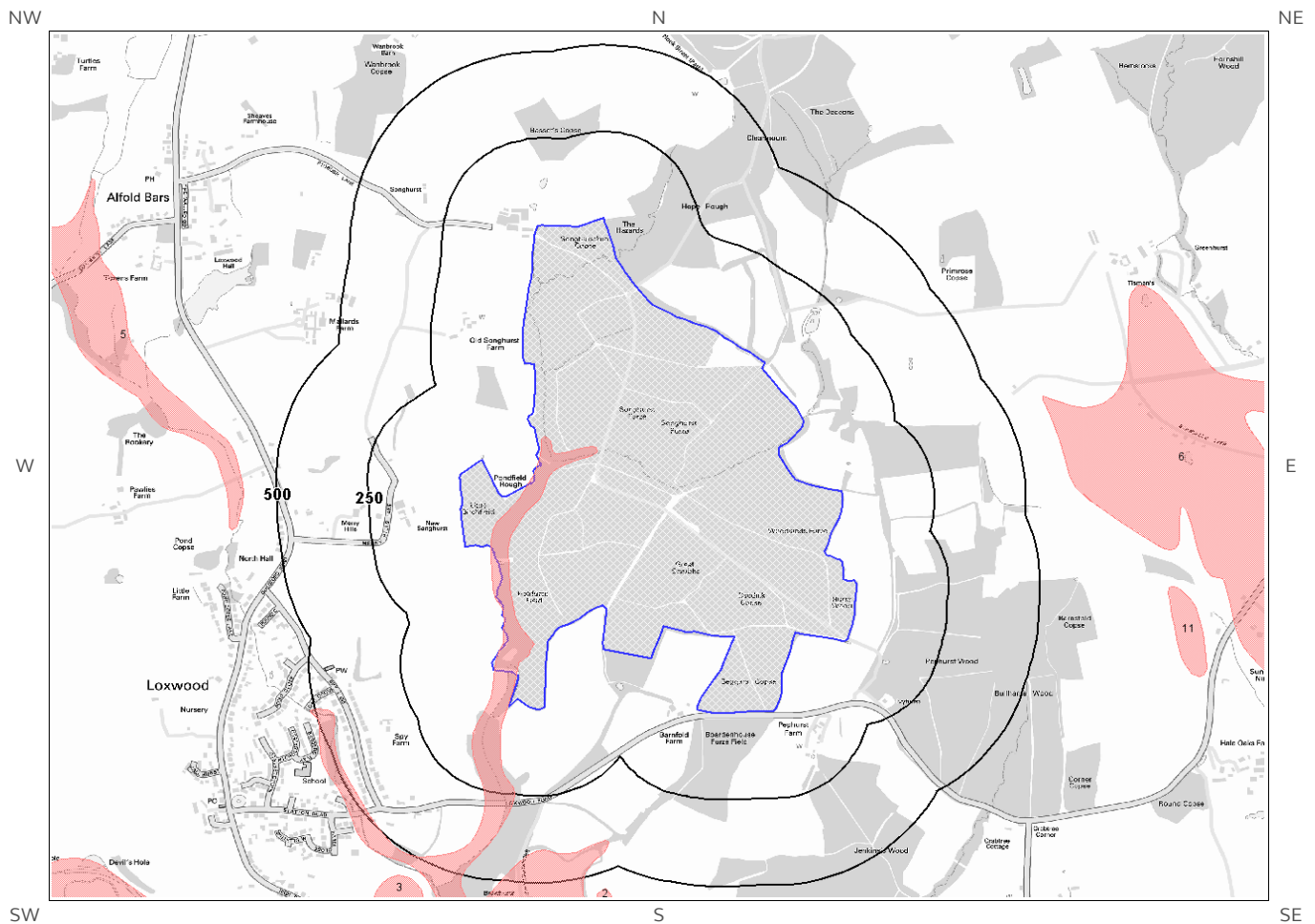
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
WC-SDST	WEALD CLAY FORMATION	SANDSTONE
WC-MDST	WEALD CLAY FORMATION	MUDSTONE
WC-SDST	WEALD CLAY FORMATION	SANDSTONE
WC-MDST	WEALD CLAY FORMATION	MUDSTONE

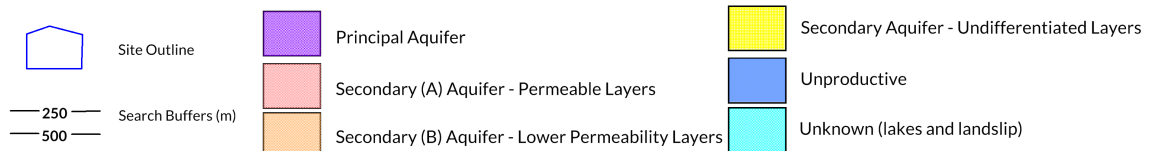
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

# 6 Hydrogeology and Hydrology

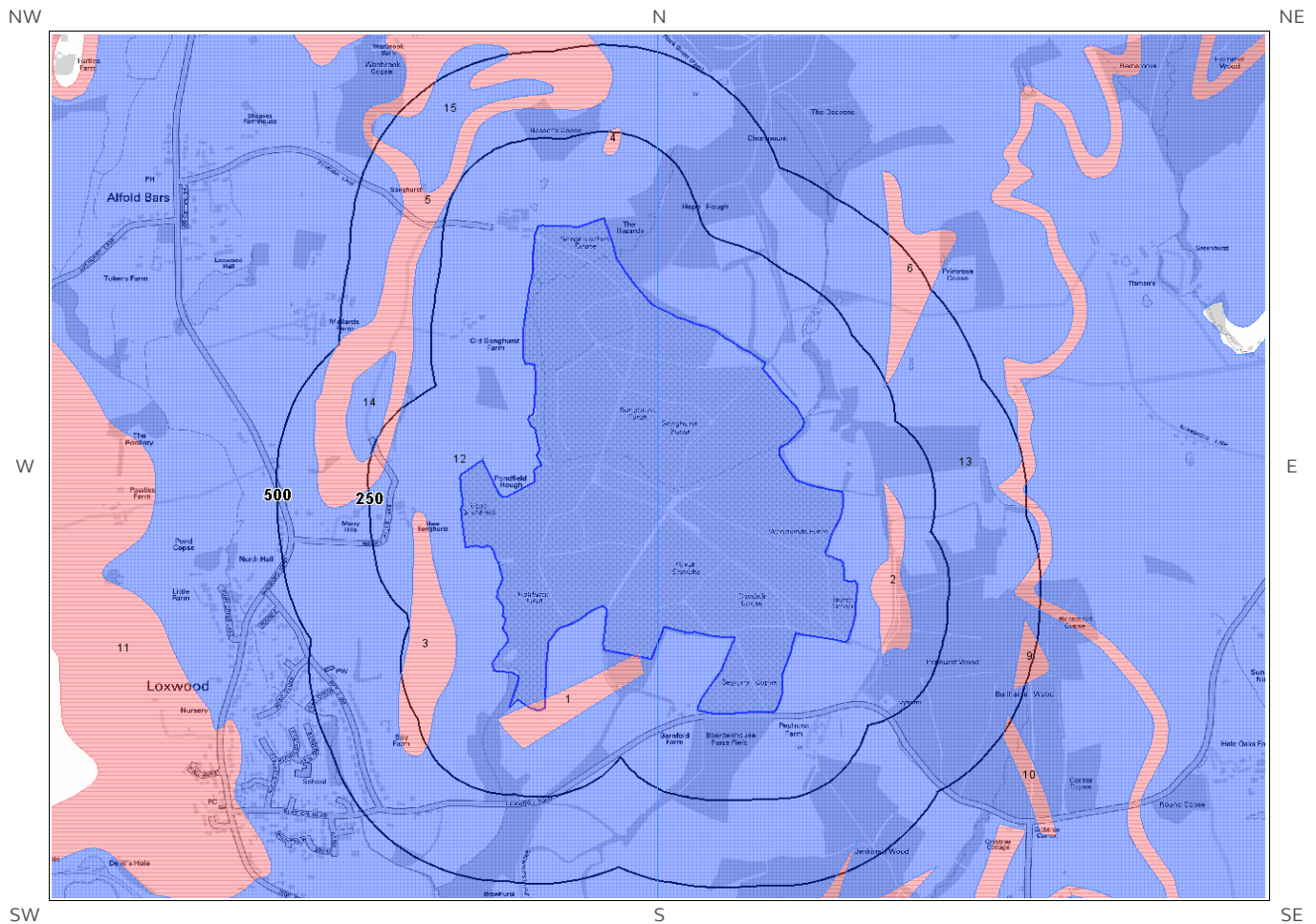
## 6a. Aquifer Within Superficial Geology



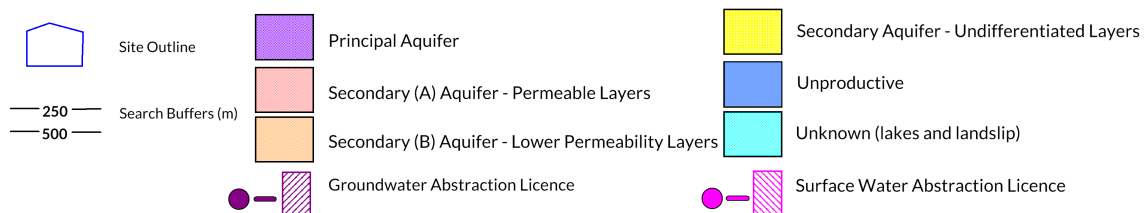
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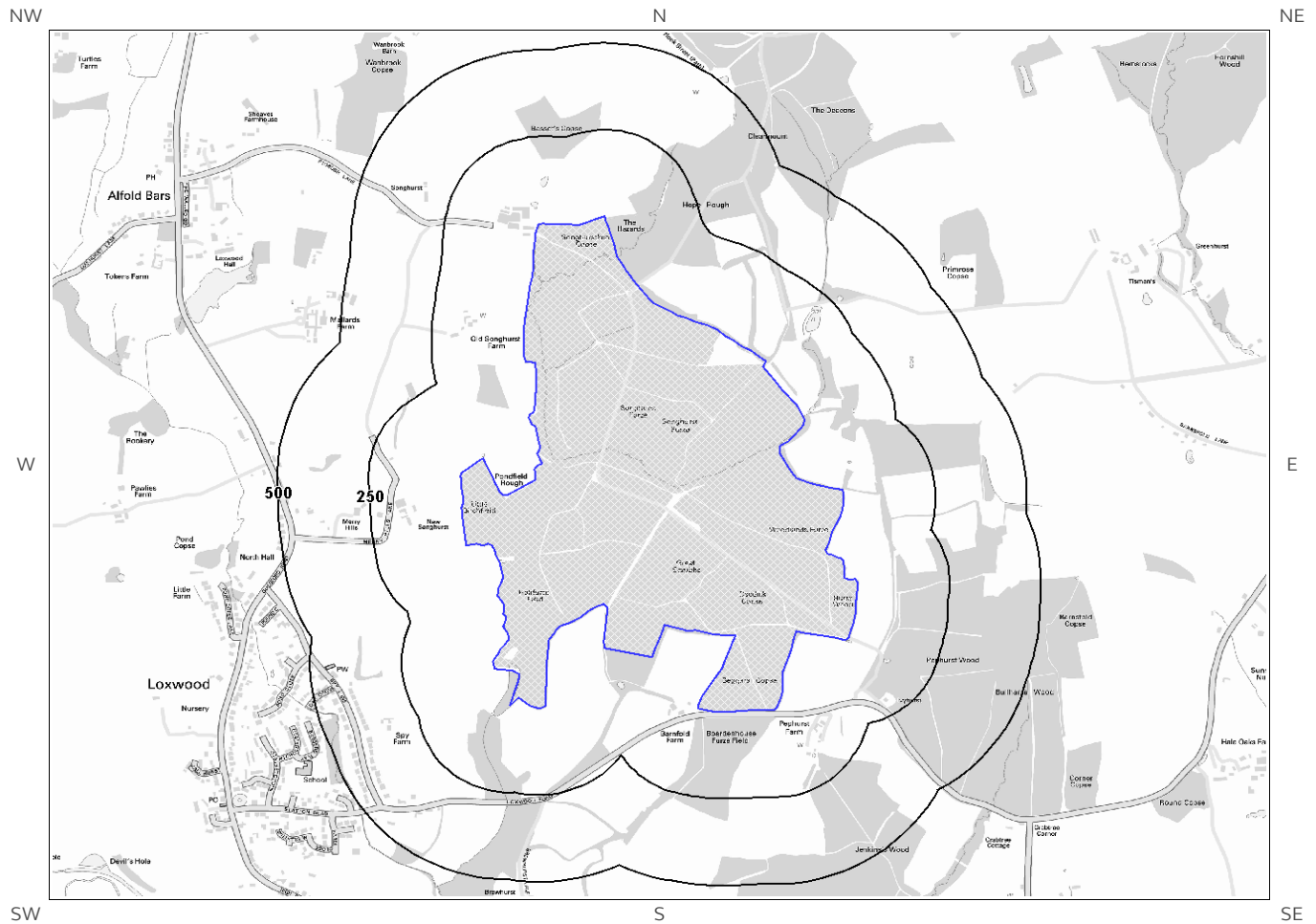
# 6b. Aquifer Within Bedrock Geology and Abstraction Licenses



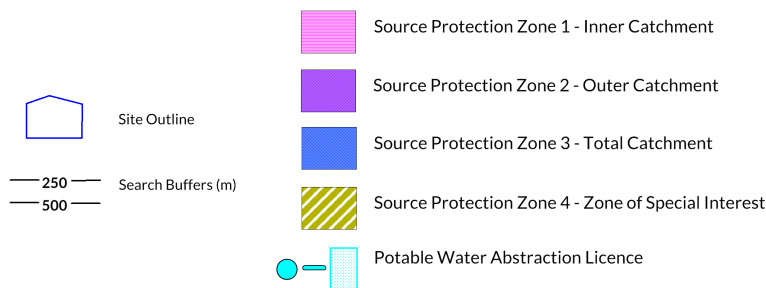
© Crown copyright and database rights 2017  
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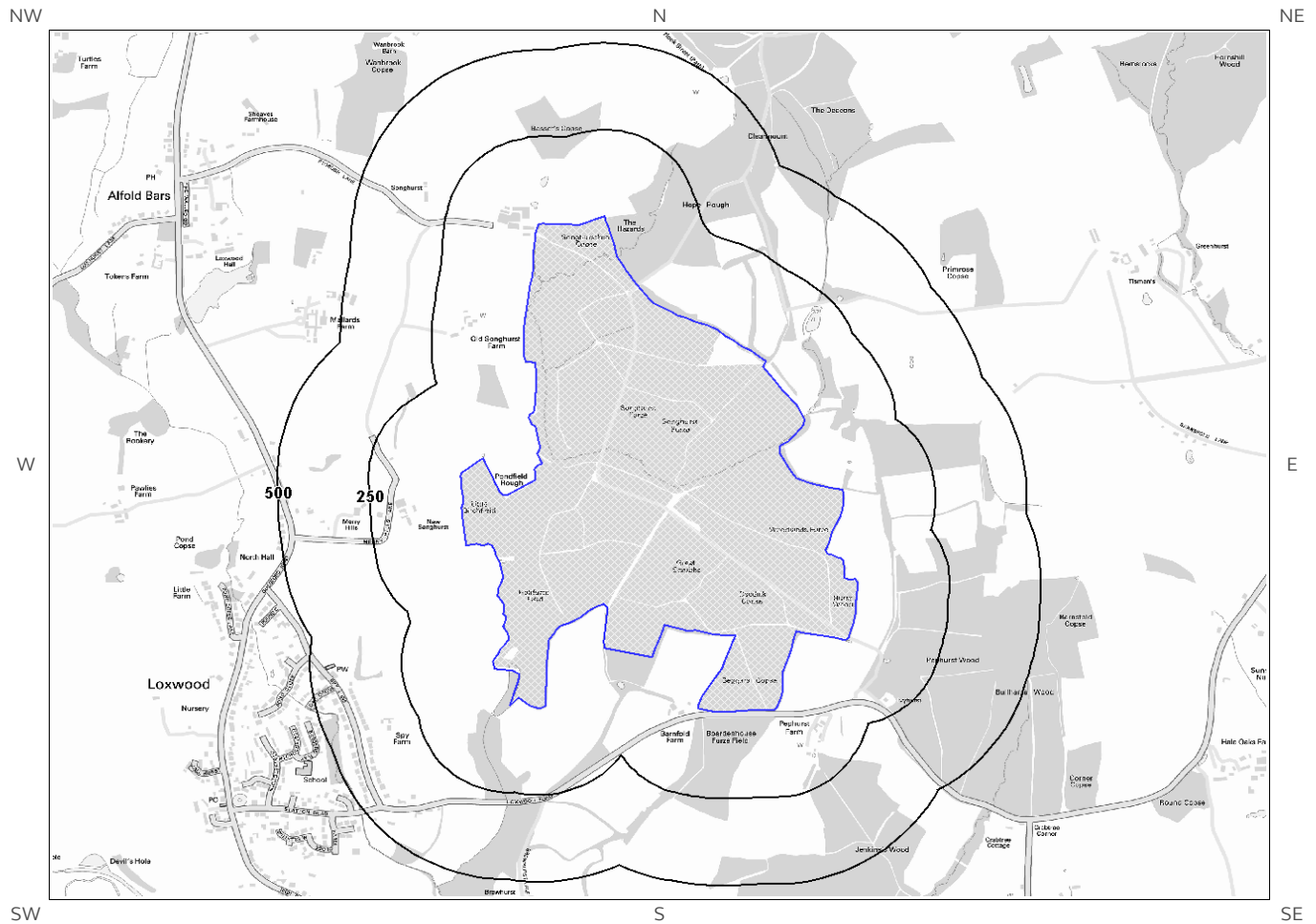
# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



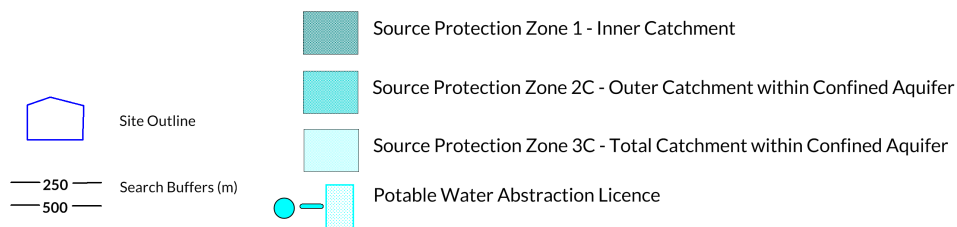
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# 6d. Hydrogeology – Source Protection Zones within confined aquifer

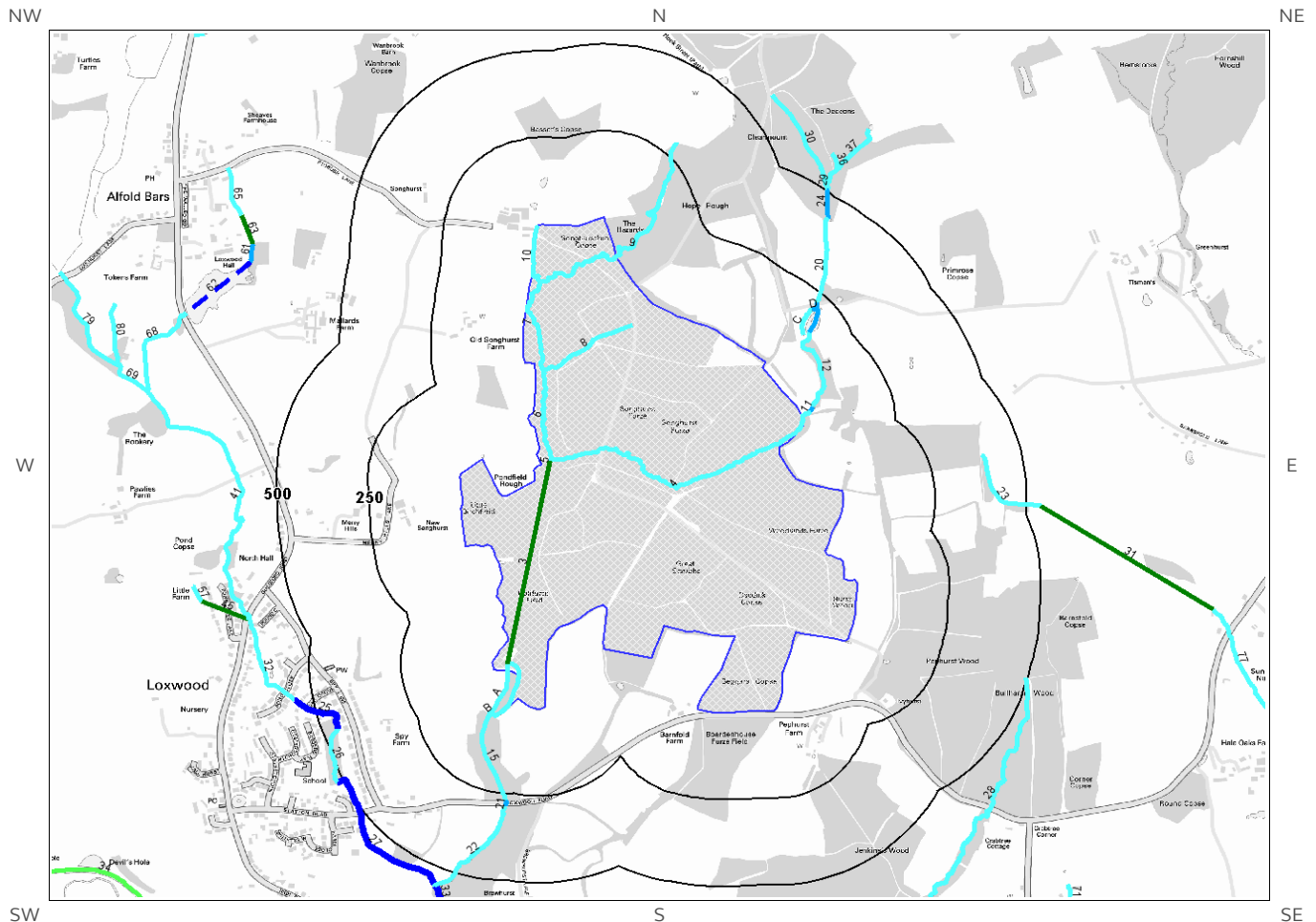


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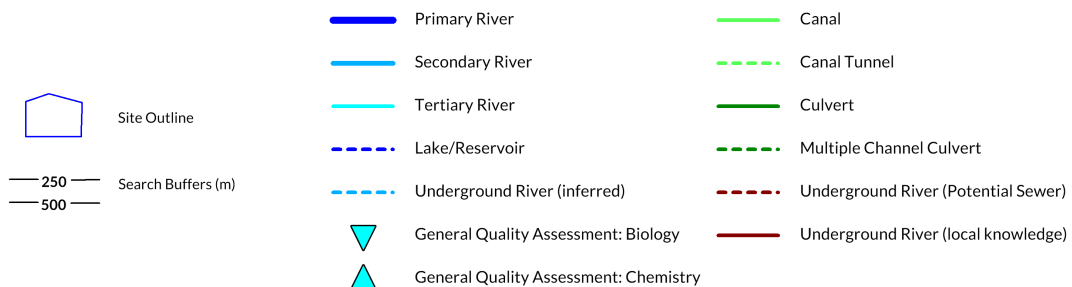




# 6e. Hydrology – Detailed River Network and River Quality



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# 6. Hydrogeology and Hydrology

## 6.1 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/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	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

## 6.2 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/Natural Resources Wales'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 Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	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
12	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
13	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
2	34	E	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	93	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	182	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	205	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Distance (m)	Direction	Designation	Description
6	238	NE	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
14	247	W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
15	288	NW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
7	421	E	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
8	435	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
9	456	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
10	482	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

## 6.3 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 (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1383	N	505300 134500	<p>Status: Historical Licence No: 28/39/30/0197 Details: General Farming &amp; Domestic Direct Source: Thames Groundwater Point: Pallinghurst Farm, Rudgwick Data Type: Point Name: R HARRISON &amp; SON</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Original Application No: WRA/2614 Original Start Date: 13/2/1967 Expiry Date: - Issue No: 100 Version Start Date: 13/2/1967 Version End Date:</p>

## 6.4 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 (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	901	S	504900 130900	<p>Status: Active Licence No: 25/080 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Loxwood Stream At Flitchfold Farm Data Type: Point Name: Wey &amp; Arun Canal Trust Ltd</p> <p>Annual Volume (m³): 136364 Max Daily Volume (m³): 1344 Application No: 169/1245 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 16/6/2009 Version End Date:</p>
Not shown	1736	SE	506600 130600	<p>Status: Historical Licence No: 10/41/423006 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Wisborough Green (point B) Data Type: Point Name: Wey &amp; Arun Canal Trust Ltd</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Application No: 169/0894 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 15/1/1991 Version End Date:</p>
Not shown	1811	SE	506568 130461	<p>Status: Active Licence No: 10/41/423006/R01 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Drungewick (point A) Data Type: Point Name: Wey &amp; Arun Canal Trust Ltd</p> <p>Annual Volume (m³): 45500 Max Daily Volume (m³): 682 Application No: NPS/WR/019136 Original Start Date: 1/4/2016 Expiry Date: 31/3/2028 Issue No: 1 Version Start Date: 1/4/2016 Version End Date:</p>
Not shown	1820	SE	506570 130450	<p>Status: Historical Licence No: 10/41/423006 Details: Make-Up Or Top Up Water Direct Source: Southern Region Surface Waters Point: Drungewick (point A) Data Type: Point Name: Wey &amp; Arun Canal Trust Ltd</p> <p>Annual Volume (m³): 45500 Max Daily Volume (m³): 682 Application No: 169/894 Original Start Date: 15/1/1991 Expiry Date: 31/3/2016 Issue No: 101 Version Start Date: 8/6/2009 Version End Date:</p>
Not shown	1902	E	507370 131530	<p>Status: Active Licence No: 10/41/425005 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: Gibbons Mill Farm, Billingshurst Data Type: Line Name: Adorian</p> <p>Annual Volume (m³): 18184 Max Daily Volume (m³): 363.7 Application No: WR.0182 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 8/6/2009 Version End Date:</p>
Not shown	1971	SE	507100 130800	<p>Status: Active Licence No: 25/078 Details: Hydroelectric Power Generation Direct Source: Southern Region Surface Waters Point: Mill Stream Of Arun Data Type: Point Name: Adorian</p> <p>Annual Volume (m³): 37843200 Max Daily Volume (m³): 103680 Application No: 25/078 Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 5/8/1992 Version End Date:</p>

## 6.5 Potable Water Abstraction Licences

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

No

Database searched and no data found.

---

## 6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

No

Database searched and no data found.

---

## 6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site?

No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

---

## 6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales 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/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.
120	NE	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.
219	W	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.
307	N	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.

## 6.9 River Quality

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

### 6.9.1 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 (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	877	S	504650 130900	River Name: Loxwood Stream Reach: R. Arun Conf - Loxwood Stw End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAH). 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 (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	844	SW	504100 131100	River Name: Loxwood Stream Reach: Loxwood Stw - Blacknest Farm End/Start of Stretch: Sample Point NGR	D	D	C	B	C
Not shown	877	S	504650 130900	River Name: Loxwood Stream Reach: Loxwood Stw - Blacknest Farm End/Start of Stretch: End of Stretch NGR	D	D	C	B	C

## 6.10 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 (6e):

ID	Distance (m)	Direction	Details	
1A	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
2A	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
3	0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
4	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
5	0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
6	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
7	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
8	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
9	0	On Site	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined



ID	Distance (m)	Direction	Details	
10	0	On Site	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
11	25	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
12	40	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
13B	48	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
14B	48	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
15	52	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
16C	130	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
17C	147	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
18D	196	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
19D	209	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
20	221	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
21	270	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
22	288	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
23	394	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
24	435	NE	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
25	450	W	River Name: Loxwood Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
26	460	W	River Name: Loxwood Stream Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
27	494	SW	River Name: Loxwood Stream Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
28	495	E	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined

## 6.11 Surface Water Features

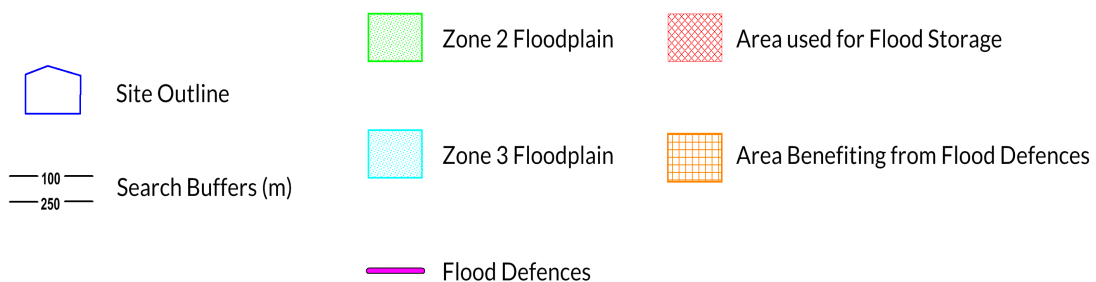
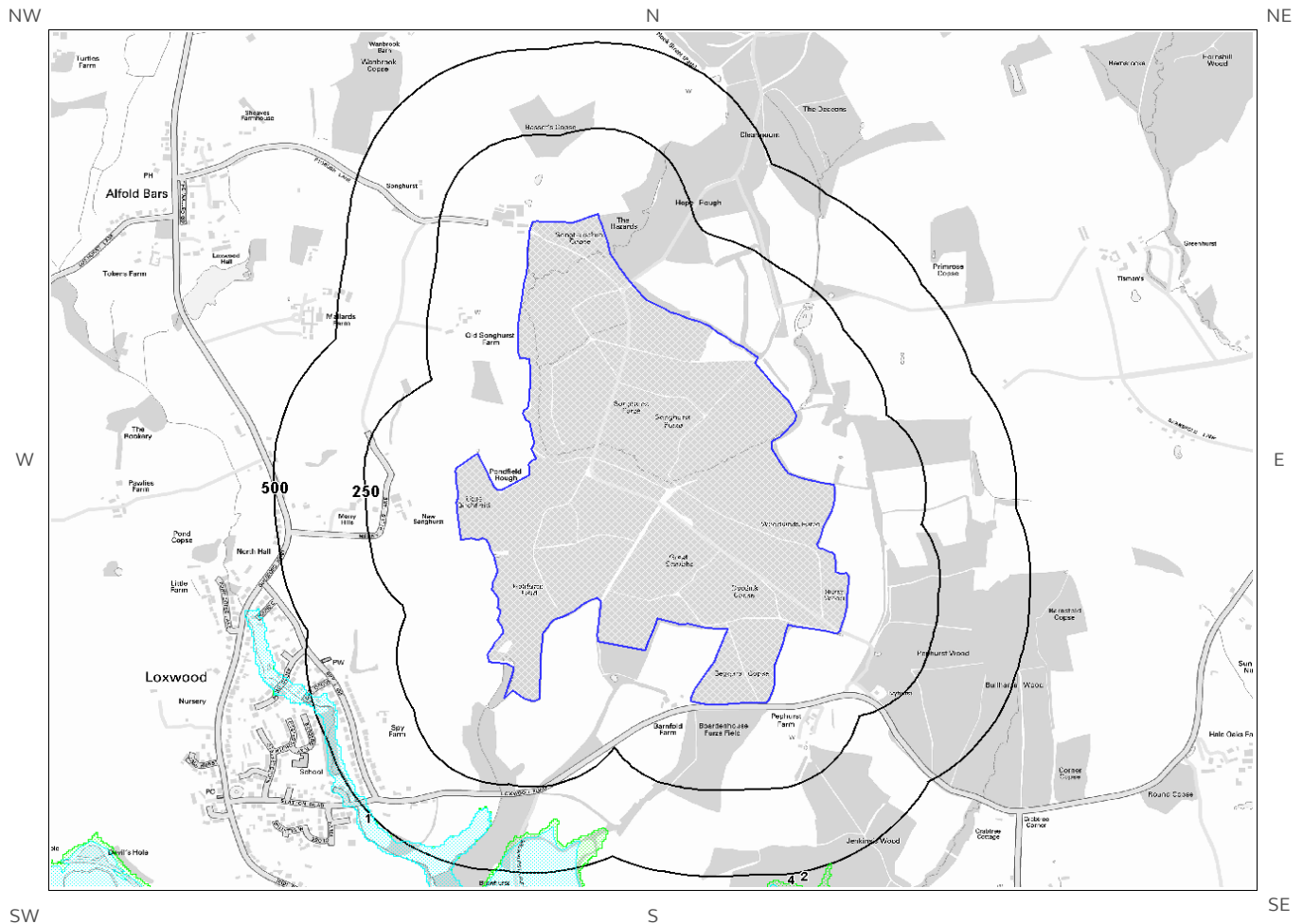
Are there any surface water features within 250m of the study site?

Yes

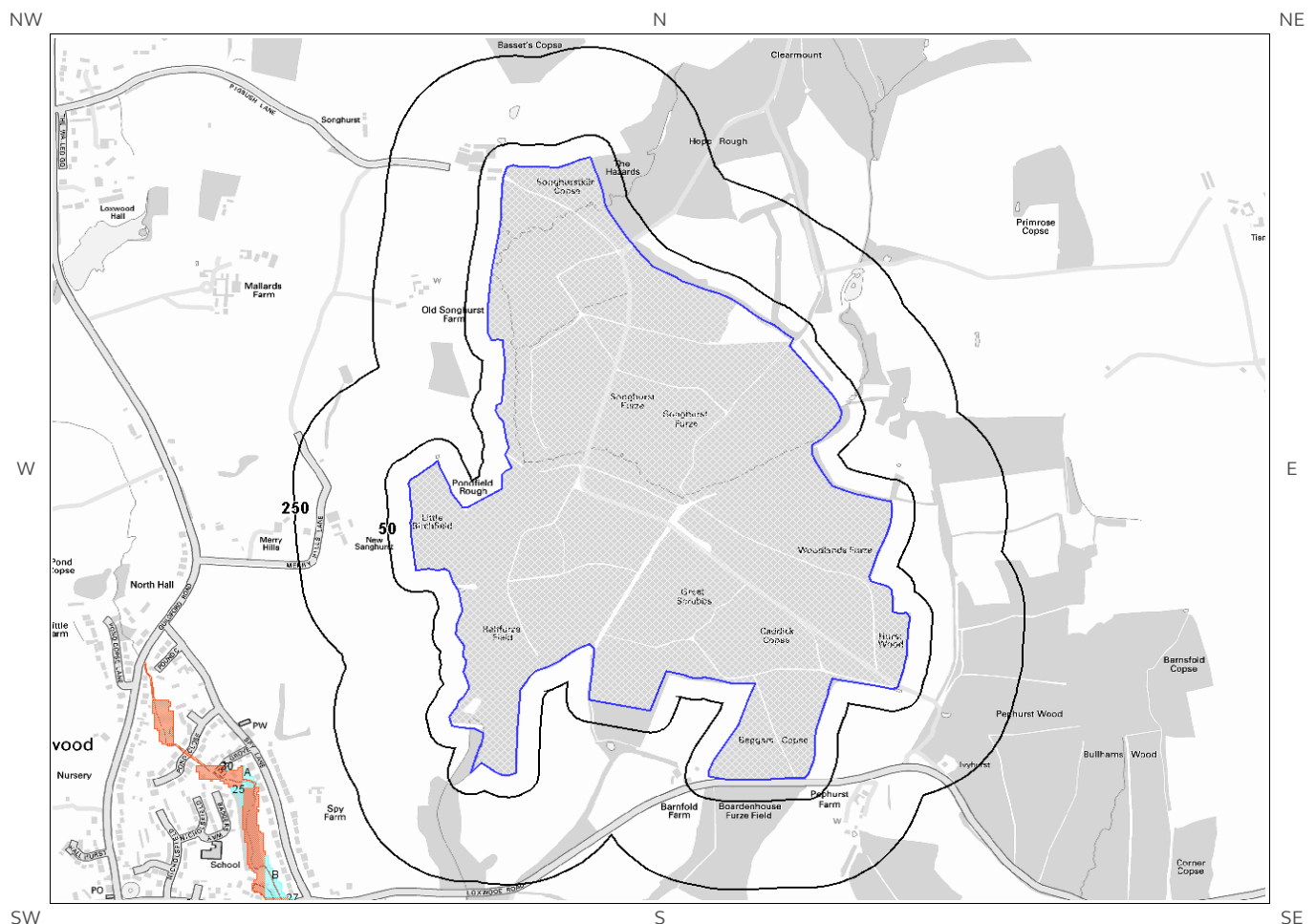
The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	W
5	E
10	SW
40	NE
47	W
47	W
55	SW
129	NE
142	NE
164	S
221	NE
248	NE

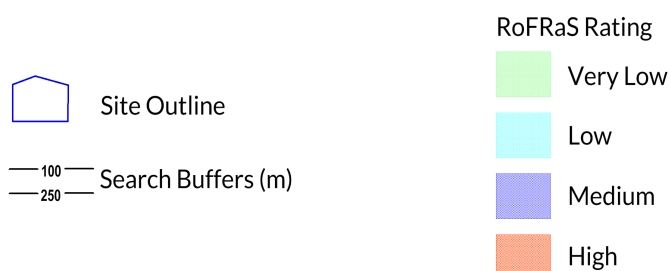
# 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

Environment Agency/Natural Resources Wales 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 7a – Flood Map for Planning:

Database searched and no data found.

## 7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

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 7a – Flood Map for Planning.

Database searched and no data found.

## 7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

## 7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No  
Database searched and no data found.

## 7.5 Areas benefiting from Flood Defences

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

## 7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

---

## 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 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).

---

7.7.2 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.

---

## 7.8 Groundwater Flooding Confidence Areas

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

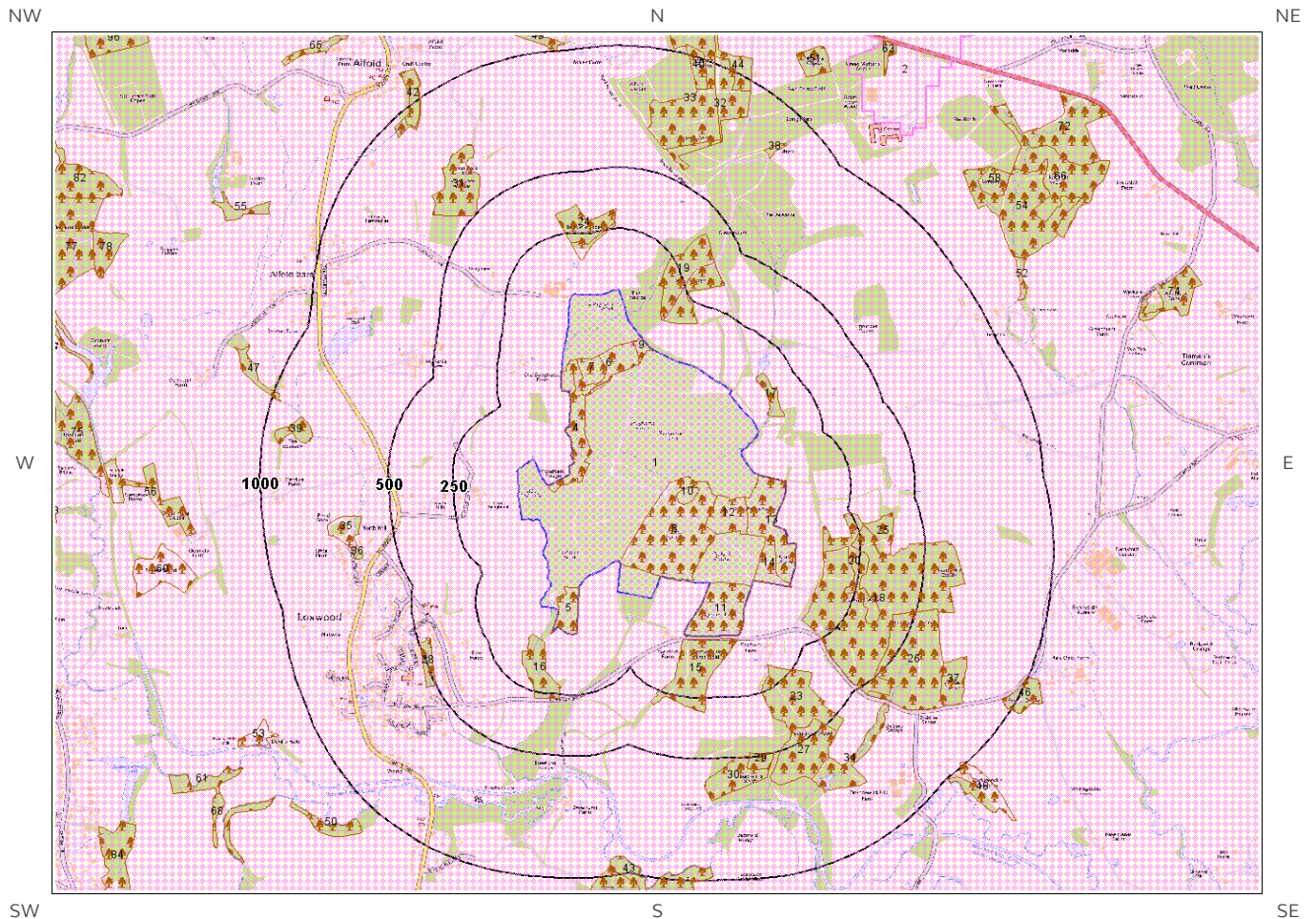
Moderate

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.

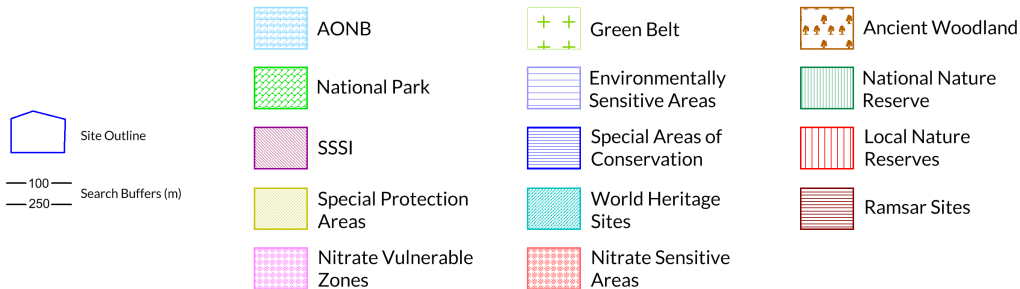
The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a 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.



# 8. Designated Environmentally Sensitive Sites Map



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## 8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?

Yes

---

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

0

Database searched and no data found.

---

### 8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

---

### 8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

---

## 8.6 Records of Ancient Woodland within 2000m of the study site:

95

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
4	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
5	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
6	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
7	0	On Site	UNKNOWN	Ancient Replanted Woodland
8	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
9	0	On Site	UNKNOWN	Ancient Replanted Woodland
10	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
11	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
12	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
13	0	On Site	UNKNOWN	Ancient and Semi-Natural Woodland
14	0	On Site	UNKNOWN	Ancient Replanted Woodland
15	8	S	UNKNOWN	Ancient and Semi-Natural Woodland
16	46	SW	UNKNOWN	Ancient Replanted Woodland
17	64	NE	UNKNOWN	Ancient and Semi-Natural Woodland
18	97	SE	UNKNOWN	Ancient and Semi-Natural Woodland
19	103	NE	UNKNOWN	Ancient and Semi-Natural Woodland
20	103	E	UNKNOWN	Ancient Replanted Woodland
21	108	NE	UNKNOWN	Ancient Replanted Woodland
22	141	N	UNKNOWN	Ancient and Semi-Natural Woodland
23	163	SE	UNKNOWN	Ancient and Semi-Natural Woodland
24	207	N	UNKNOWN	Ancient and Semi-Natural Woodland
25	273	E	UNKNOWN	Ancient and Semi-Natural Woodland
26	418	E	UNKNOWN	Ancient Replanted Woodland
27	434	SE	UNKNOWN	Ancient Replanted Woodland
28	451	W	UNKNOWN	Ancient and Semi-Natural Woodland
29	482	S	UNKNOWN	Ancient and Semi-Natural Woodland
30	495	S	UNKNOWN	Ancient Replanted Woodland
31	502	NW	UNKNOWN	Ancient and Semi-Natural Woodland
32	550	NE	UNKNOWN	Ancient Replanted Woodland
33	602	N	UNKNOWN	Ancient Replanted Woodland
34	603	SE	UNKNOWN	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
35	614	W	UNKNOWN	Ancient and Semi-Natural Woodland
36	633	W	UNKNOWN	Ancient and Semi-Natural Woodland
37	675	SE	UNKNOWN	Ancient and Semi-Natural Woodland
38	797	NE	UNKNOWN	Ancient and Semi-Natural Woodland
39	809	W	UNKNOWN	Ancient and Semi-Natural Woodland
40	876	N	UNKNOWN	Ancient and Semi-Natural Woodland
41	907	NW	UNKNOWN	Ancient and Semi-Natural Woodland
42	917	NW	UNKNOWN	Ancient and Semi-Natural Woodland
43	924	S	UNKNOWN	Ancient Replanted Woodland
44	929	NE	UNKNOWN	Ancient and Semi-Natural Woodland
45	937	S	UNKNOWN	Ancient and Semi-Natural Woodland
46	945	SE	UNKNOWN	Ancient and Semi-Natural Woodland
47	962	W	UNKNOWN	Ancient and Semi-Natural Woodland
48	982	SE	UNKNOWN	Ancient and Semi-Natural Woodland
49	996	N	UNKNOWN	Ancient and Semi-Natural Woodland
50	1078	SW	UNKNOWN	Ancient and Semi-Natural Woodland
51	1135	NE	UNKNOWN	Ancient and Semi-Natural Woodland
52	1139	NE	UNKNOWN	Ancient and Semi-Natural Woodland
53	1143	W	UNKNOWN	Ancient and Semi-Natural Woodland
54	1214	NE	UNKNOWN	Ancient and Semi-Natural Woodland
55	1224	W	UNKNOWN	Ancient and Semi-Natural Woodland
56	1265	W	UNKNOWN	Ancient and Semi-Natural Woodland
57	1269	SW	UNKNOWN	Ancient and Semi-Natural Woodland
58	1272	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1277	S	UNKNOWN	Ancient Replanted Woodland
60	1282	W	UNKNOWN	Ancient and Semi-Natural Woodland
61	1323	SW	UNKNOWN	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1348	S	UNKNOWN	Ancient Replanted Woodland
63	1354	NE	UNKNOWN	Ancient and Semi-Natural Woodland
64	1354	NE	UNKNOWN	Ancient and Semi-Natural Woodland
65	1372	NW	UNKNOWN	Ancient and Semi-Natural Woodland
66	1382	NE	UNKNOWN	Ancient Replanted Woodland
Not shown	1443	S	UNKNOWN	Ancient and Semi-Natural Woodland
68	1448	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1468	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1480	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1485	SE	UNKNOWN	Ancient and Semi-Natural Woodland
72	1525	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1525	S	UNKNOWN	Ancient and Semi-Natural Woodland
74	1526	NE	UNKNOWN	Ancient and Semi-Natural Woodland
75	1588	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1646	S	UNKNOWN	Ancient and Semi-Natural Woodland
77	1697	W	UNKNOWN	Ancient and Semi-Natural Woodland
78	1738	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1744	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1744	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1761	S	UNKNOWN	Ancient and Semi-Natural Woodland
82	1796	W	UNKNOWN	Ancient and Semi-Natural Woodland
83	1799	W	UNKNOWN	Ancient and Semi-Natural Woodland
84	1801	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1812	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1818	W	UNKNOWN	Ancient Replanted Woodland
Not shown	1823	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1832	NE	UNKNOWN	Ancient and Semi-Natural Woodland

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1838	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1844	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1878	E	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1879	NE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1886	S	UNKNOWN	Ancient Replanted Woodland
Not shown	1921	N	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1929	W	UNKNOWN	Ancient and Semi-Natural Woodland
96	1945	NW	UNKNOWN	Ancient Replanted Woodland
Not shown	1947	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1995	NE	UNKNOWN	Ancient and Semi-Natural Woodland

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

3

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA
2	1196	NE	Existing	DEFRA
Not shown	1767	S	Existing	DEFRA

### 8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.



# 9. Natural Hazards Findings

## 9.1 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 Geo Insight**, available from our **website**. The following information has been found:

### 9.1.1 Shrink Swell

What is the maximum Shrink-Swell\* 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
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

### 9.1.2 Landslides

What is the maximum Landslide\* 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
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.

### 9.1.3 Soluble Rocks

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

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

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. 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.

### 9.1.4 Compressible Ground

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

Moderate

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

Hazard
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.

### 9.1.5 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.

### 9.1.6 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.

## 9.2 Radon

### 9.2.1 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 not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

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? ☐ No radon protective measures are necessary.

# 10. Mining

## 10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

## 10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
0.0	On Site	Not available	Iron Ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

## 10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No  
Guidance: No Guidance Required.

# Contact Details

## CENTREMAPS

Telephone: 01886 832972  
Groundsure@centremaps.co.uk



## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email:

Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)



**British  
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

## Environment Agency

National Customer Contact Centre, PO Box 544  
Rotherham, S60 1BY  
Tel: 03708 506 506

Web: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)



## Public Health England

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
[www.gov.uk/phe](http://www.gov.uk/phe)

Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



Public Health  
England

## The Coal Authority

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



The Coal  
Authority

## Ordnance Survey

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505



## Local Authority

Authority: Chichester District Council  
Phone: 01243 785 166

Web: <http://www.chichester.gov.uk/>

Address: East Pallant House, 1 East Pallant, Chichester, West Sussex,

## 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, Natural England who retain the Copyright and Intellectual Property Rights for the data.

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<https://www.groundsure.com/terms-and-conditions-sept-2016>



## **APPENDIX B**

### **PHOTOGRAPHS**





**Photograph 1: Typical view of forestry area (eastern plot).**



**Photograph 2: Possible clay extraction "delve" in area of old brick works (eastern plot).**





**Photograph 3: Discarded waste – including unlabelled metal drums – near old brick works (eastern plot).**



**Photograph 4: Damaged culvert (western plot).**





**Photograph 5: Replanted forestry area (western plot).**



**Photograph 6: Main access track through woodland (western plot).**



## **APPENDIX C**

### **HISTORICAL MAPS**





#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:10,560

**Printed at:** 1:10,560



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



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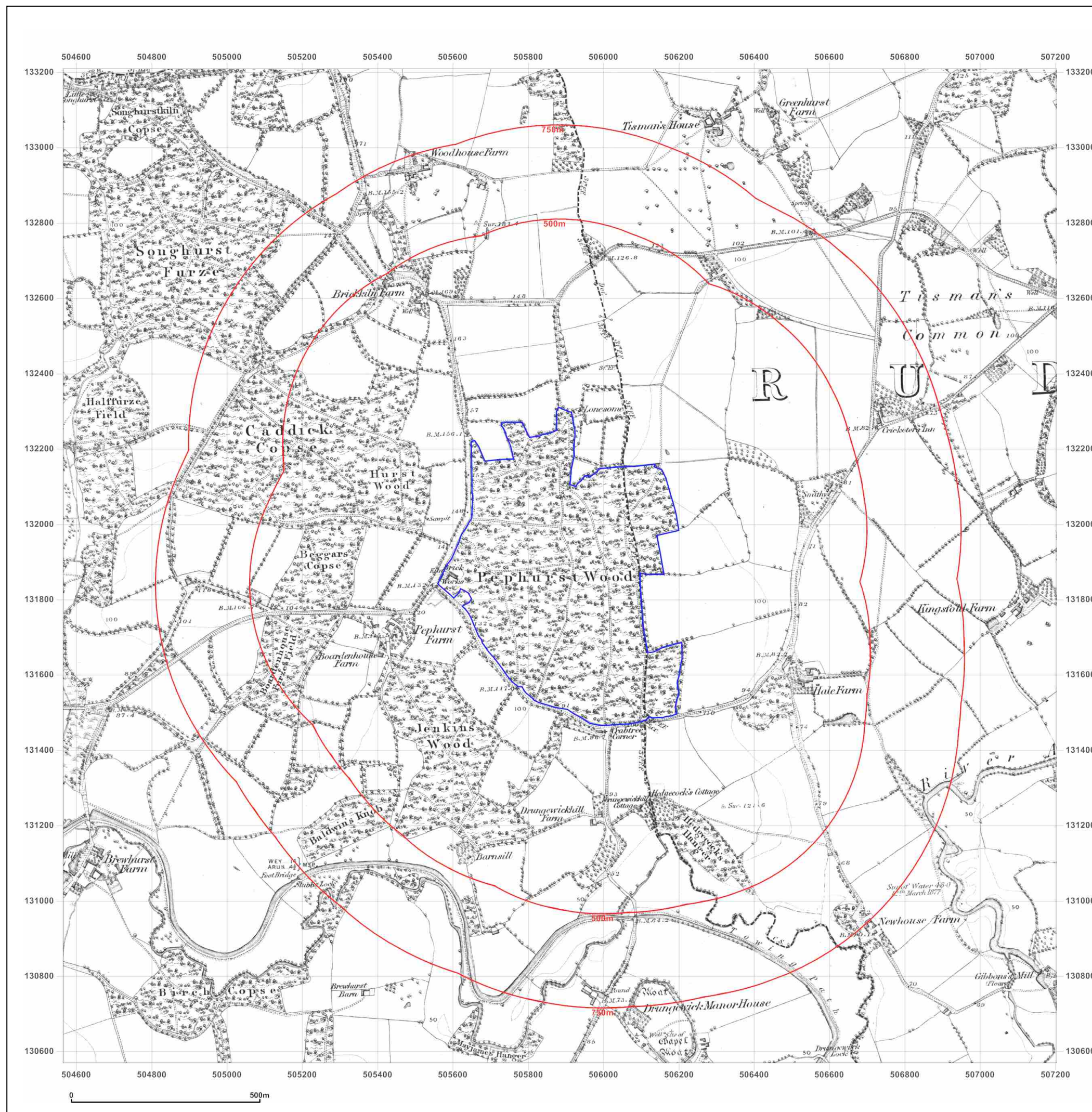


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[www.centremapslive.com](http://www.centremapslive.com)  
[Groundsure@centremaps.com](mailto:Groundsure@centremaps.com)

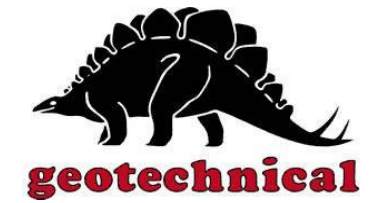
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Production date: 06 January 2017

To view map legend click here [Legend](#)







#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** County Series

**Map date:** 1895

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1876  
Revised 1895  
Edition N/A  
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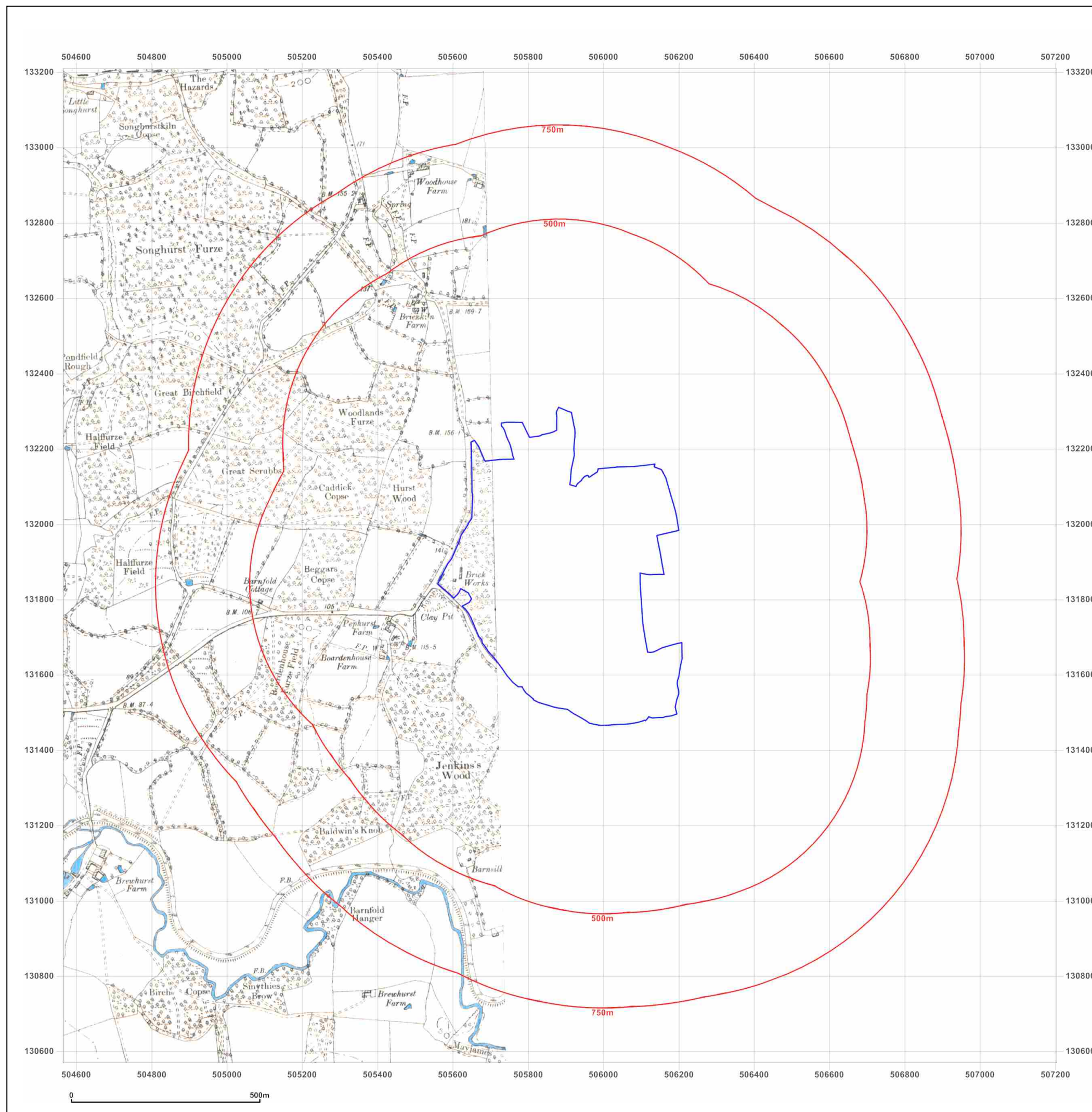


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** County Series

**Map date:** 1895

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1876  
Revised 1895  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1876  
Revised 1895  
Edition N/A  
Copyright N/A  
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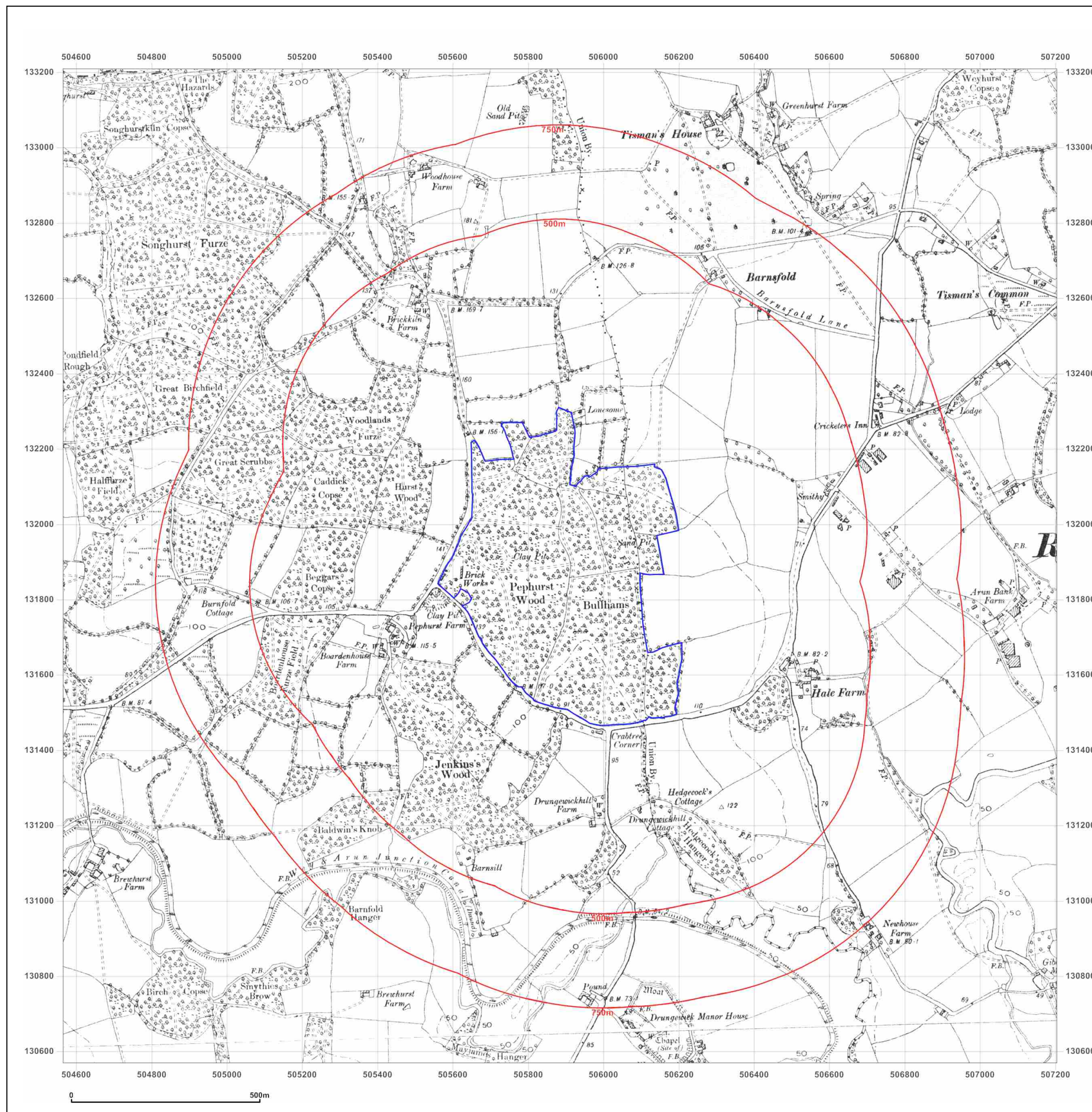


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

Client Ref: 38143  
Report Ref: CMAPS-AAC-588992-38143-060117HIS  
Grid Ref: 505883, 131888

Map Name: County Series

Map date: 1914

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874  
Revised 1914  
Edition N/A  
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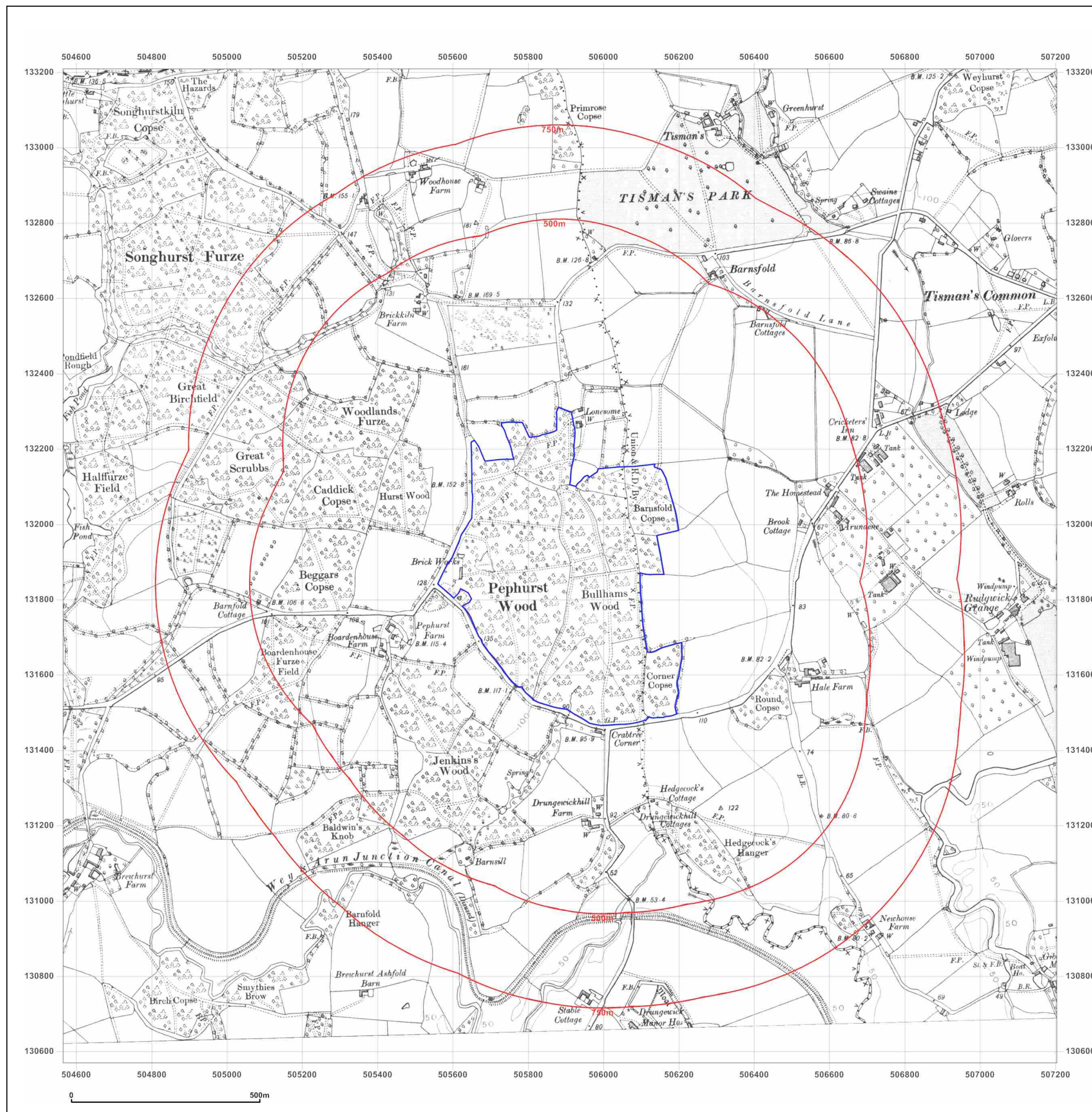


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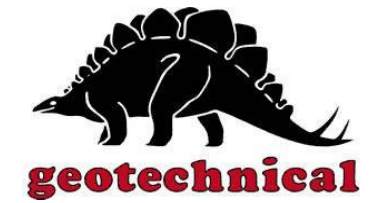
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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** County Series

**Map date:** 1920

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1870  
Revised 1920  
Edition N/A  
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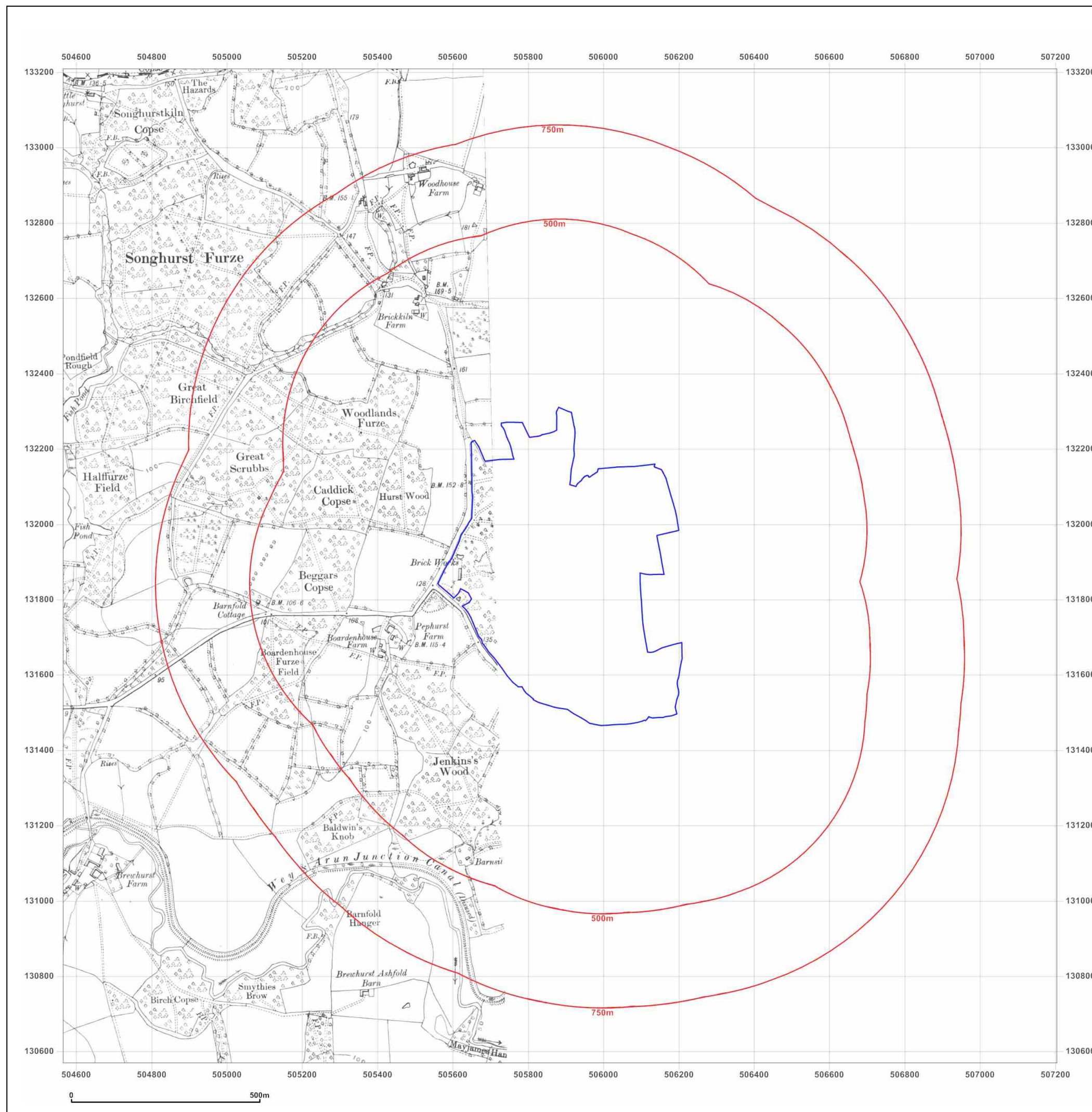


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#### Site Details:

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ORW

Client Ref: 38143  
Report Ref: CMAPS-AAC-588992-38143-060117HIS  
Grid Ref: 505883, 131888

Map Name: Provisional

Map date: 1956-1957

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1957  
Revised 1957  
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Surveyed 1956  
Revised 1956  
Edition N/A  
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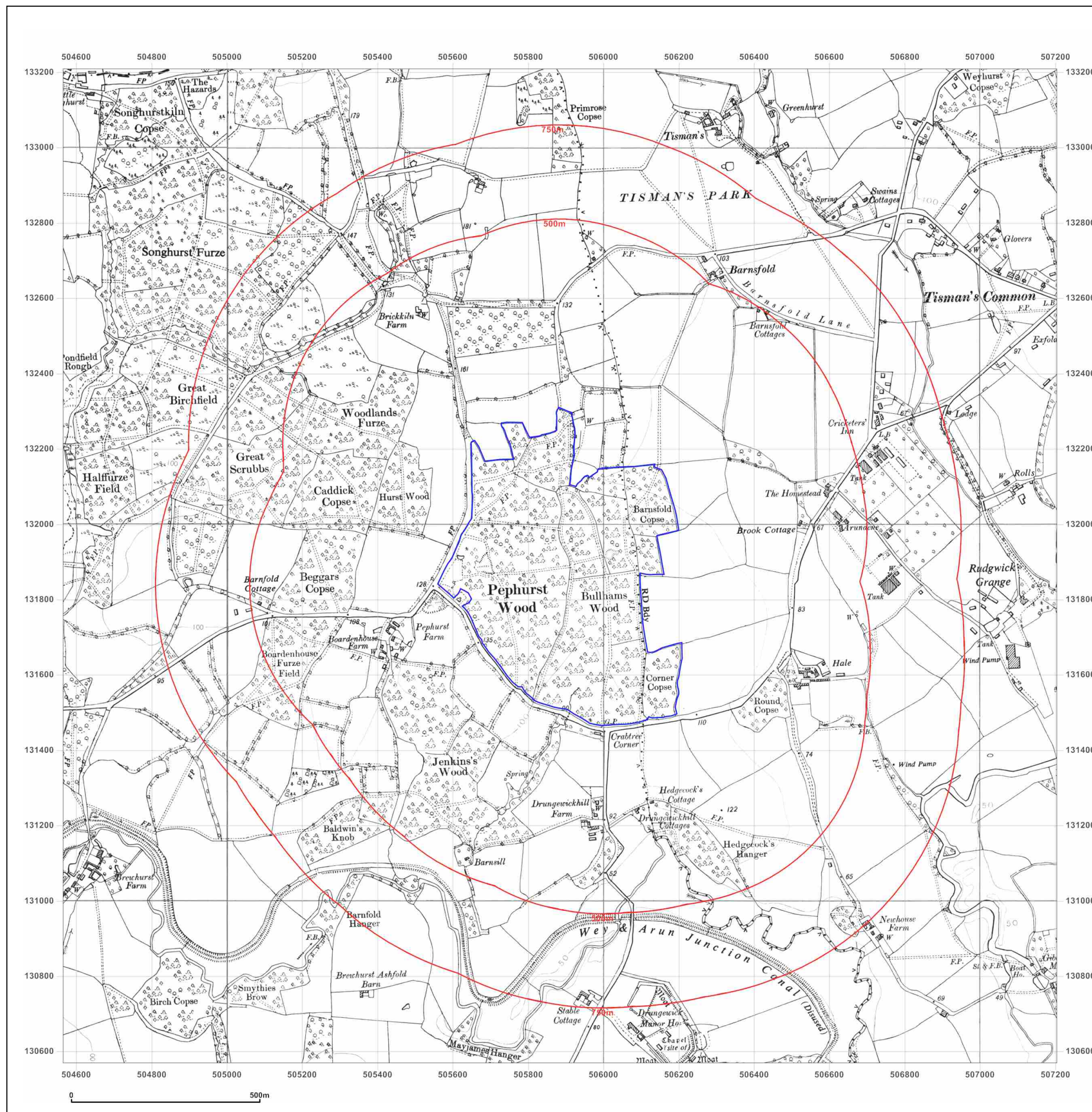


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** National Grid

**Map date:** 1979-1980

**Scale:** 1:10,000

**Printed at:** 1:10,000



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Revised 1979  
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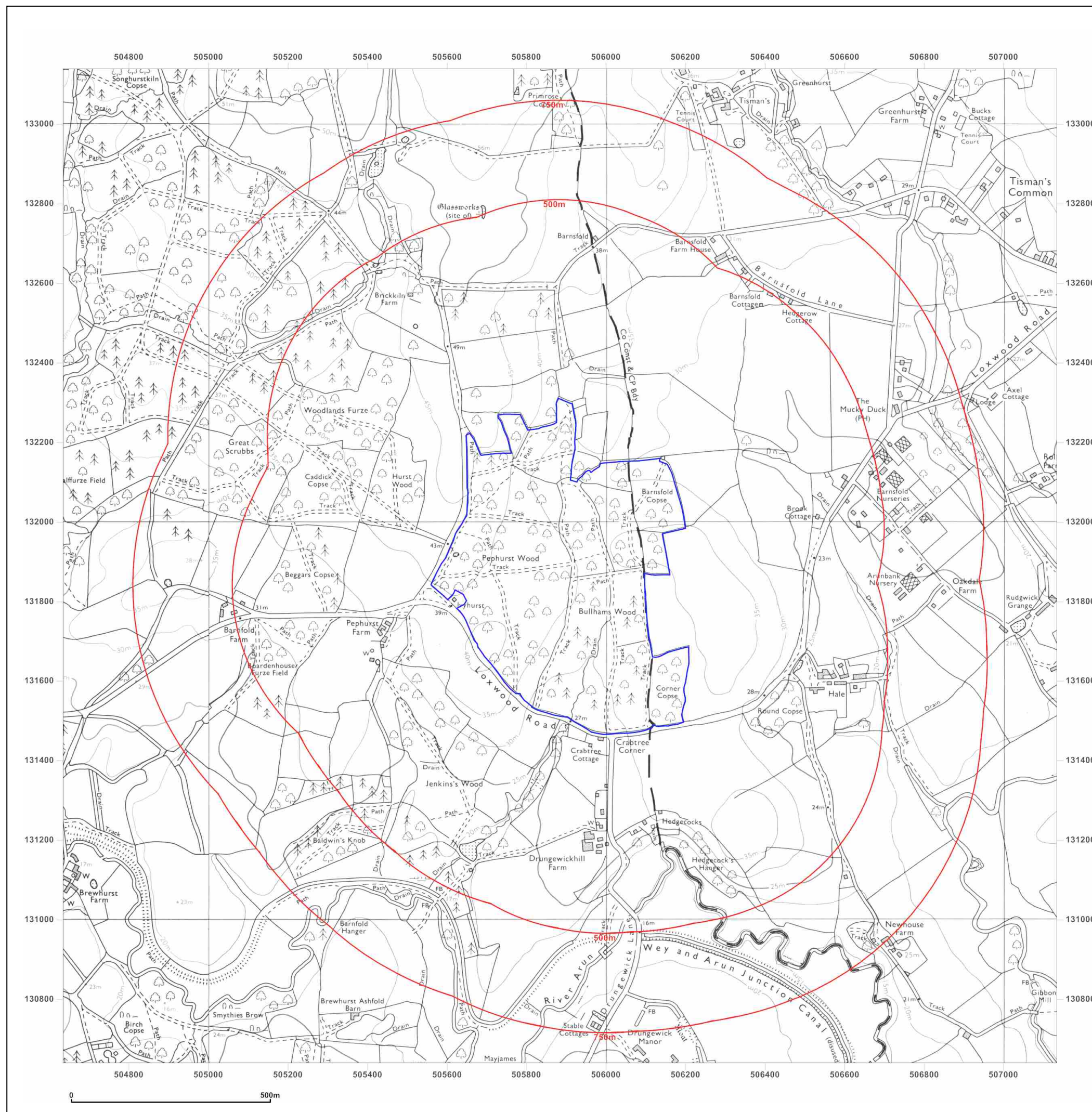


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** 1:10,000 Raster

**Map date:** 2002

**Scale:** 1:10,000

**Printed at:** 1:10,000



2002



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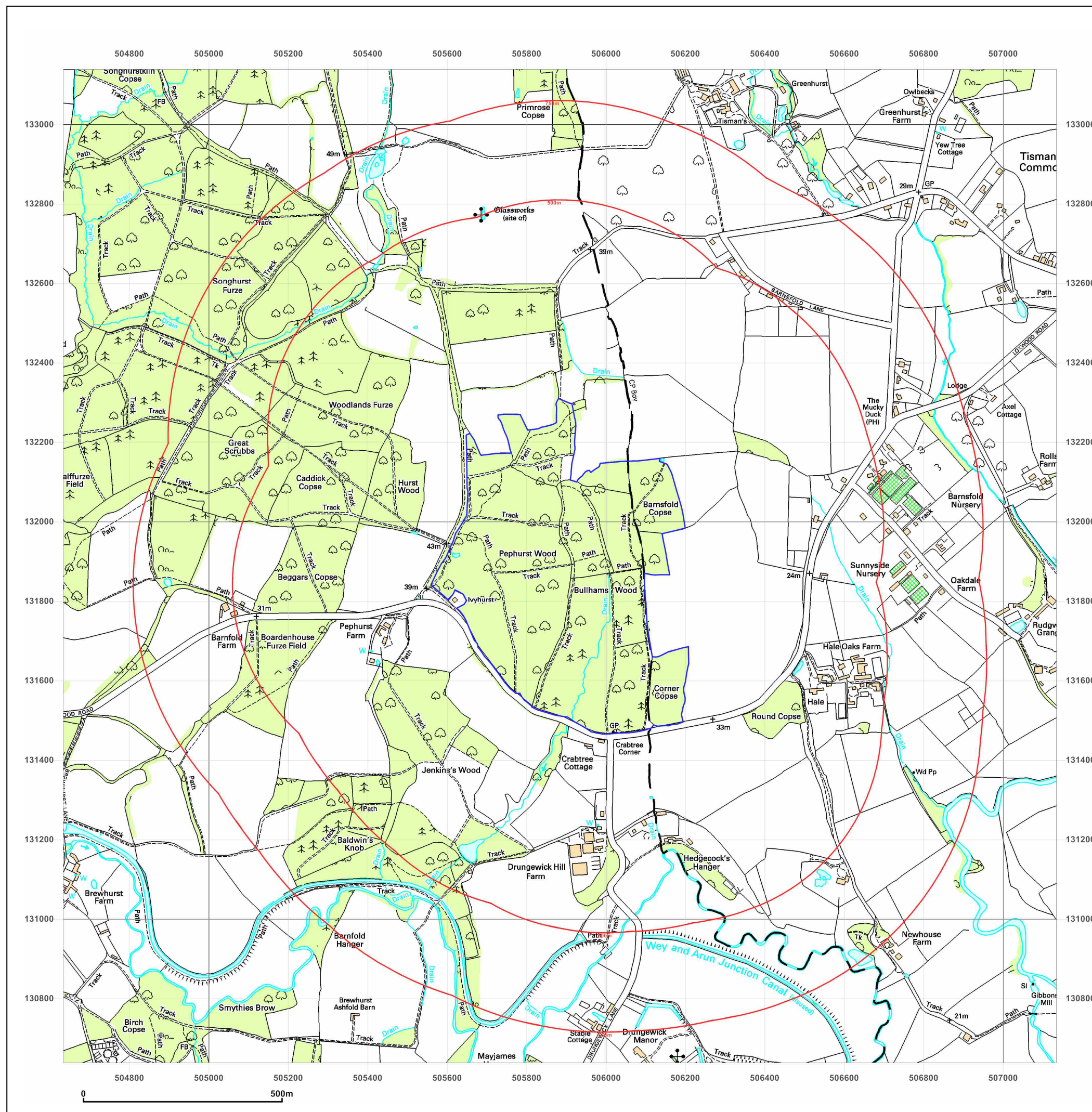


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** National Grid

**Map date:** 2010

**Scale:** 1:10,000

**Printed at:** 1:10,000



2010



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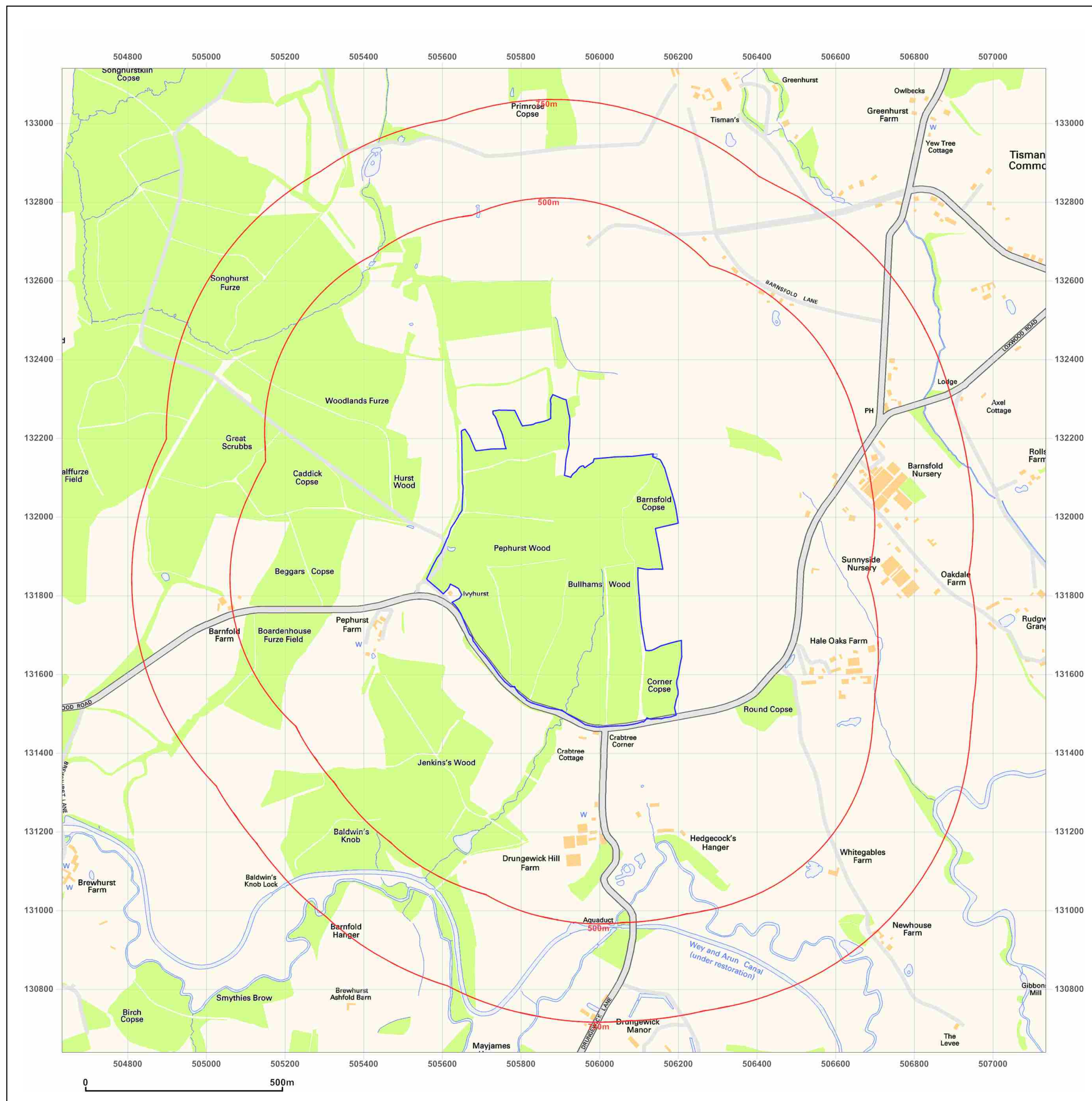


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS  
**Grid Ref:** 505883, 131888

**Map Name:** National Grid

**Map date:** 2014

**Scale:** 1:10,000

**Printed at:** 1:10,000



2014



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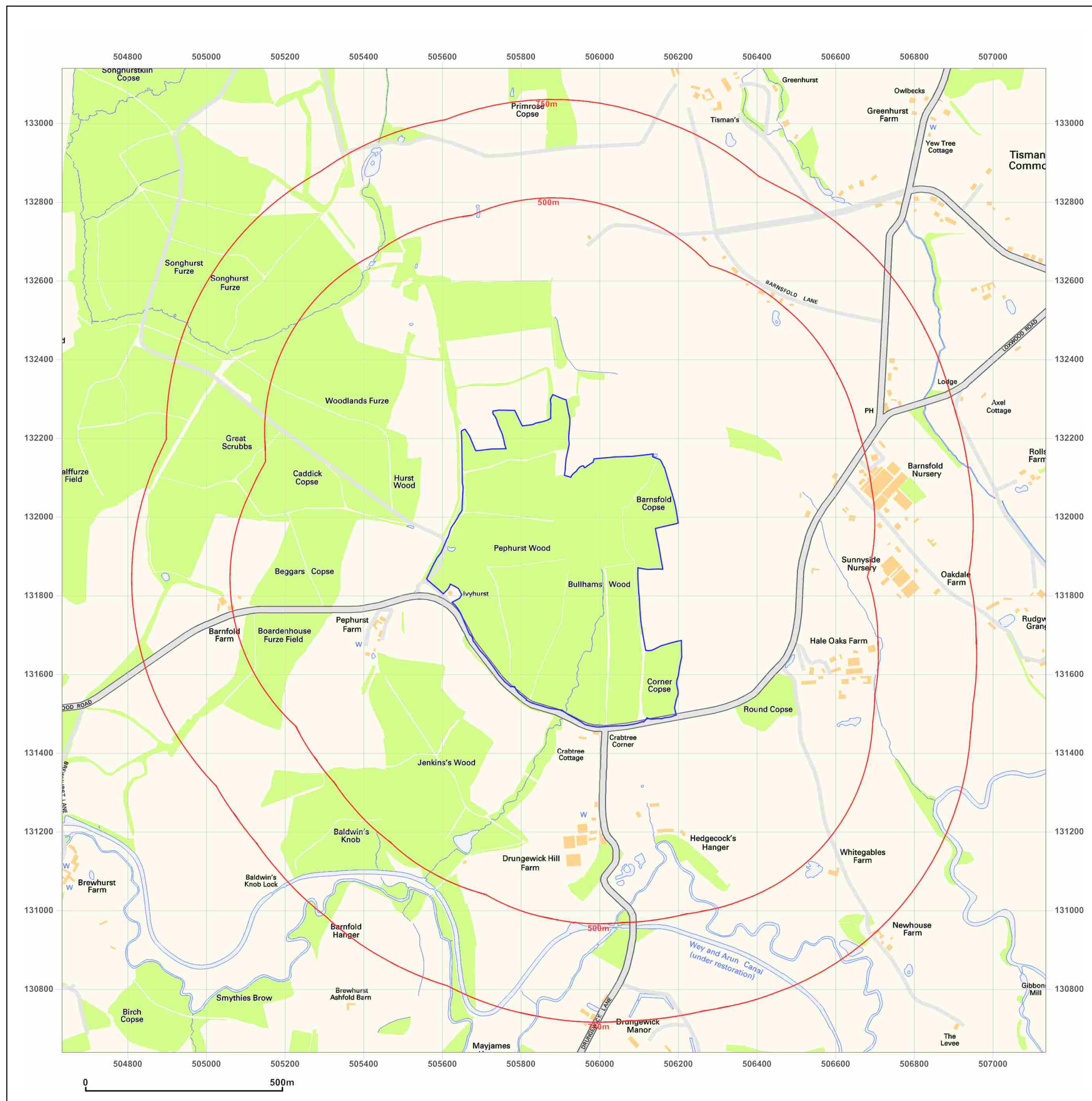


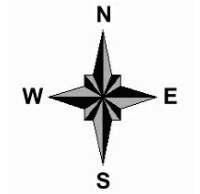
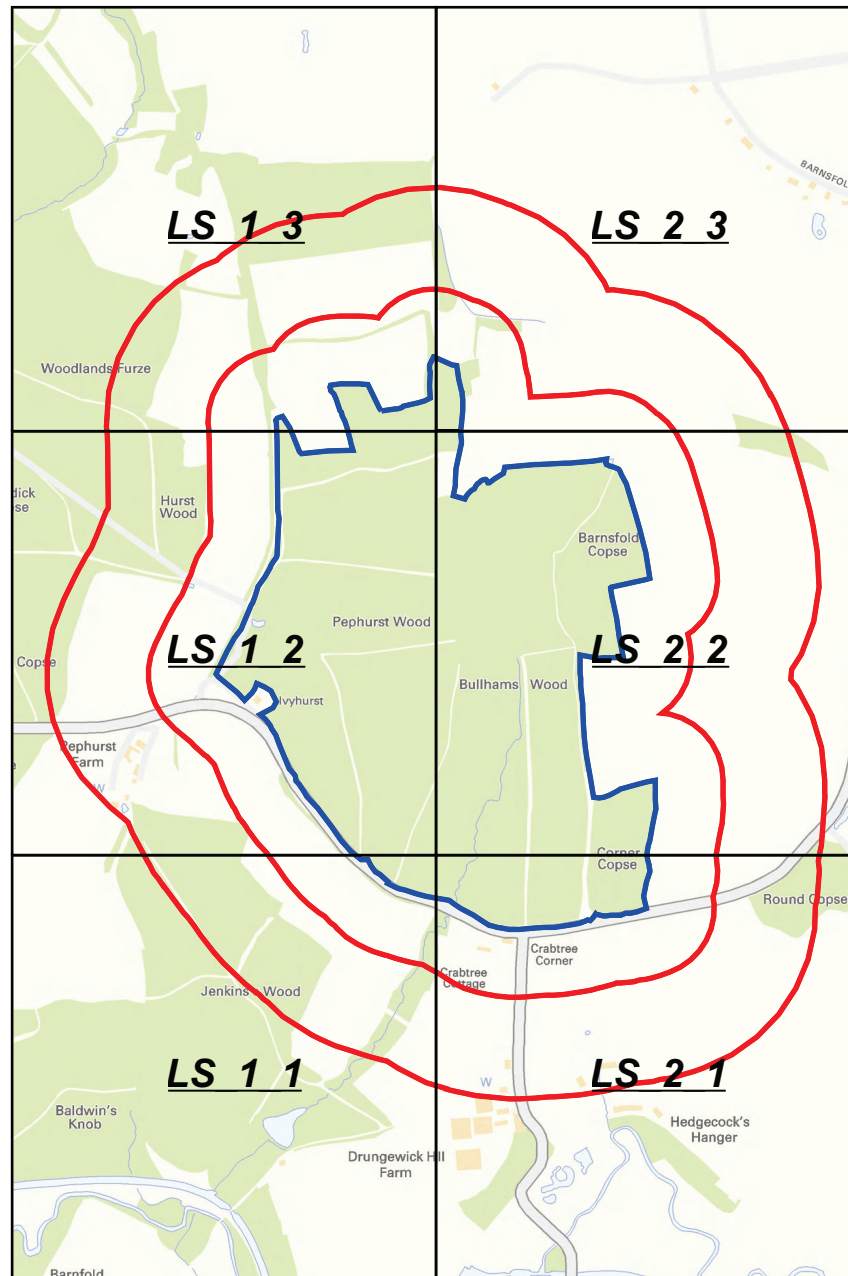
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**1:2500 Scale Grid Index**





#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_1  
**Grid Ref:** 505570, 131262

**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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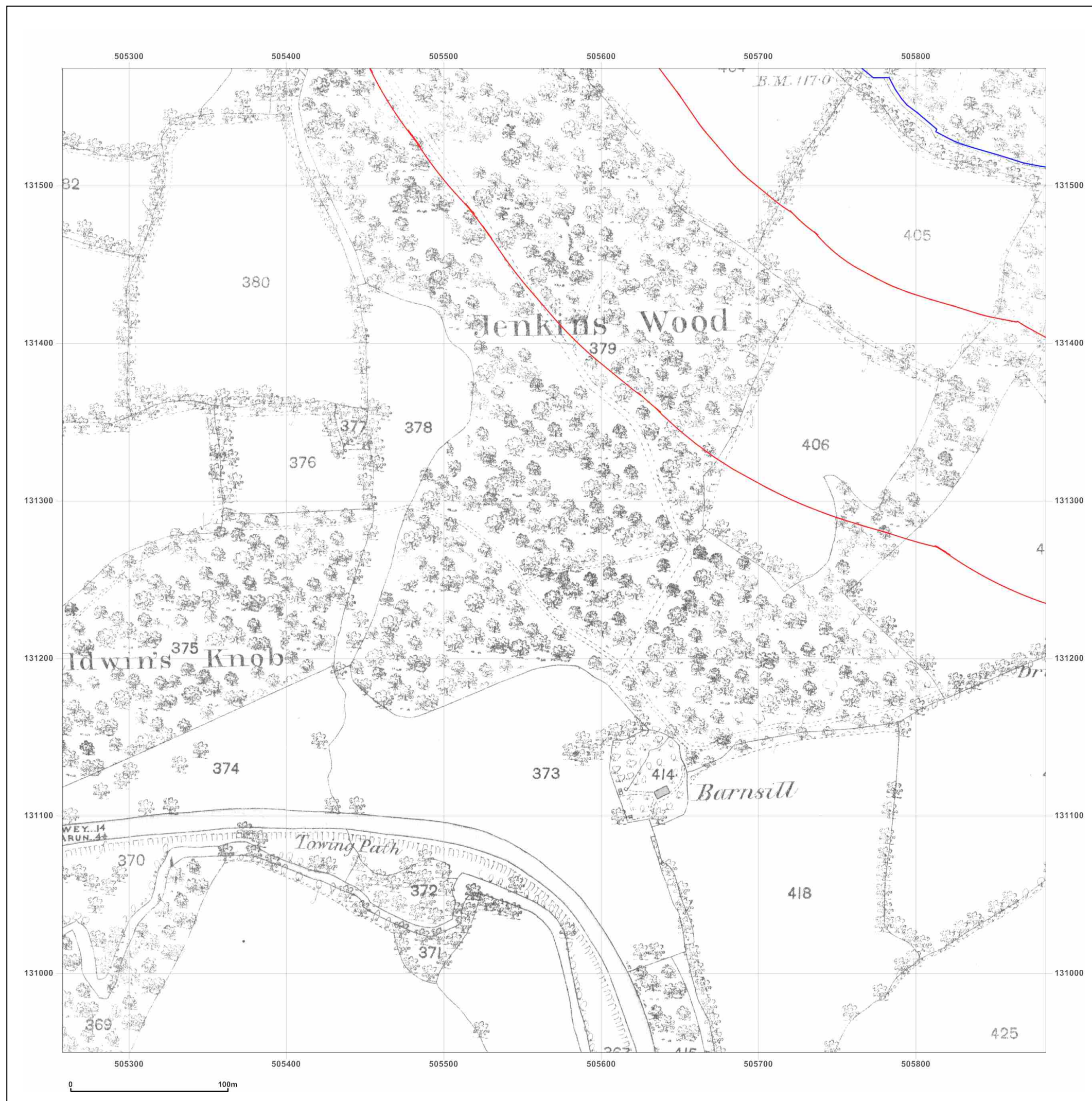


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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_1  
**Grid Ref:** 505570, 131262

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1897  
Revised 1897  
Edition N/A  
Copyright N/A  
Levelled N/A



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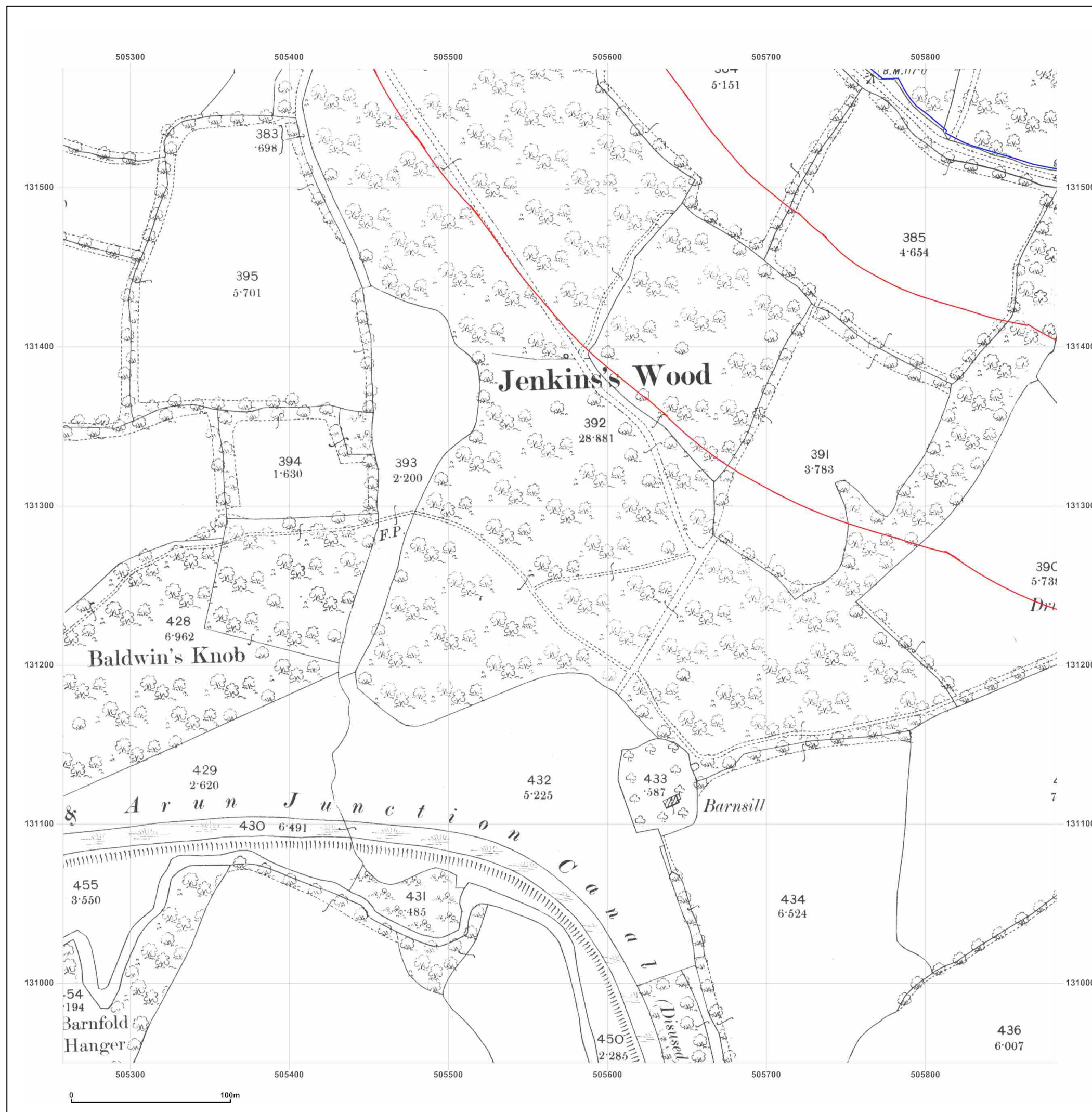


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#### Site Details:

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ORW

Client Ref: 38143  
Report Ref: CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_1  
Grid Ref: 505570, 131262

Map Name: County Series

Map date: 1912

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1912  
Revised 1912  
Edition N/A  
Copyright N/A  
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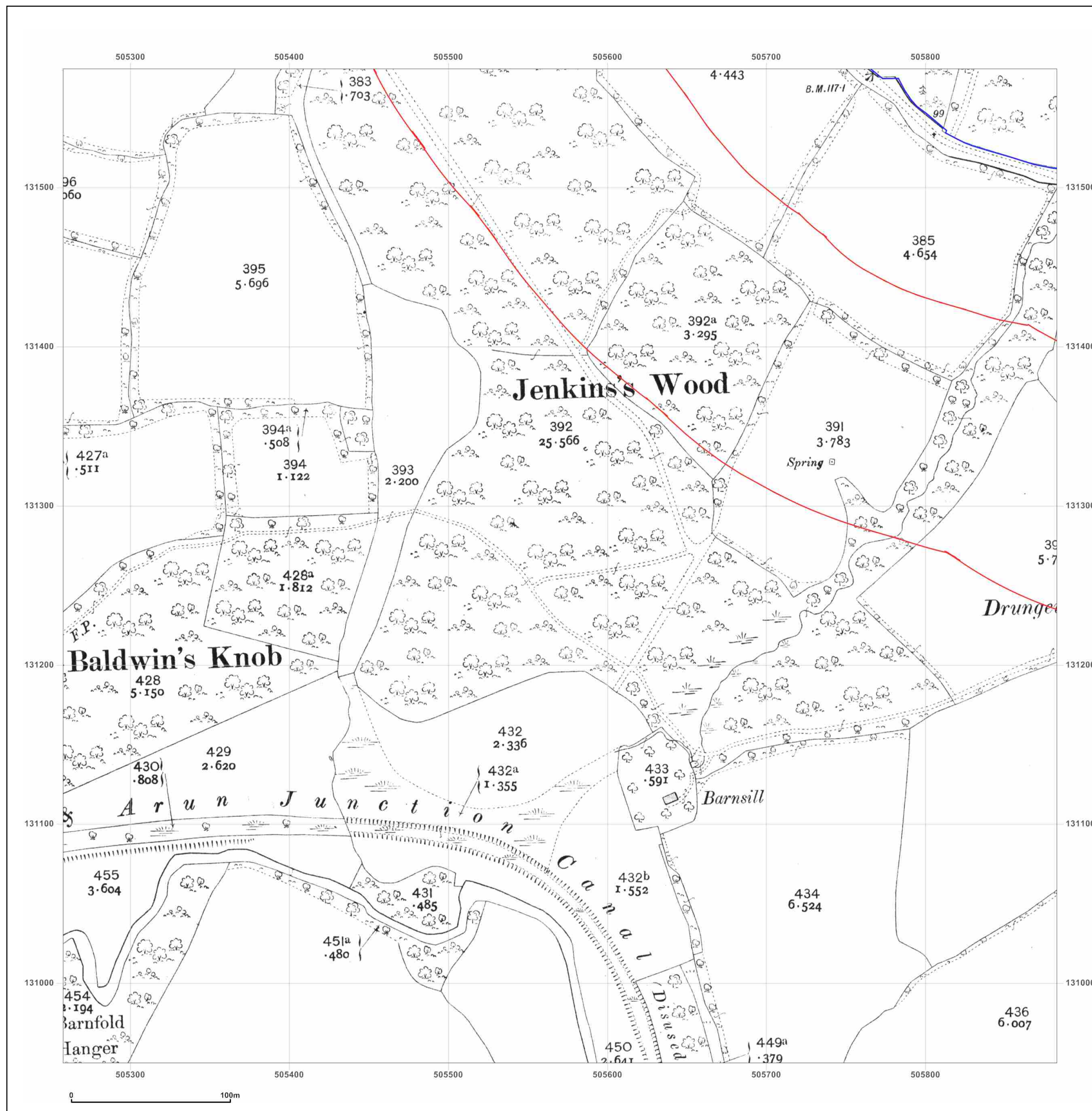


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_1  
**Grid Ref:** 505570, 131262

**Map Name:** National Grid

**Map date:** 1973-1974

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1973  
Revised 1973  
Edition N/A  
Copyright 1974  
Levelled 1952

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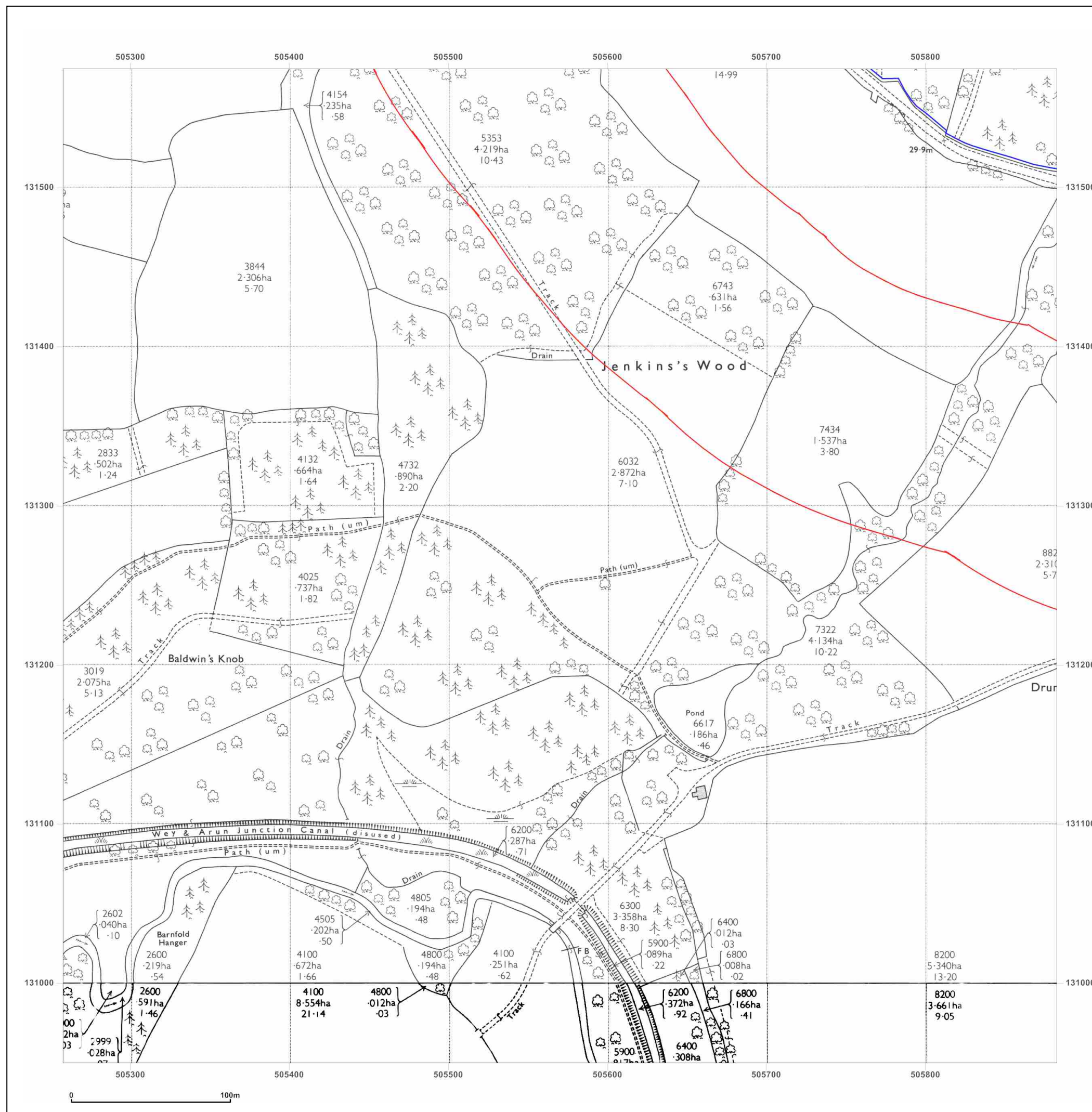


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_2  
**Grid Ref:** 505570, 131888

**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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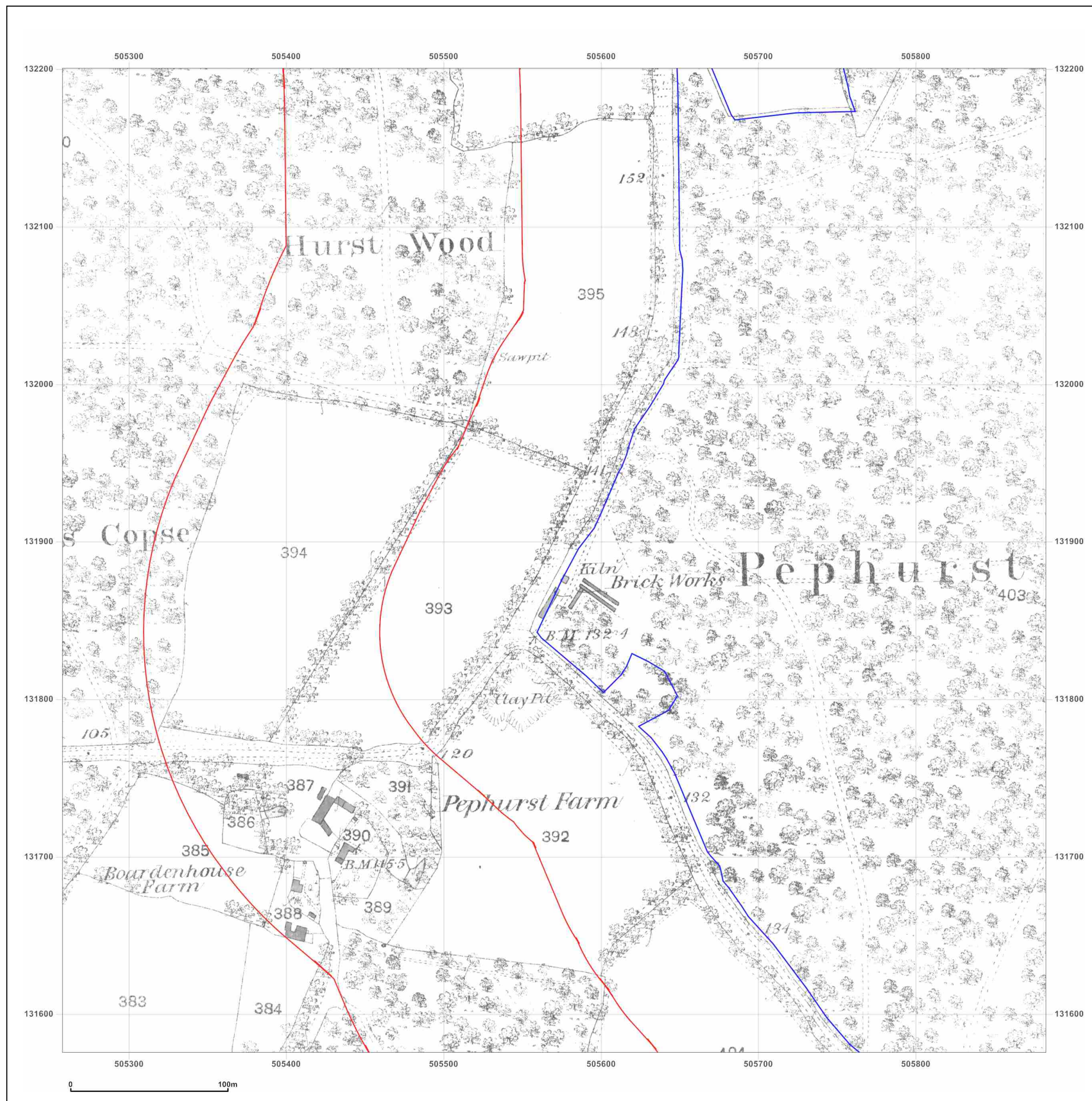


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**Site Details:**

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_2  
**Grid Ref:** 505570, 131888

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1897  
Revised 1897  
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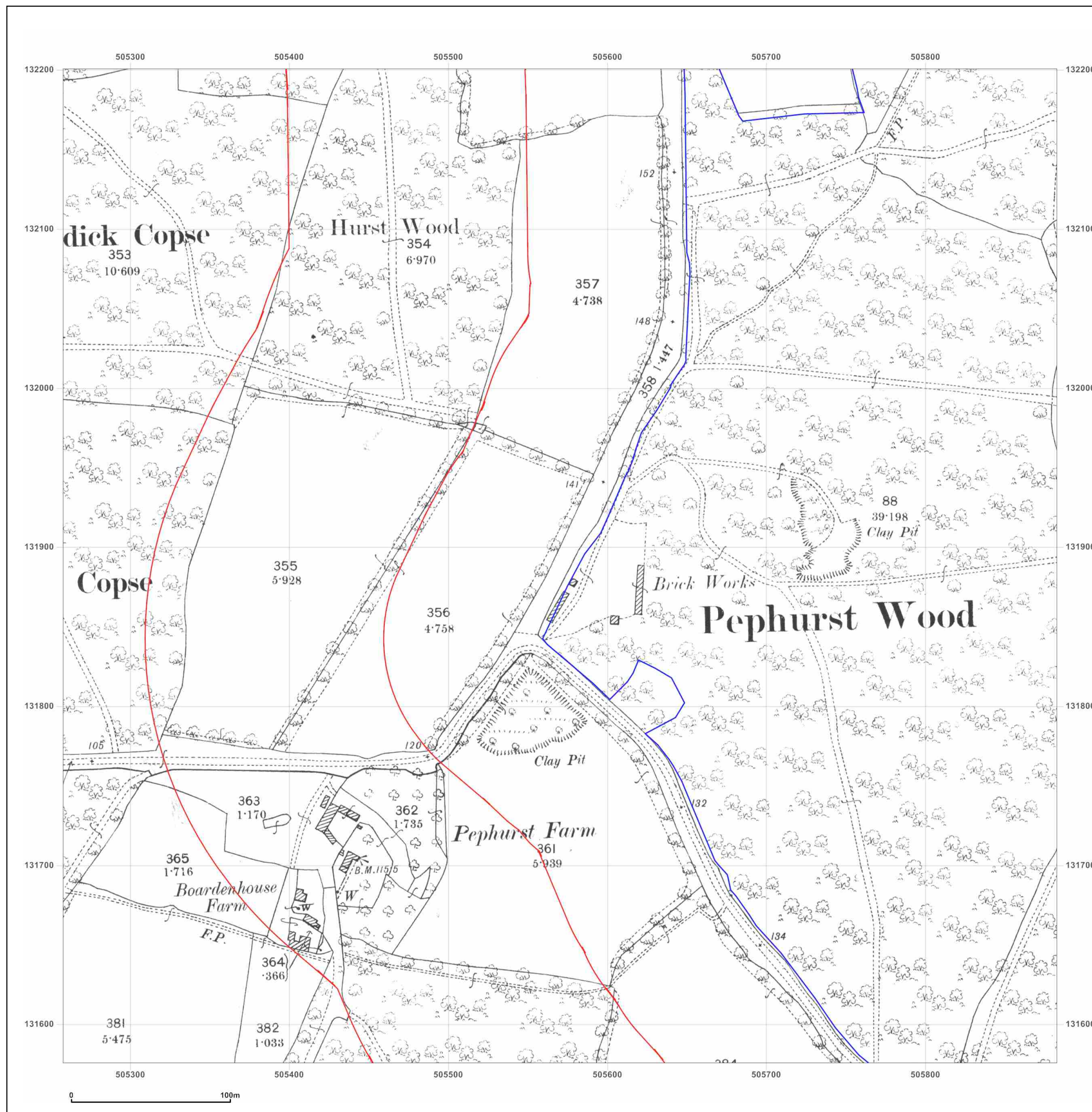


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#### Site Details:

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ORW

**Client Ref:** 38143  
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**Map Name:** County Series

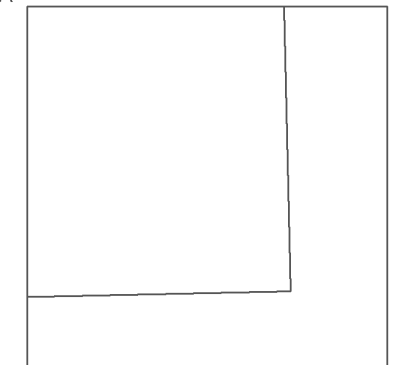
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**Scale:** 1:2,500

**Printed at:** 1:2,500



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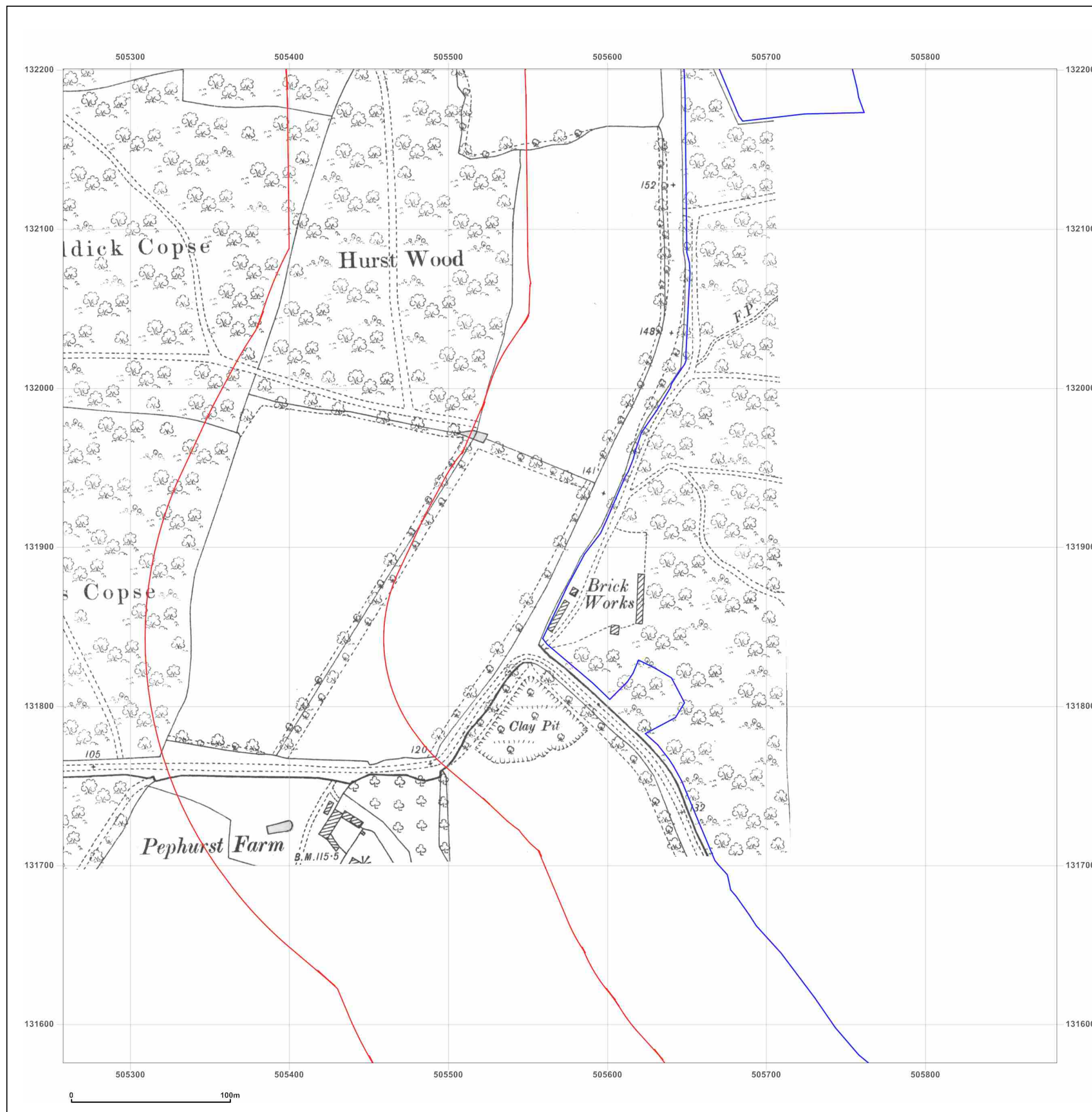


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Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_2  
**Grid Ref:** 505570, 131888

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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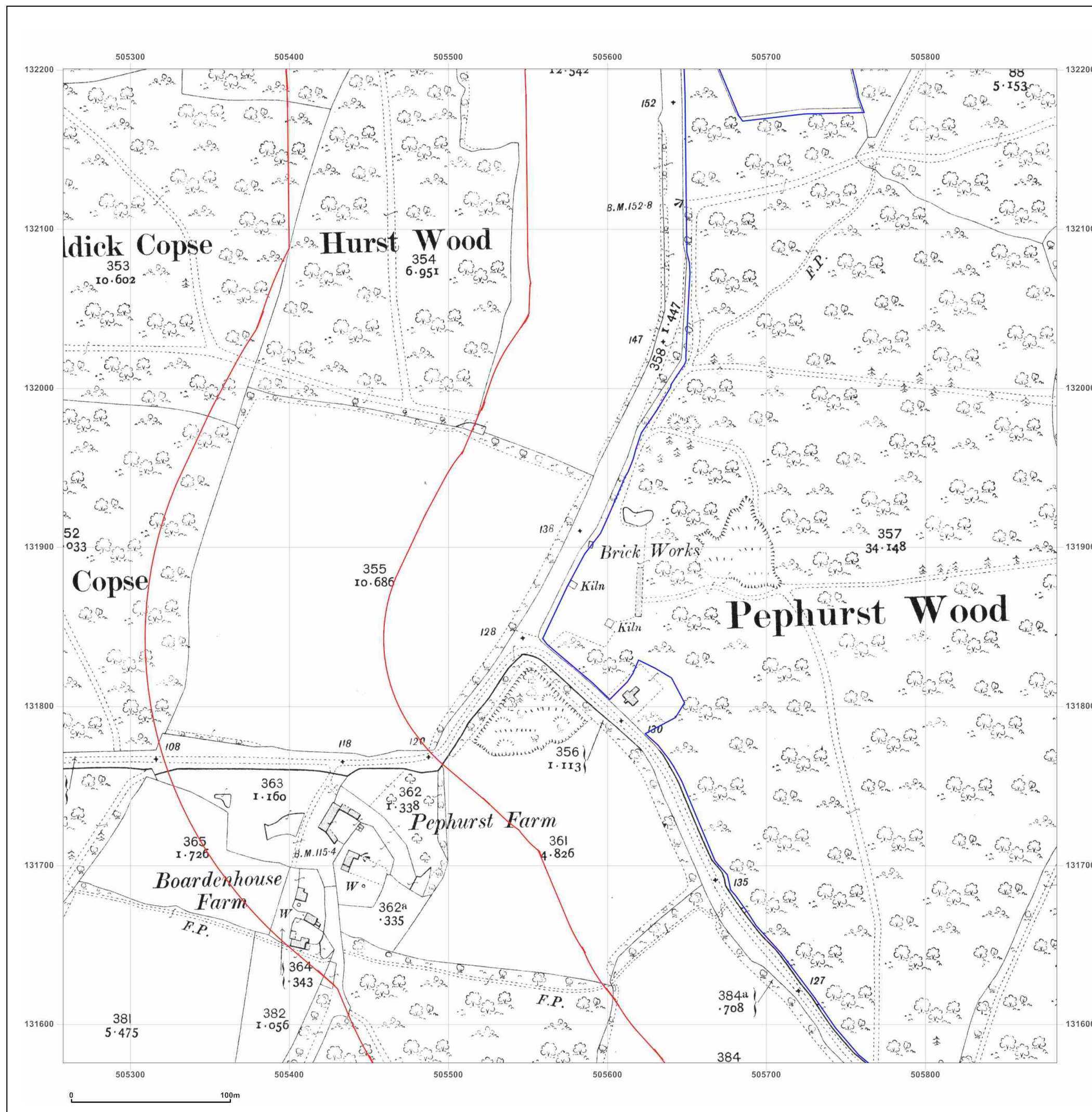


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_2  
**Grid Ref:** 505570, 131888

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1973  
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Revised 1973  
Edition N/A  
Copyright 1974  
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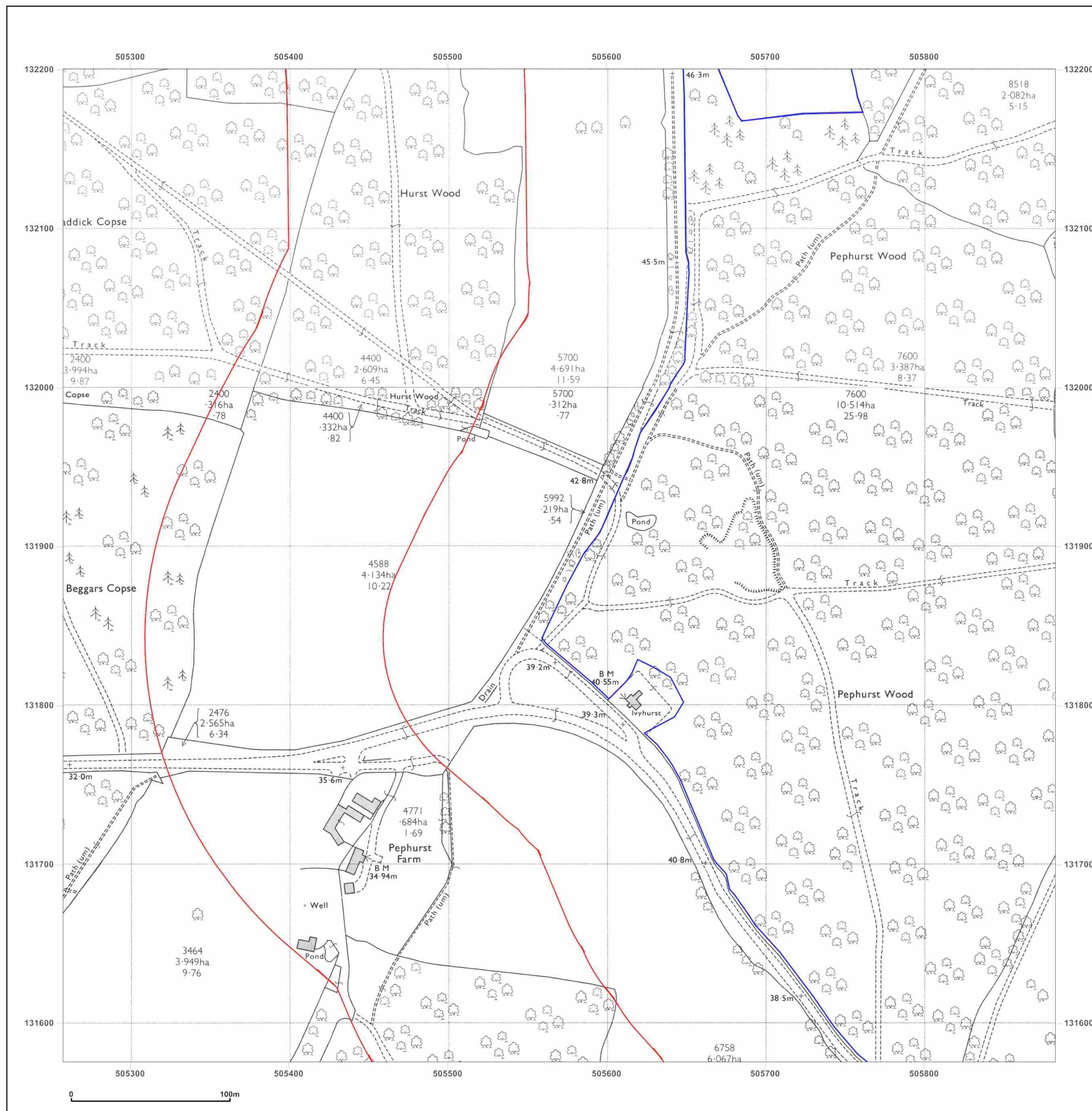


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_2  
**Grid Ref:** 505570, 131888

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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

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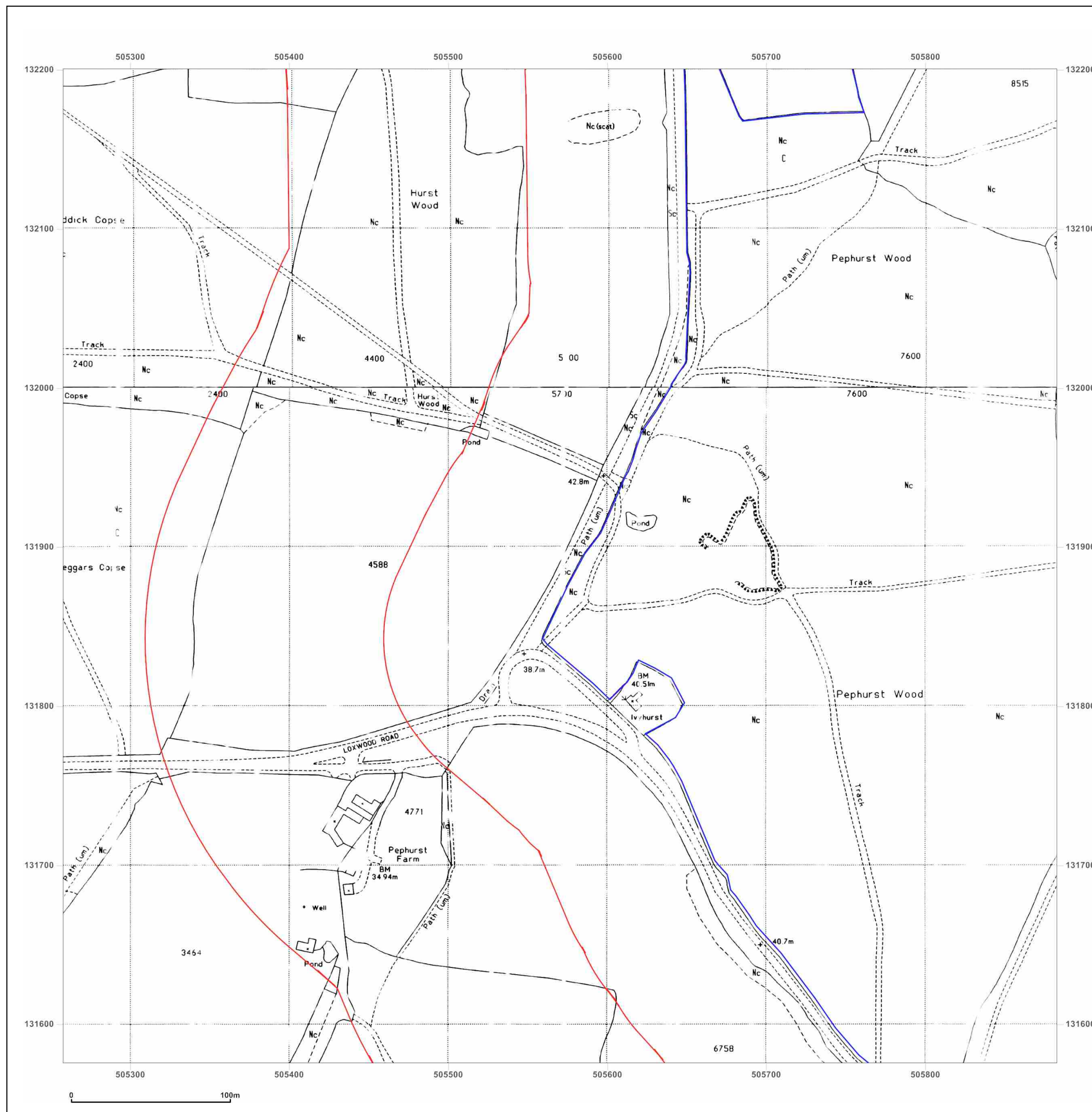


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 505570, 132513

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1876  
Edition N/A  
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Revised 1876  
Edition N/A  
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ORW

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**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 505570, 132513

**Map Name:** County Series

**Map date:** 1897-1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1897  
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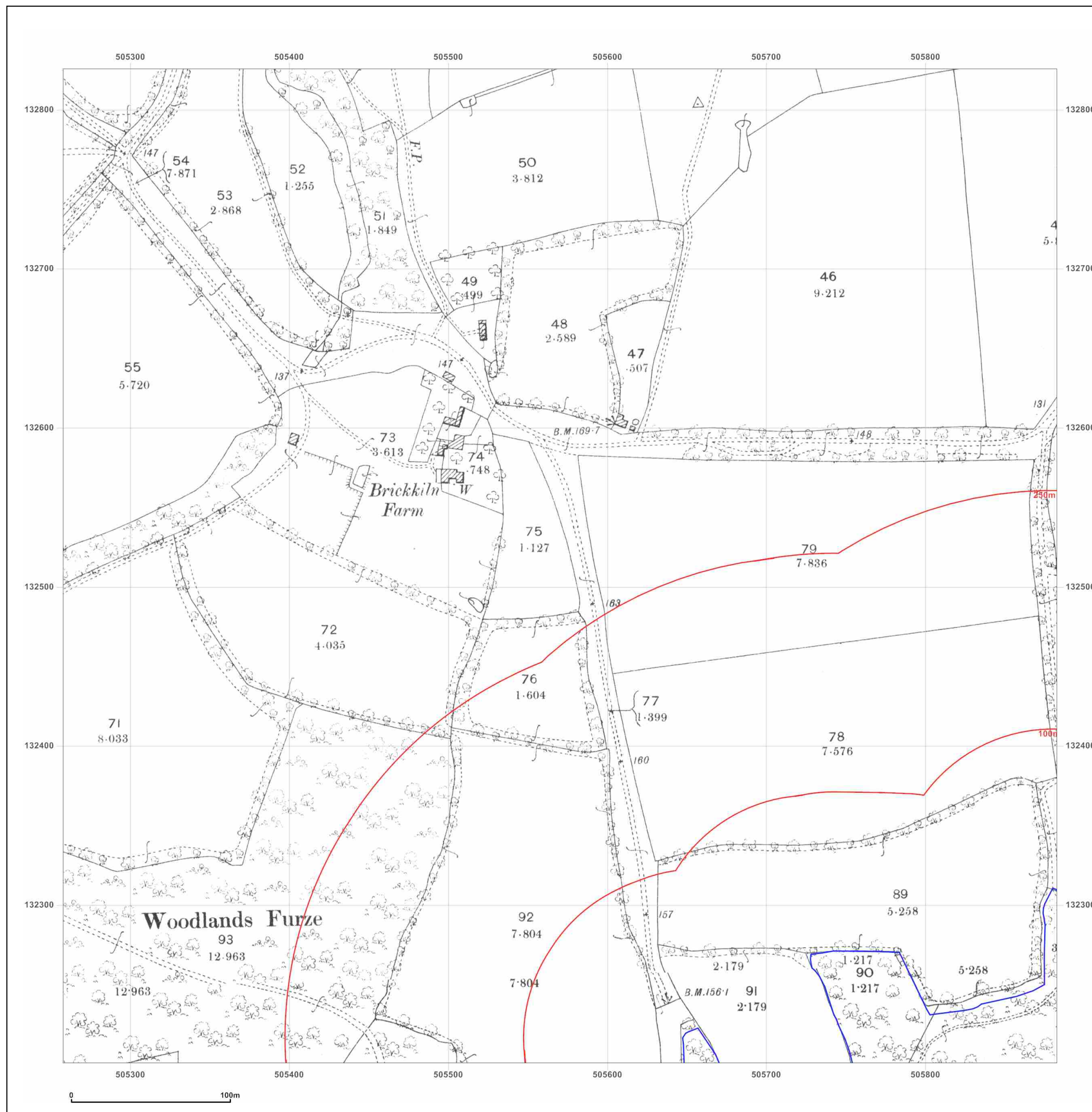


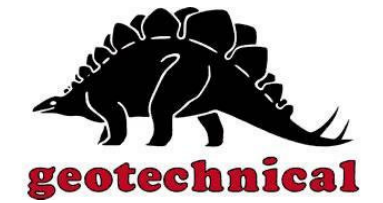
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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 505570, 132513

**Map Name:** County Series

**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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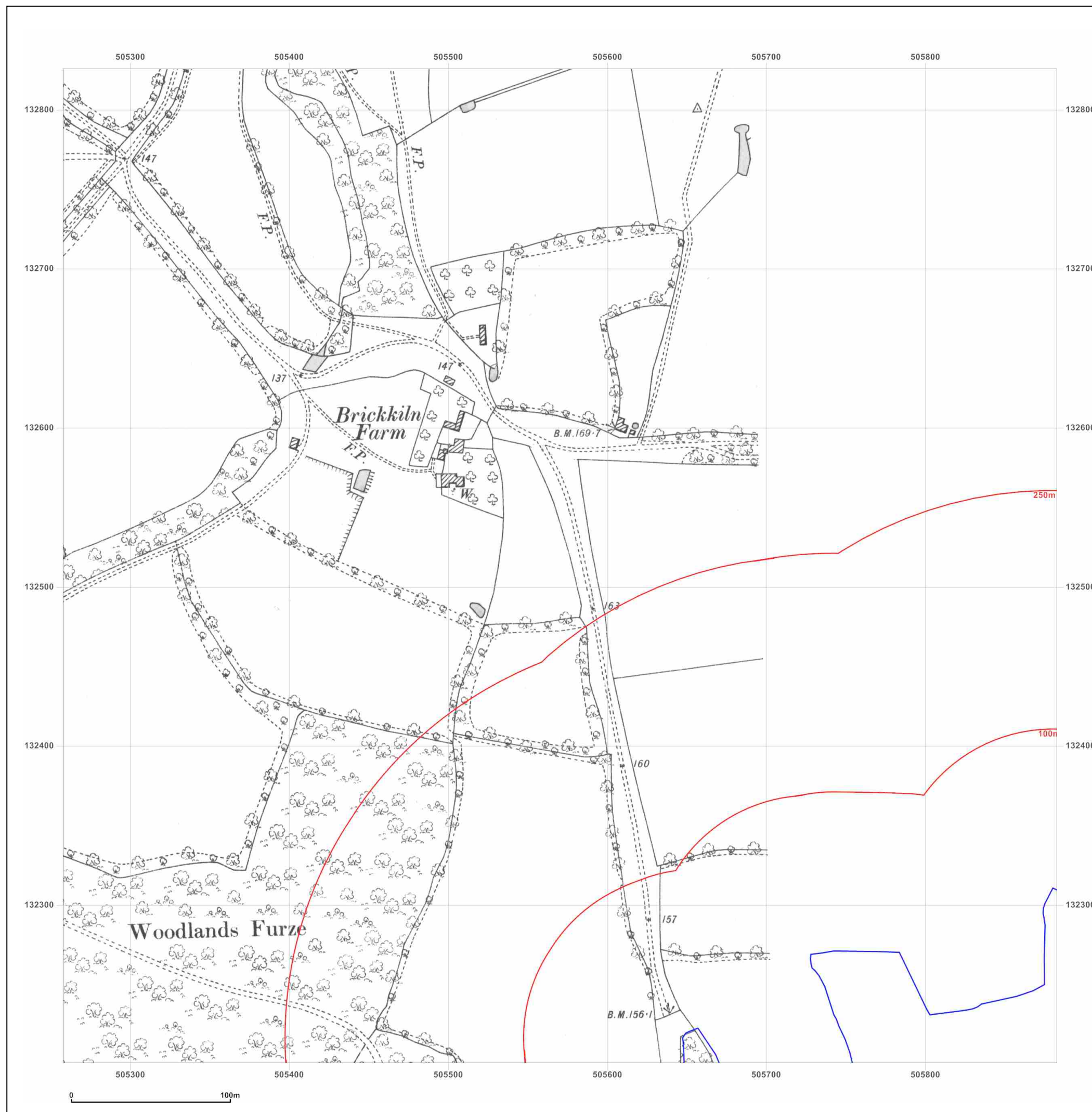


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_3  
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**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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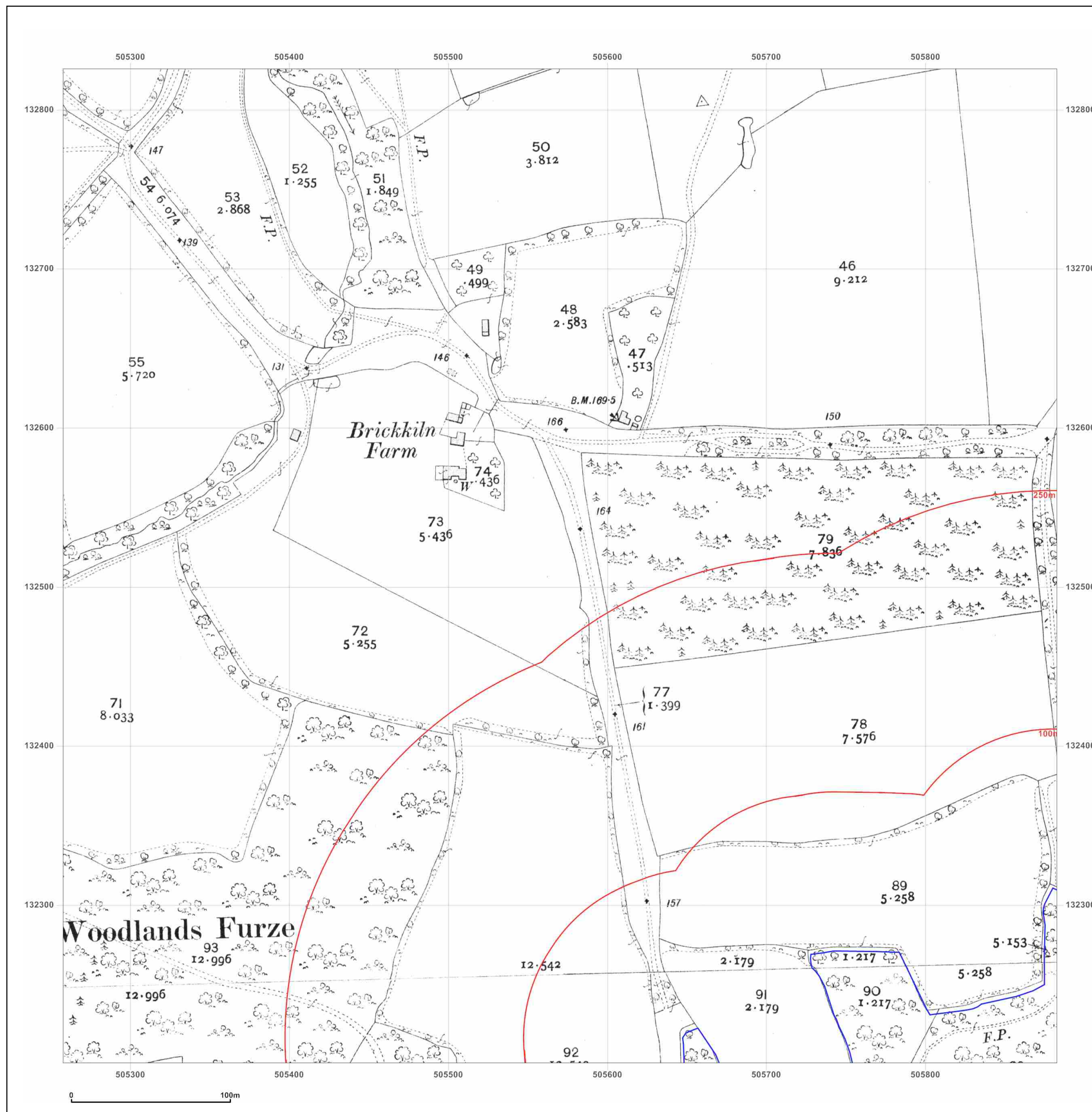


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 505570, 132513

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1973  
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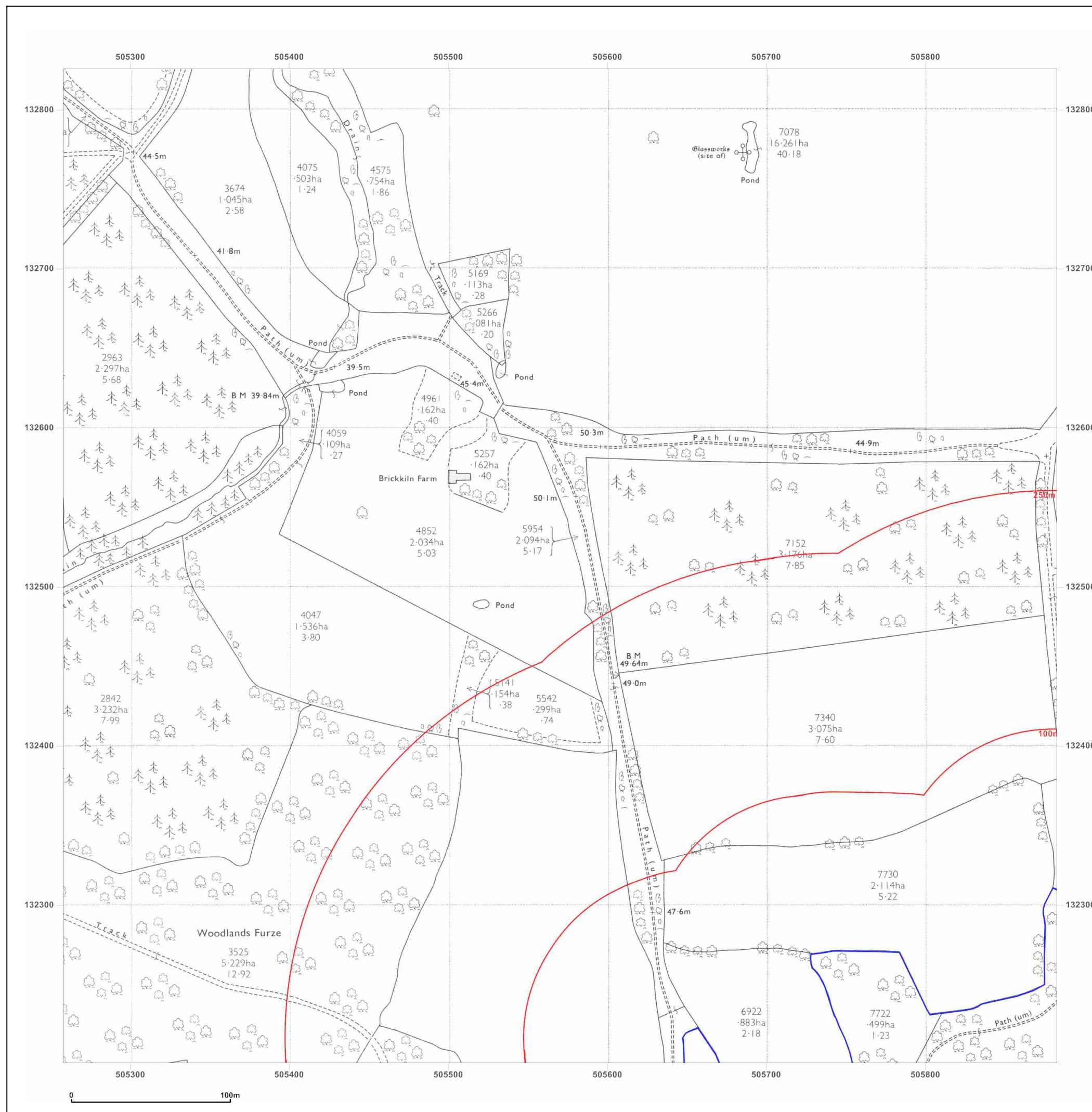


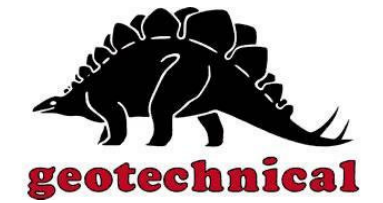
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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 505570, 132513

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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**Site Details:**

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_1  
**Grid Ref:** 506196, 131262

**Map Name:** County Series

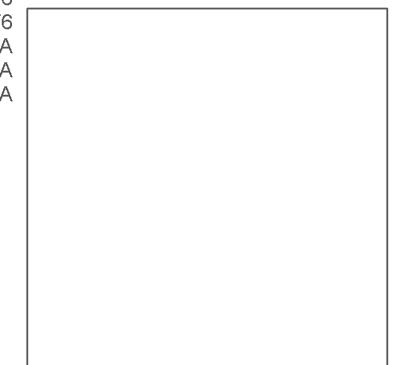
**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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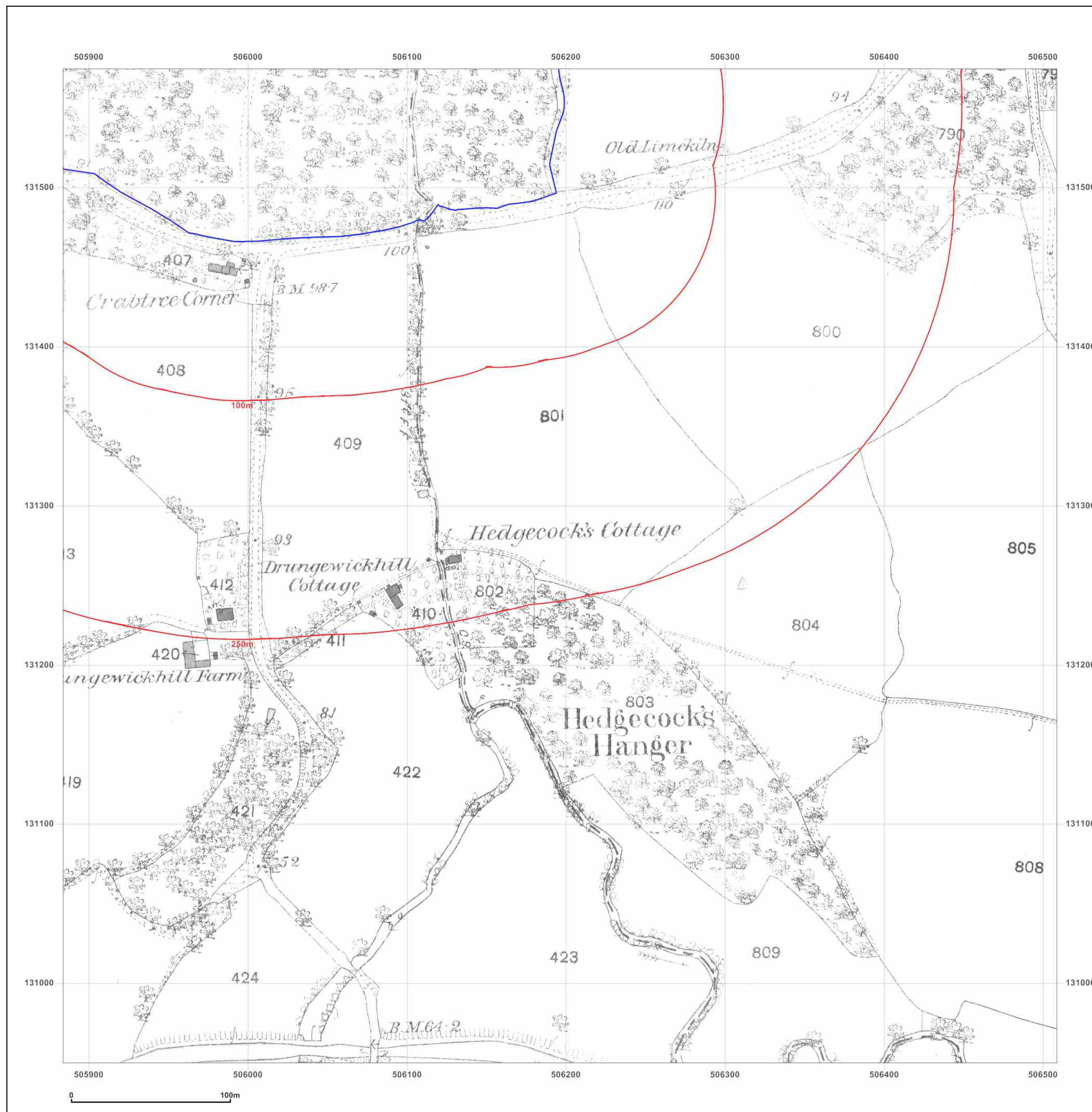


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#### Site Details:

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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_1  
**Grid Ref:** 506196, 131262

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

**Printed at:** 1:2,500



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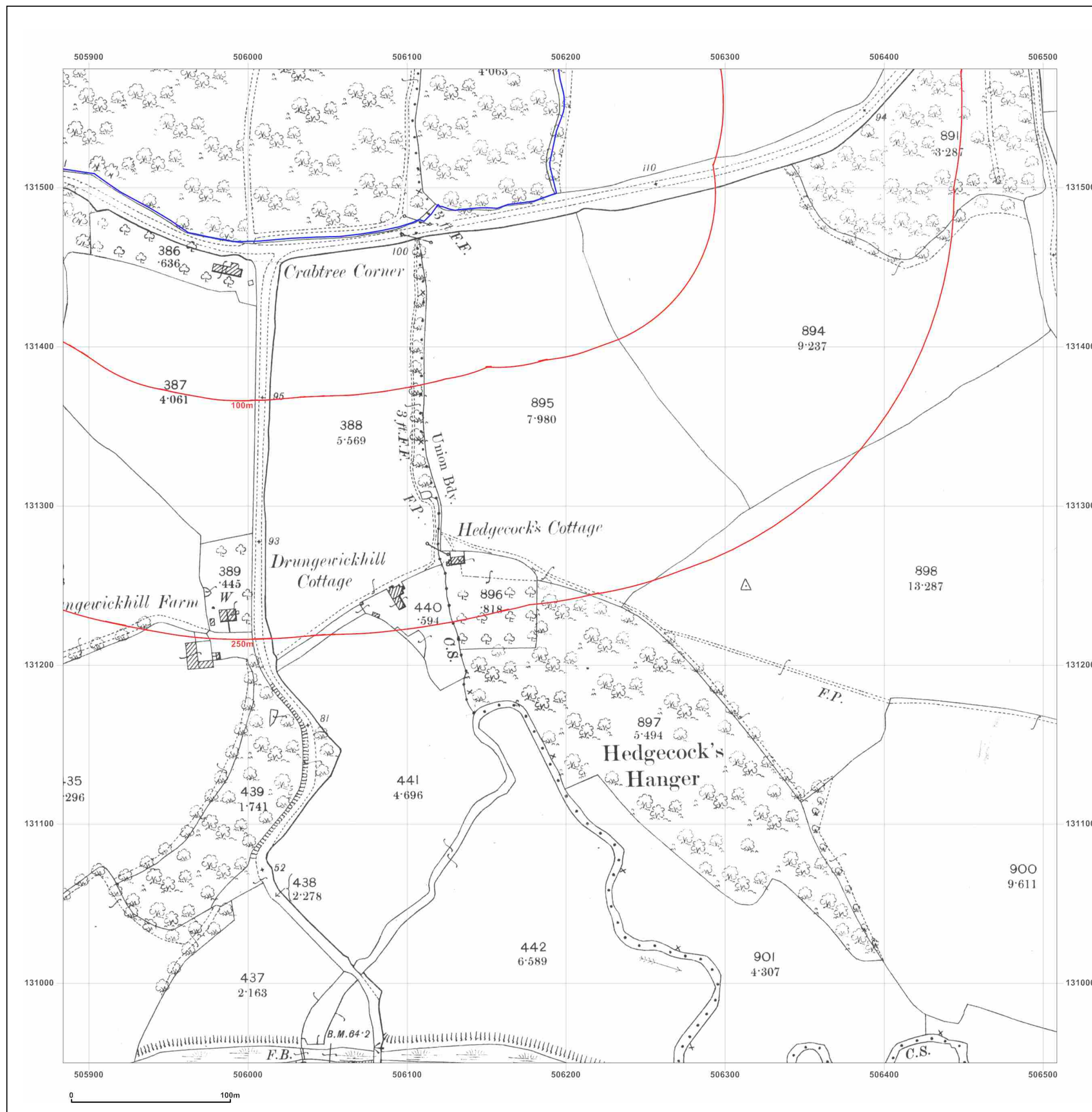


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Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_1  
**Grid Ref:** 506196, 131262

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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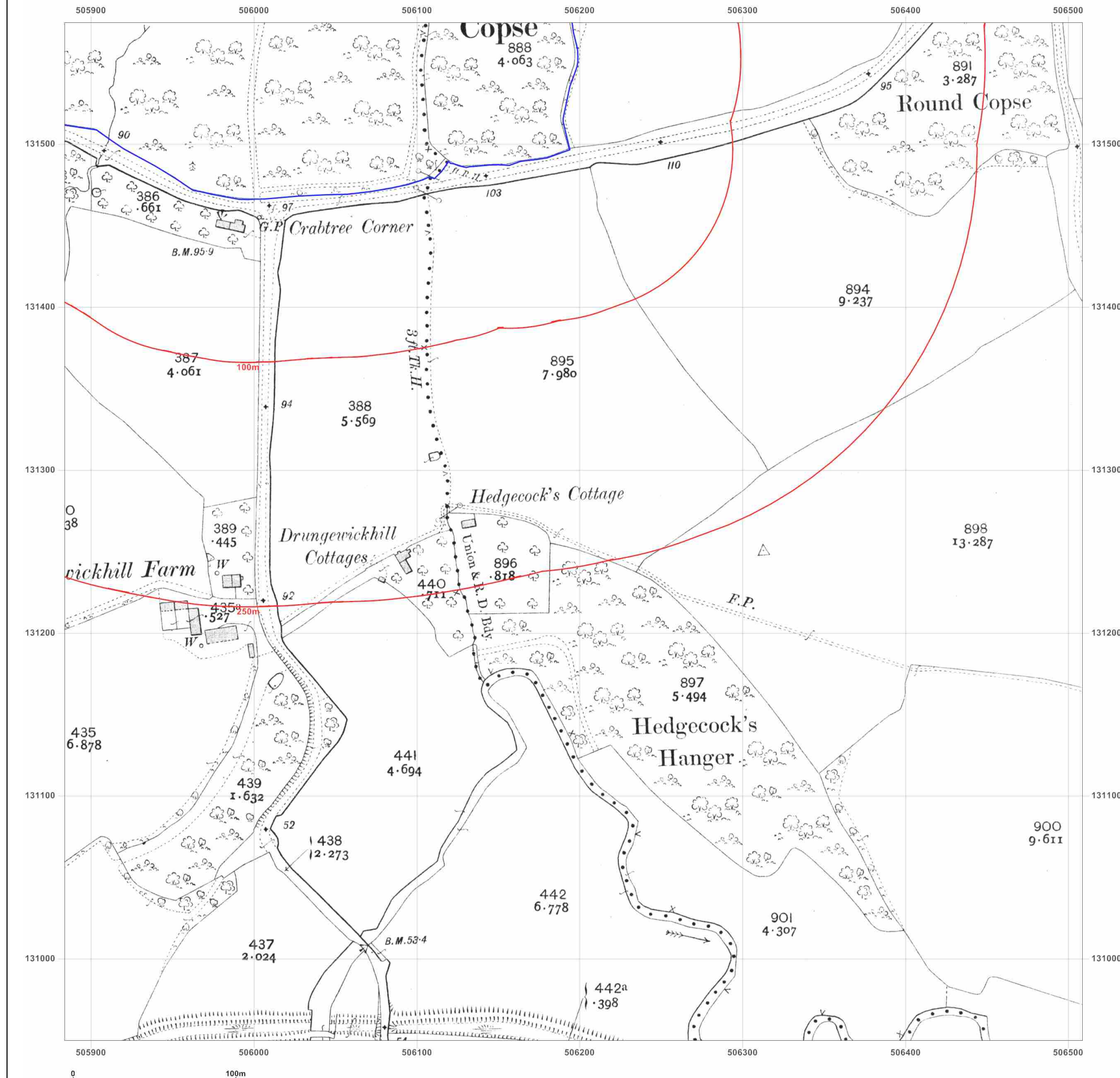


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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_1  
**Grid Ref:** 506196, 131262

**Map Name:** National Grid

**Map date:** 1973-1974

**Scale:** 1:2,500

**Printed at:** 1:2,500



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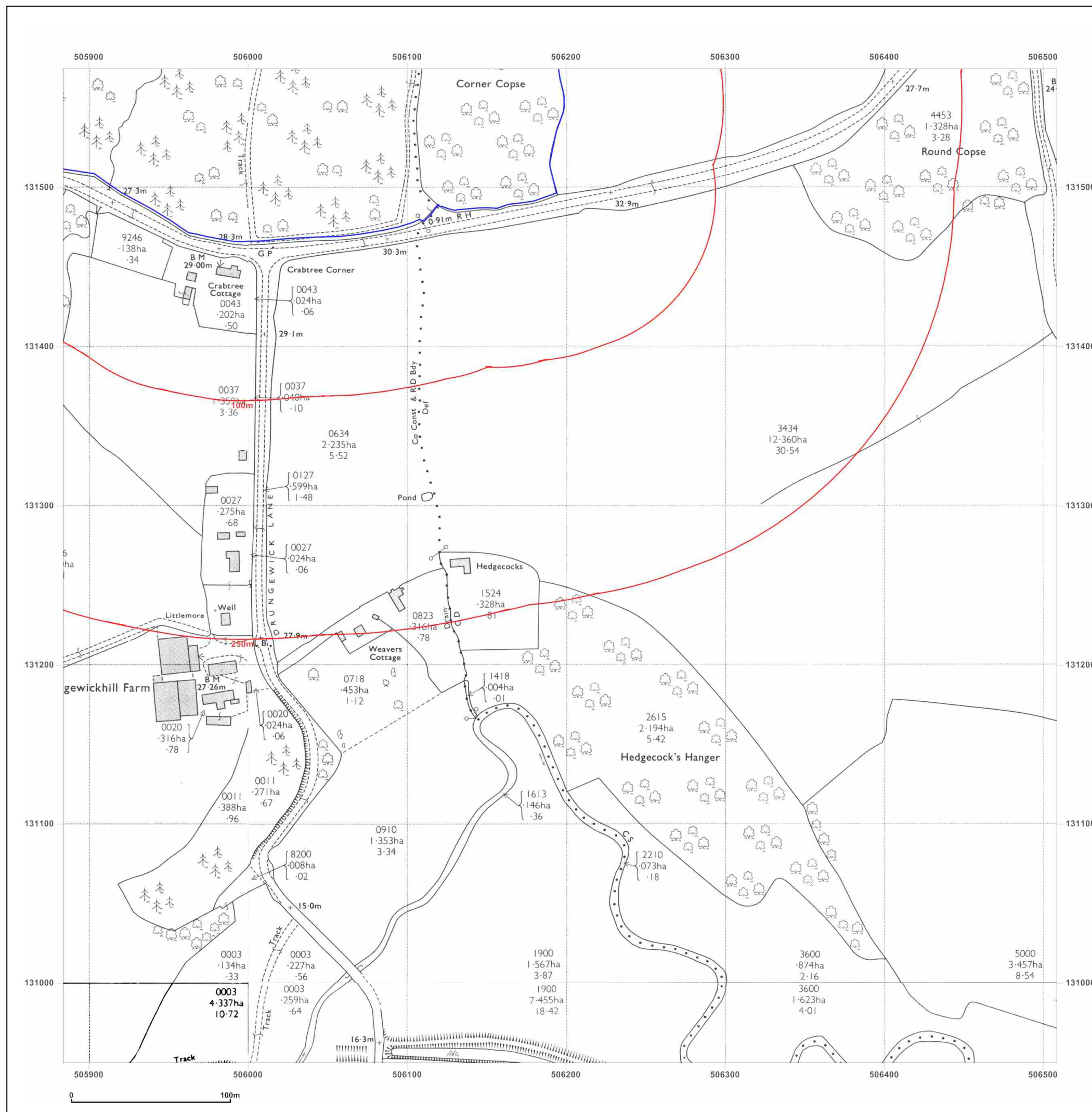


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_1  
**Grid Ref:** 506196, 131262

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 506196, 131888

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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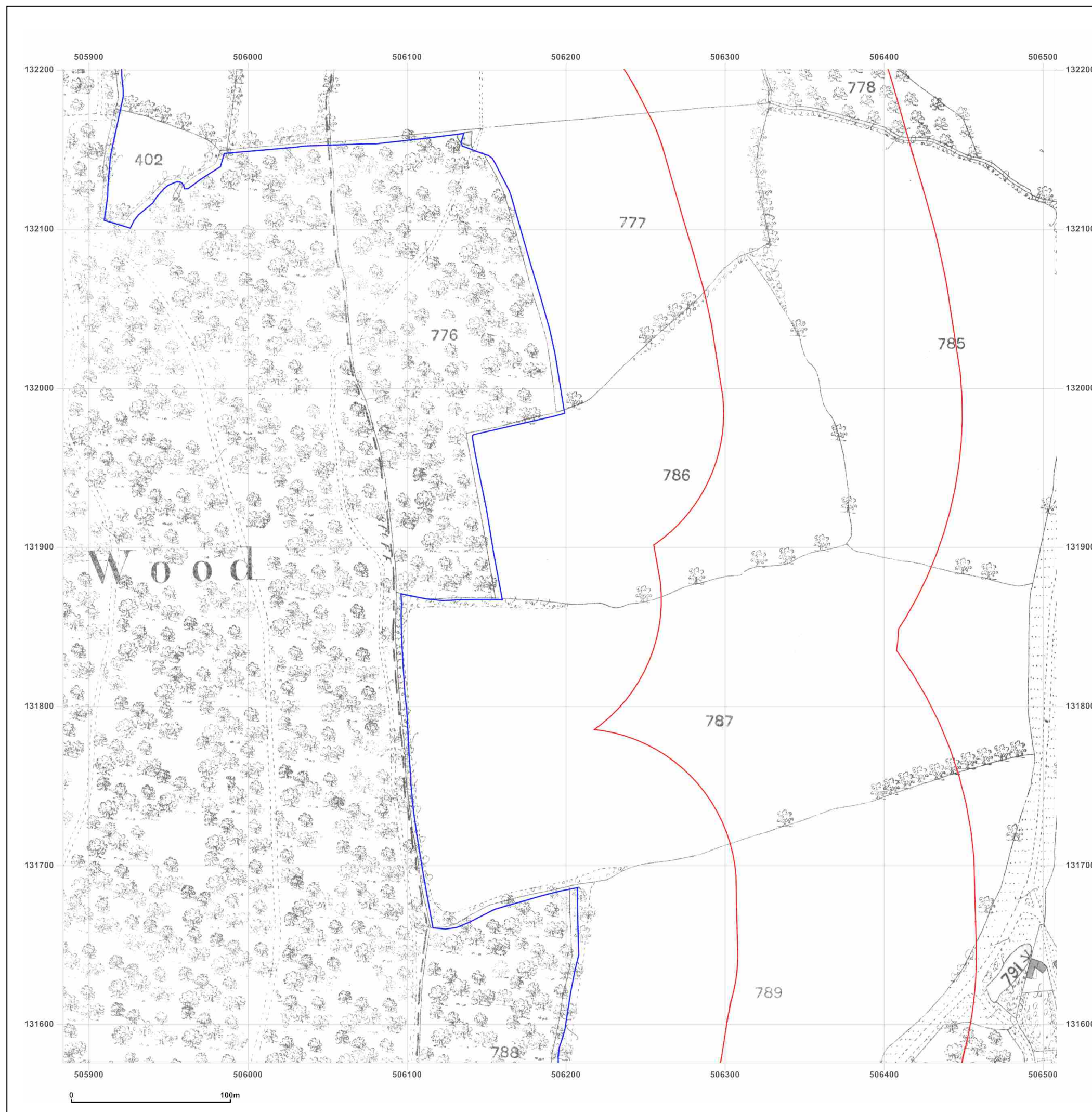


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 506196, 131888

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

**Printed at:** 1:2,500



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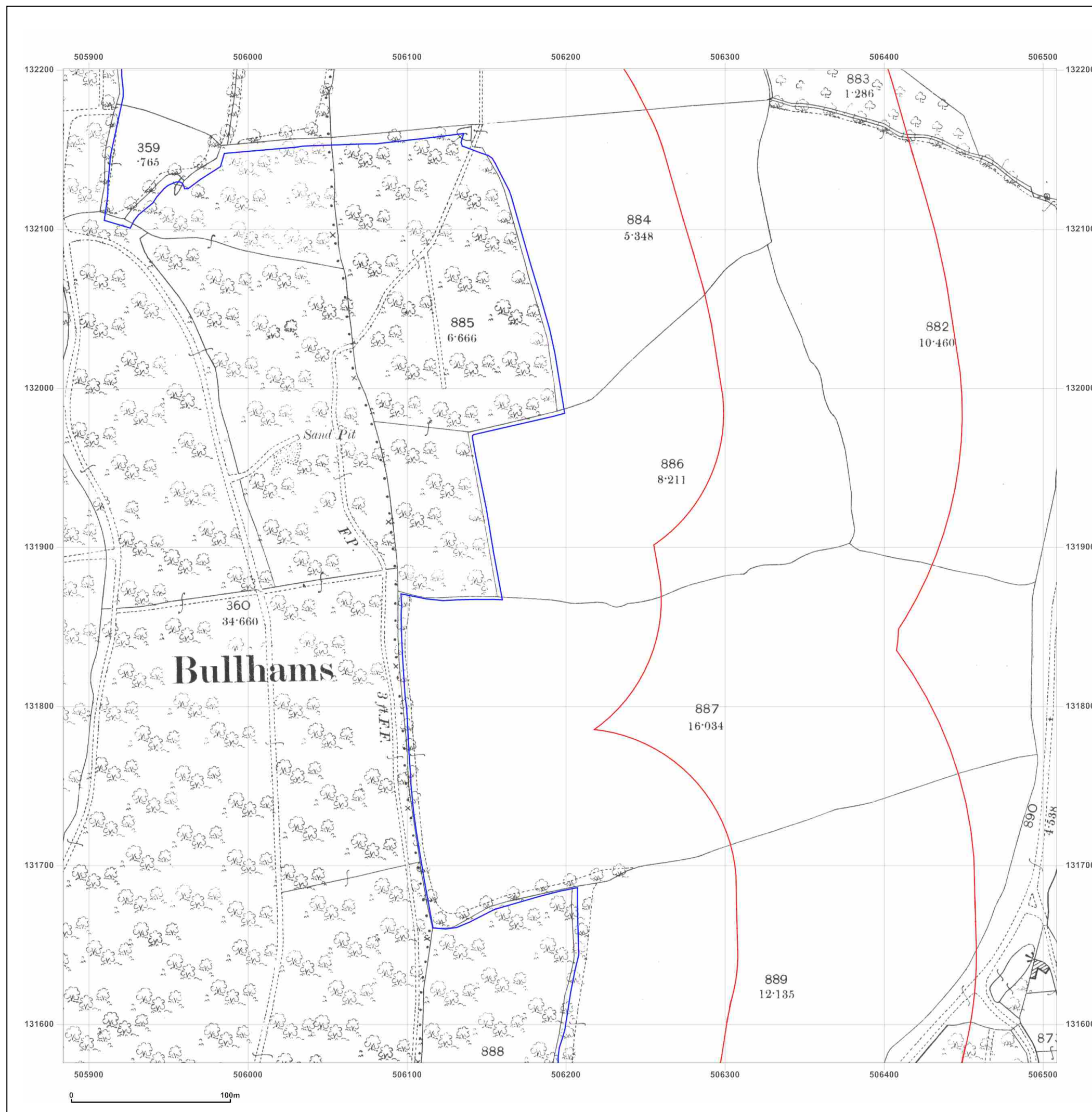


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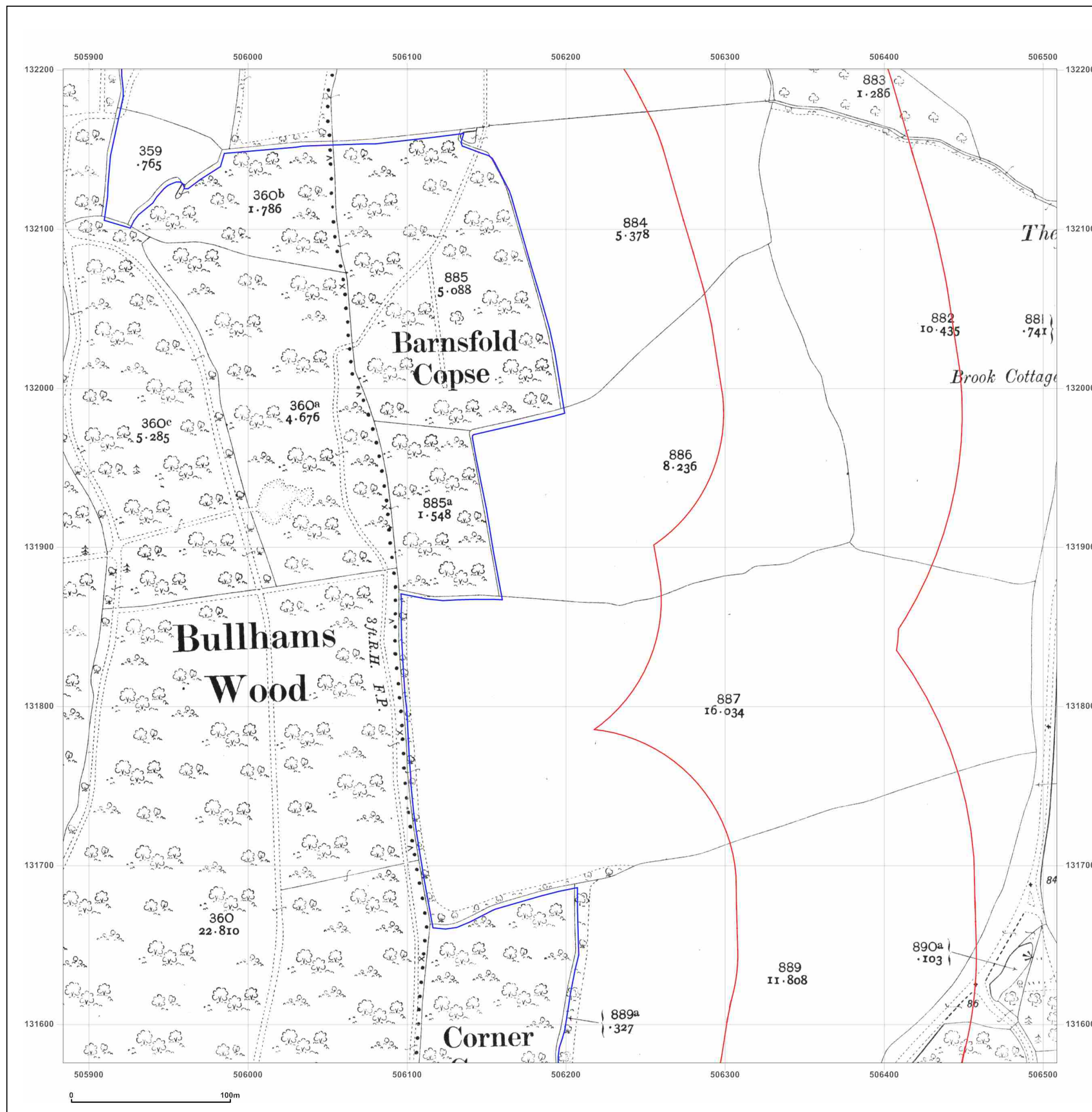
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**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 506196, 131888

**Map Name:** National Grid

**Map date:** 1973-1974

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
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Revised 1973  
Edition N/A  
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Levelled 1952

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Revised N/A  
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Revised 1973  
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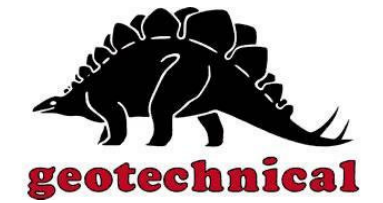
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**Map Name:** National Grid

**Map date:** 1994

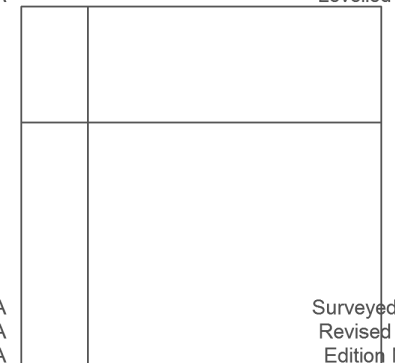
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**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
Copyright 1994  
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Revised N/A  
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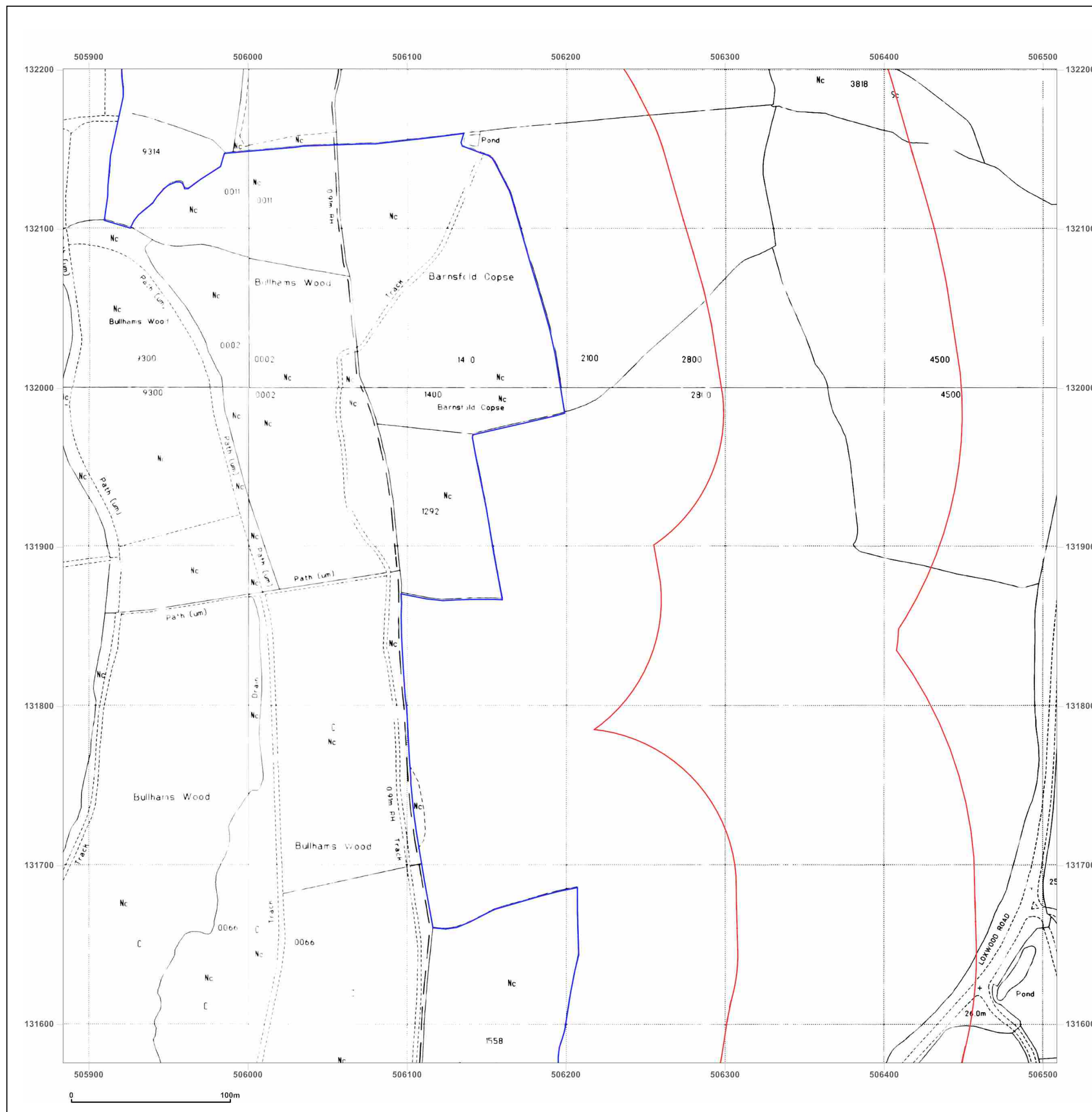


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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 506196, 132513

**Map Name:** County Series

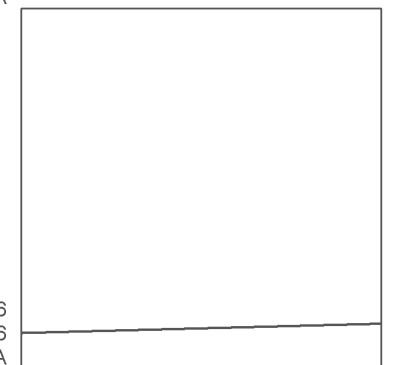
**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1876  
Revised 1876  
Edition N/A  
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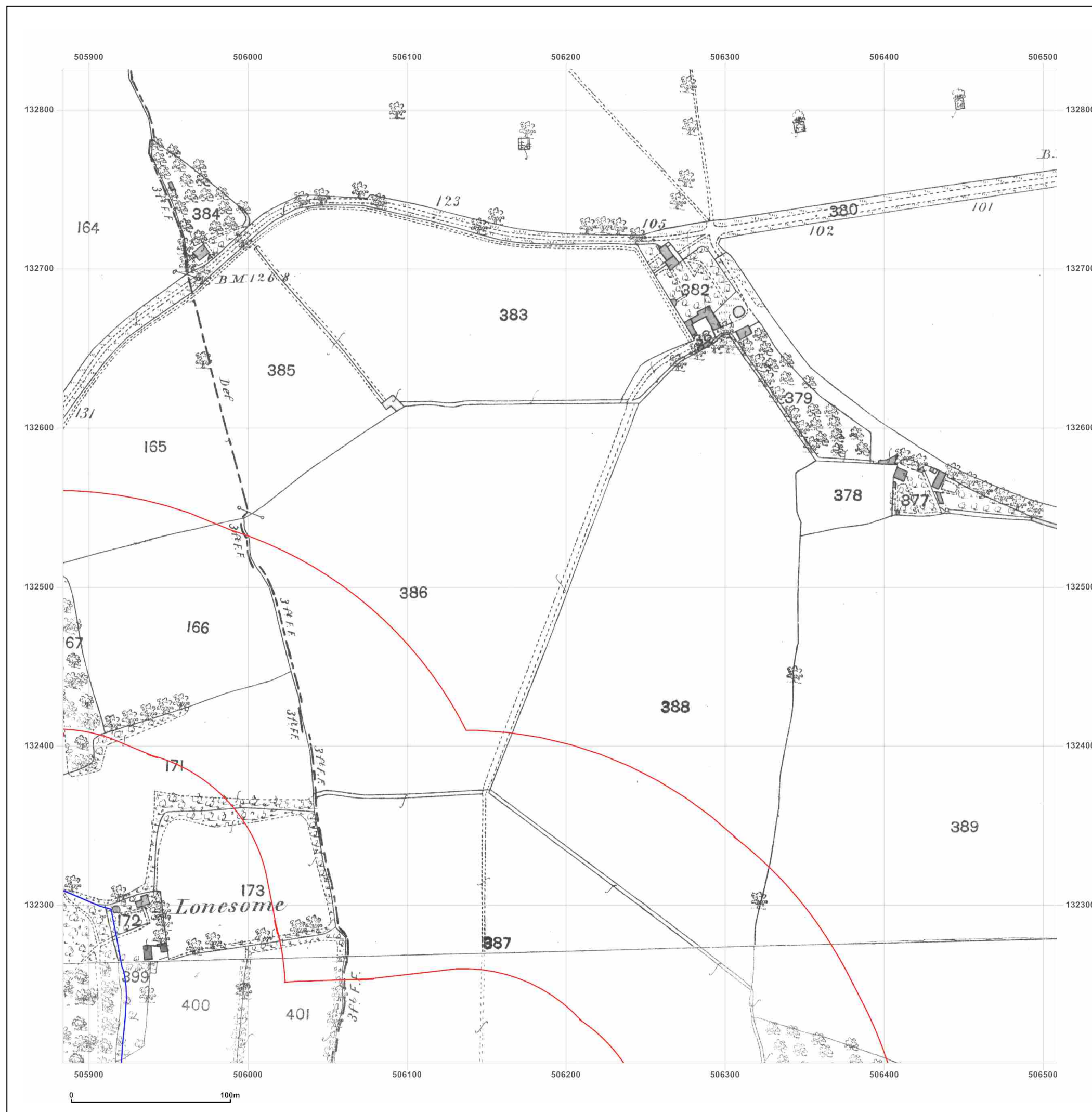


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 506196, 132513

**Map Name:** County Series

**Map date:** 1897-1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1897  
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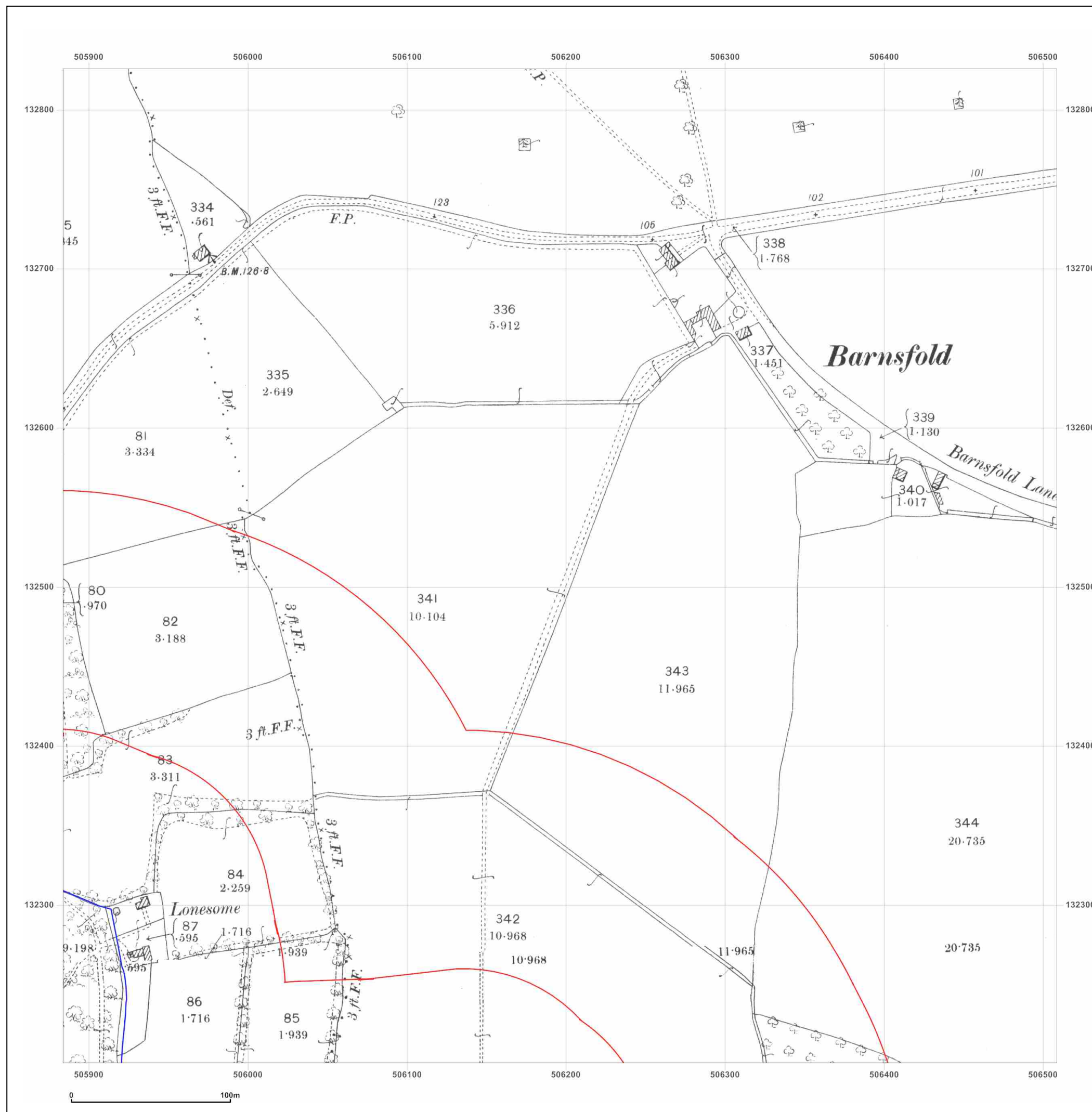


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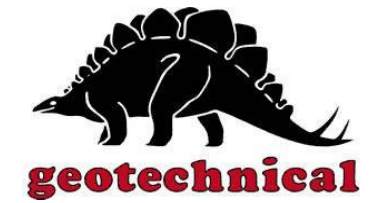
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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 506196, 132513

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
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Revised 1973  
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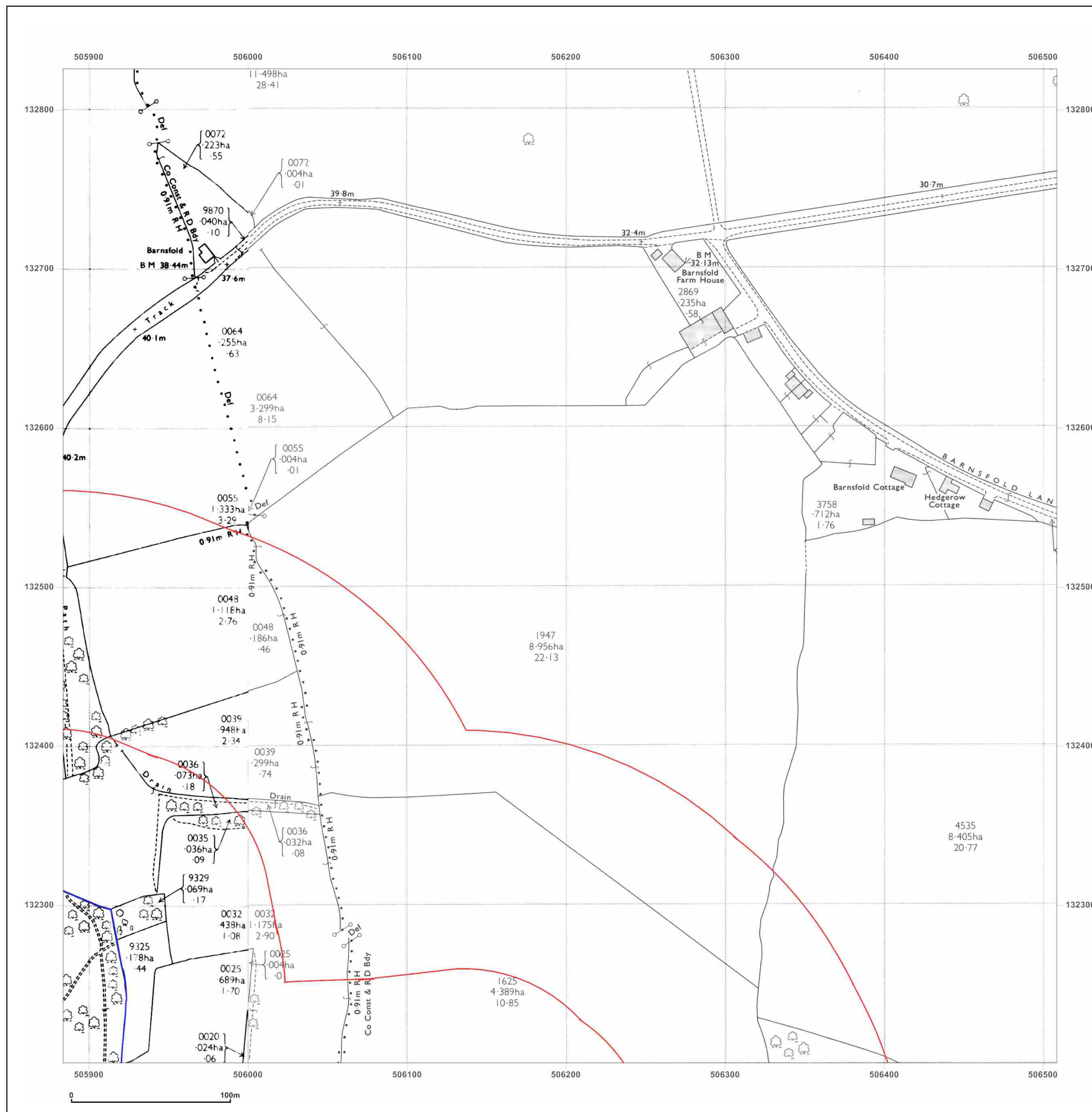


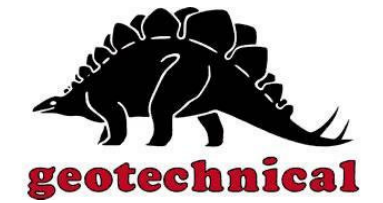
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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-588992-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 506196, 132513

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
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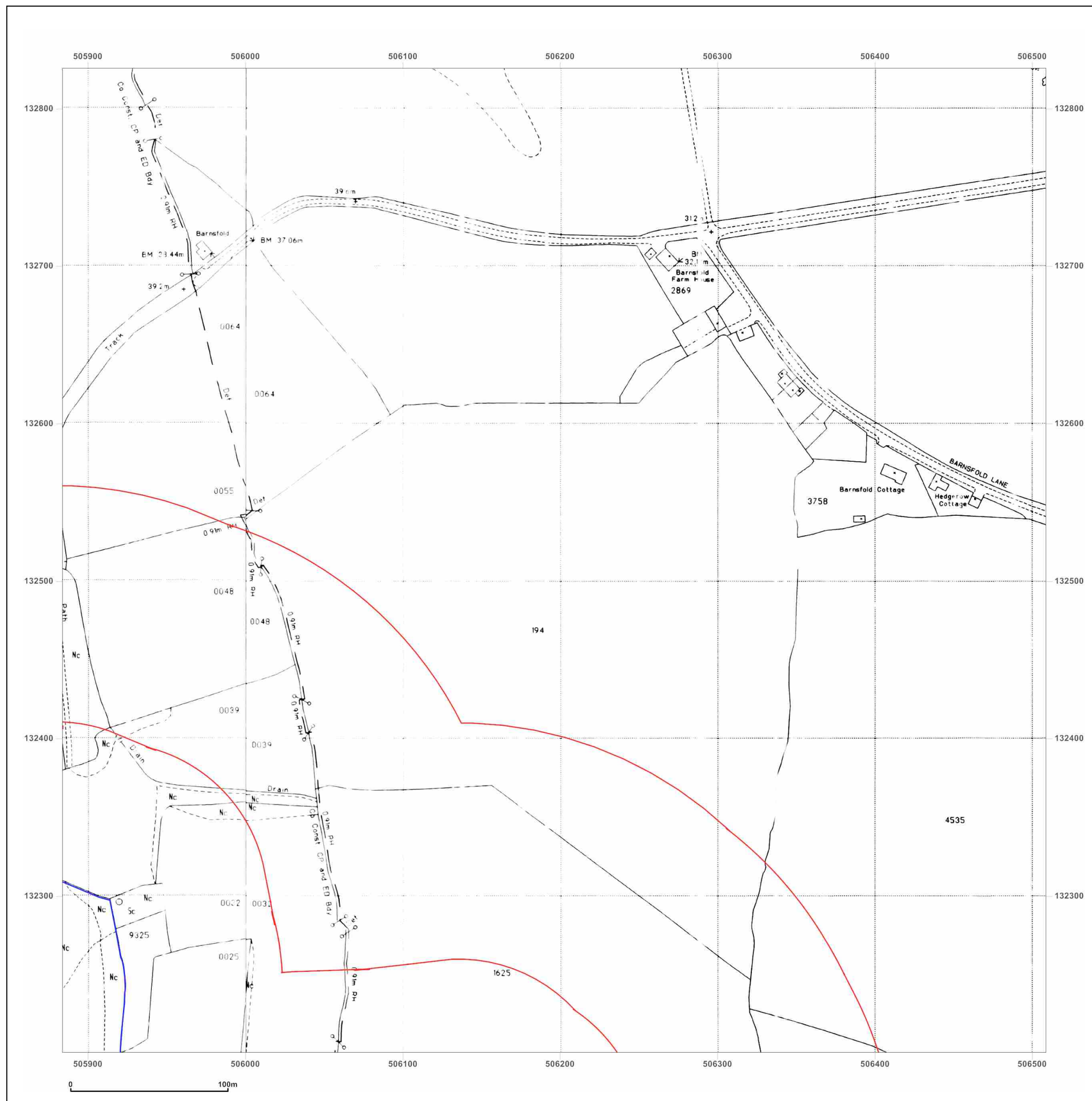


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** County Series

**Map date:** 1871

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1871  
Revised 1871  
Edition N/A  
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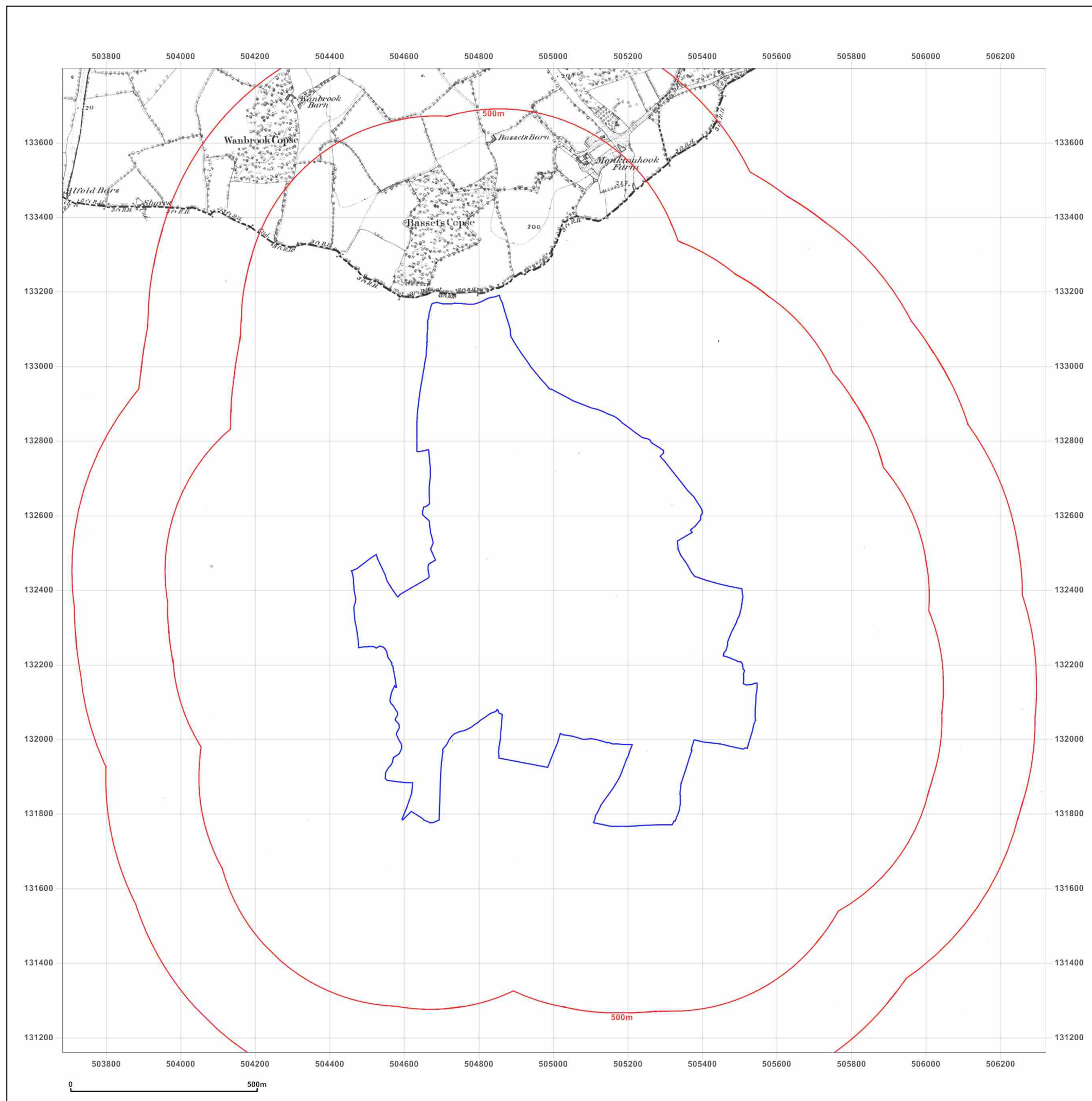


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** County Series

**Map date:** 1910-1914

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1874  
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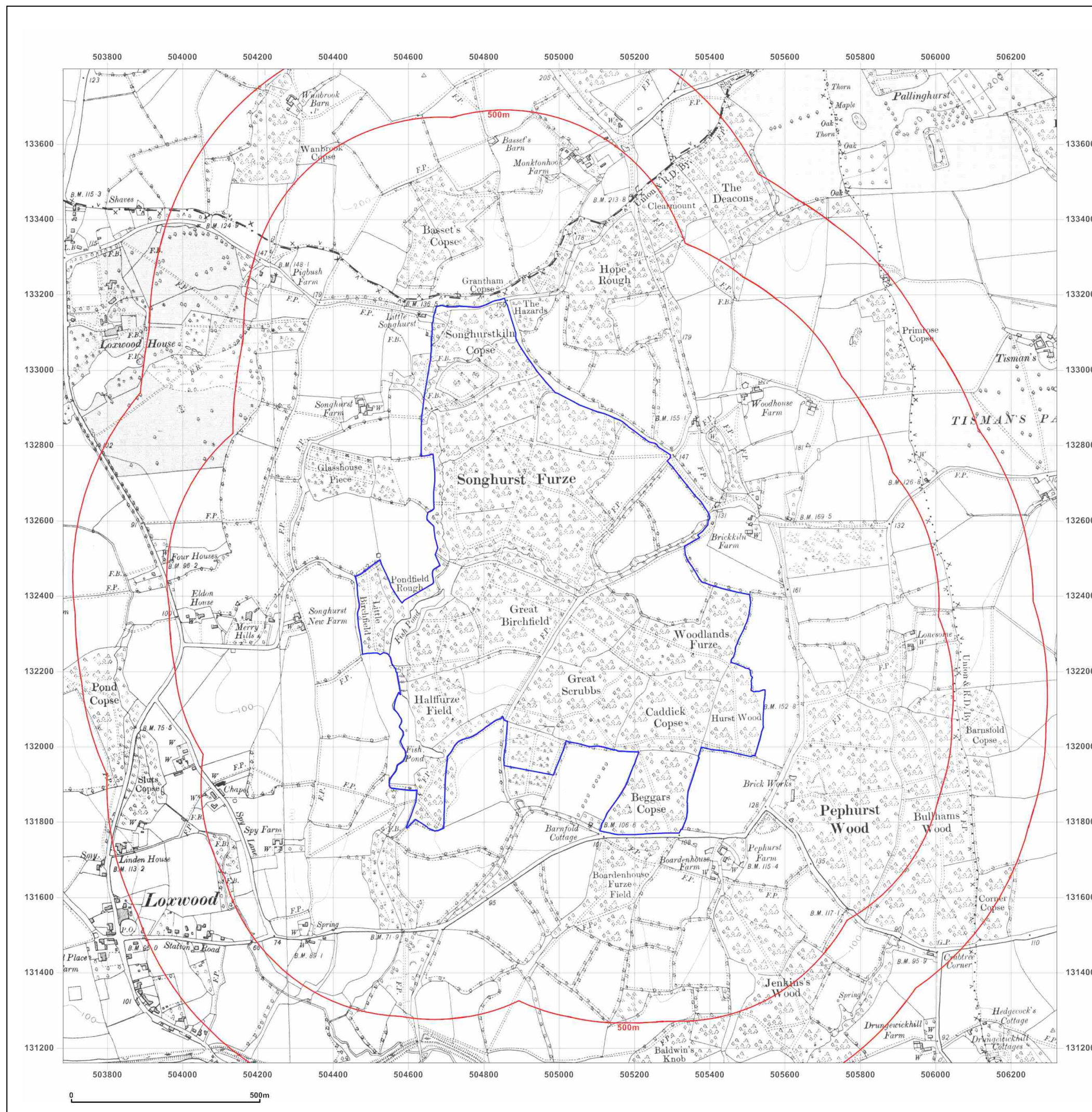


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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** County Series

**Map date:** 1920

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Revised 1920  
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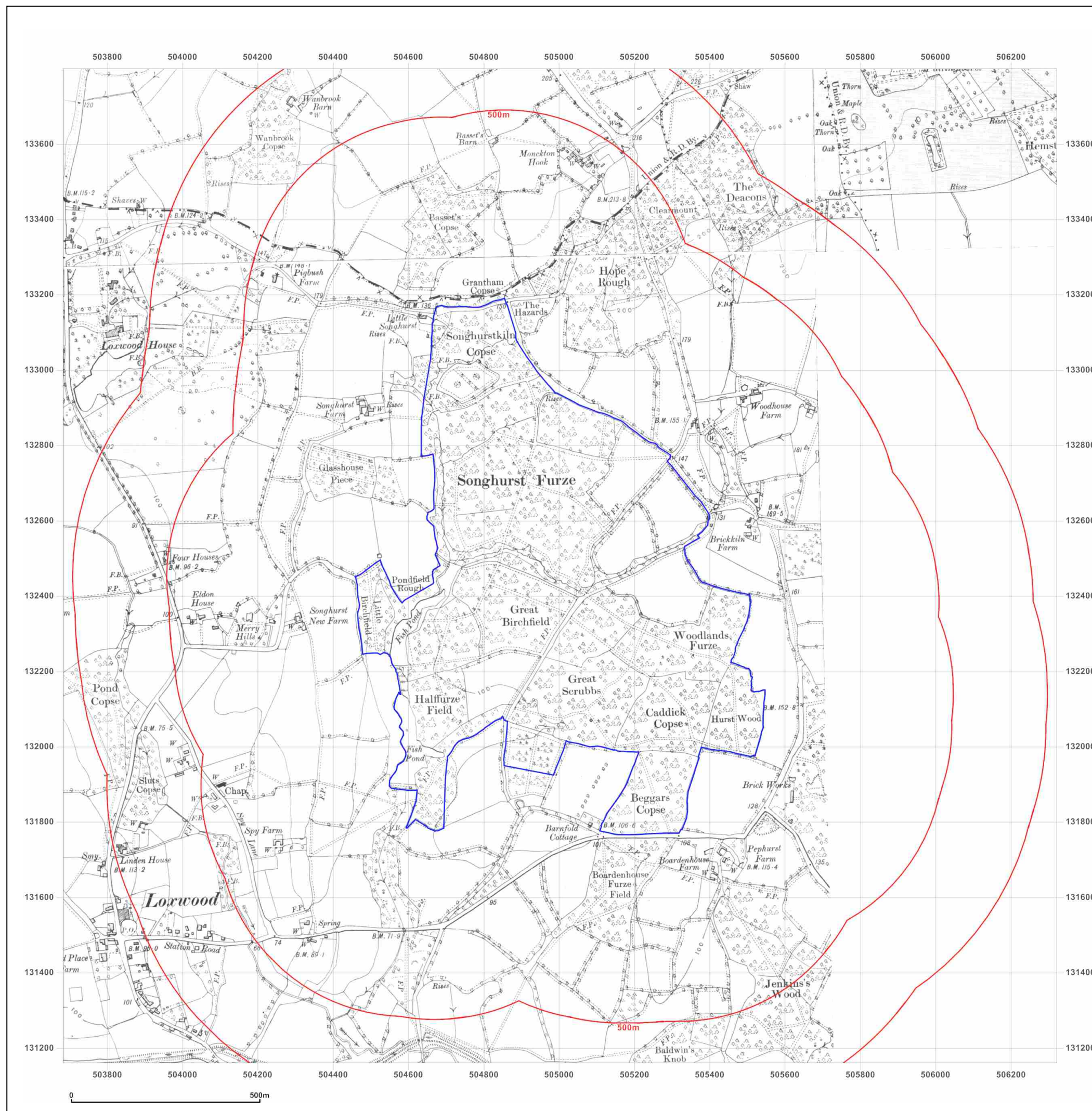


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** Provisional

**Map date:** 1956-1957

**Scale:** 1:10,560

**Printed at:** 1:10,560



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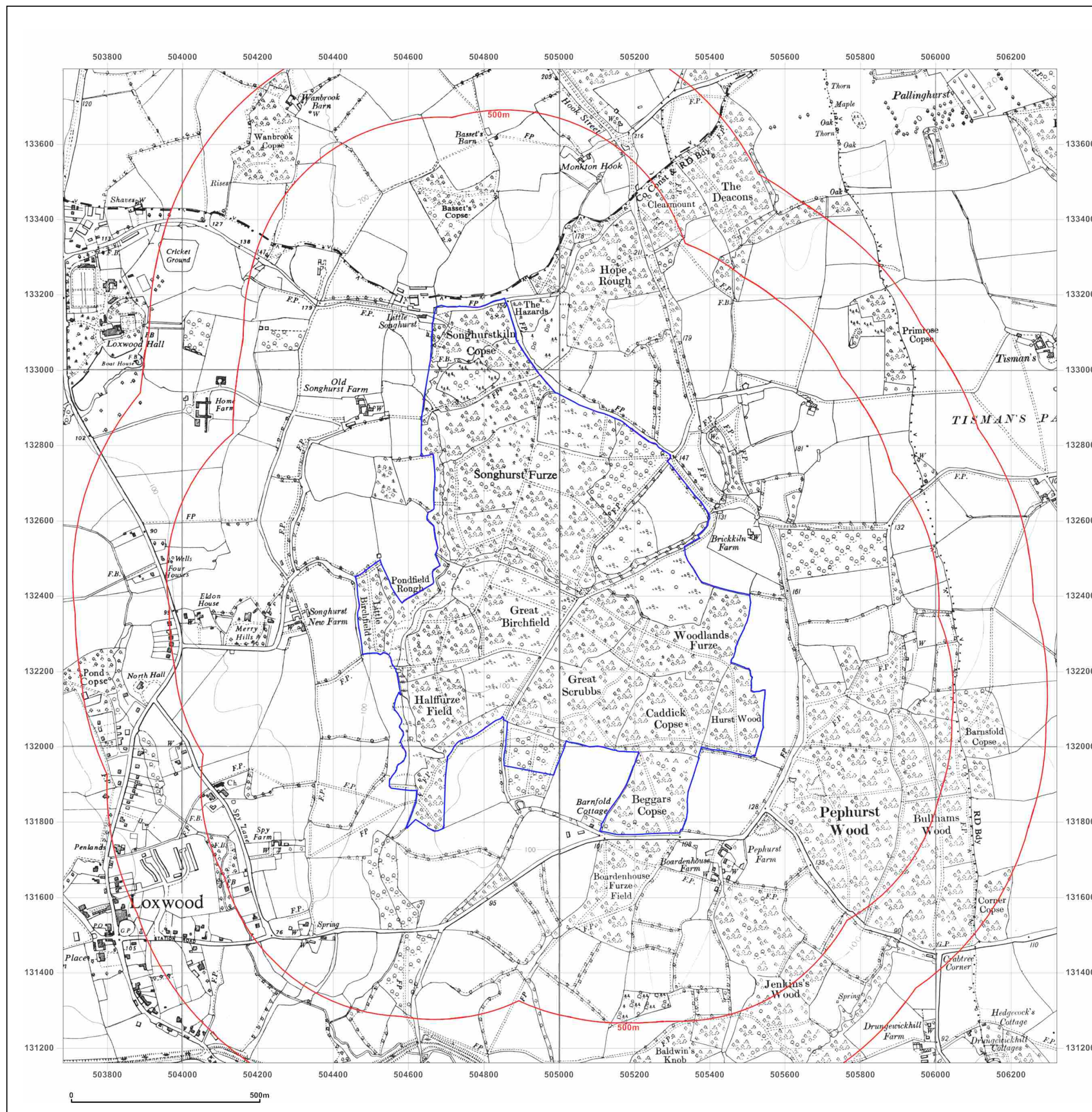


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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** National Grid

**Map date:** 1979-1980

**Scale:** 1:10,000

**Printed at:** 1:10,000



Surveyed 1973  
Revised 1980  
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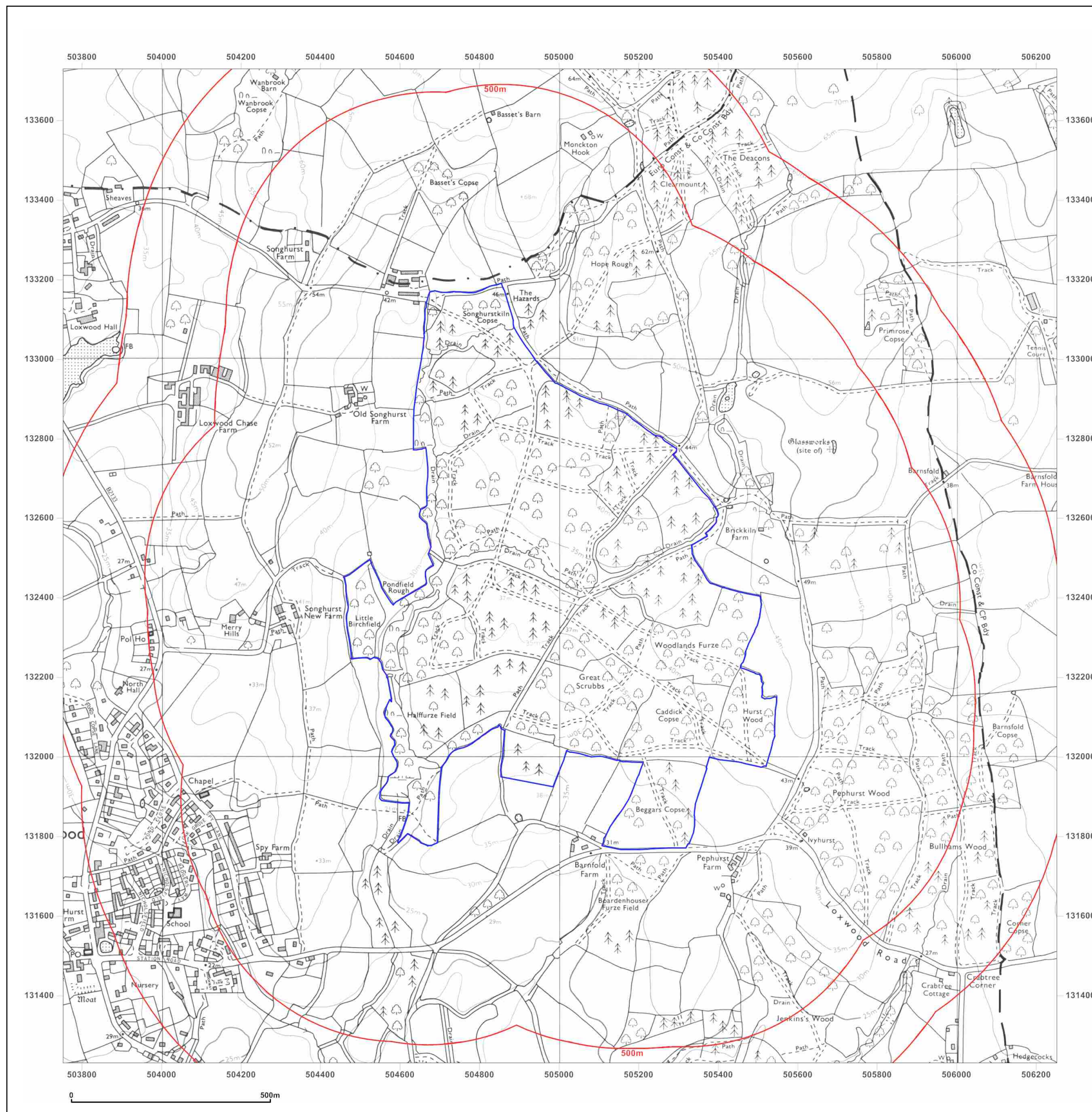


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** 1:10,000 Raster

**Map date:** 2002

**Scale:** 1:10,000

**Printed at:** 1:10,000



2002



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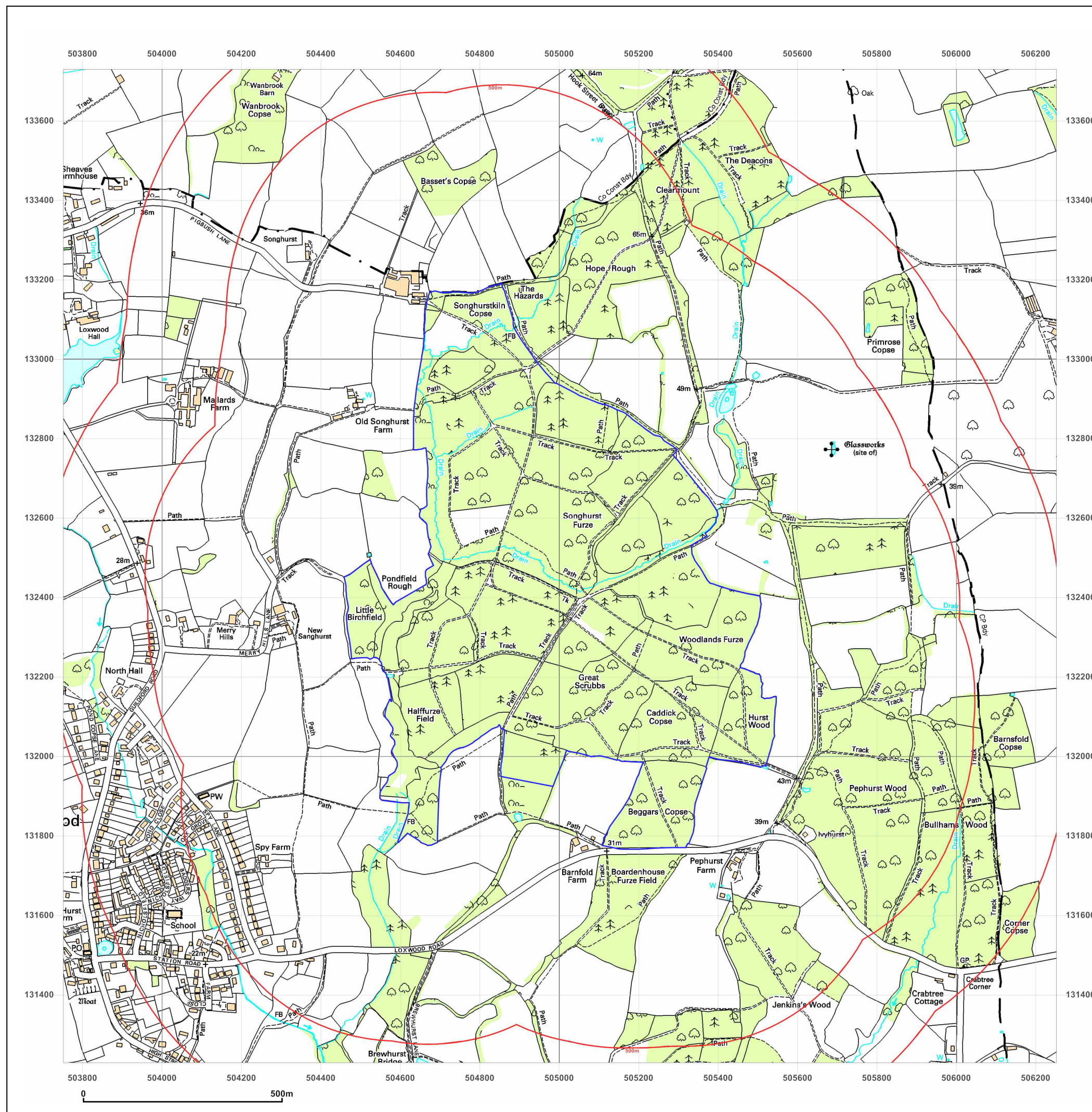


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ORW

**Client Ref:** 38143  
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**Grid Ref:** 505002, 132479

**Map Name:** National Grid

**Map date:** 2010

**Scale:** 1:10,000

**Printed at:** 1:10,000



2010



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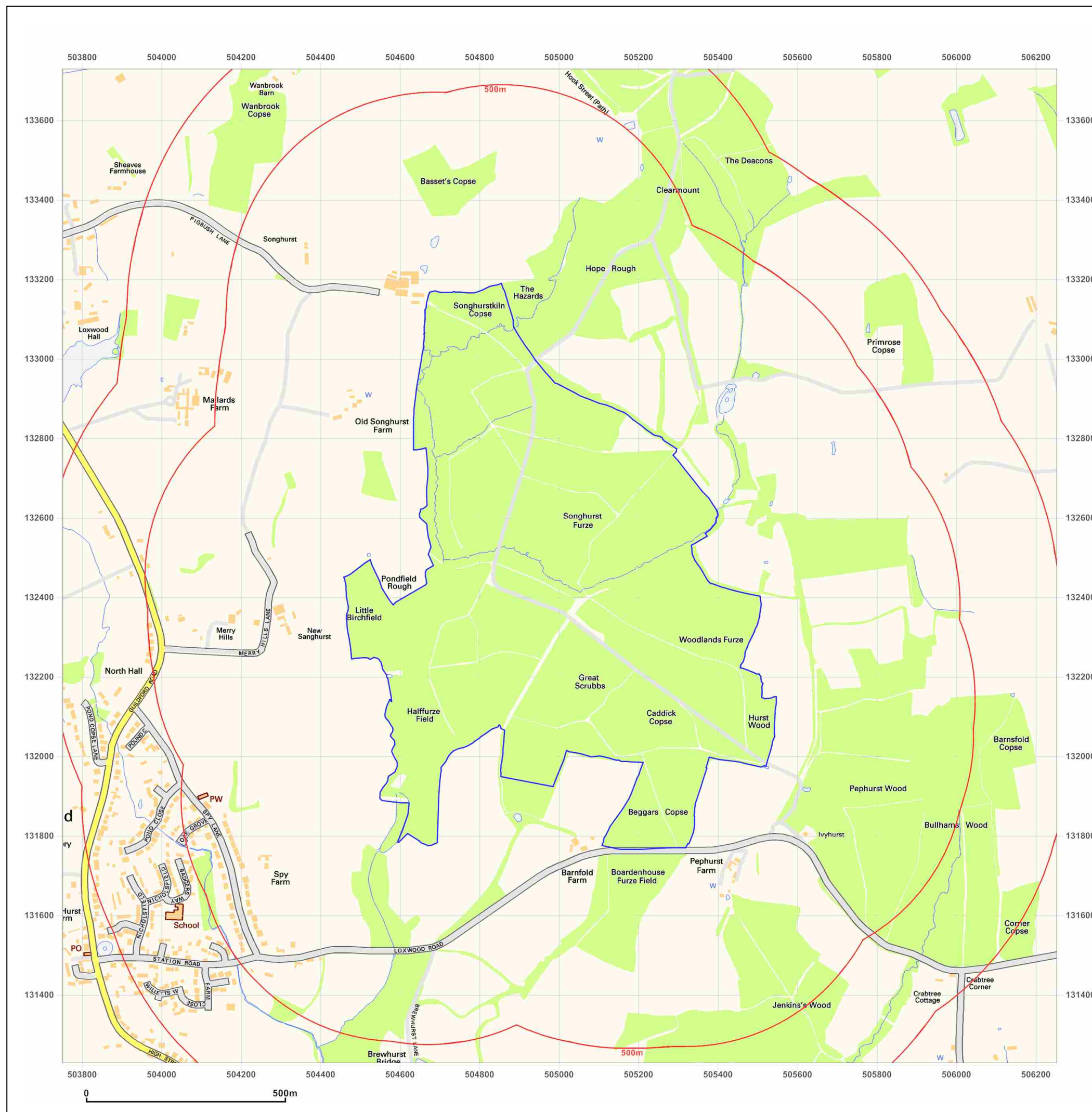


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS  
**Grid Ref:** 505002, 132479

**Map Name:** National Grid

**Map date:** 2014

**Scale:** 1:10,000

**Printed at:** 1:10,000



2014



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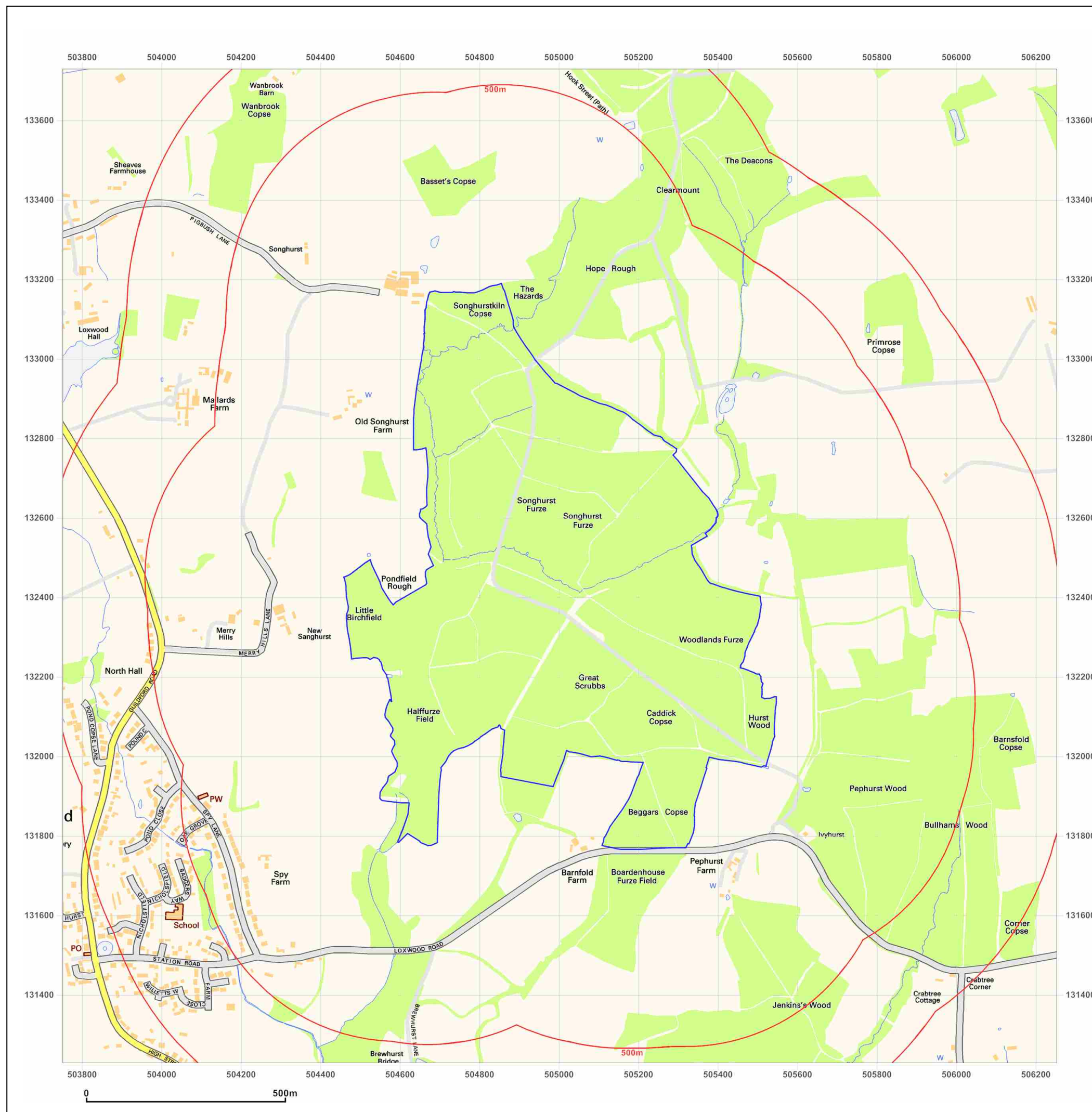


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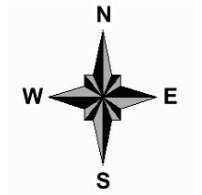
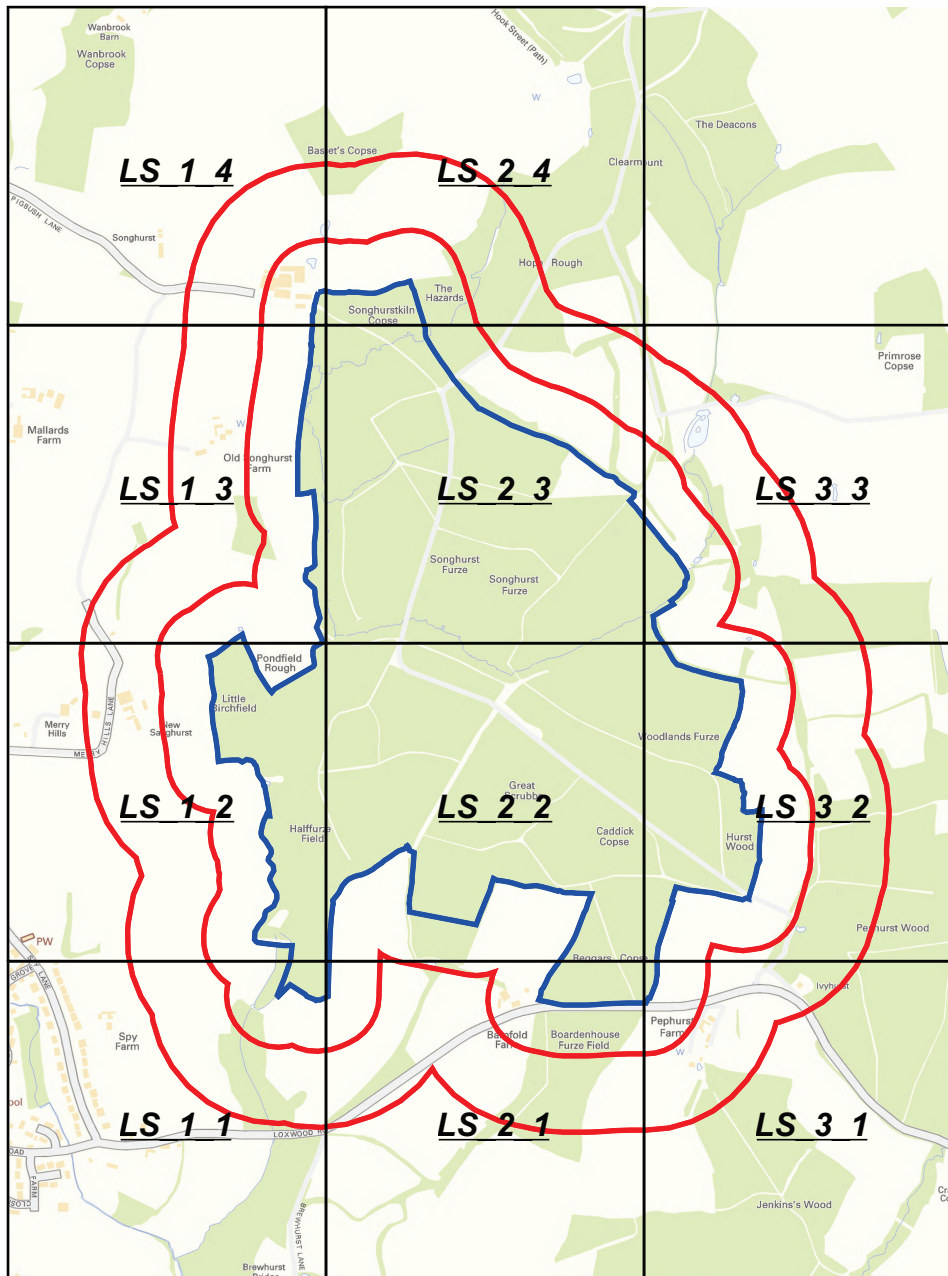
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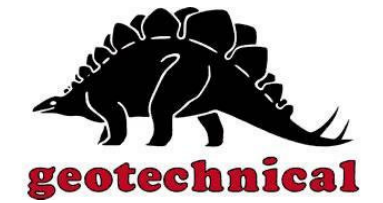
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1:2500 Scale Grid Index



**Site Details:**

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
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**Grid Ref:** 504376, 131540

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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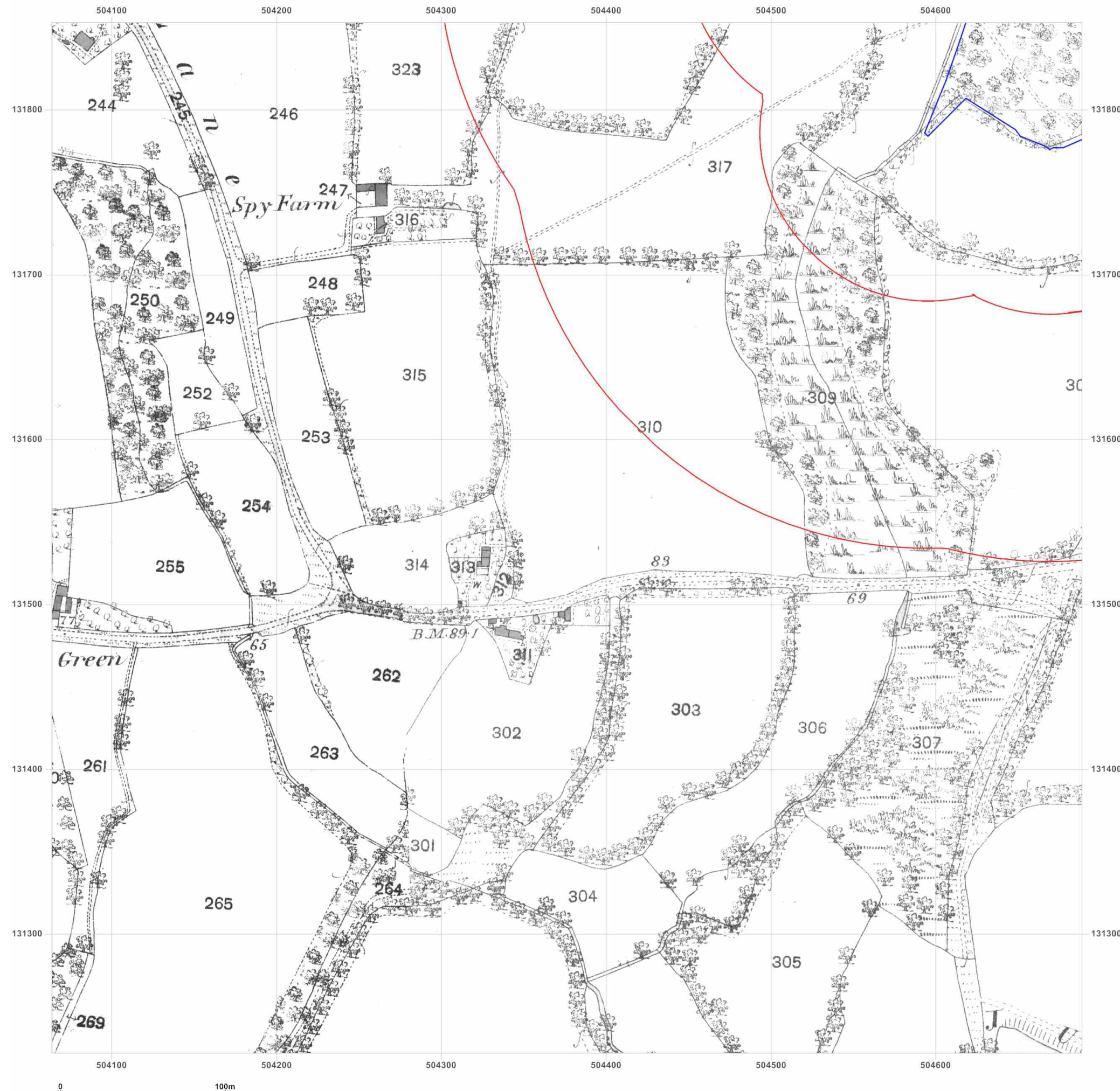


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**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_1\_1  
**Grid Ref:** 504376, 131540

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

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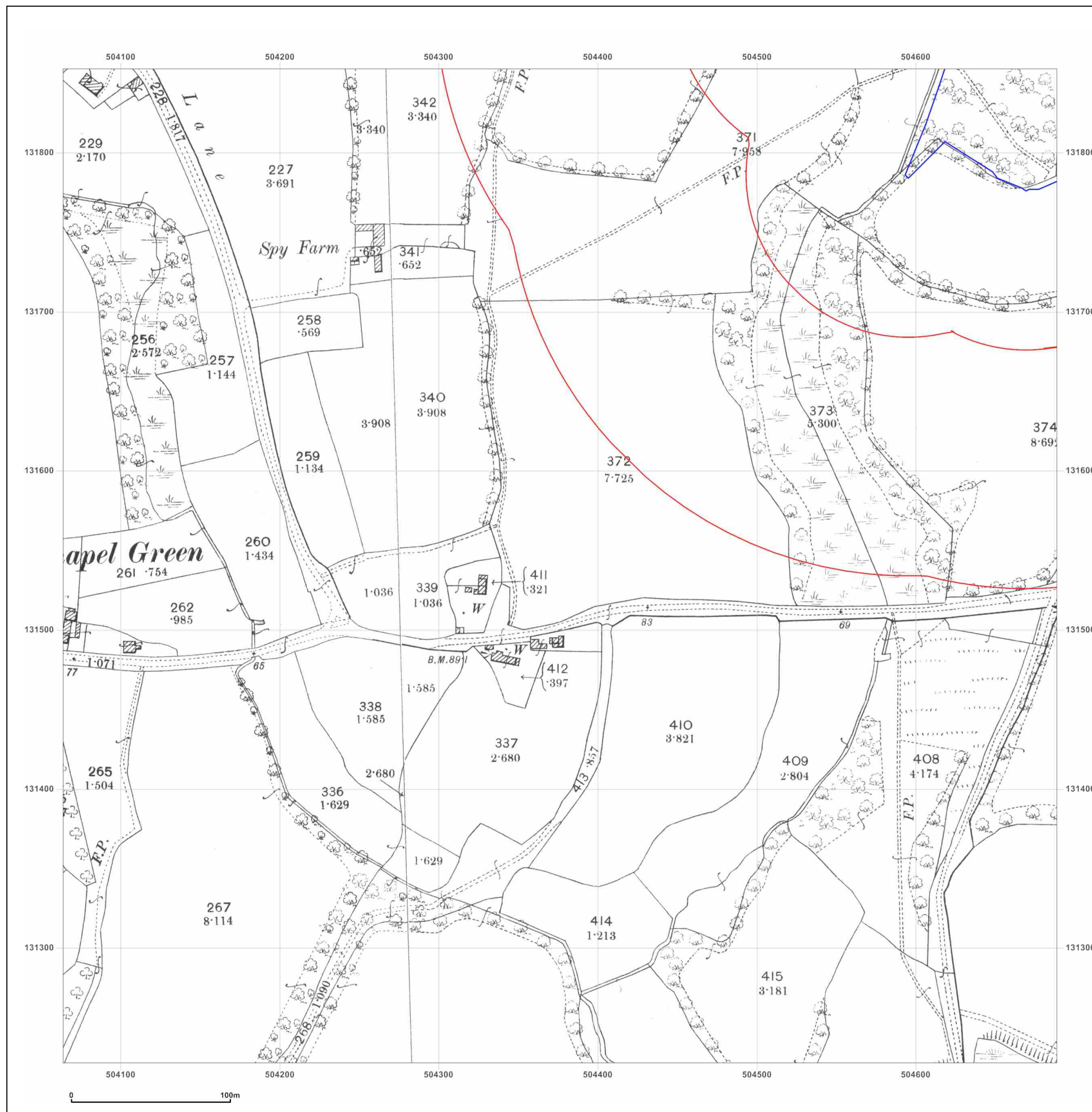


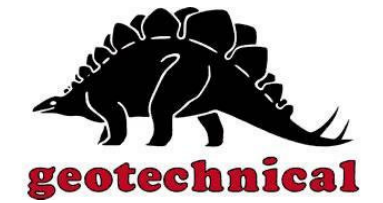
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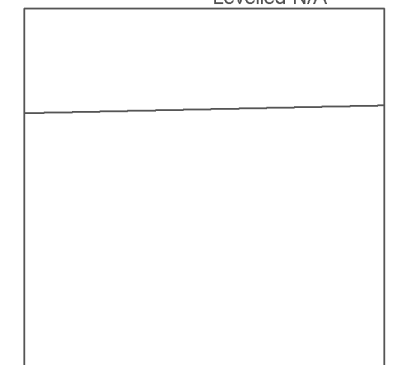
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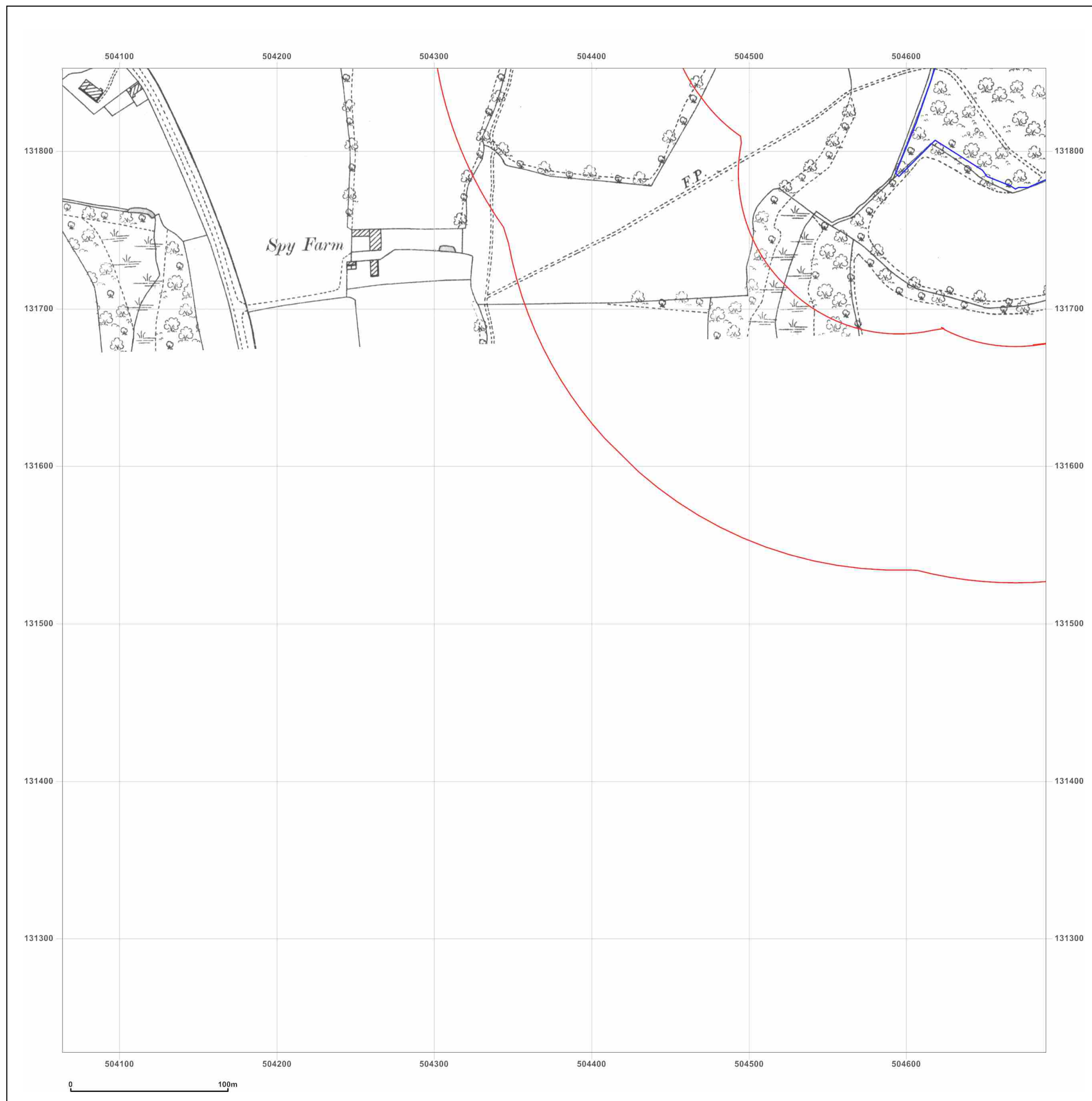


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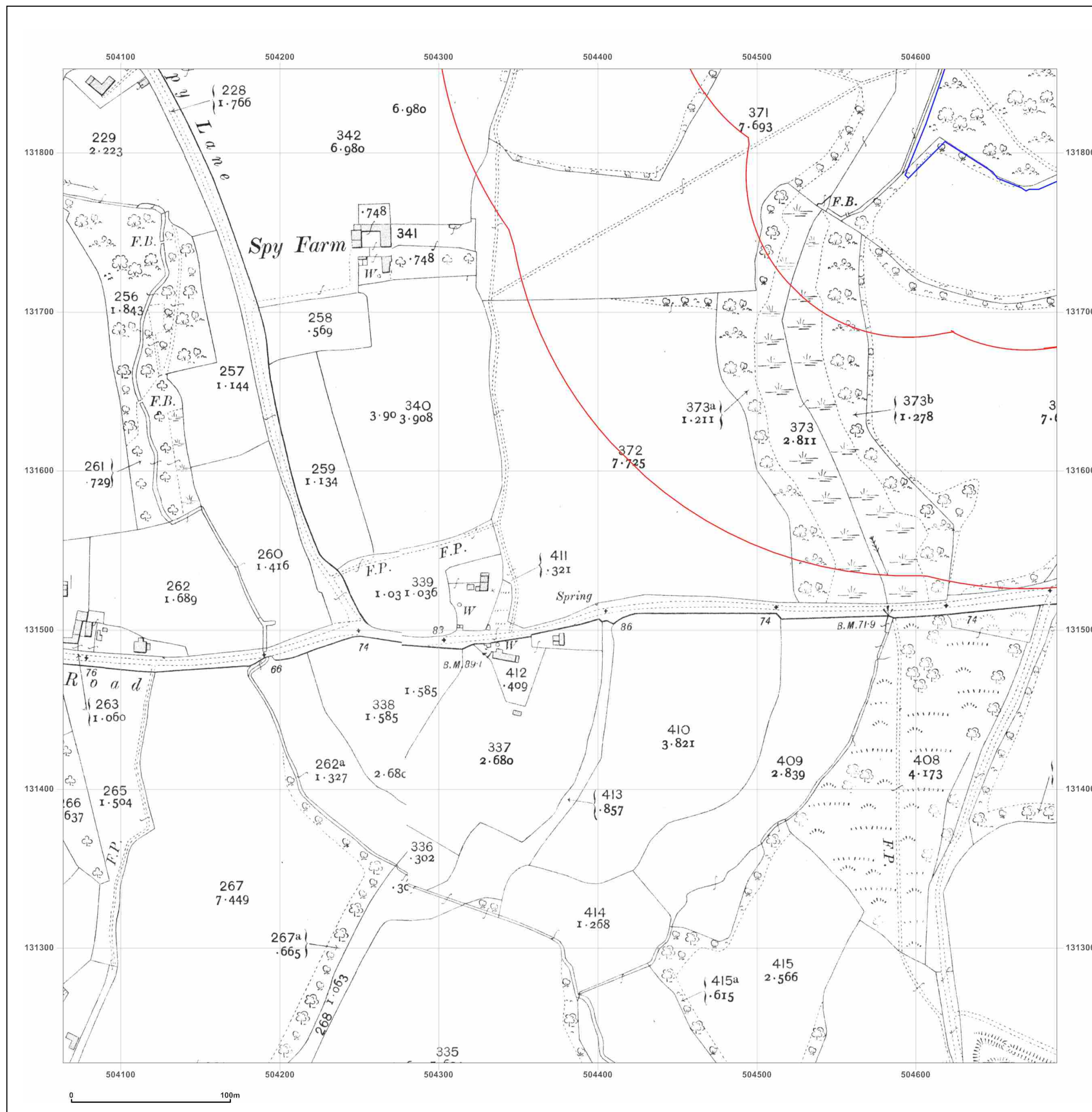


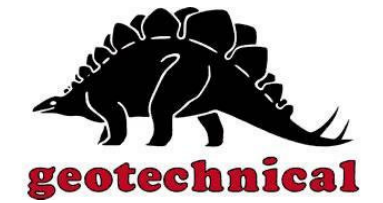
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**Map date:** 1937

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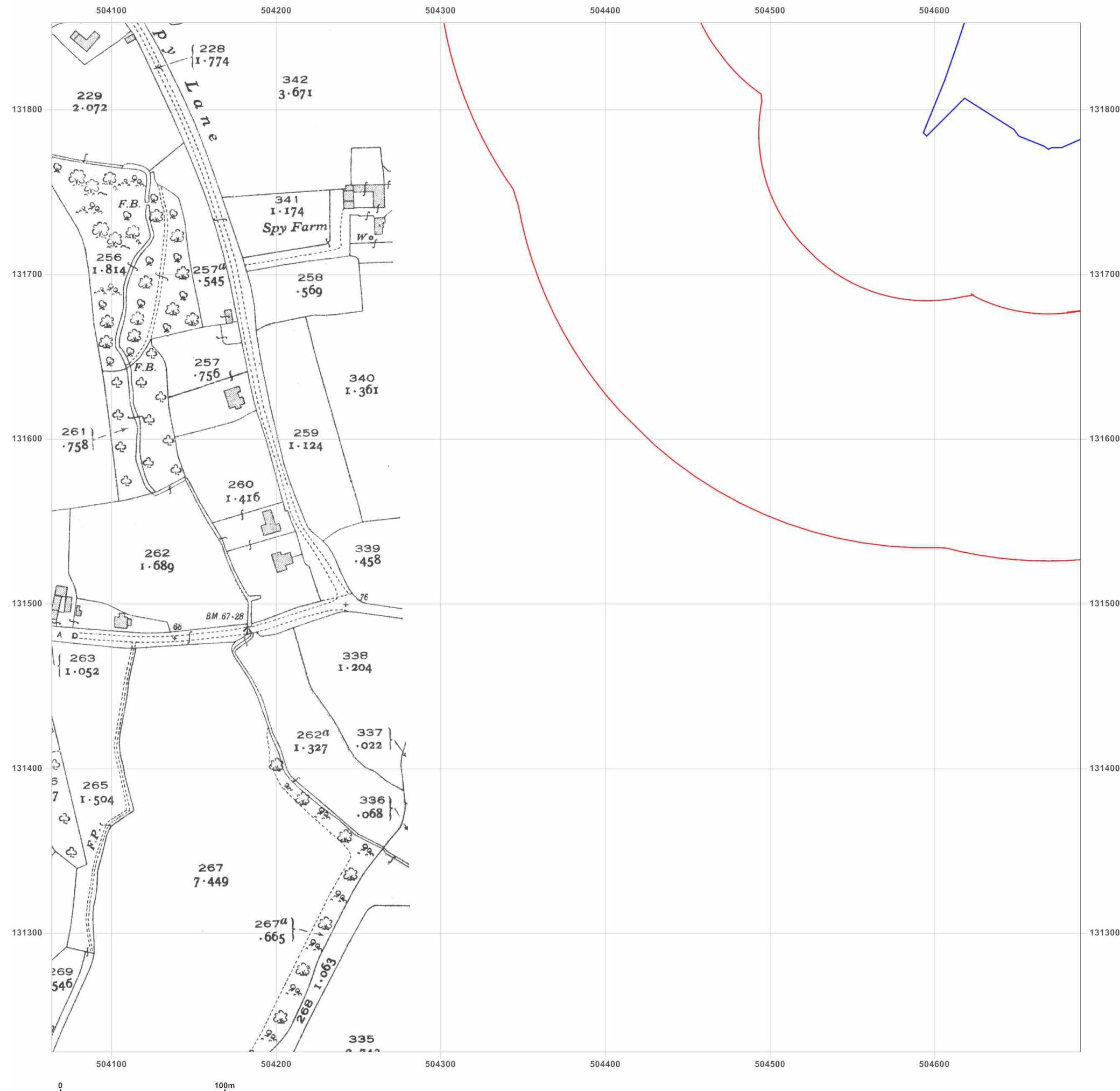


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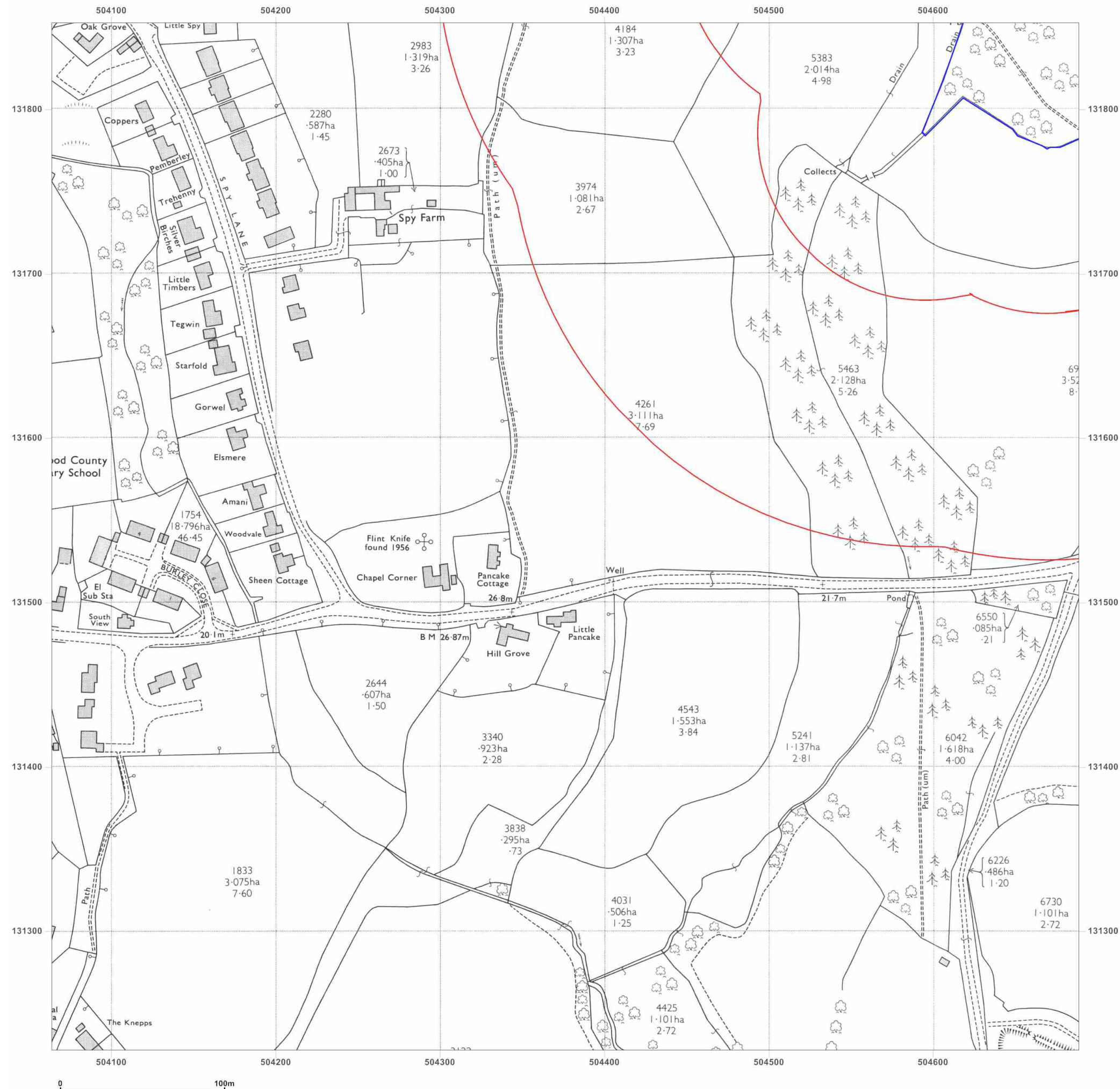
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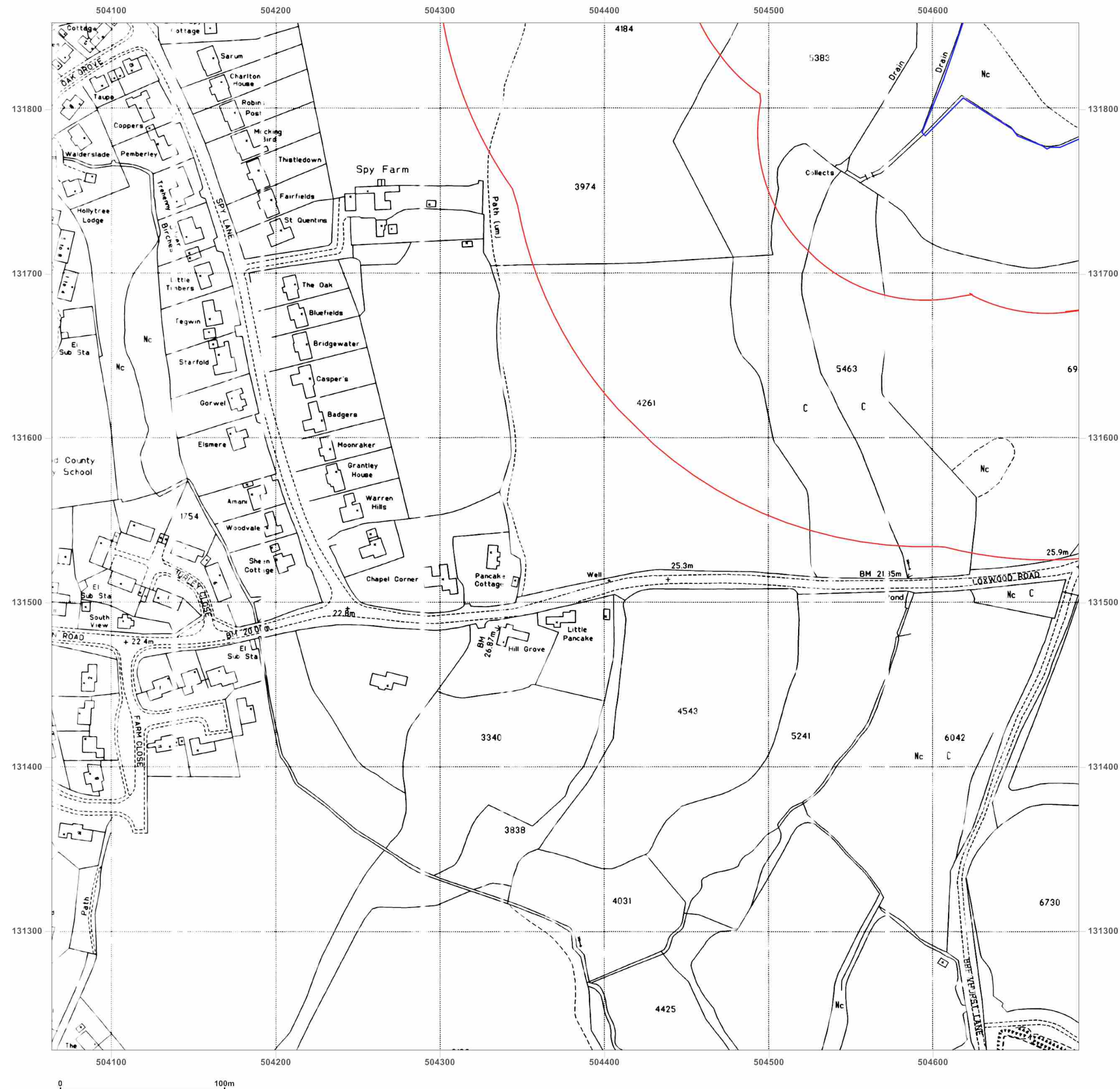
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**Map date:** 1875-1876

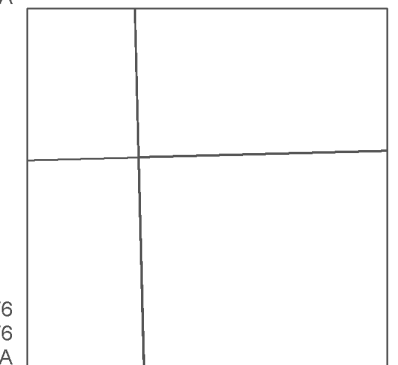
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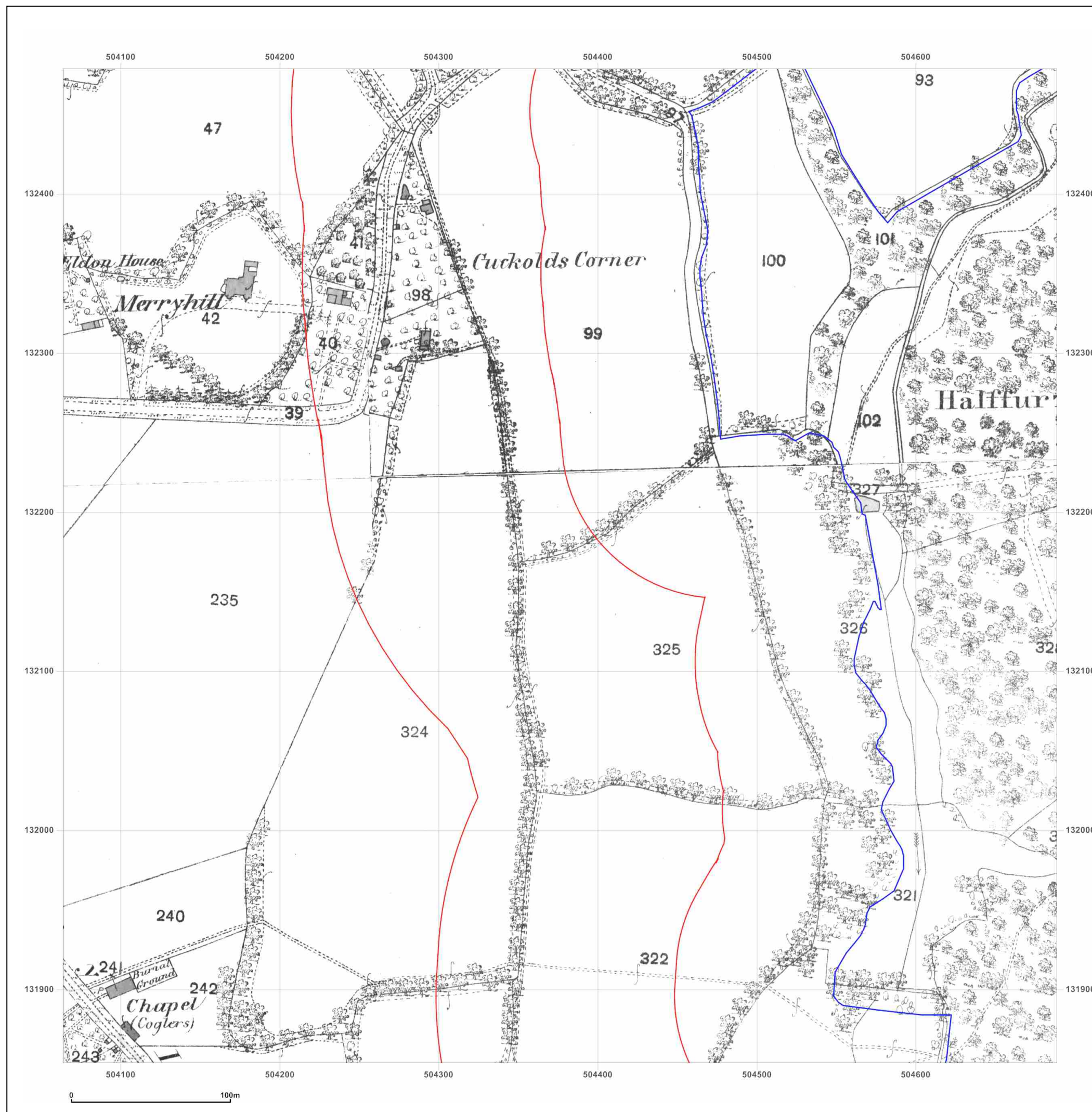


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**Map date:** 1898

**Scale:** 1:2,500

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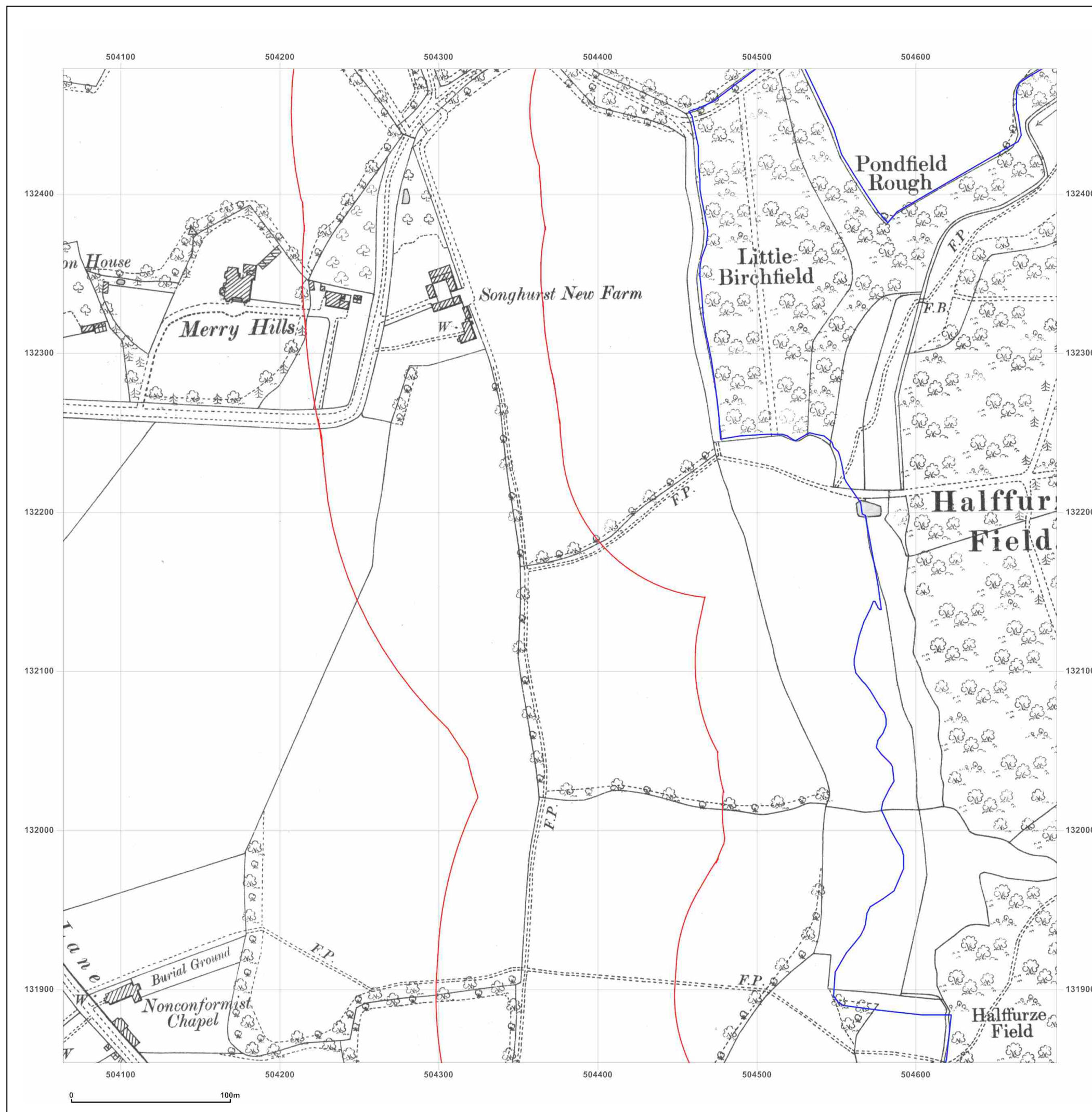


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**Map date:** 1912

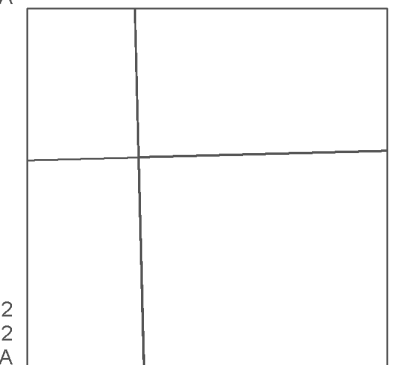
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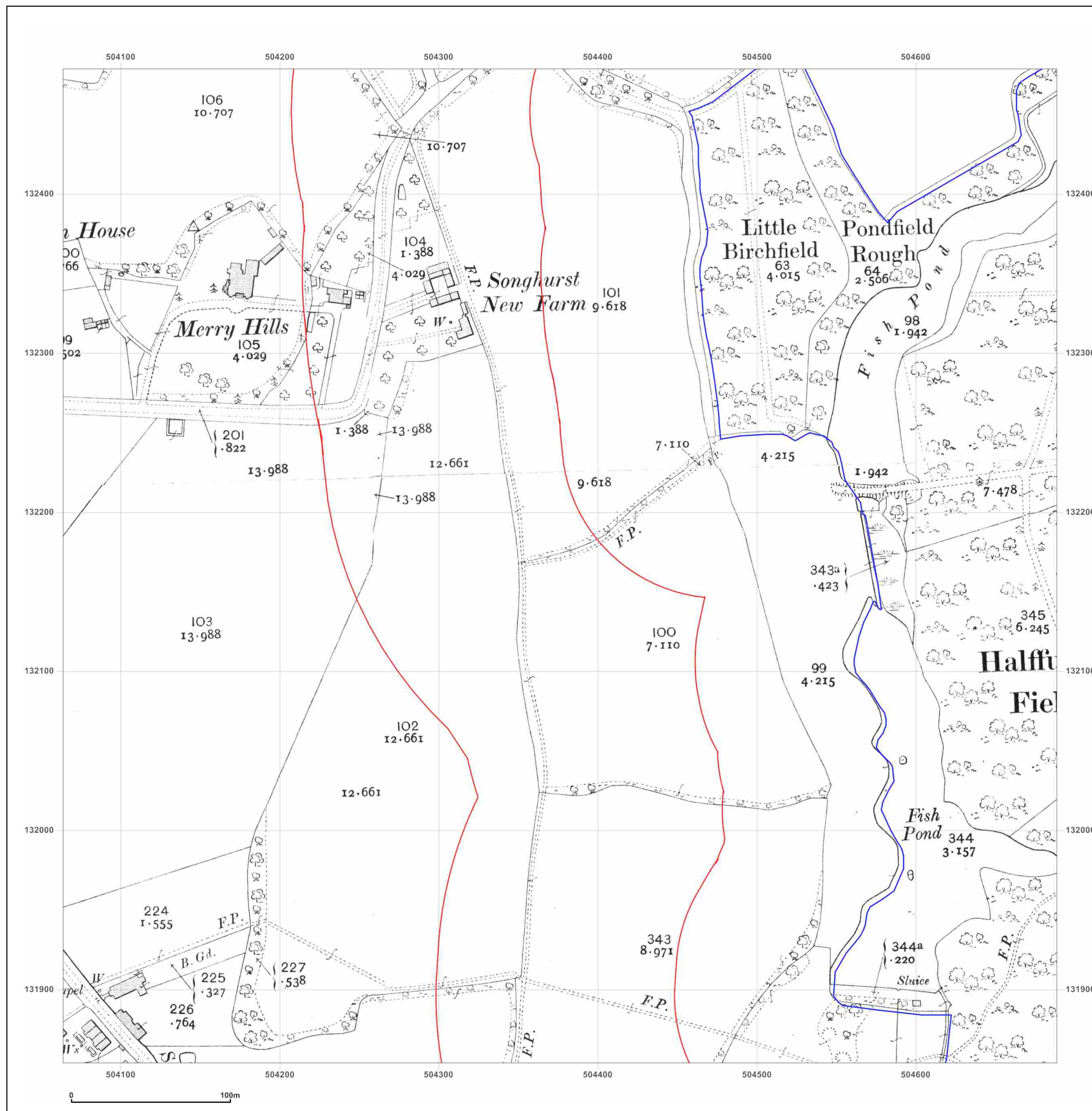


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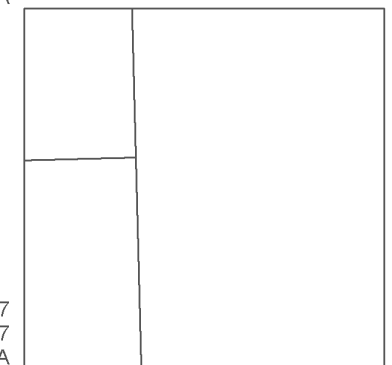
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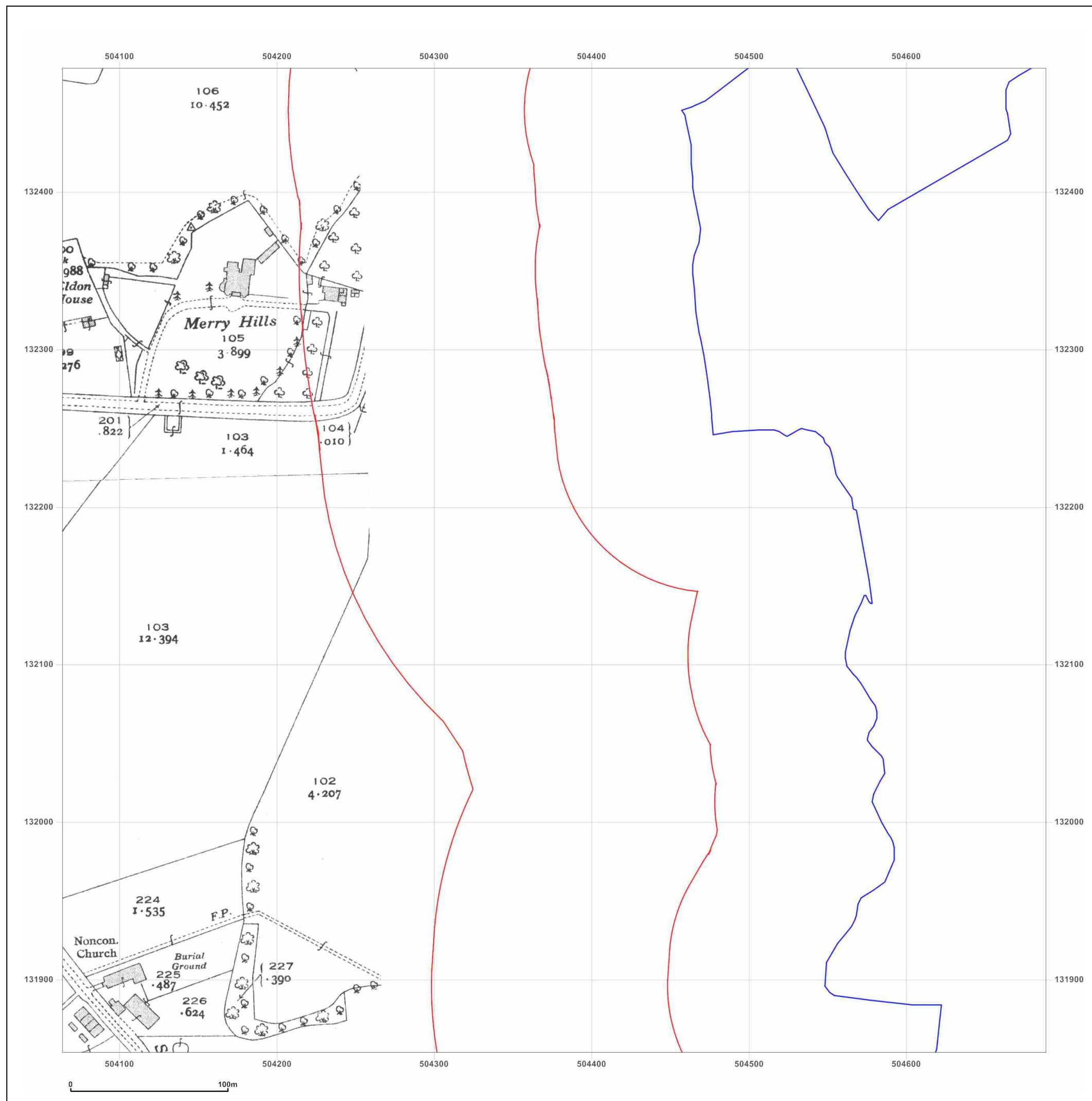


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**Map Name:** National Grid

**Map date:** 1973

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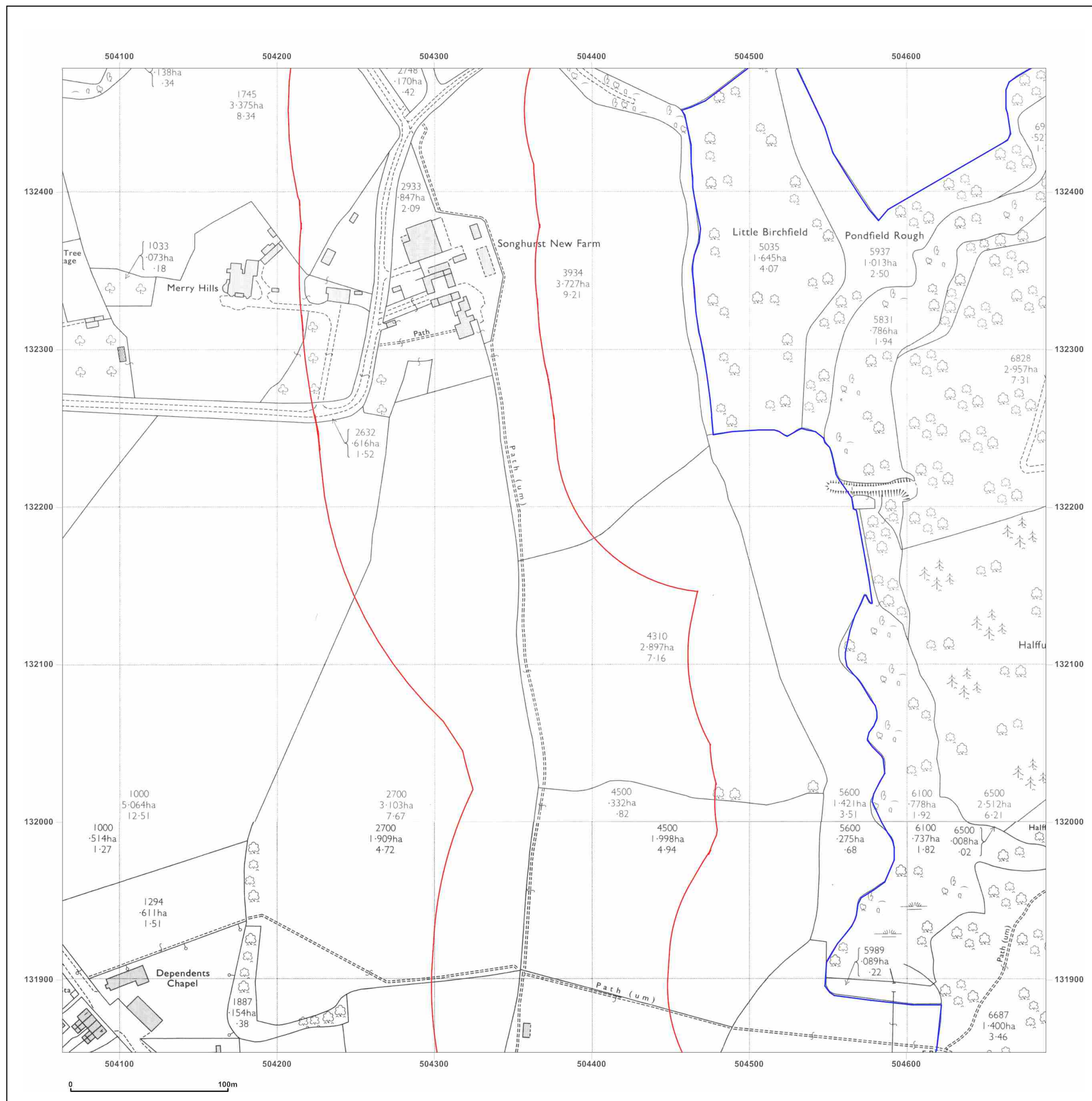


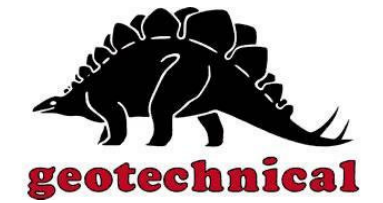
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**Map date:** 1994

**Scale:** 1:2,500

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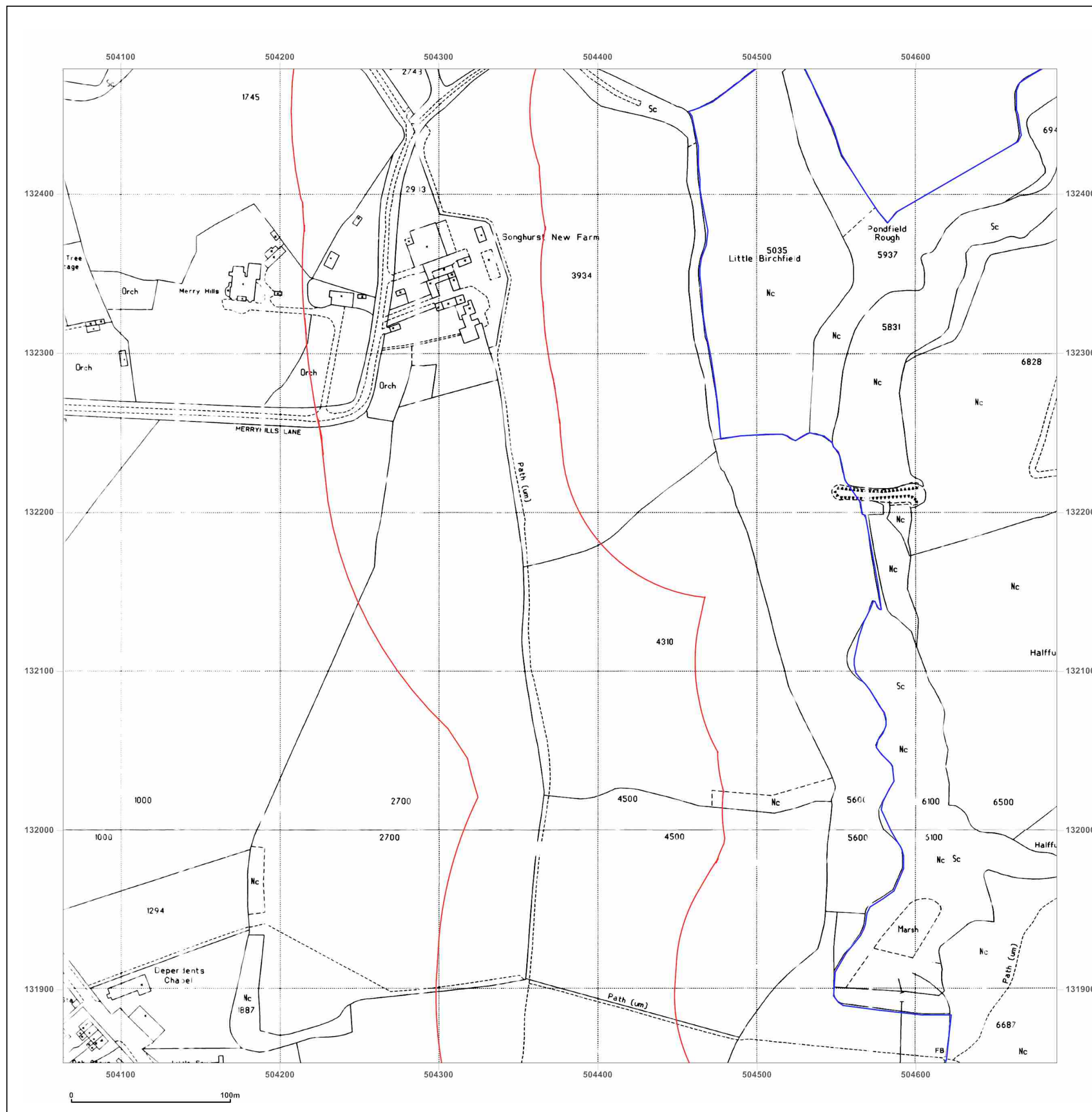


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ORW

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**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 504376, 132791

**Map Name:** County Series

**Map date:** 1875-1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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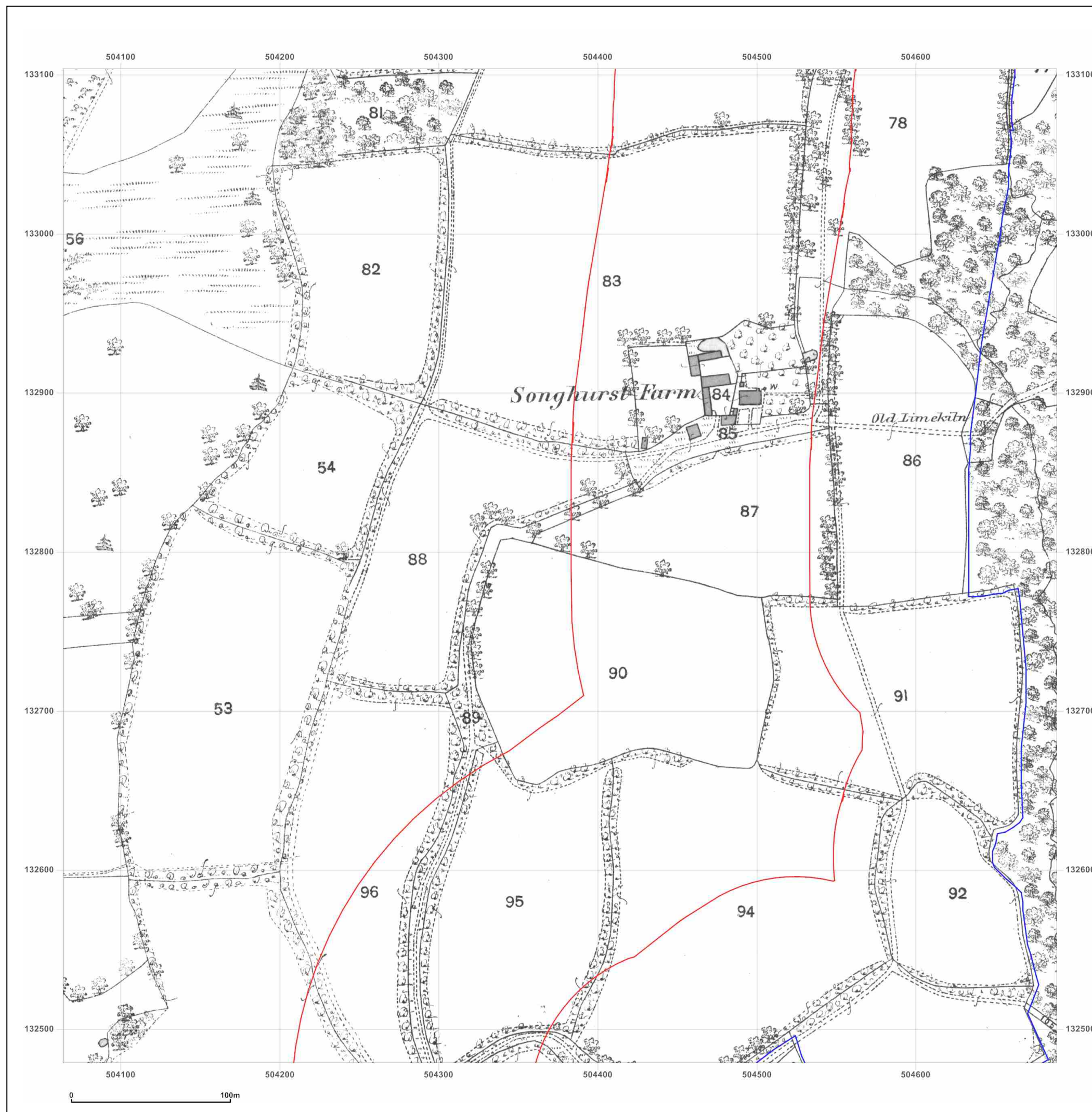


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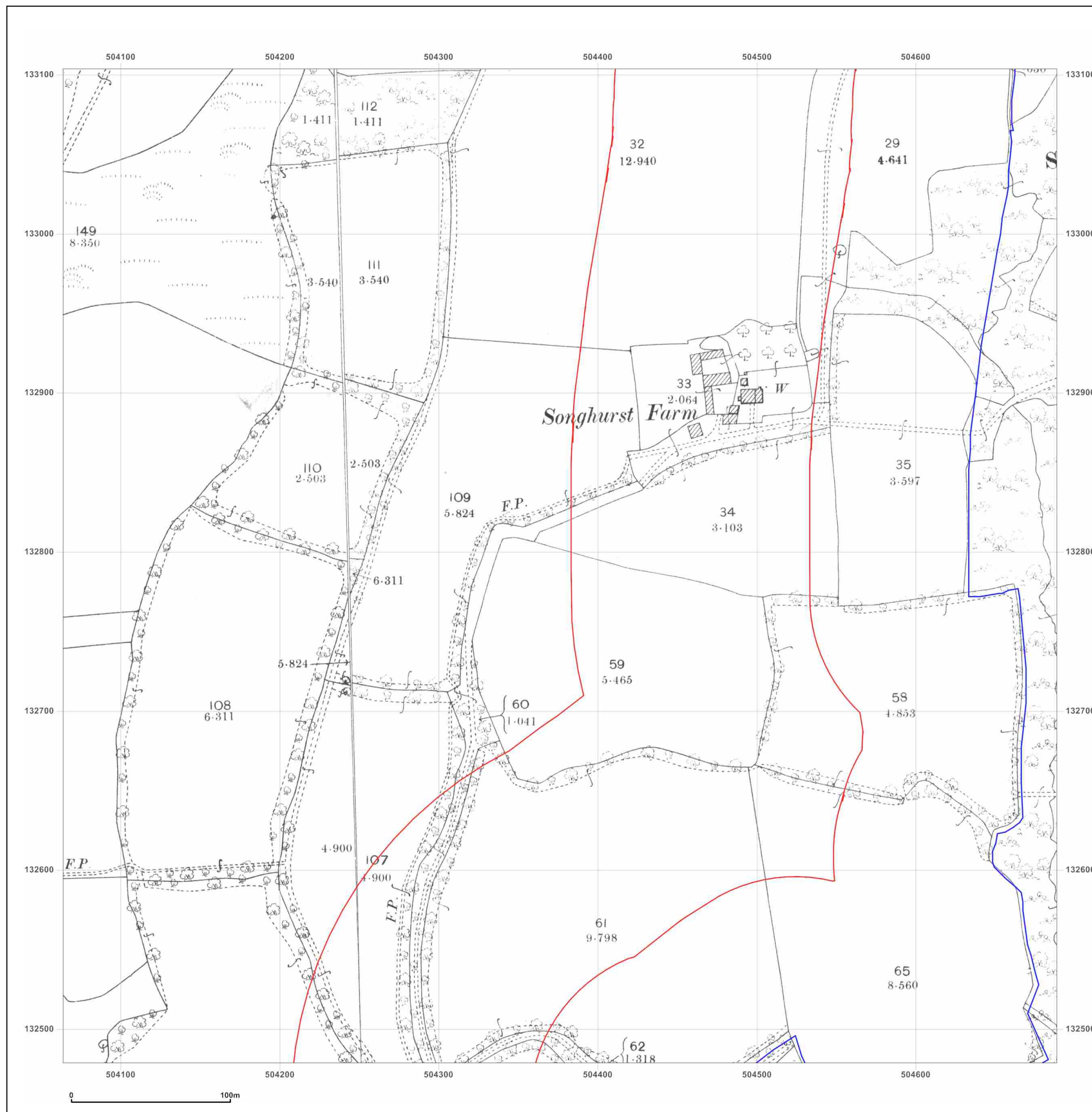


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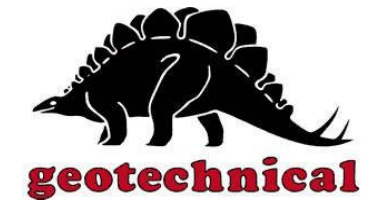
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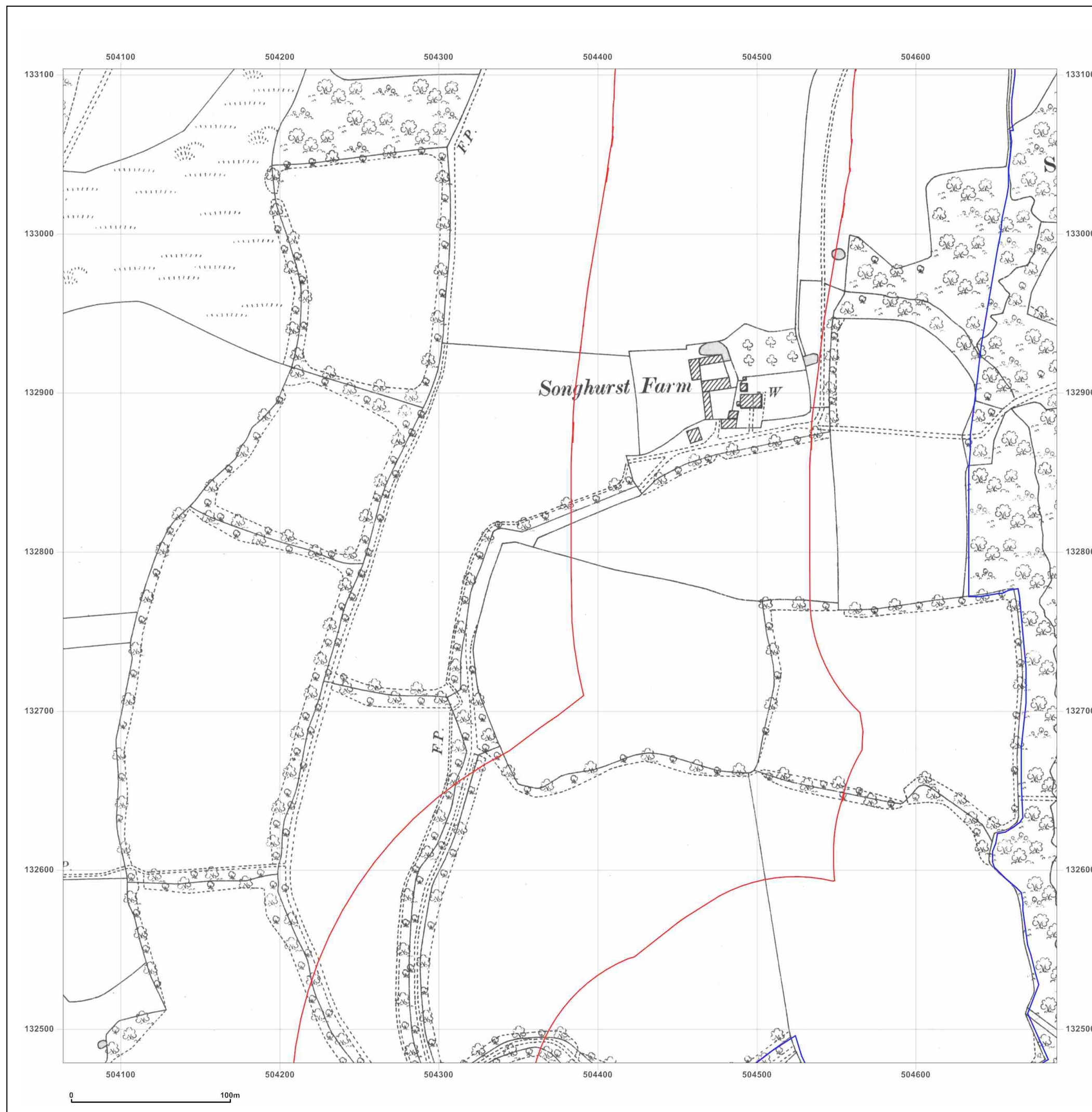


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**Map date:** 1912

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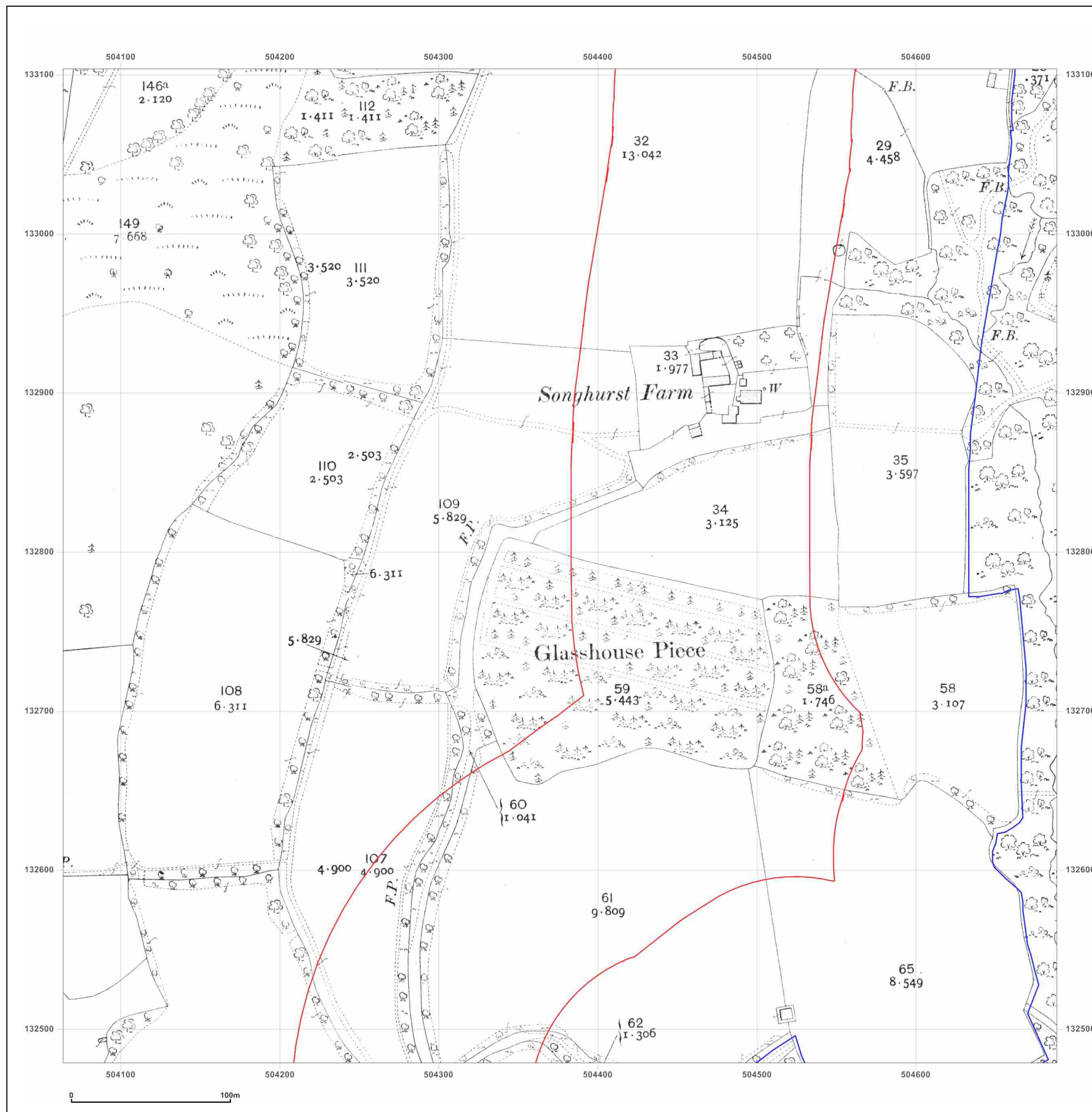


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**Grid Ref:** 504376, 132791

**Map Name:** County Series

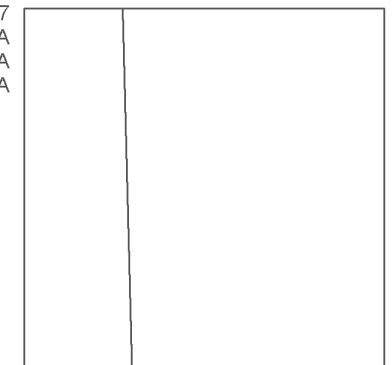
**Map date:** 1937

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1937  
Revised 1937  
Edition N/A  
Copyright N/A  
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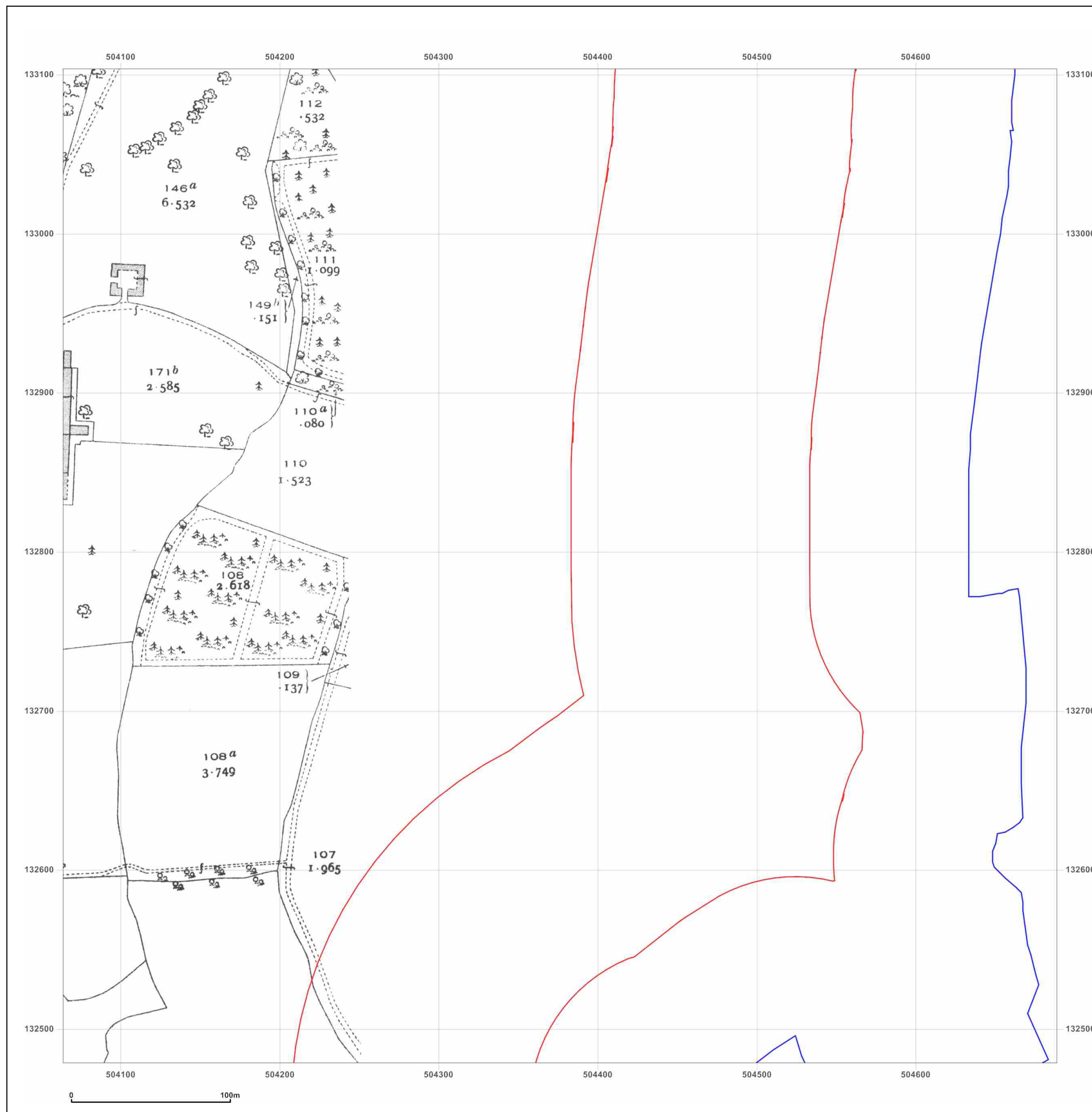


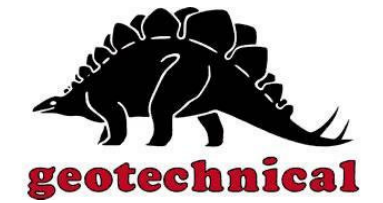
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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 504376, 132791

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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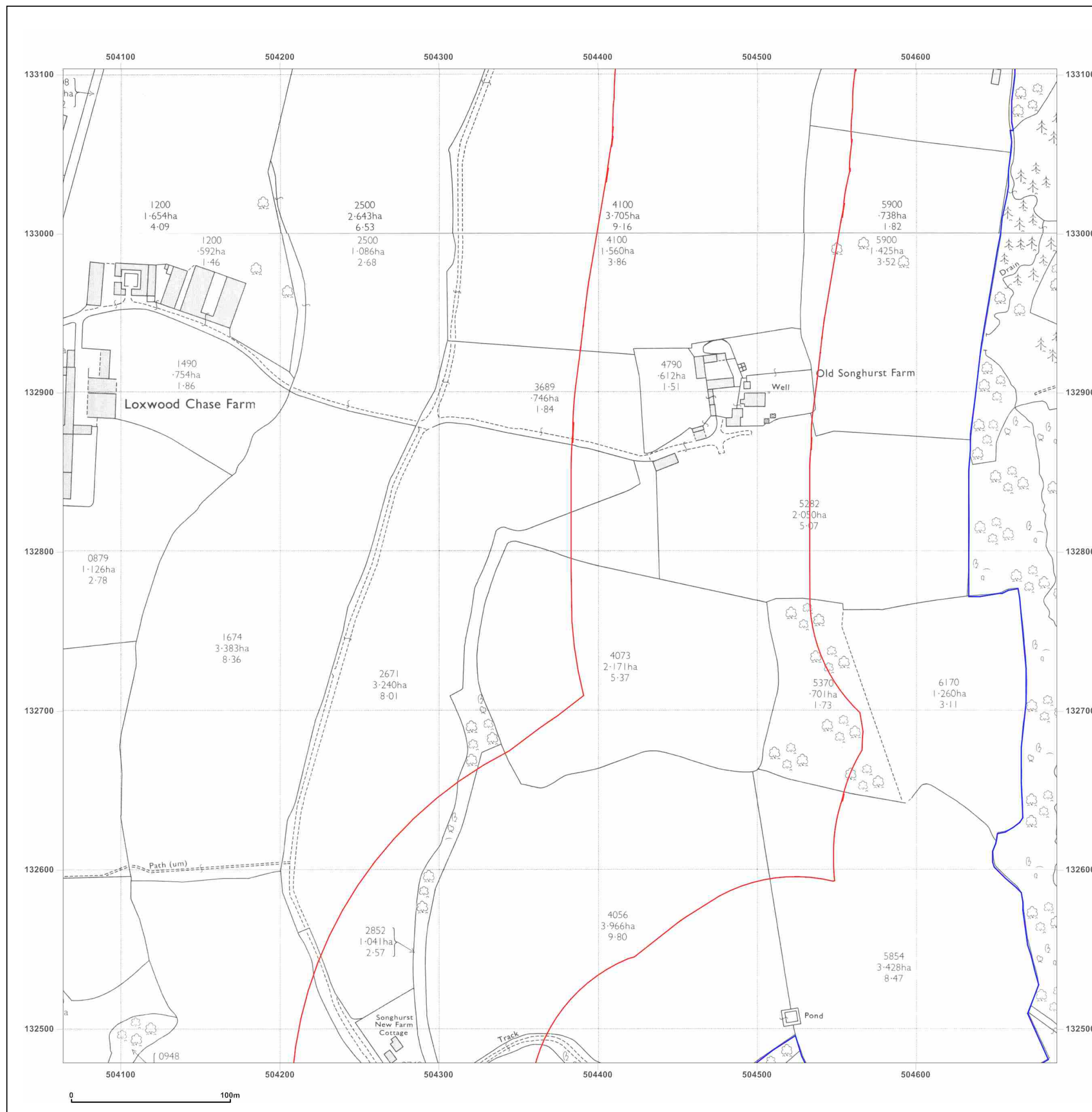


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_1\_3  
**Grid Ref:** 504376, 132791

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
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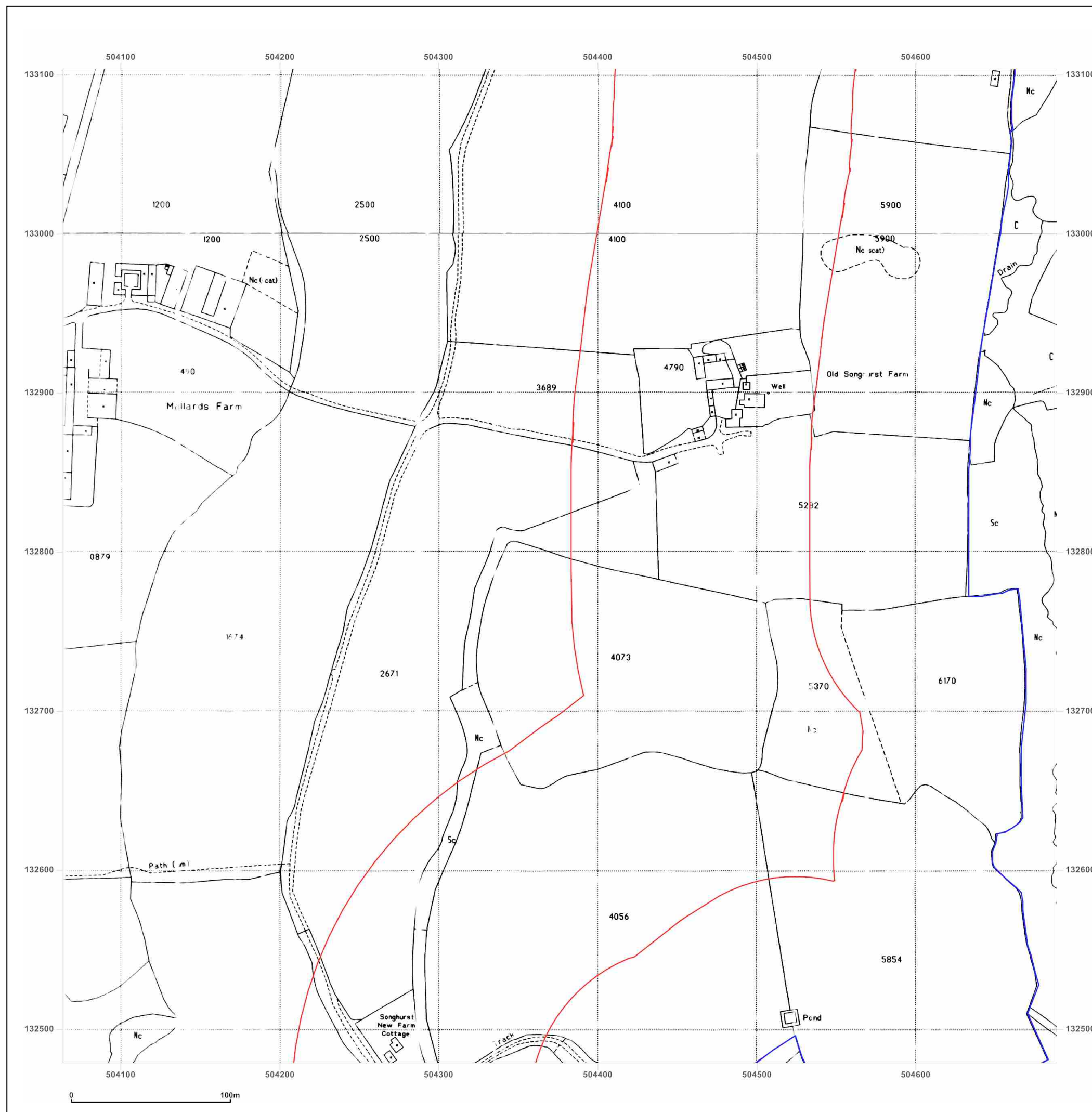


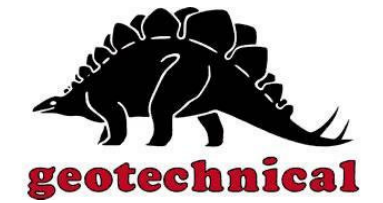
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**Site Details:**

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ORW

**Client Ref:** 38143  
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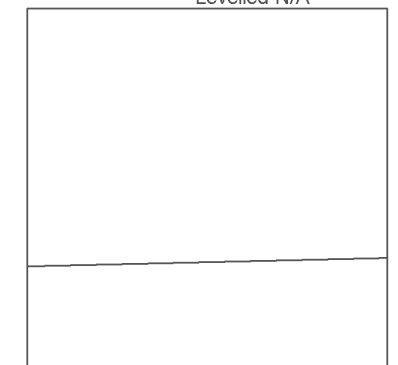
**Map date:** 1871

**Scale:** 1:2,500

**Printed at:** 1:2,500



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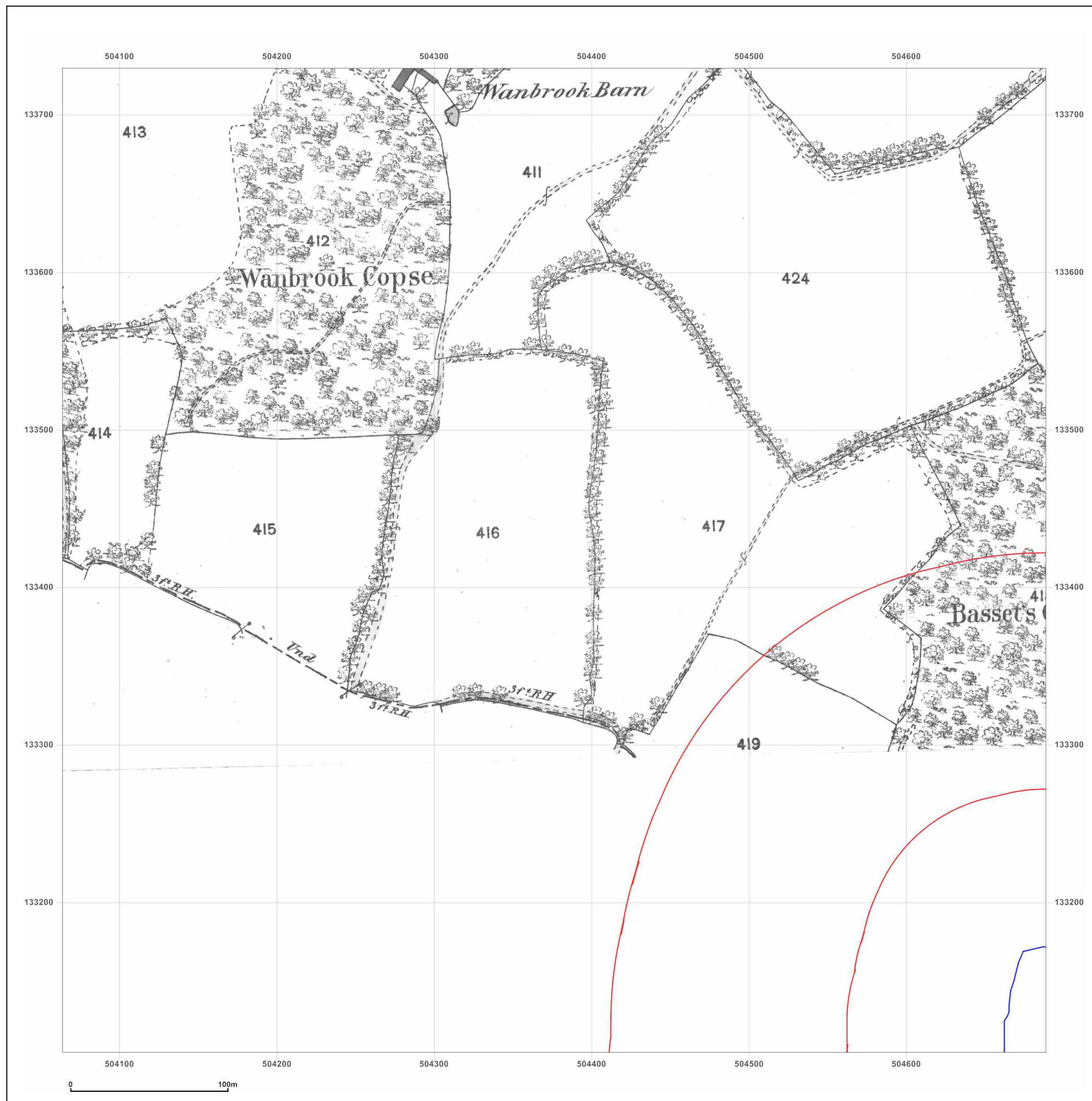


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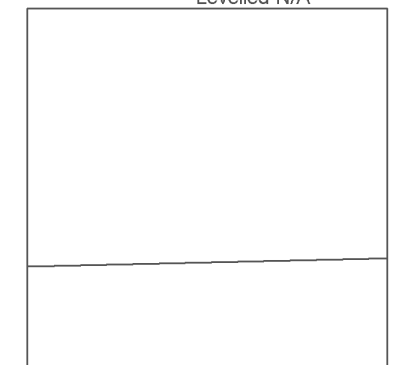
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**Printed at:** 1:2,500



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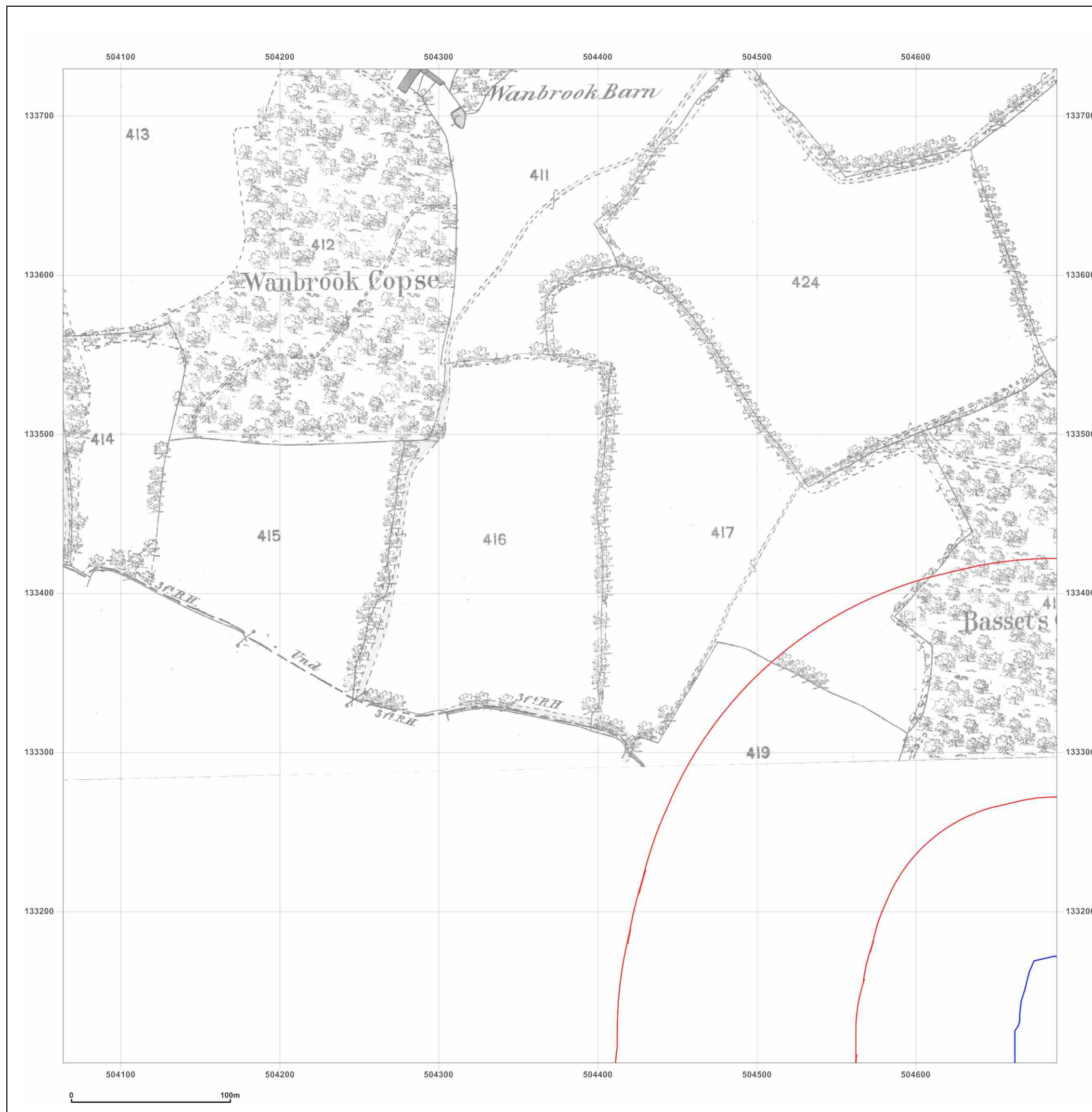


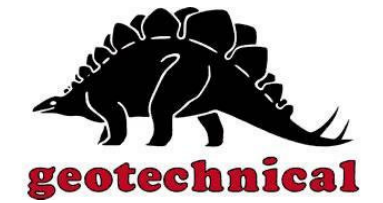
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**Map Name:** County Series

**Map date:** 1875-1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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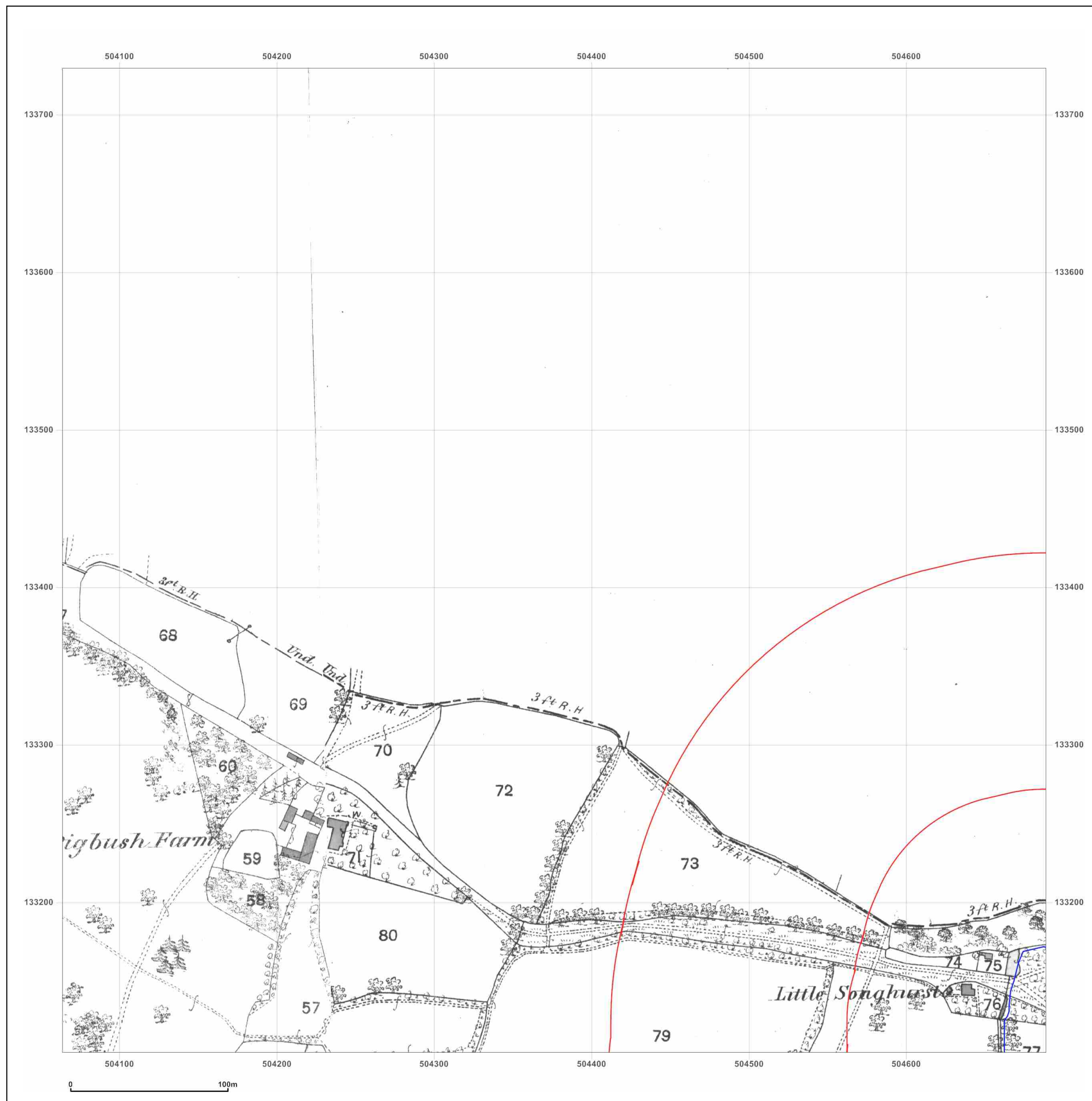


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**Map Name:** County Series

**Map date:** 1897-1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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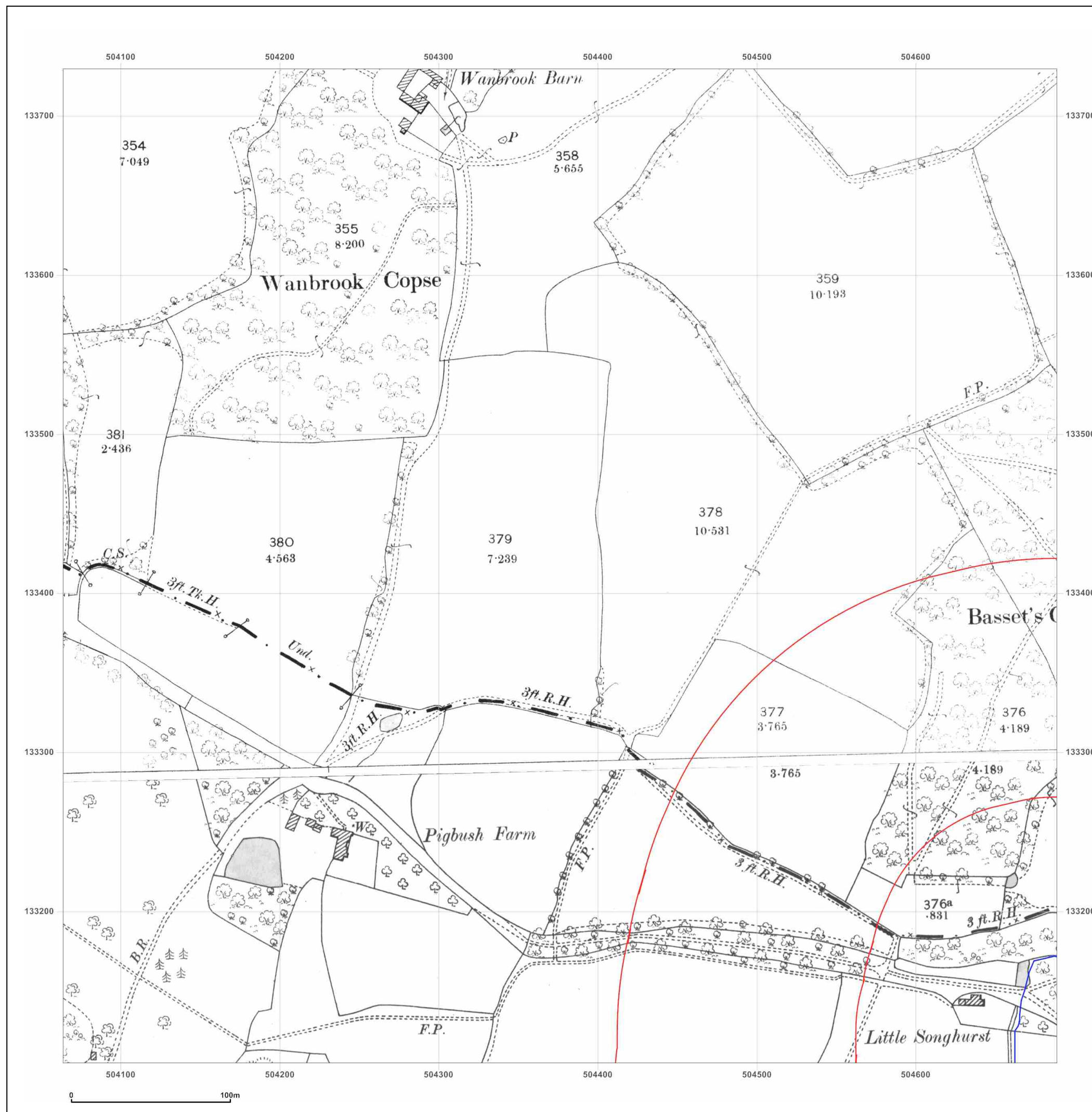


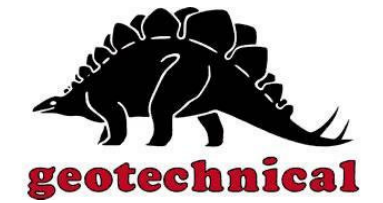
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**Grid Ref:** 504376, 133417

**Map Name:** County Series

**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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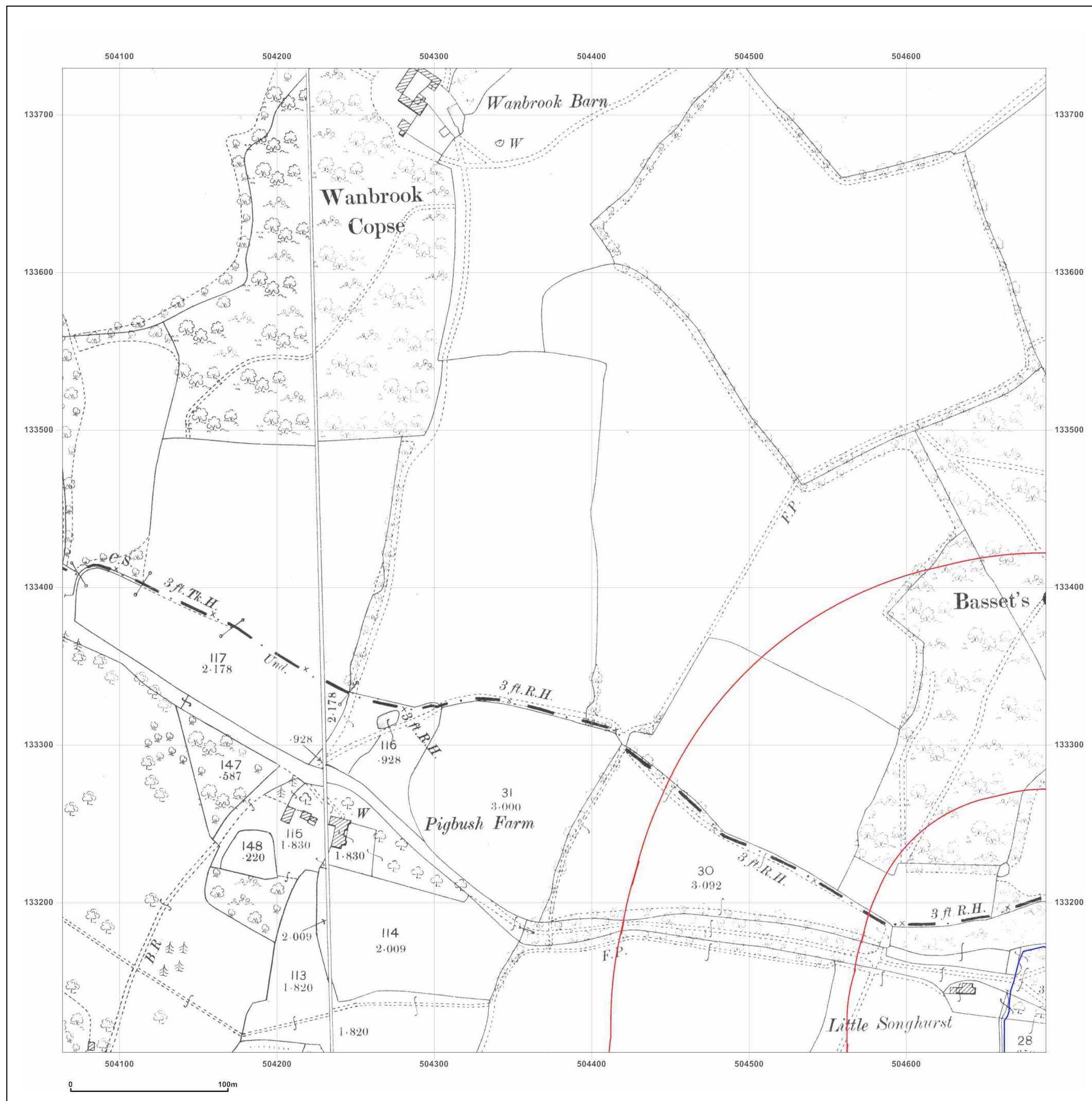


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**Grid Ref:** 504376, 133417

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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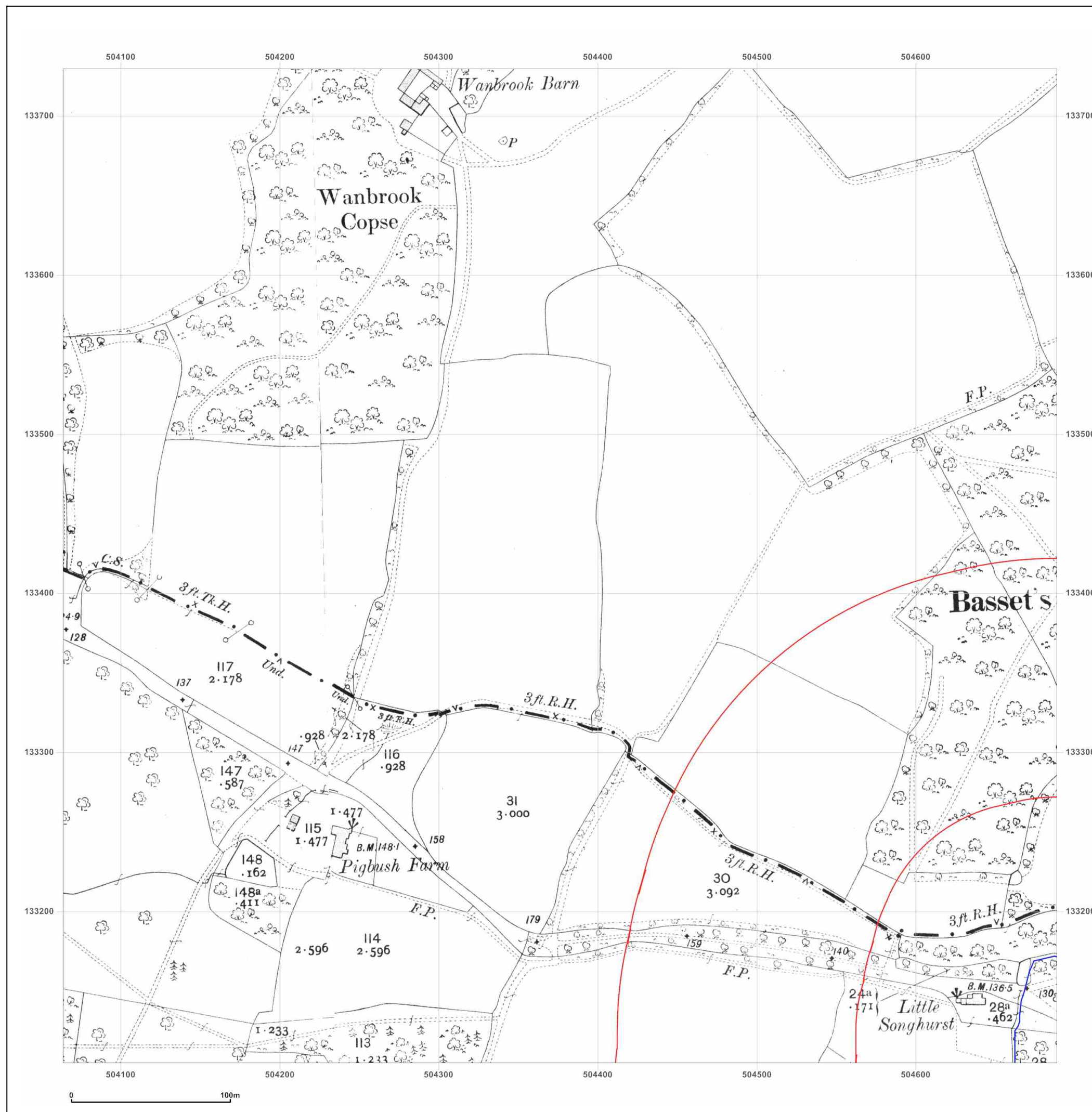


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Client Ref: 38143  
Report Ref: CMAPS-AAC-589029-38143-060117HIS\_LS\_1\_4  
Grid Ref: 504376, 133417

Map Name: County Series

Map date: 1933

Scale: 1:2,500

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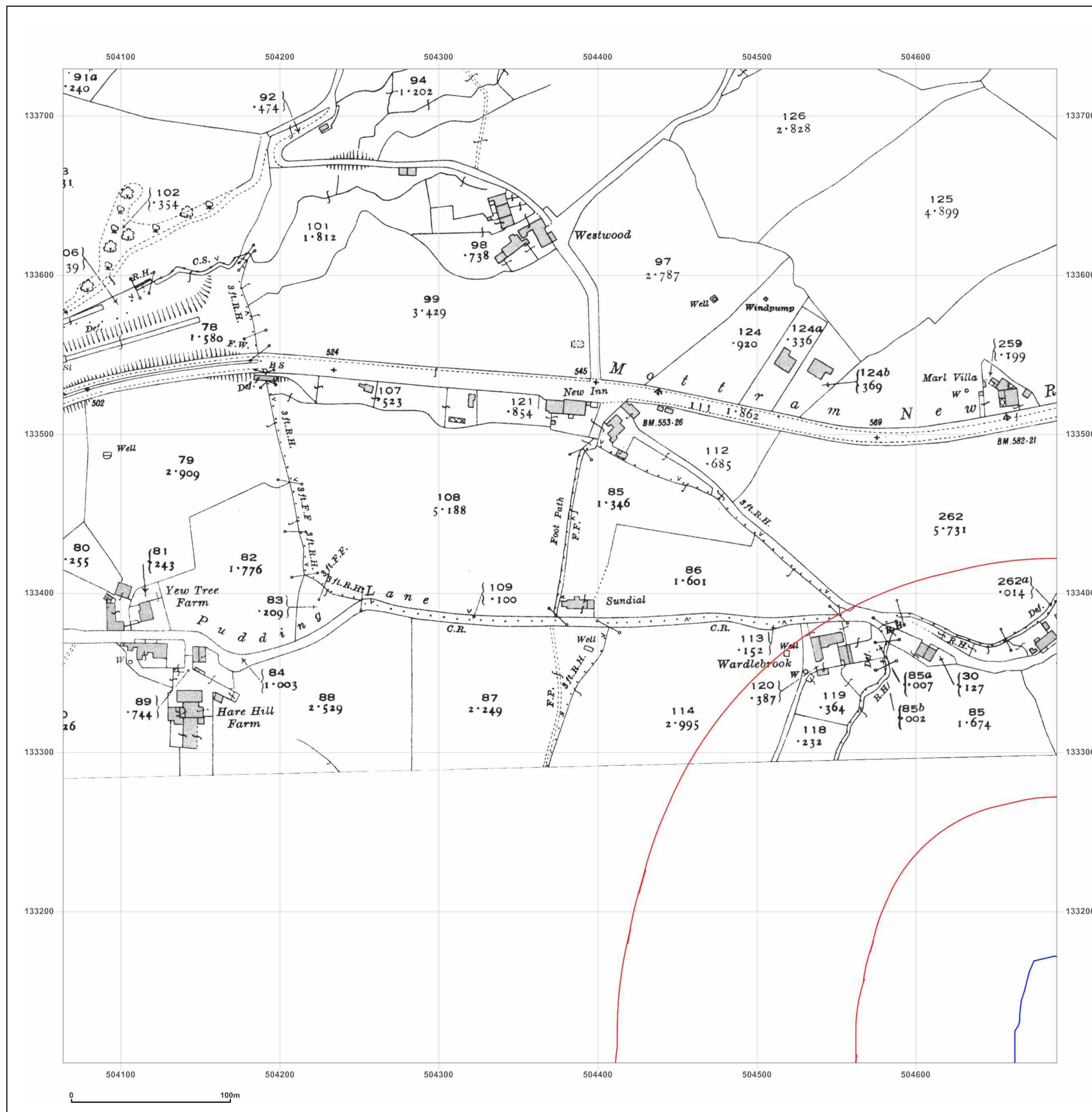


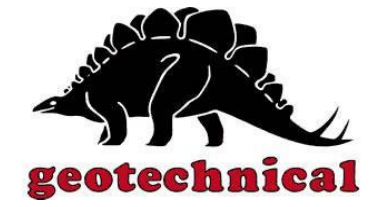
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**Map Name:** County Series

**Map date:** 1937

**Scale:** 1:2,500

**Printed at:** 1:2,500



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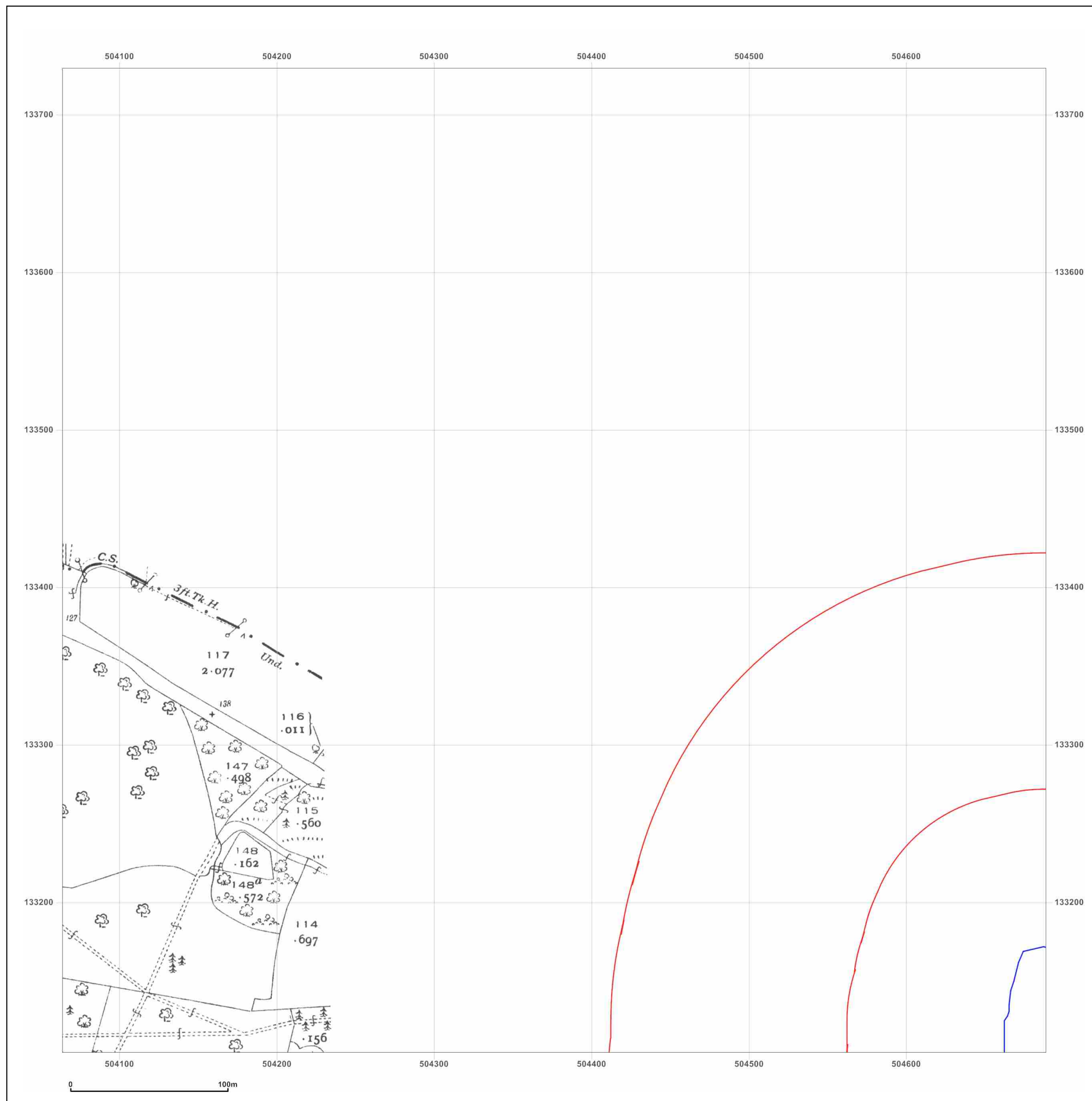


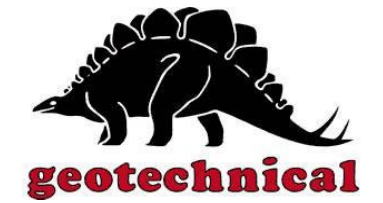
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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_1\_4  
**Grid Ref:** 504376, 133417

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

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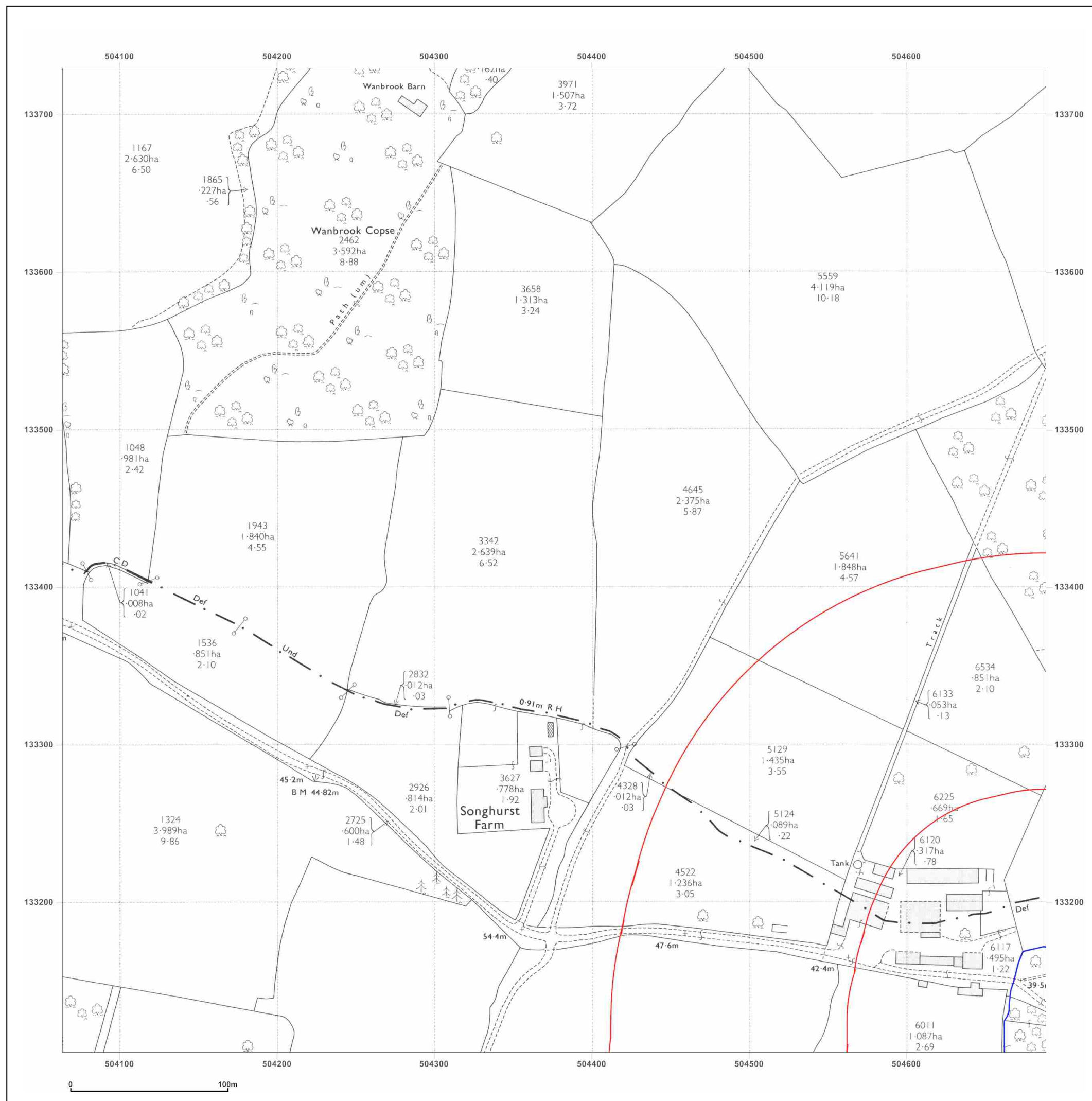


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**Map Name:** National Grid

**Map date:** 1994

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**Printed at:** 1:2,500



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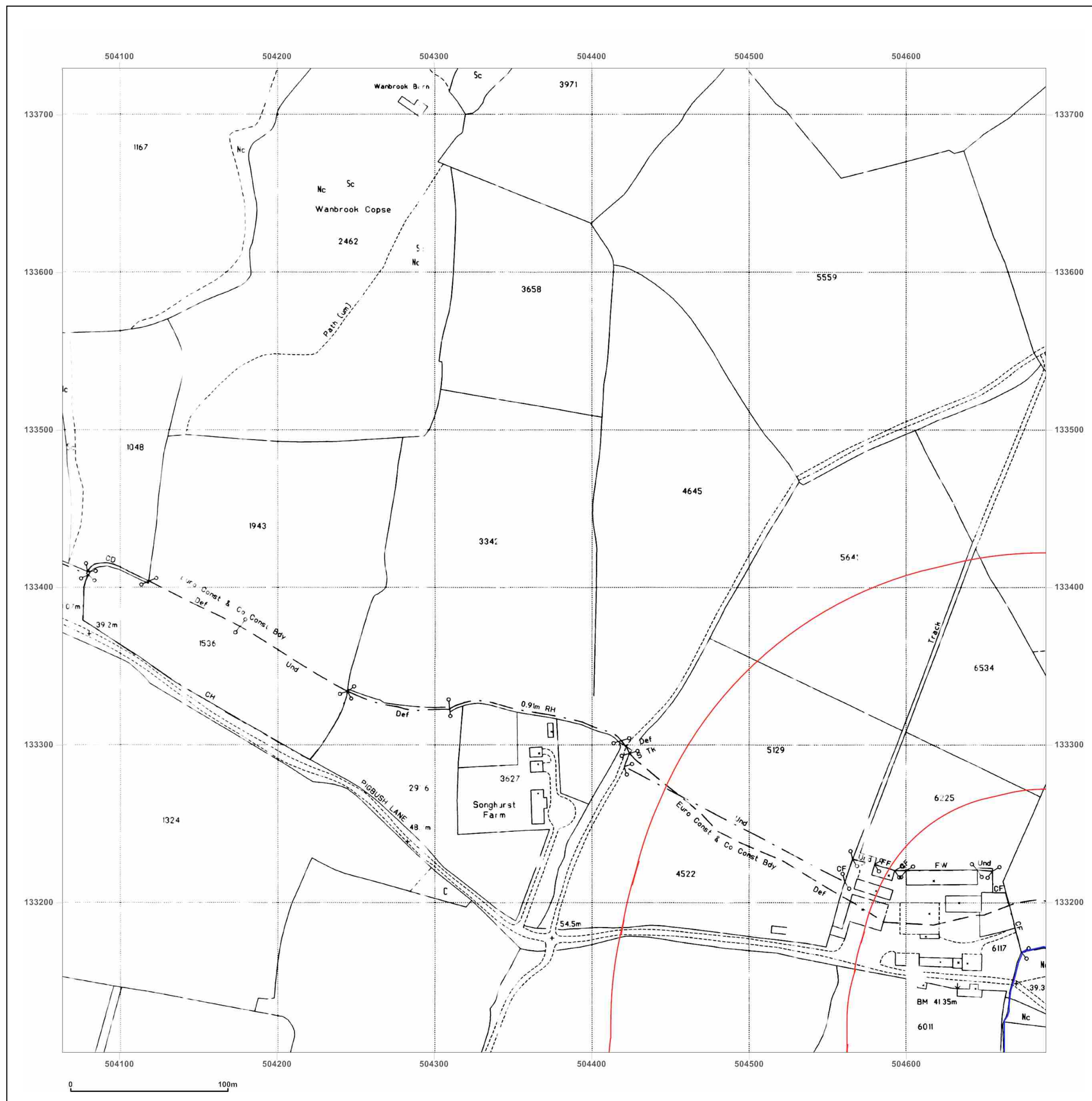


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ORW

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**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_1  
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**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

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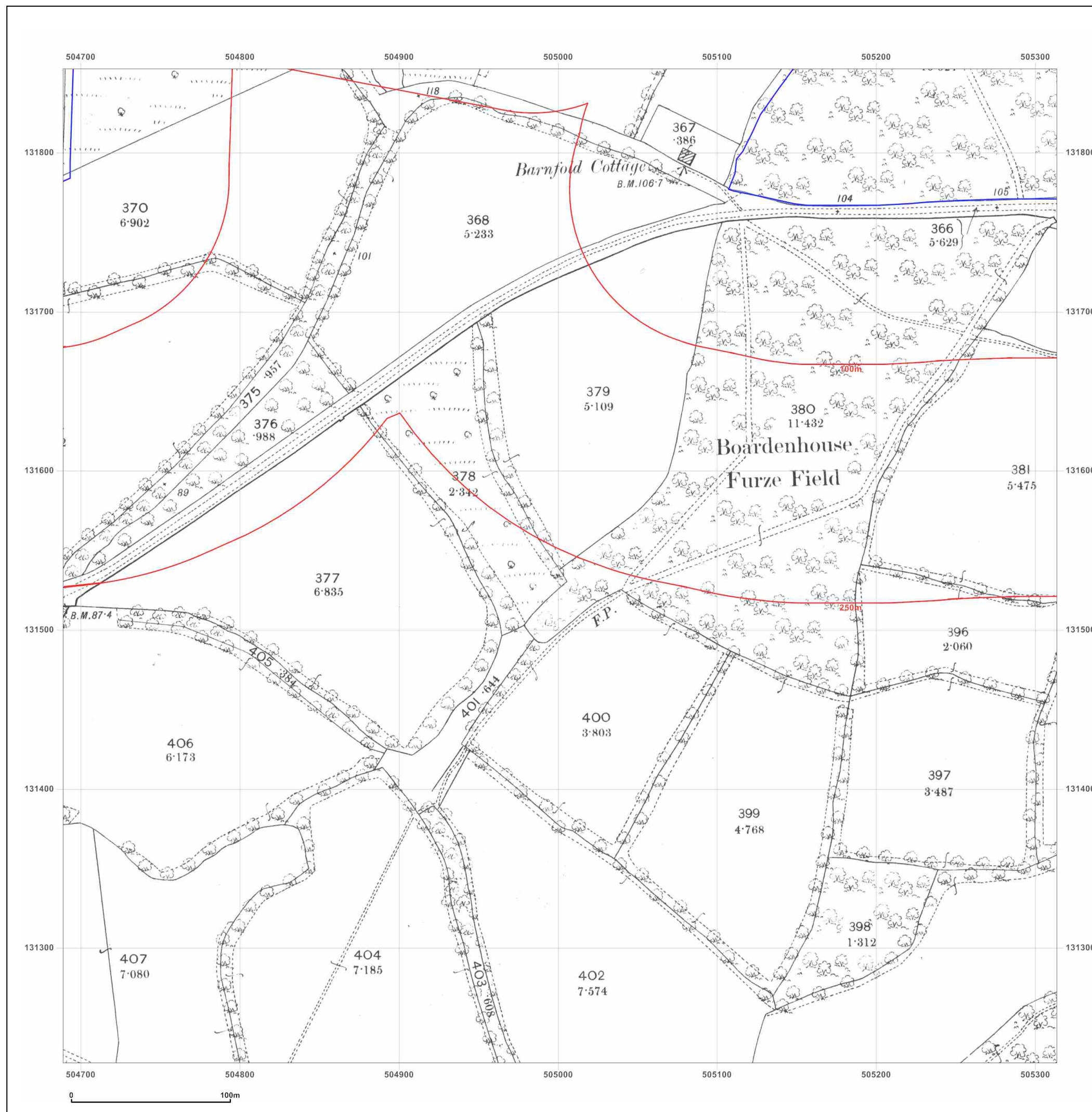


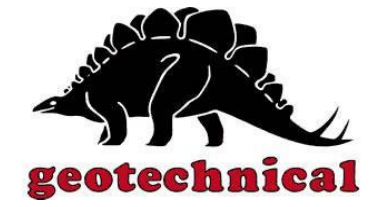
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ORW

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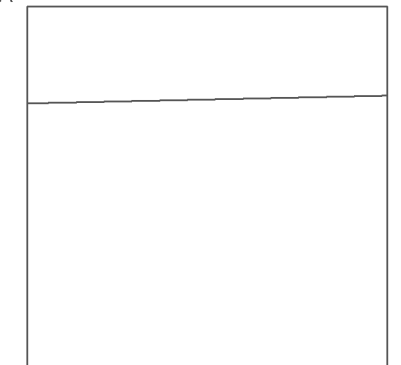
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**Printed at:** 1:2,500



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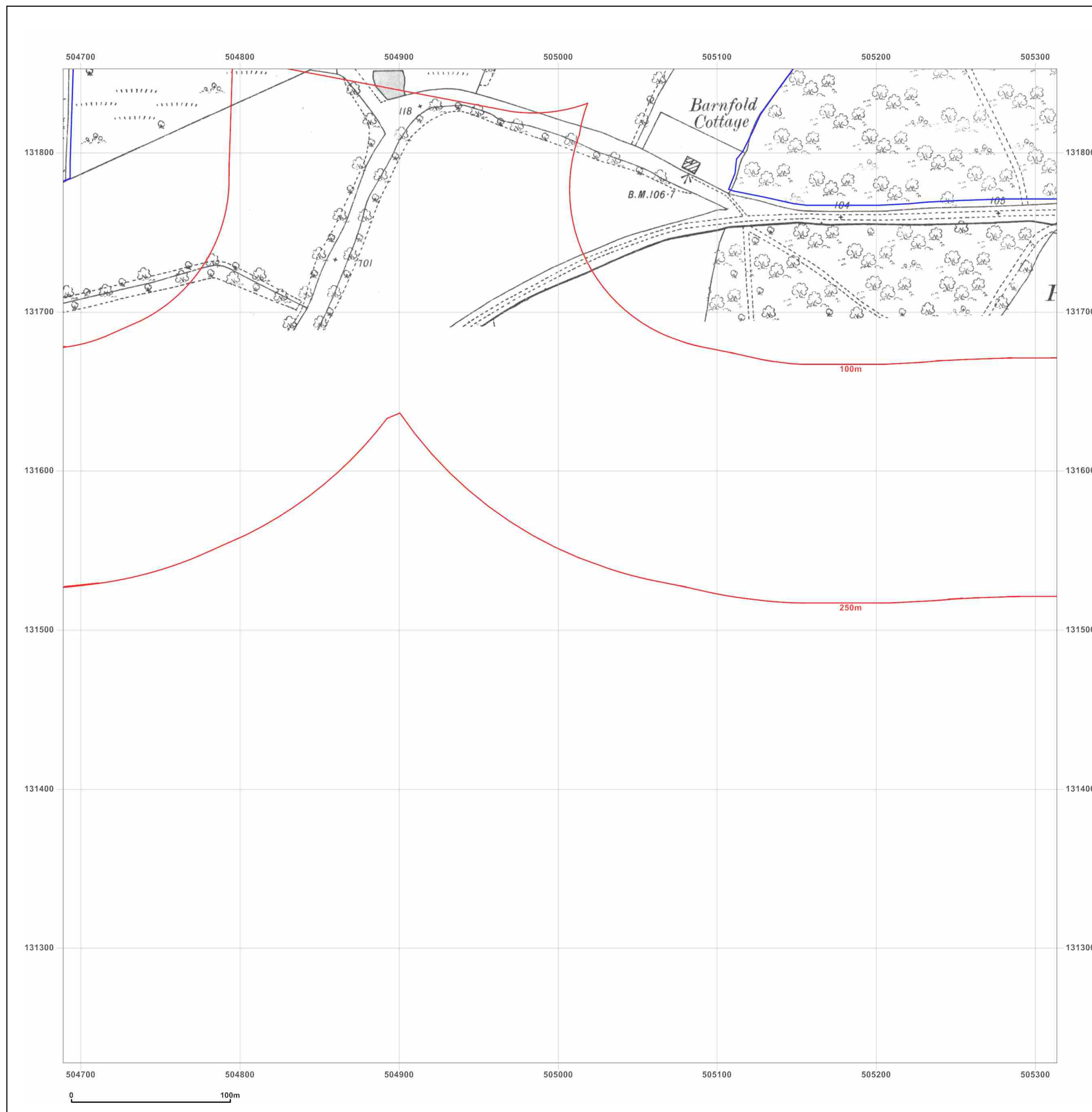


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**Client Ref:** 38143  
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**Map date:** 1912

**Scale:** 1:2,500

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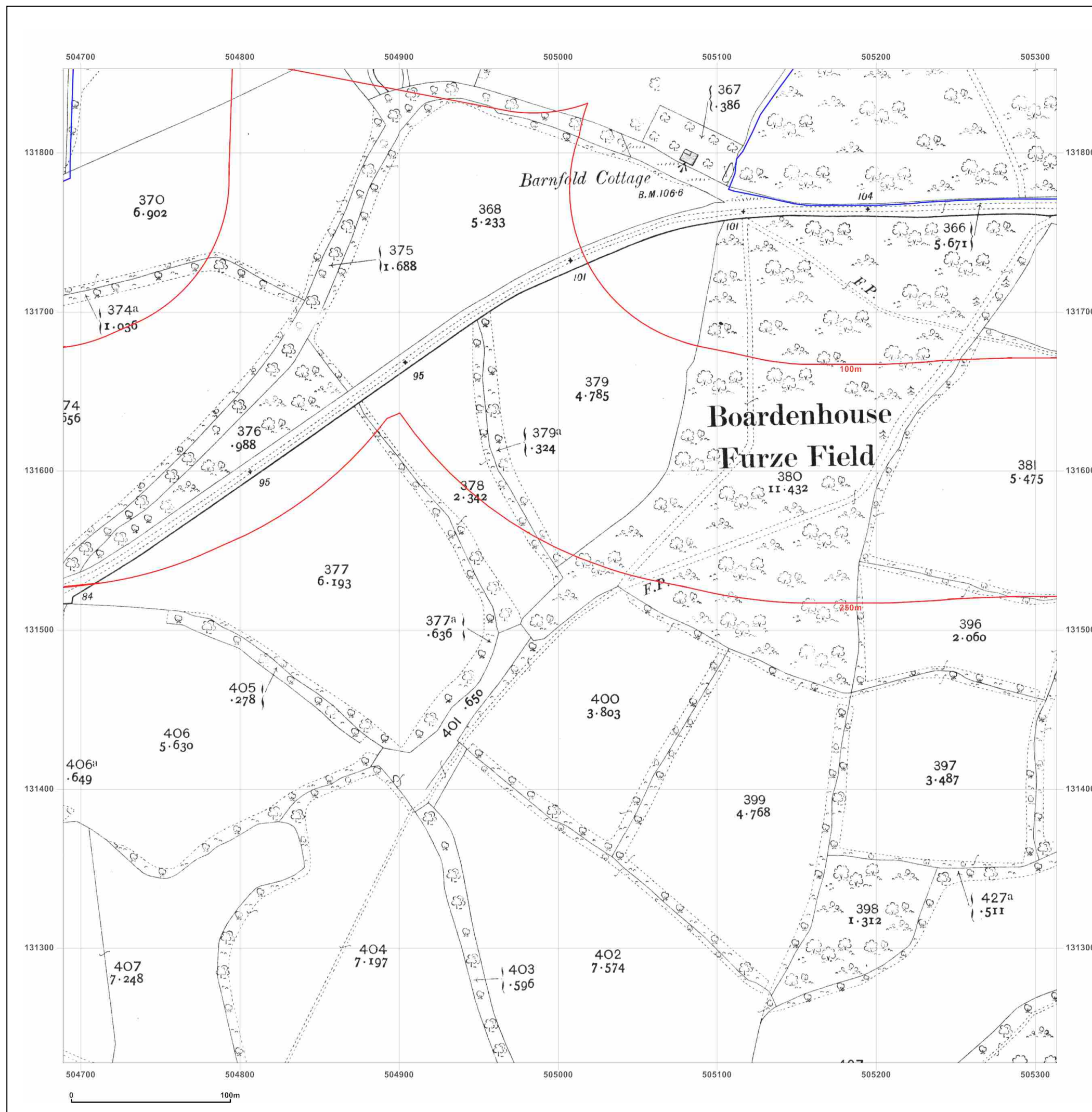


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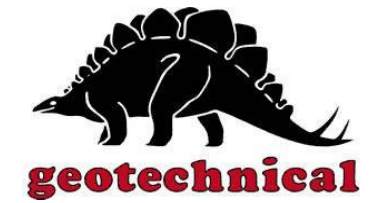
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**Map date:** 1973

**Scale:** 1:2,500

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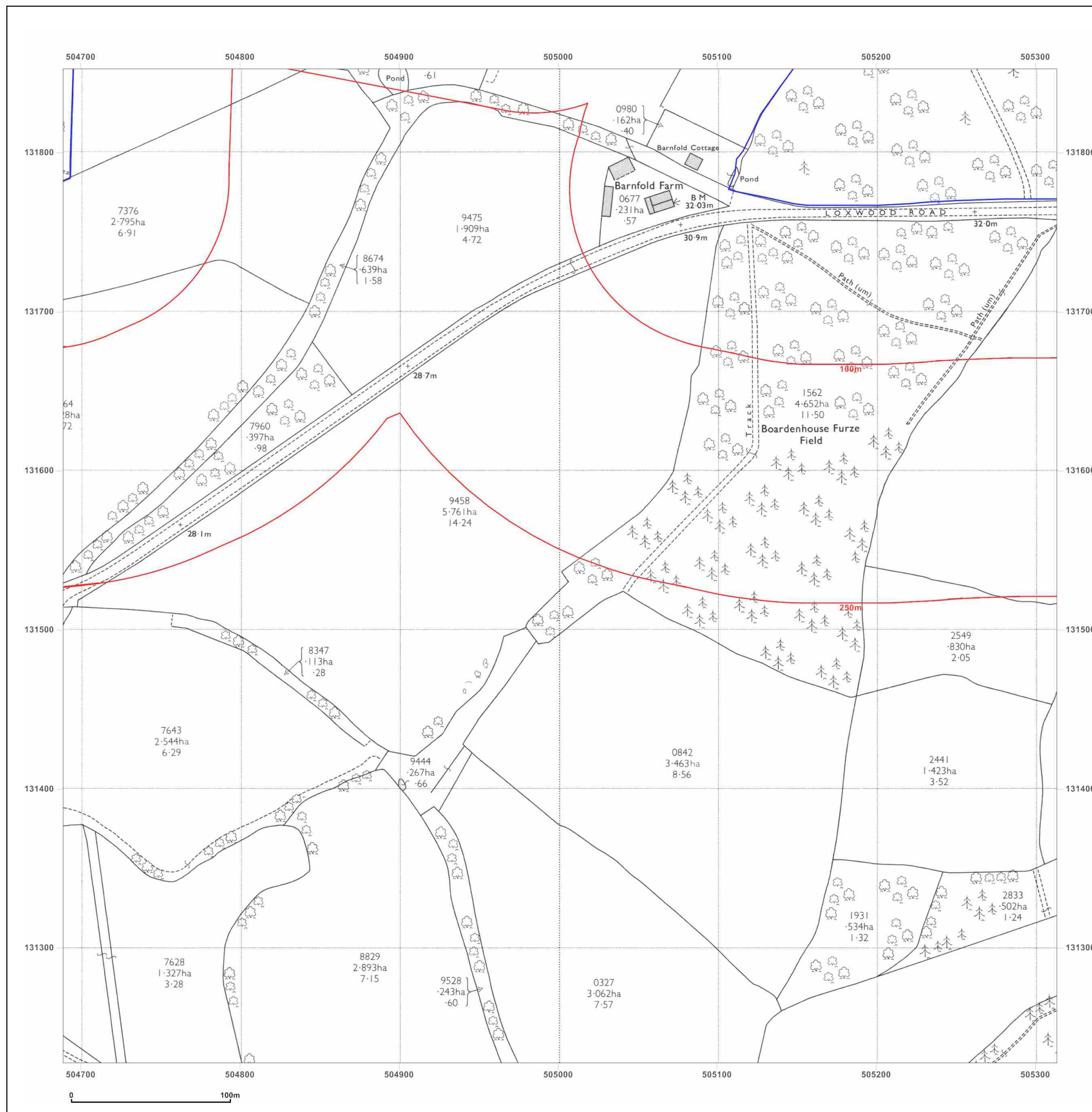


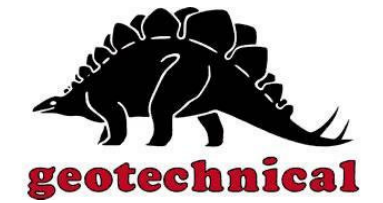
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**Map date:** 1994

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**Printed at:** 1:2,500



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Revised N/A  
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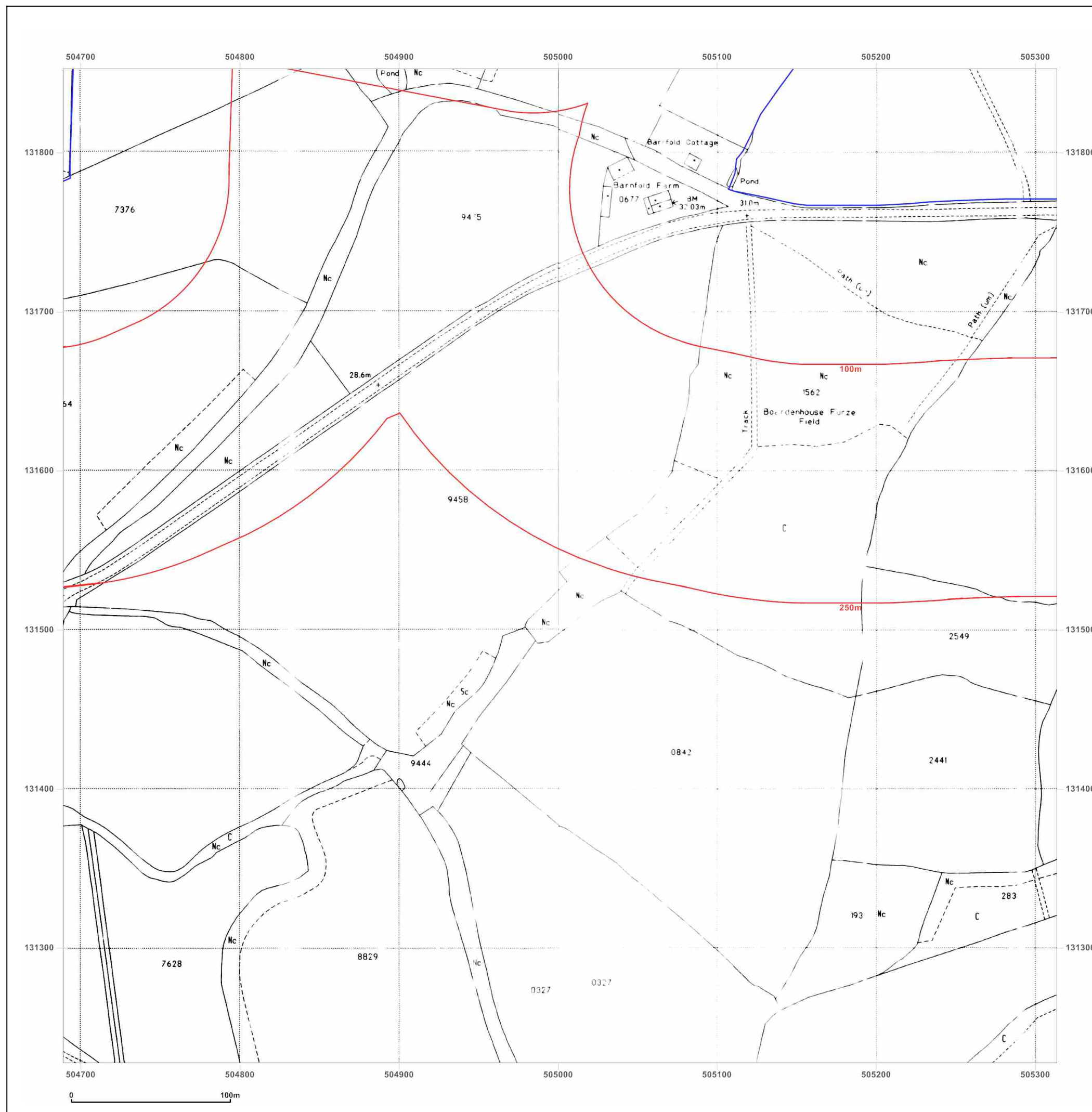


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 505001, 132166

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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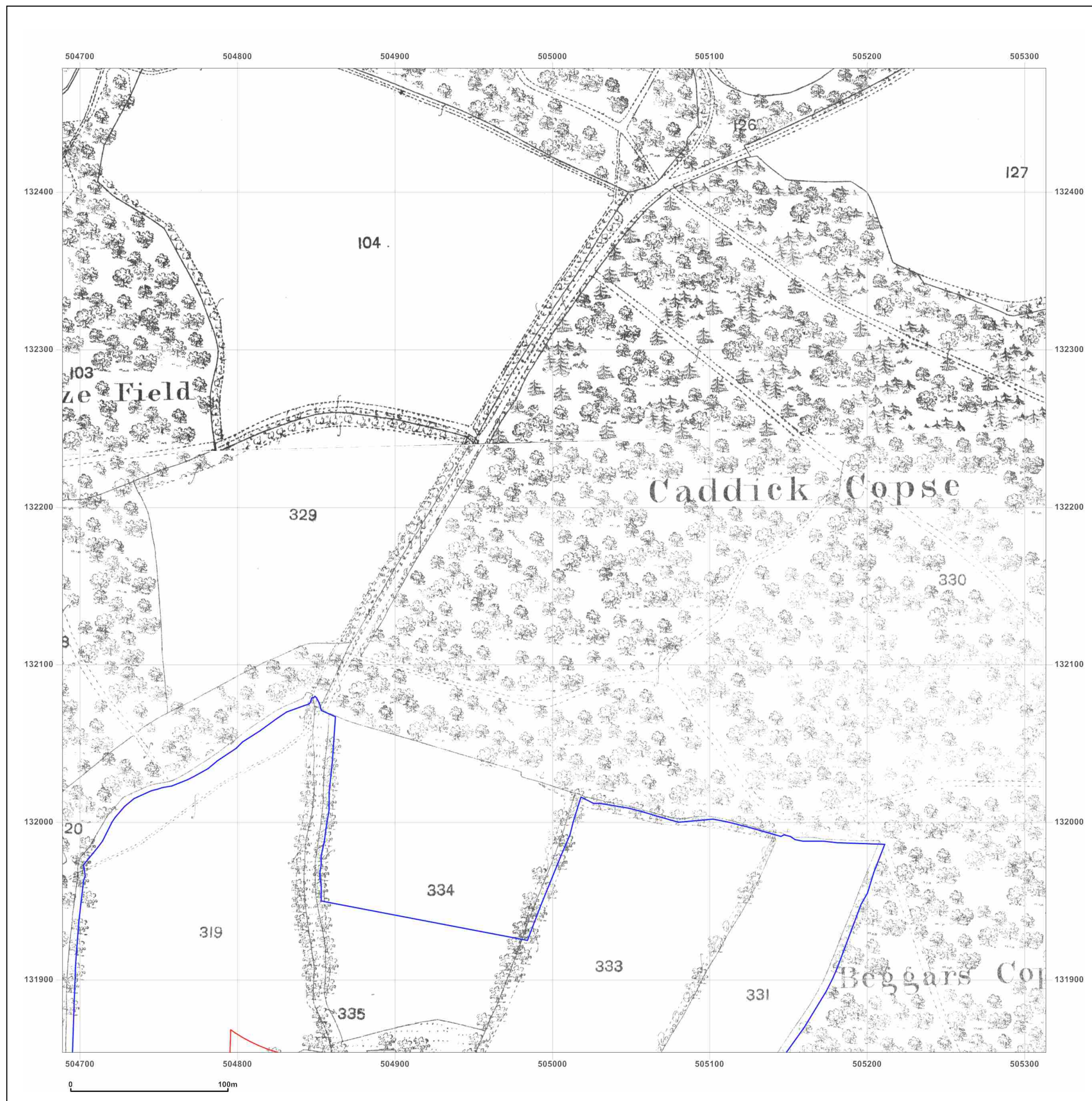


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**Client Ref:** 38143  
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**Map Name:** County Series

**Map date:** 1897-1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
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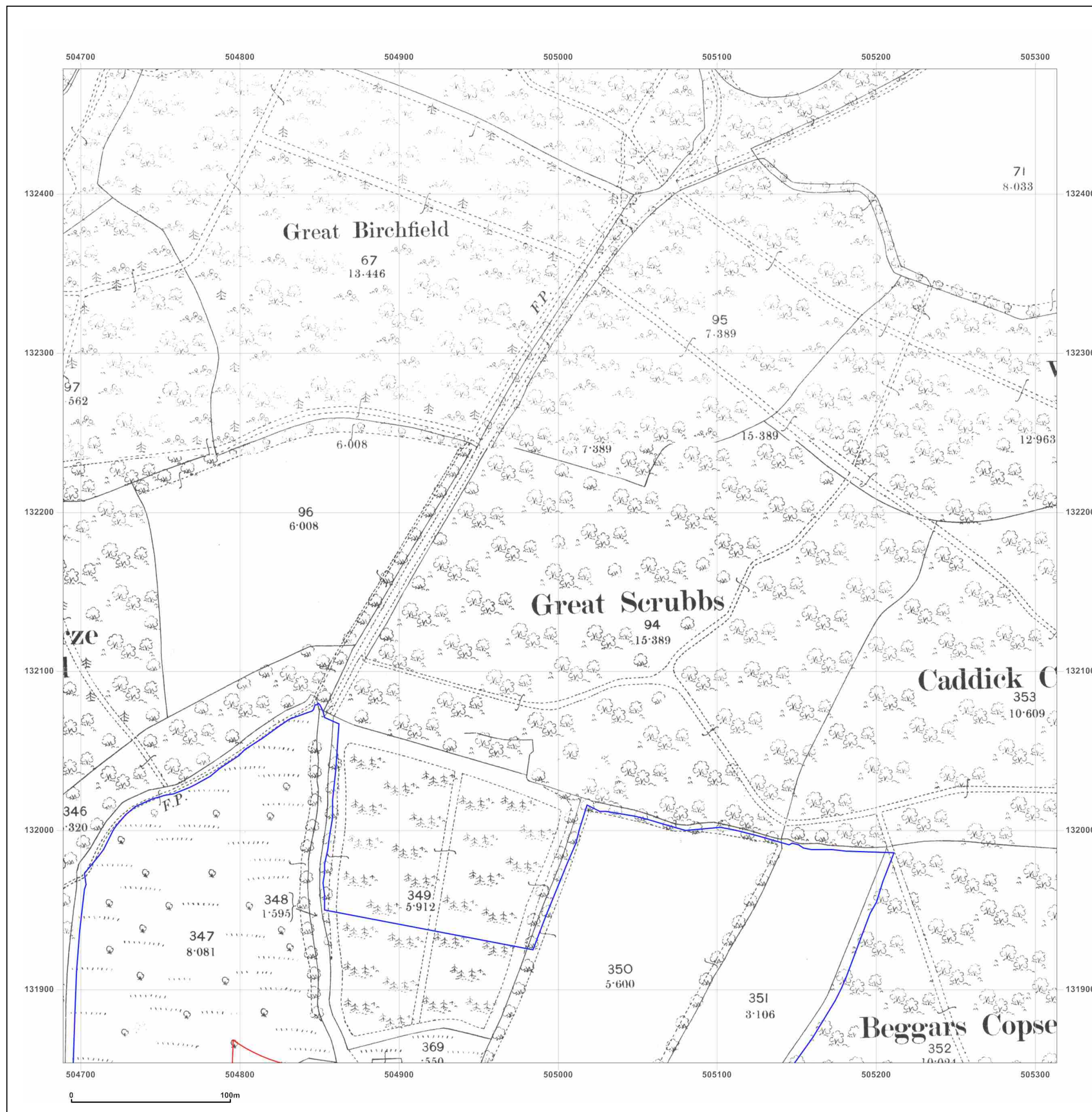


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Production date: 06 January 2017

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**Site Details:**

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 505001, 132166

**Map Name:** County Series

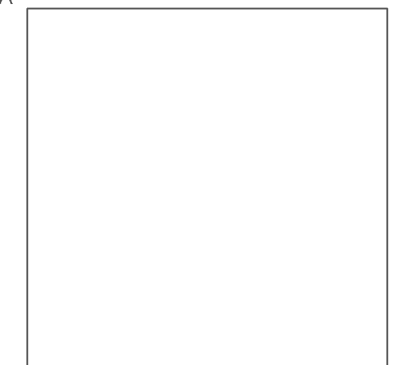
**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1898  
Edition N/A  
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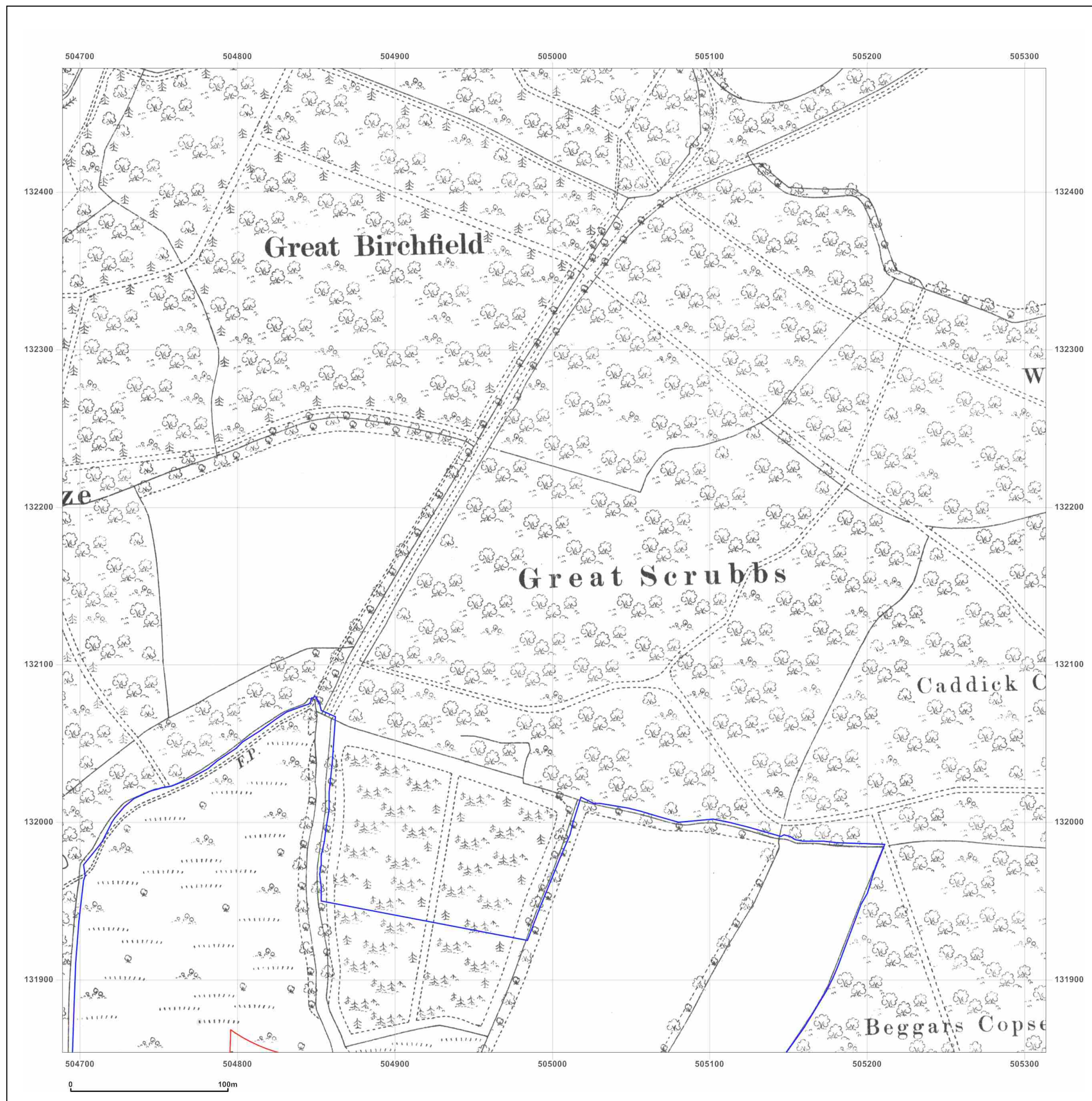


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
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**Grid Ref:** 505001, 132166

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1912  
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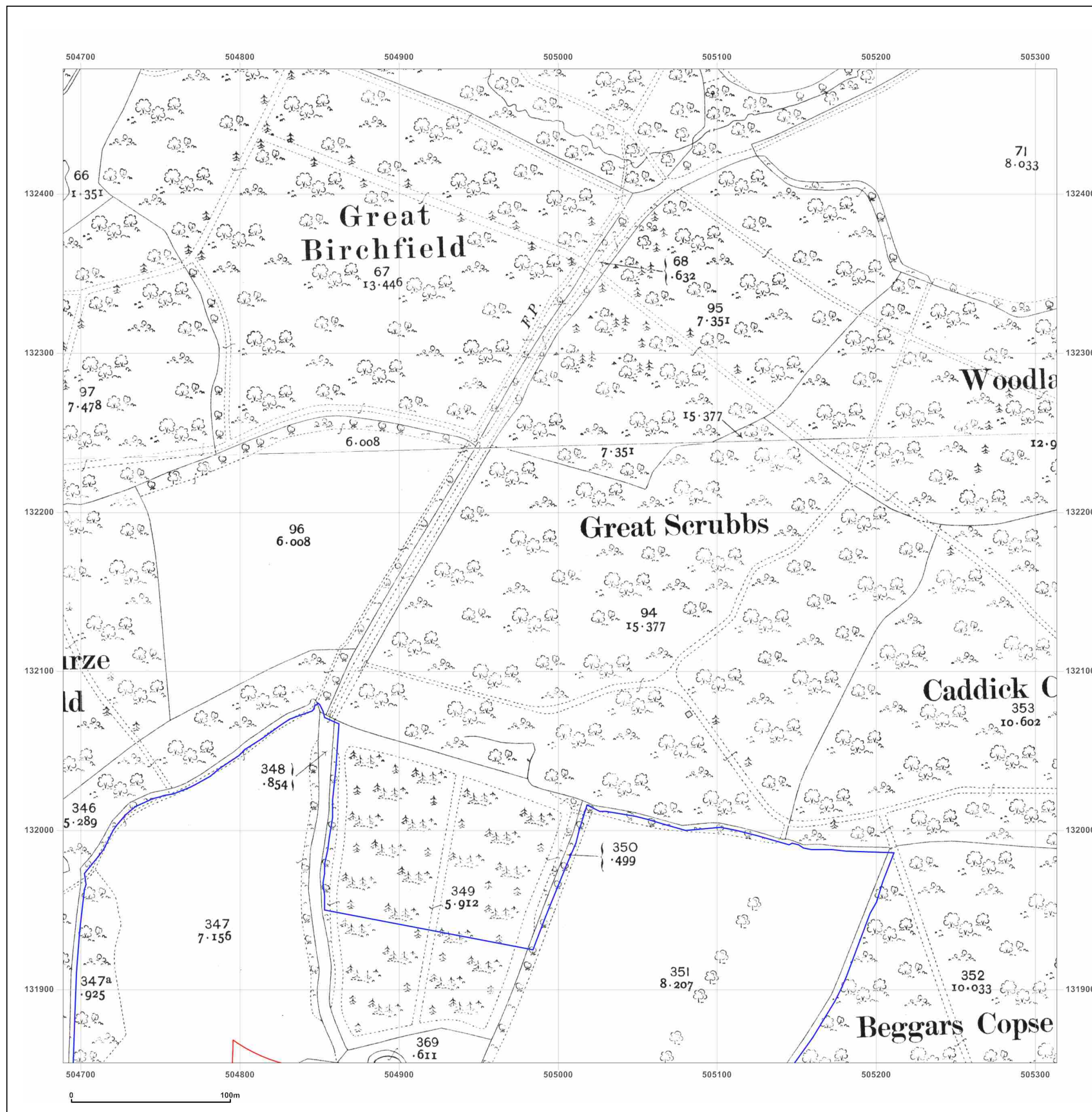


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 505001, 132166

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Surveyed 1973  
Revised 1973  
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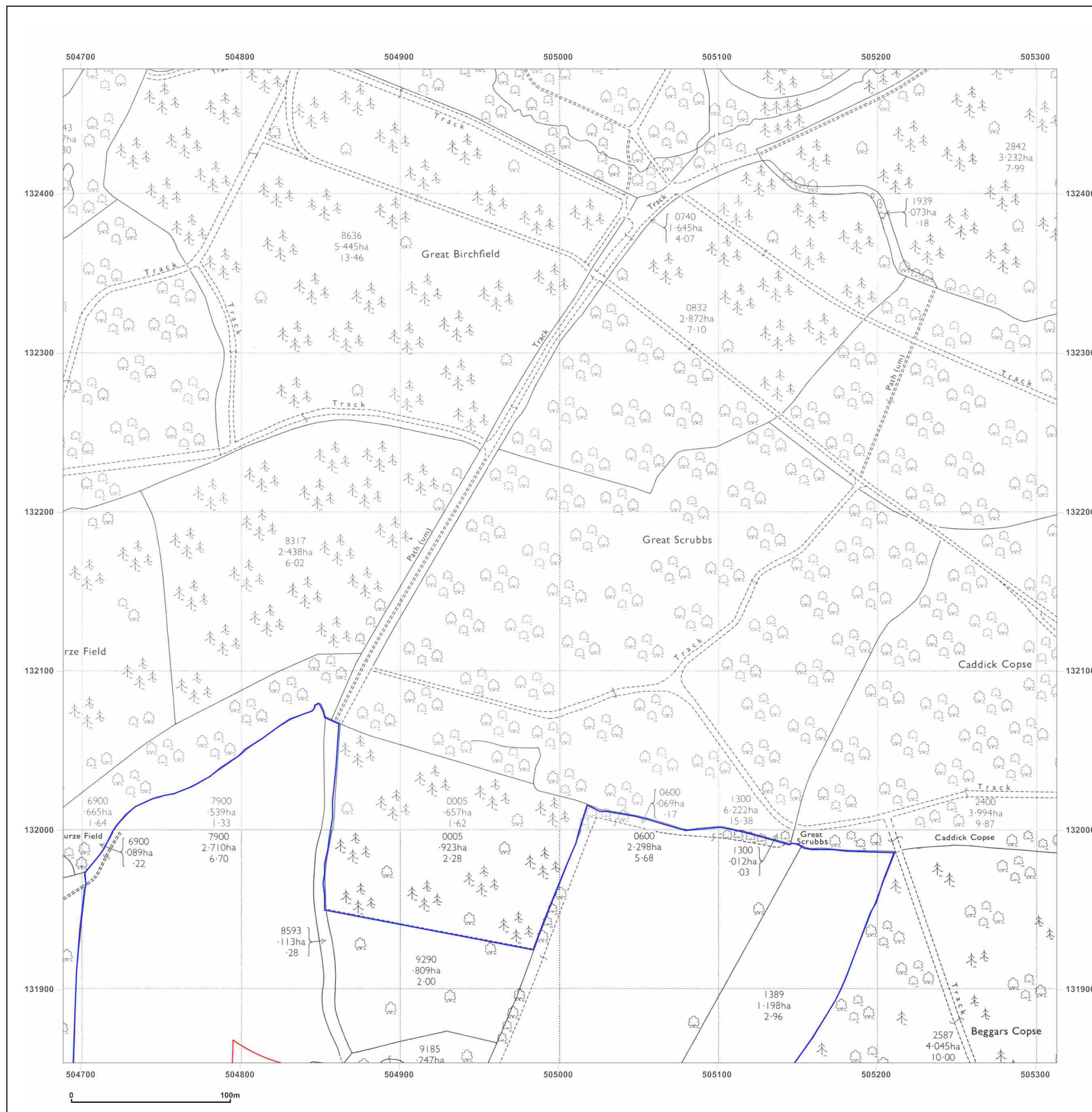


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_2  
**Grid Ref:** 505001, 132166

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed N/A  
Revised N/A  
Edition N/A  
Copyright 1994  
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Revised N/A  
Edition N/A  
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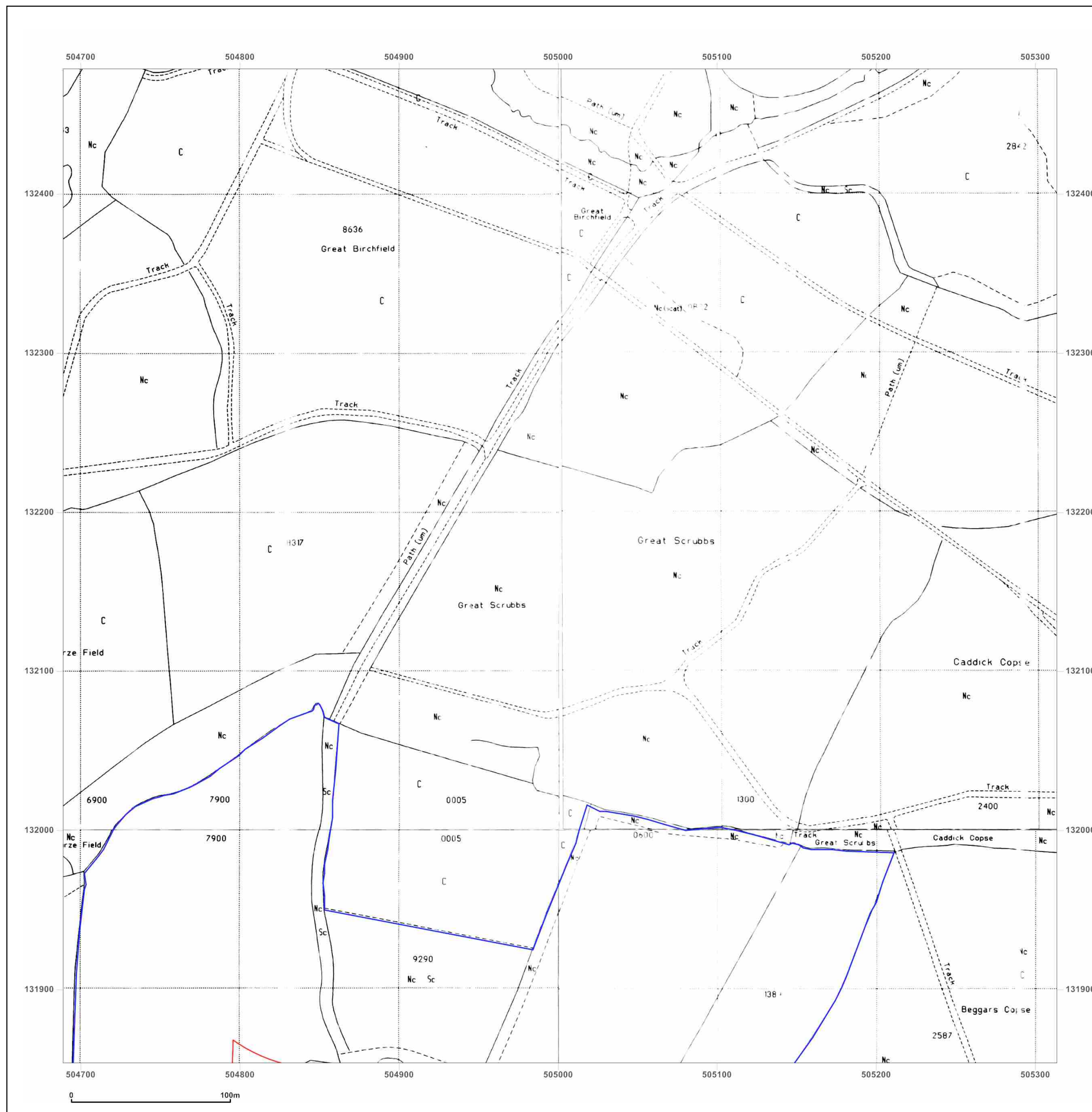


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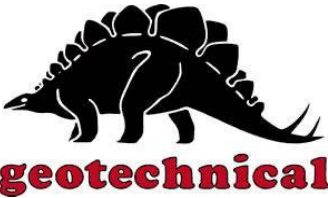
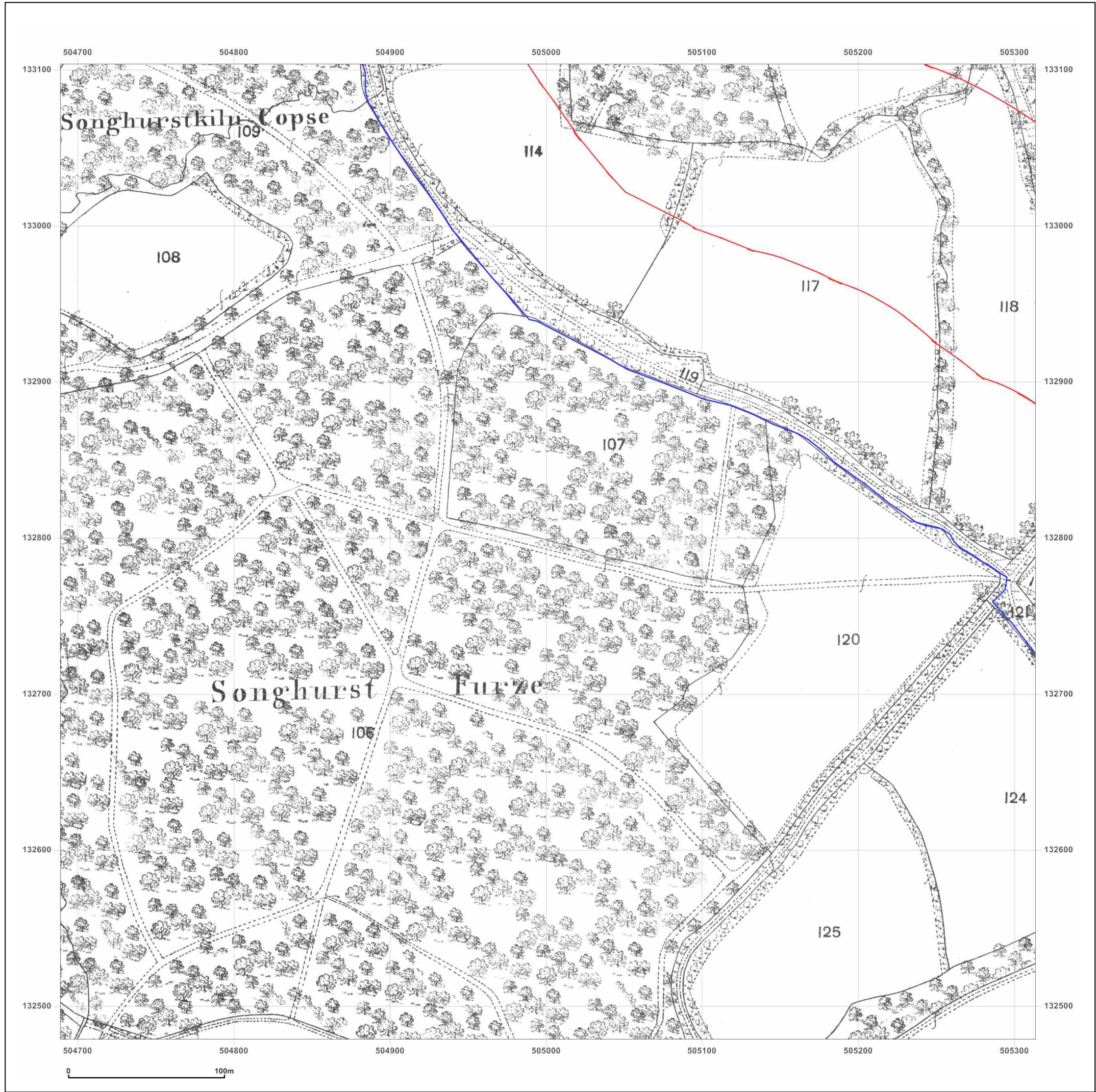
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ORW

Client Ref: 38143  
Report Ref: CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_3  
Grid Ref: 505001, 132791

Map Name: County Series

Map date: 1876

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1876  
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#### Site Details:

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 505001, 132791

**Map Name:** County Series

**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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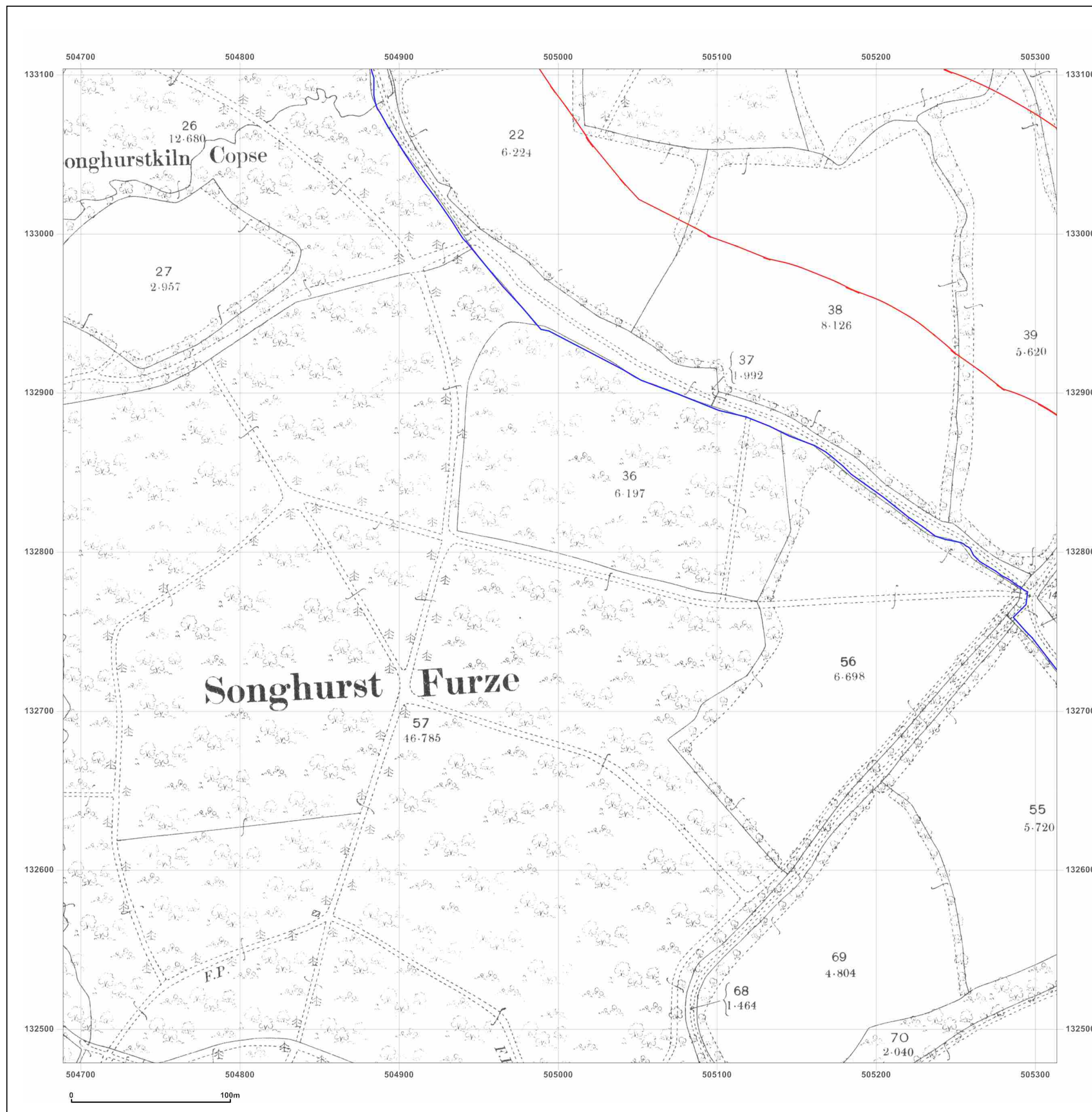


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**Map Name:** County Series

**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1898  
Revised 1898  
Edition N/A  
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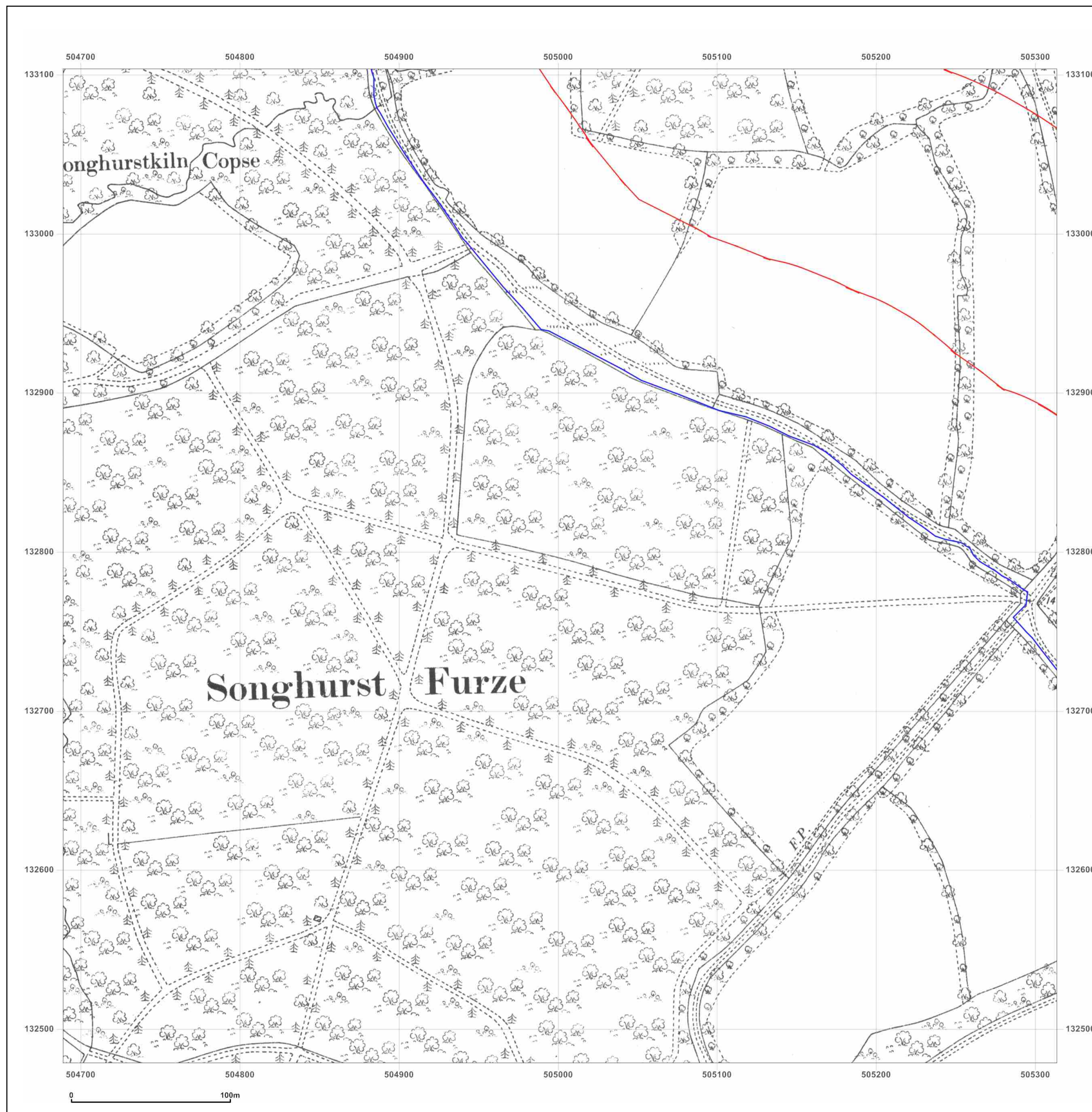


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 505001, 132791

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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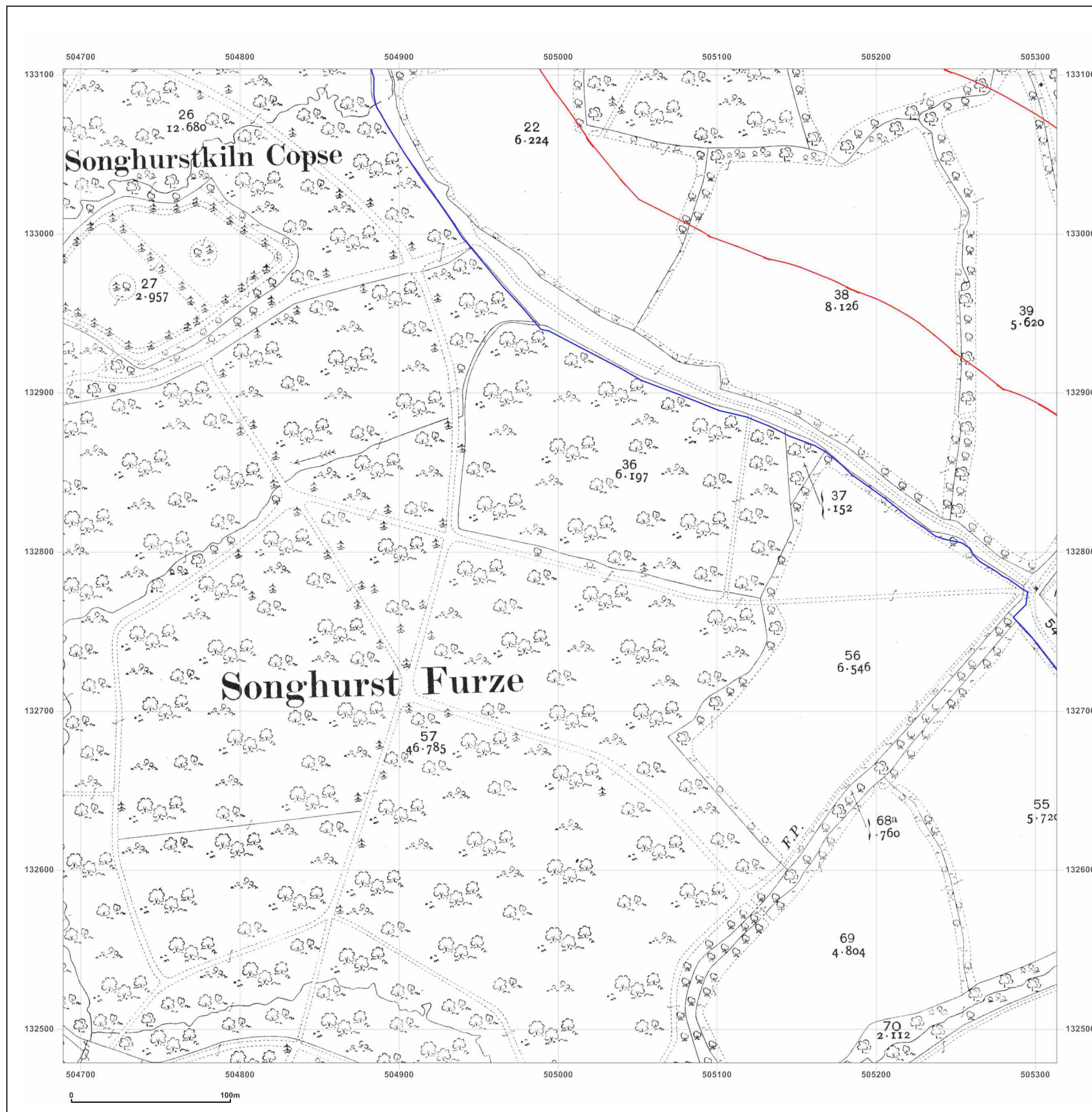


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 505001, 132791

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1973  
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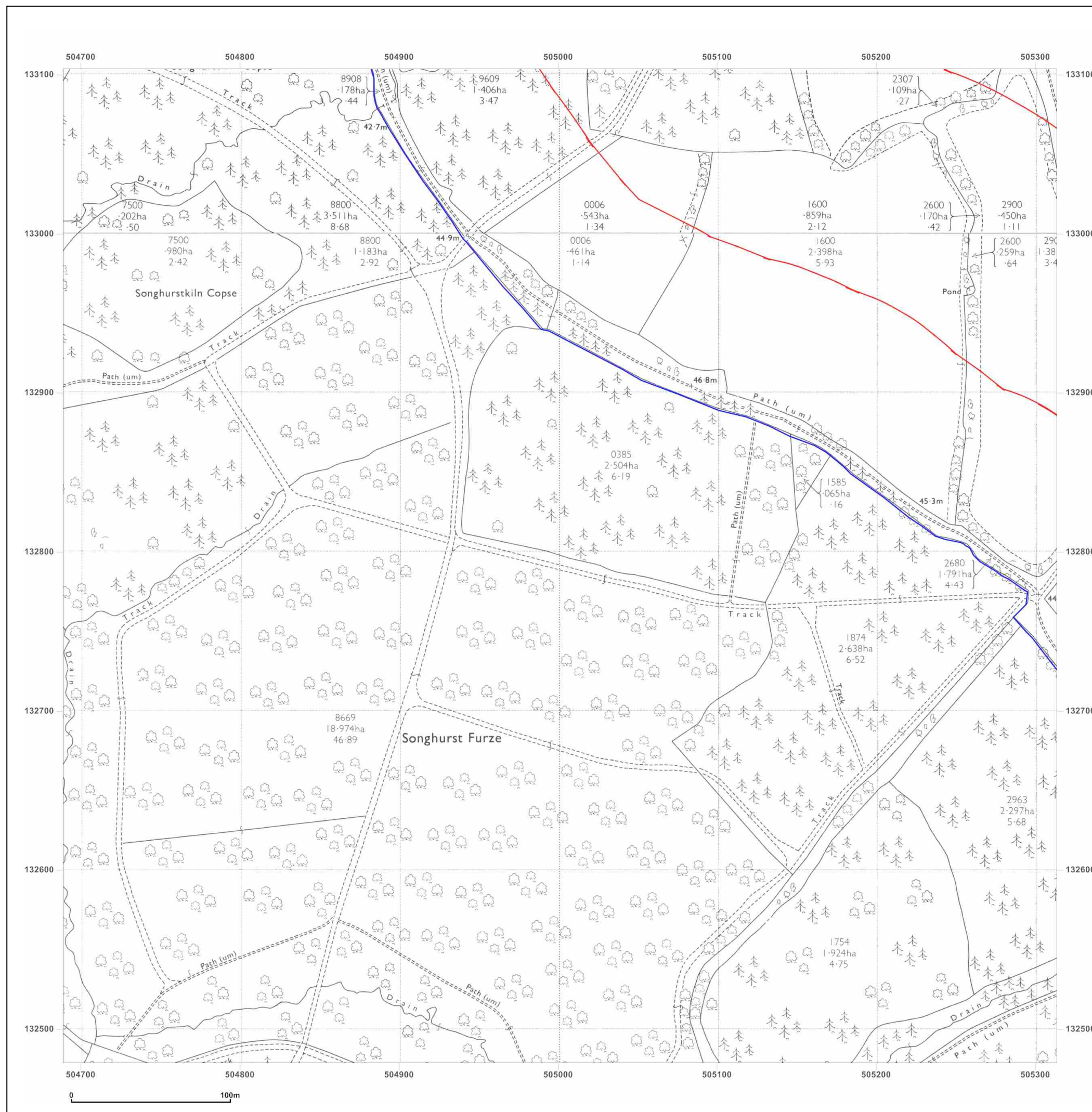


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**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_3  
**Grid Ref:** 505001, 132791

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
Copyright 1994  
Levelled N/A

Surveyed N/A  
Revised N/A  
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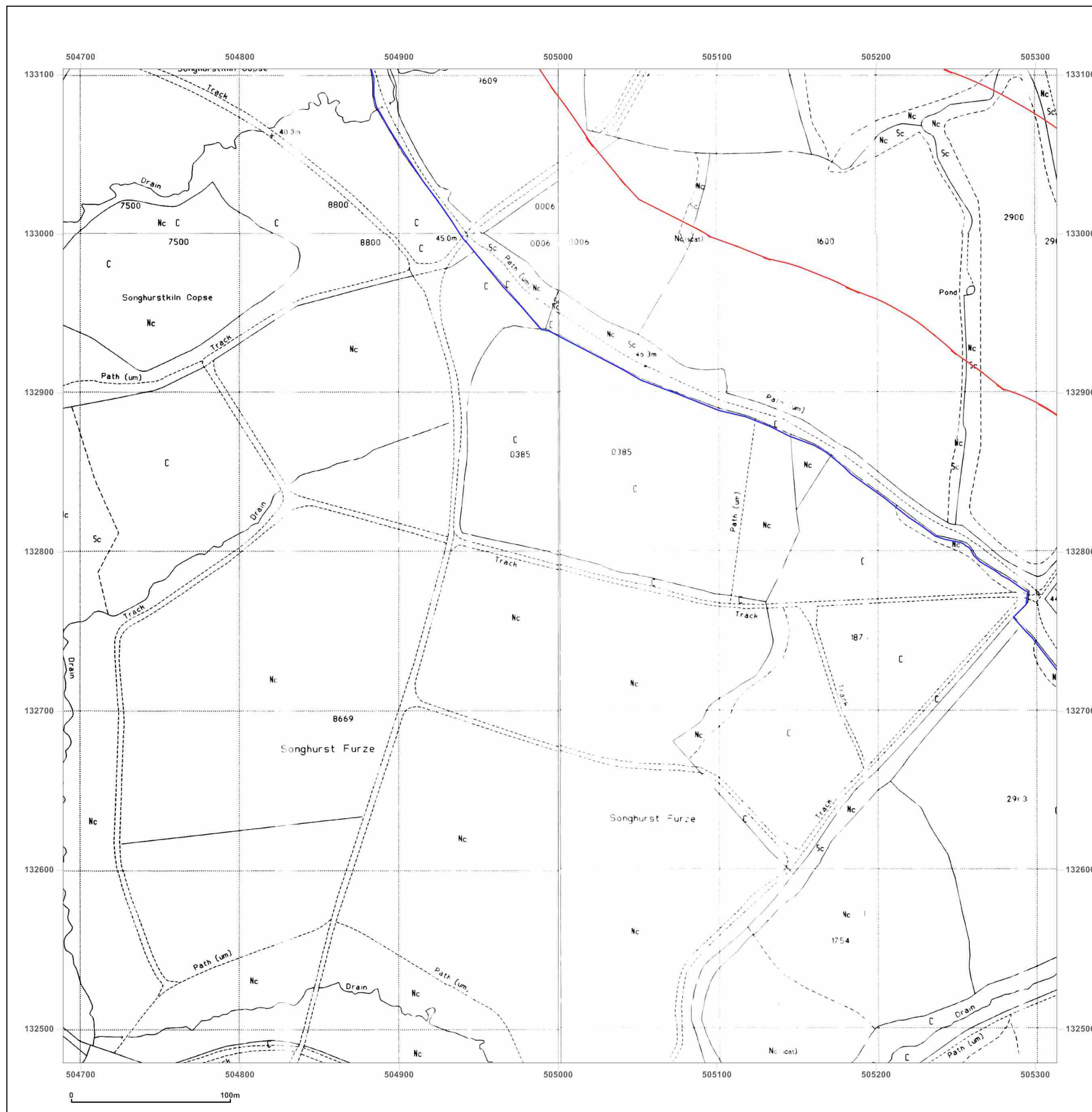


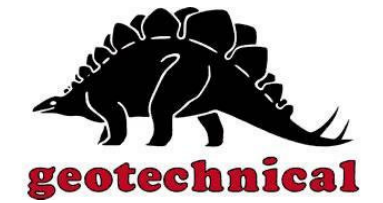
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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_4  
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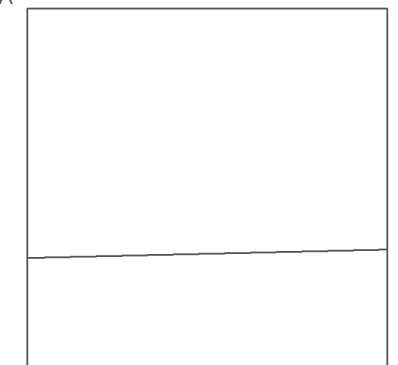
**Map date:** 1871

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1871  
Edition N/A  
Copyright N/A  
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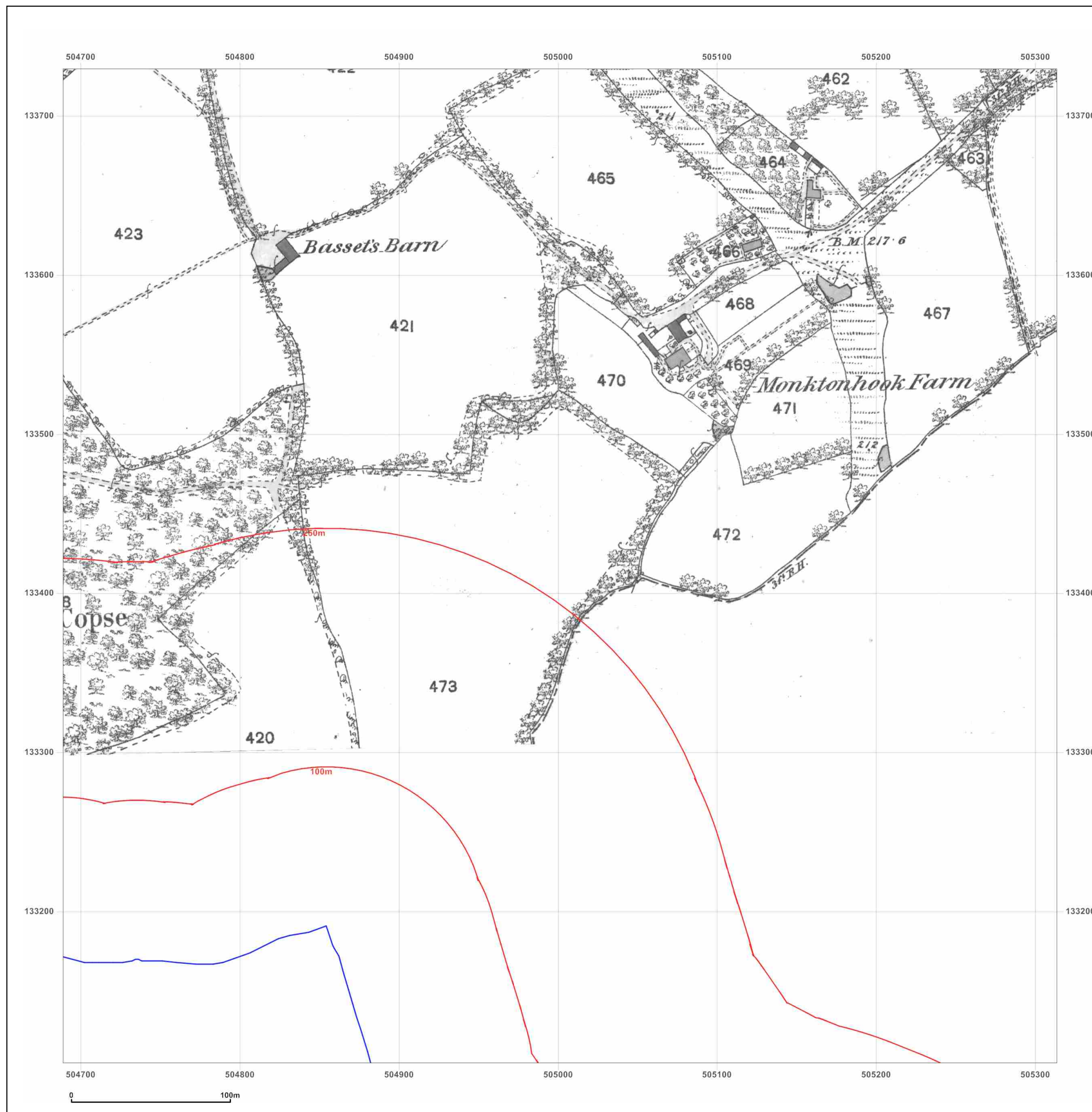


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#### Site Details:

Loxwood (Chichester), RH14  
ORW

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**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_4  
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**Map Name:** County Series

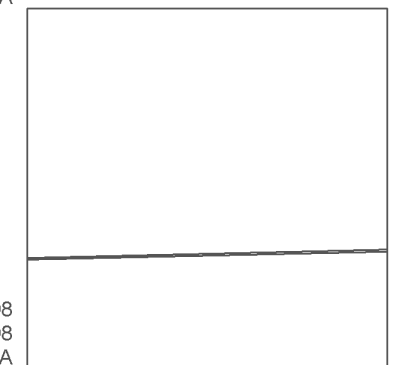
**Map date:** 1897-1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1897  
Revised 1897  
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Revised 1898  
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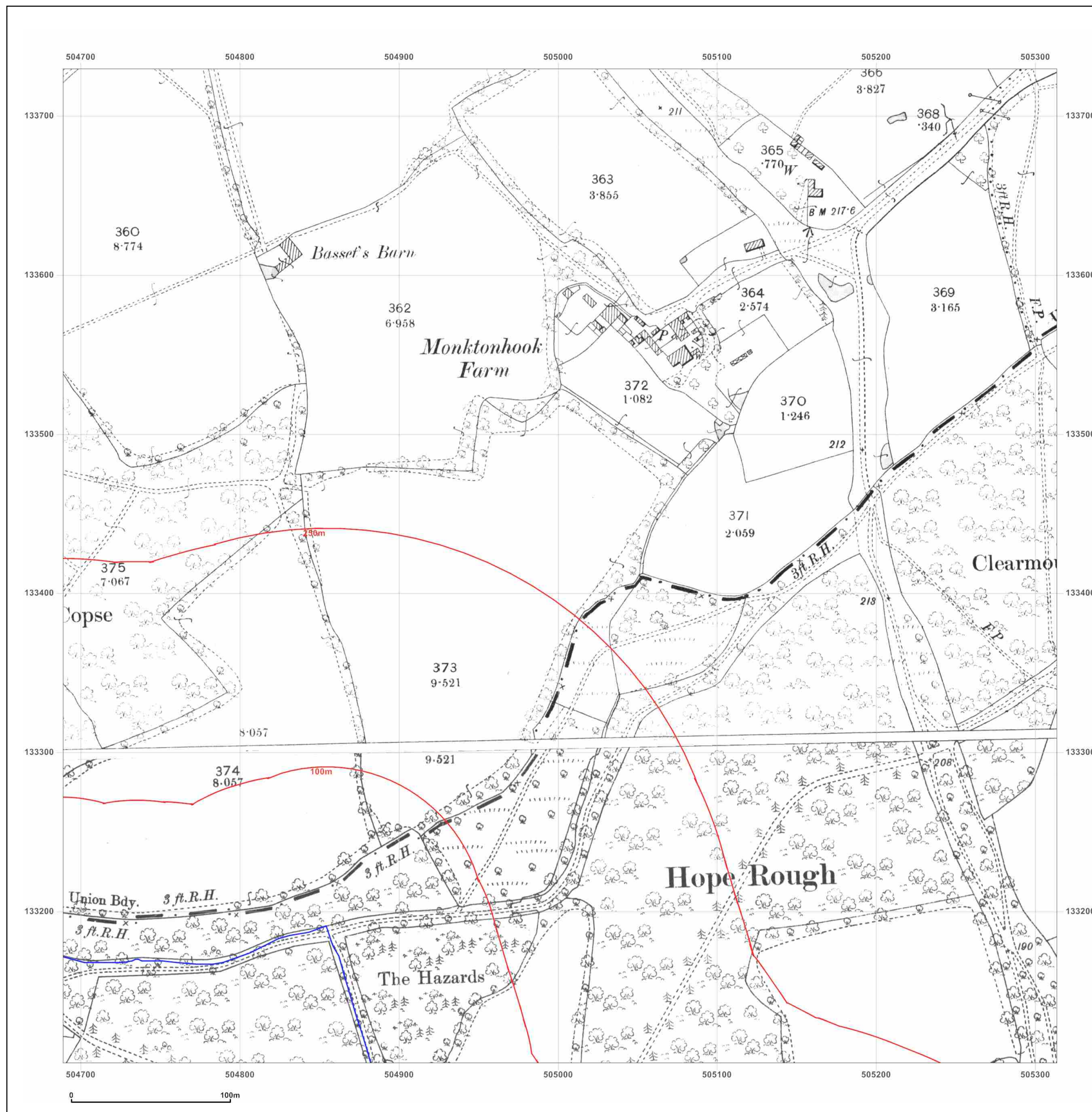


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ORW

**Client Ref:** 38143  
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**Grid Ref:** 505001, 133417

**Map Name:** County Series

**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1898  
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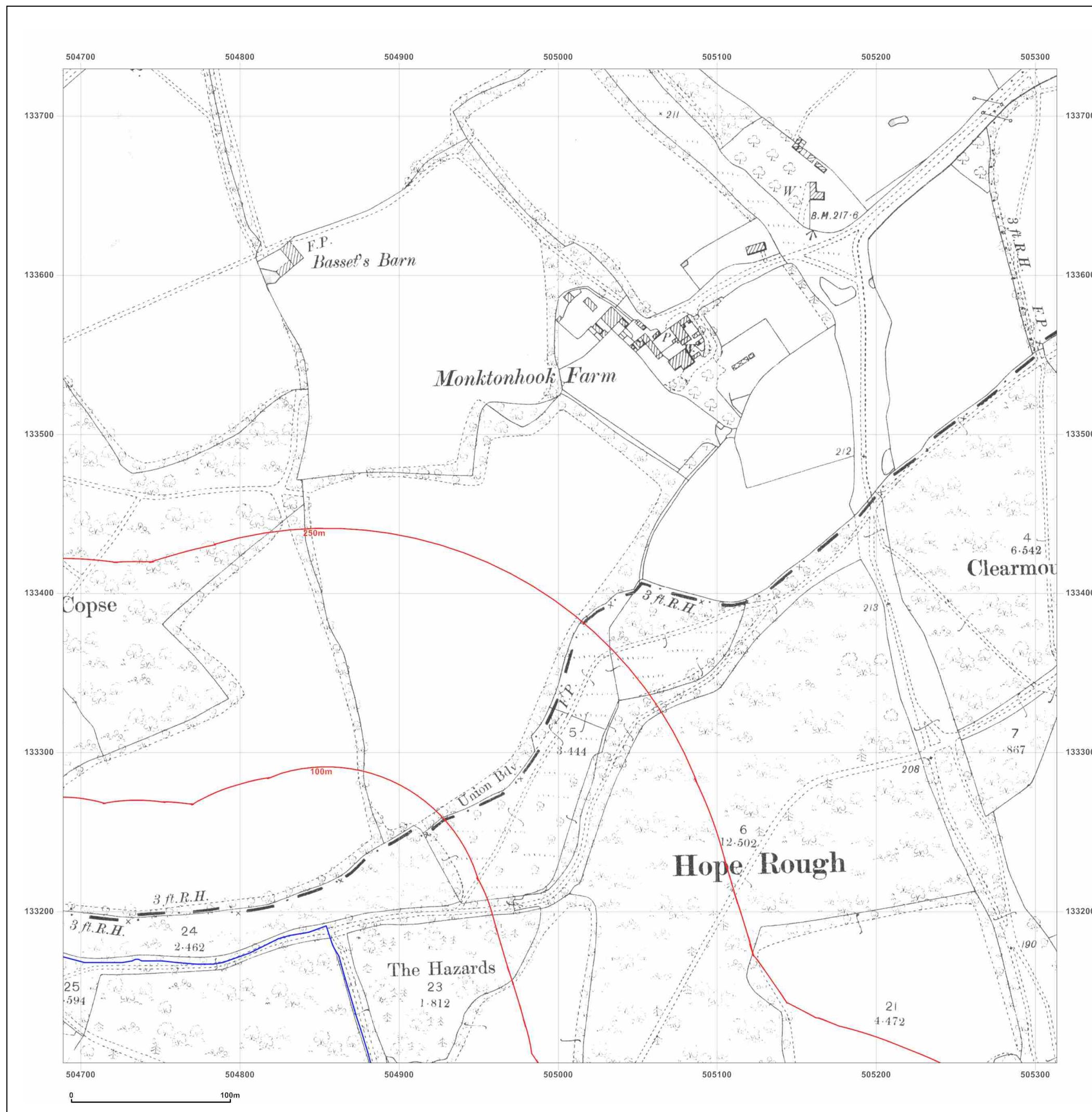


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_4  
**Grid Ref:** 505001, 133417

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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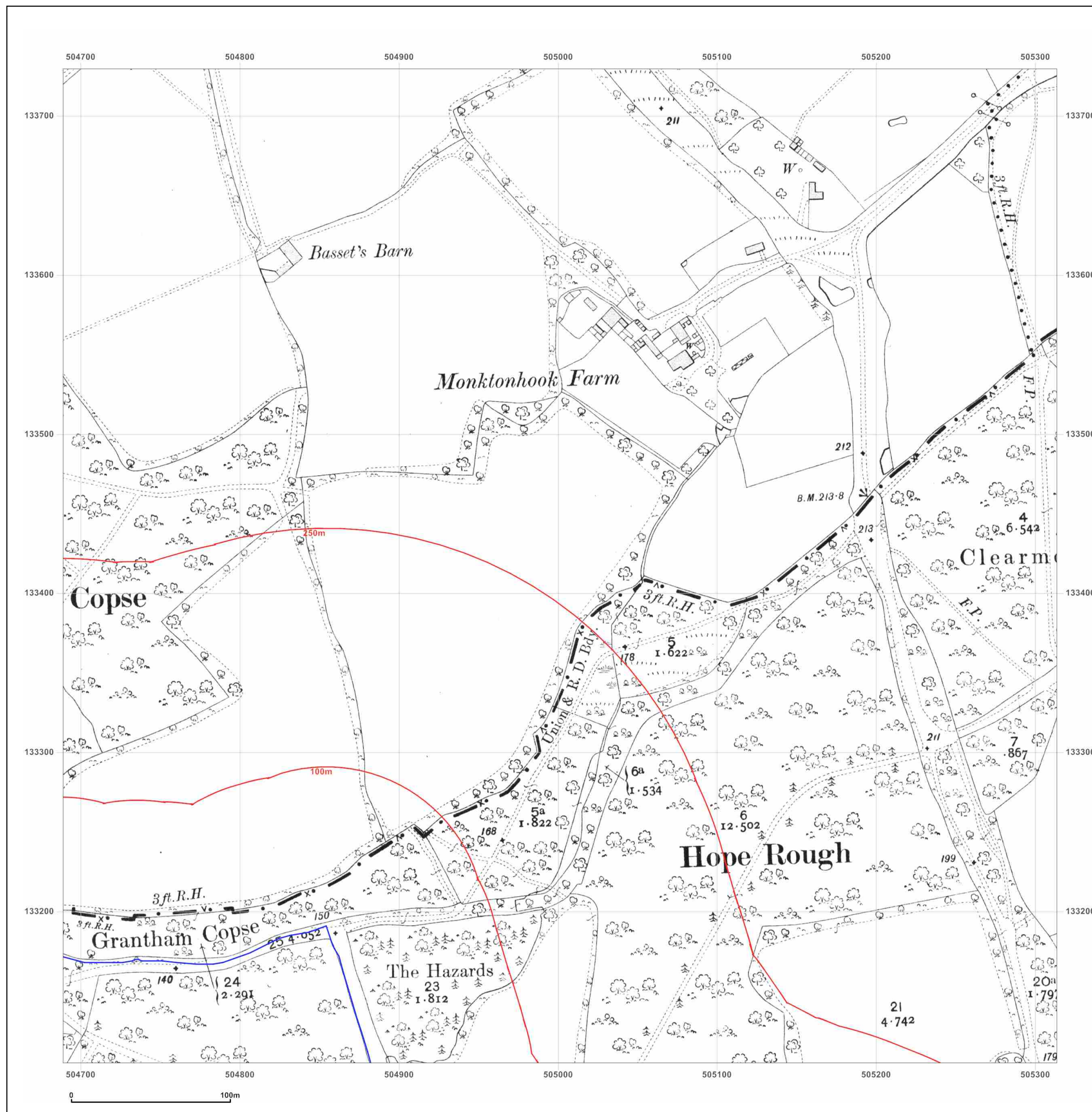


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ORW

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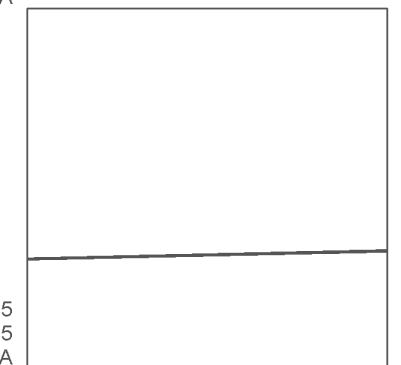
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**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1915  
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Revised 1915  
Edition N/A  
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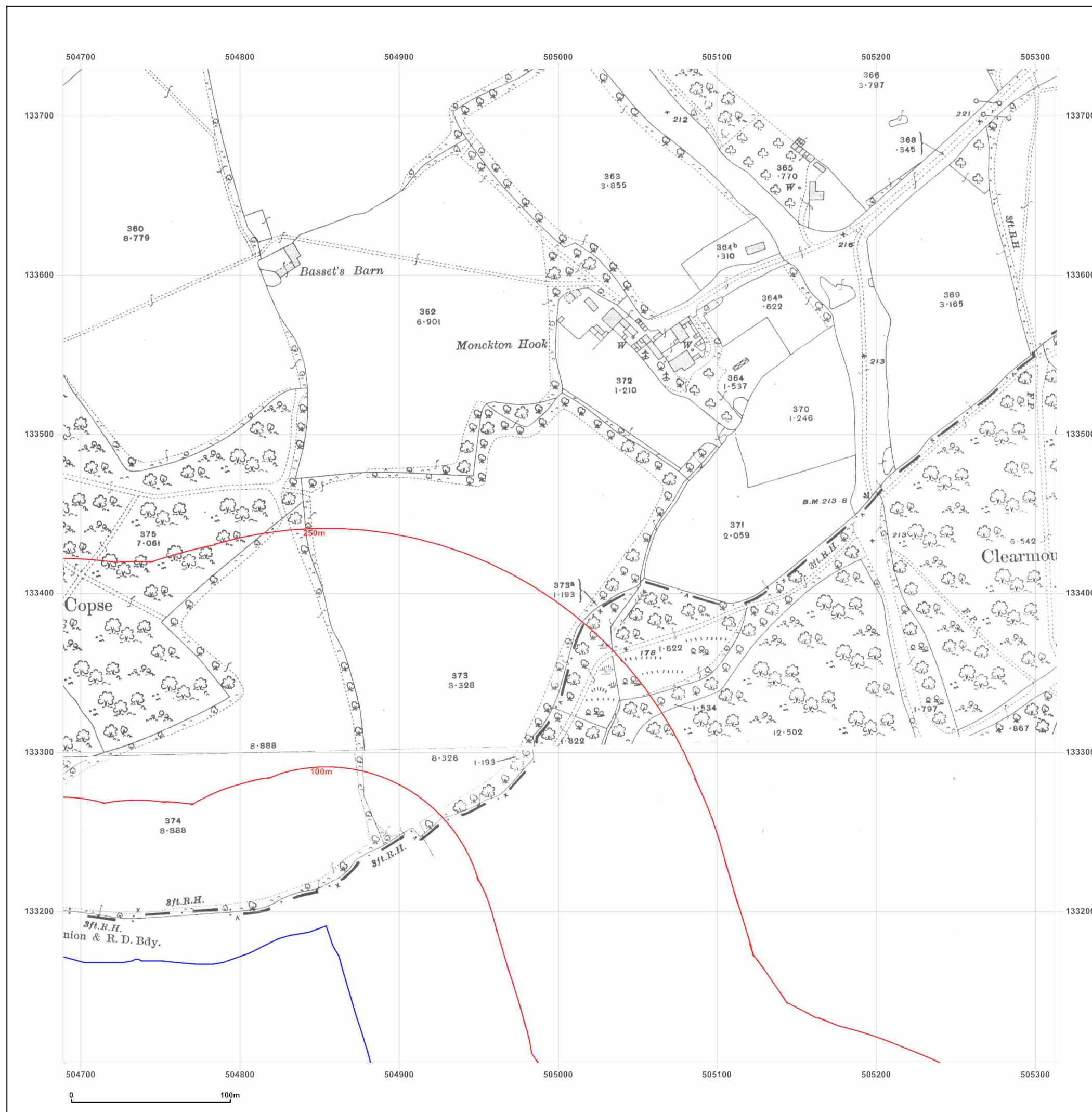


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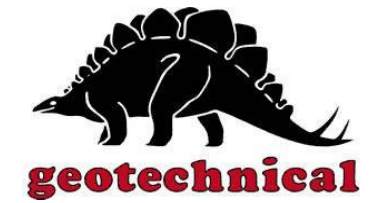
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#### Site Details:

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Client Ref: 38143  
Report Ref: CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_4  
Grid Ref: 505001, 133417

Map Name: County Series

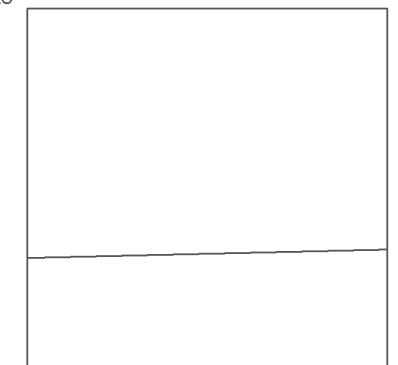
Map date: 1933

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1872  
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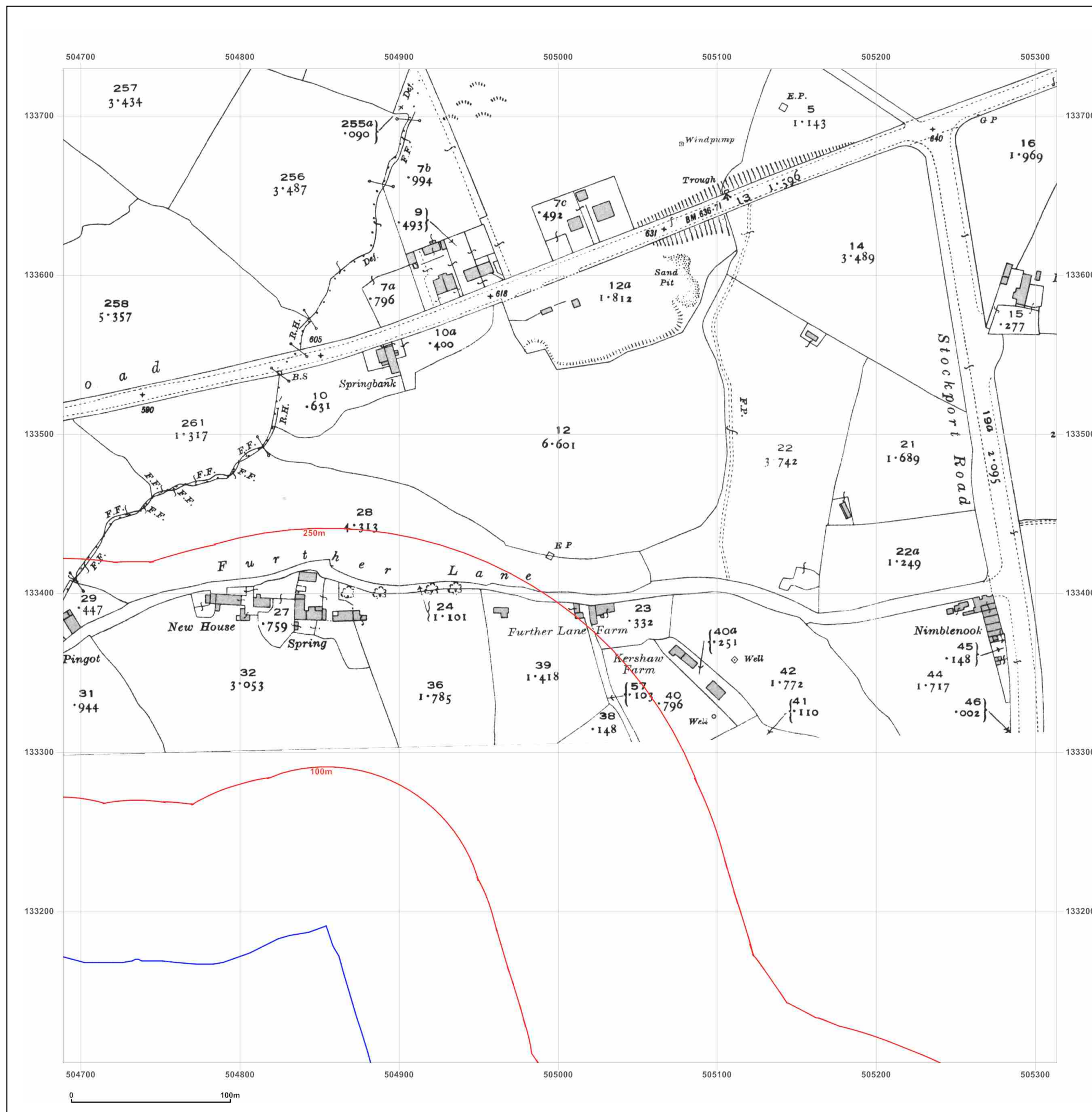


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_4  
**Grid Ref:** 505001, 133417

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1973  
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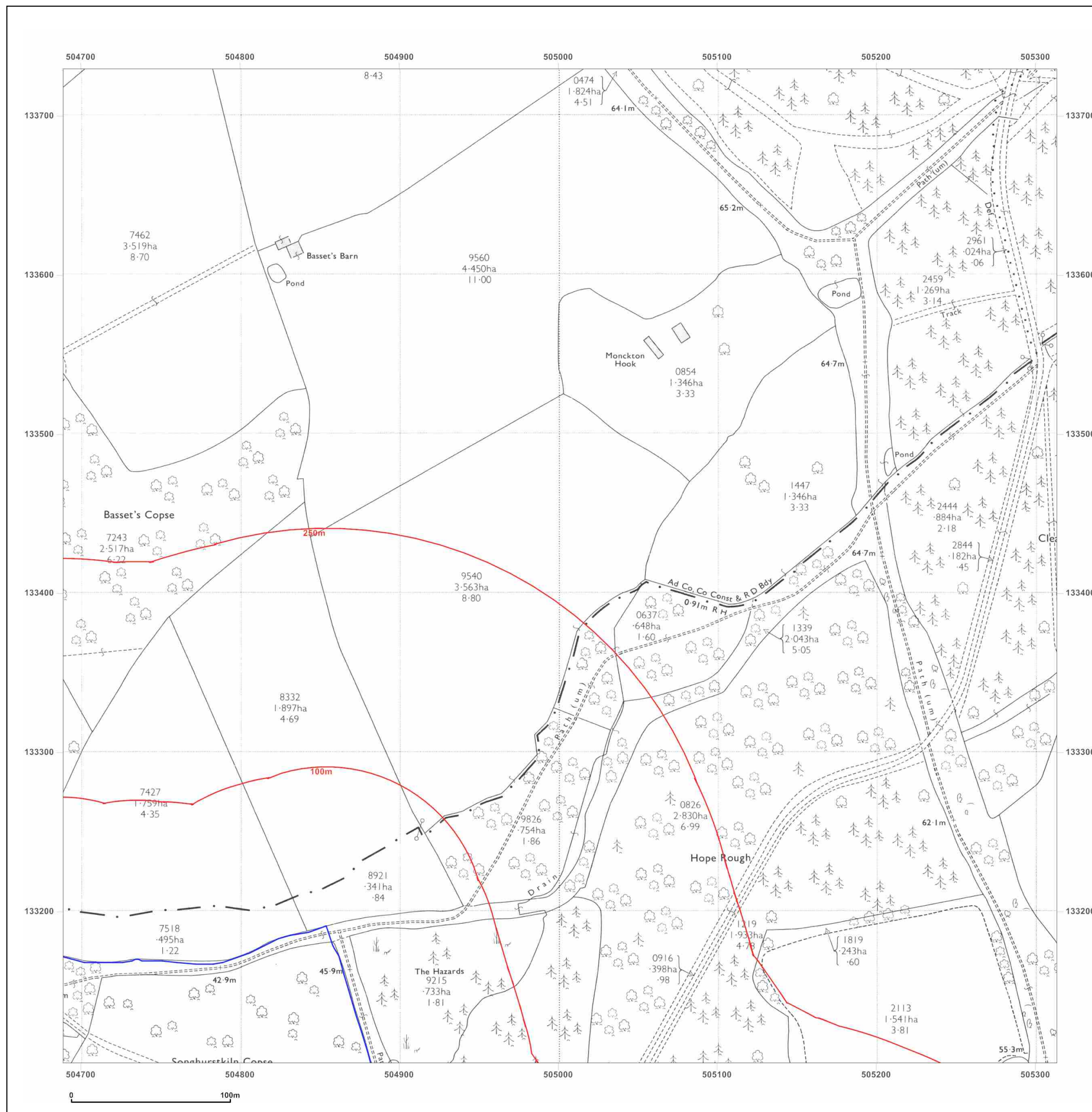


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ORW

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**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_2\_4  
**Grid Ref:** 505001, 133417

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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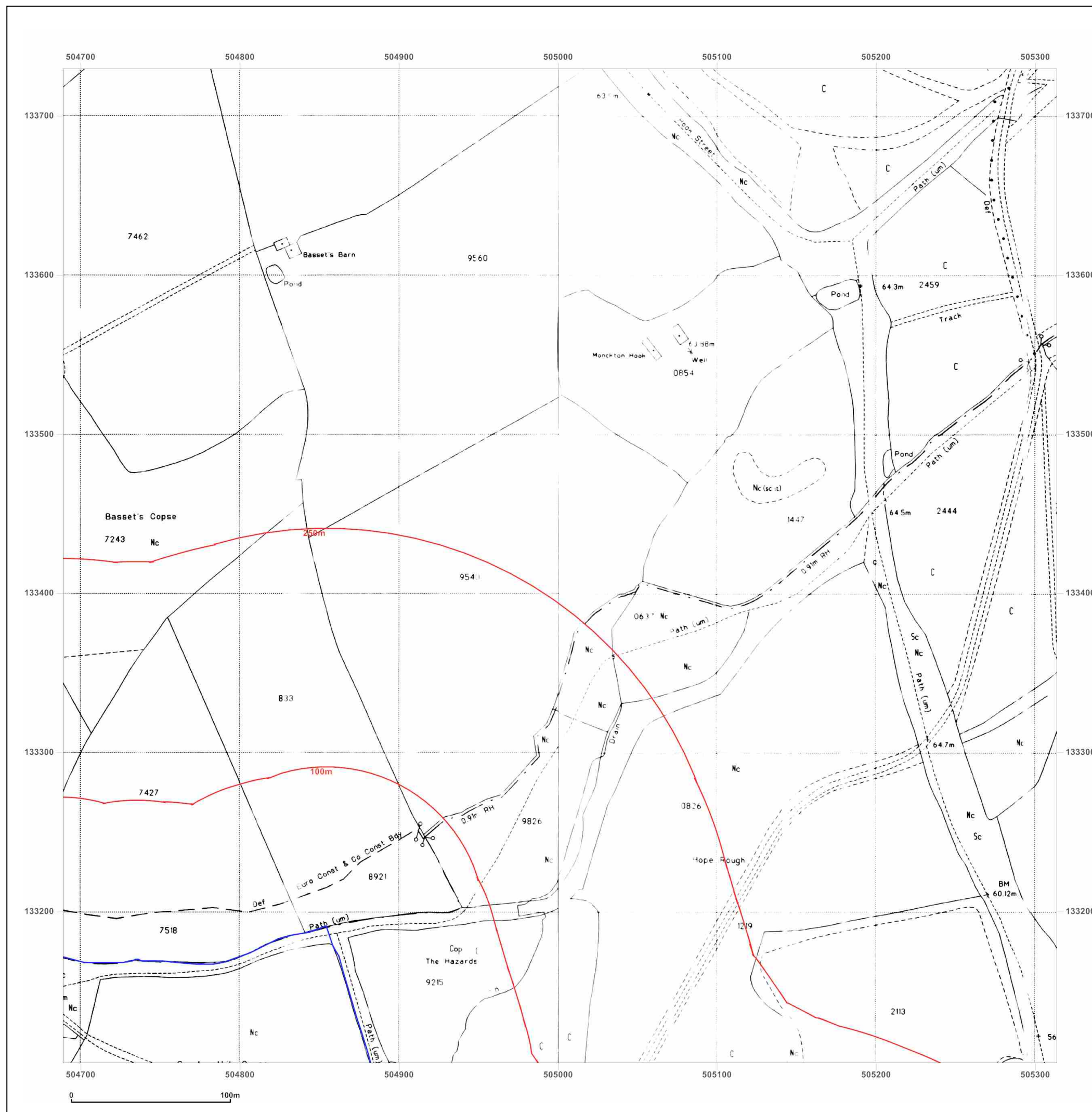


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_3\_1  
**Grid Ref:** 505627, 131540

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1876  
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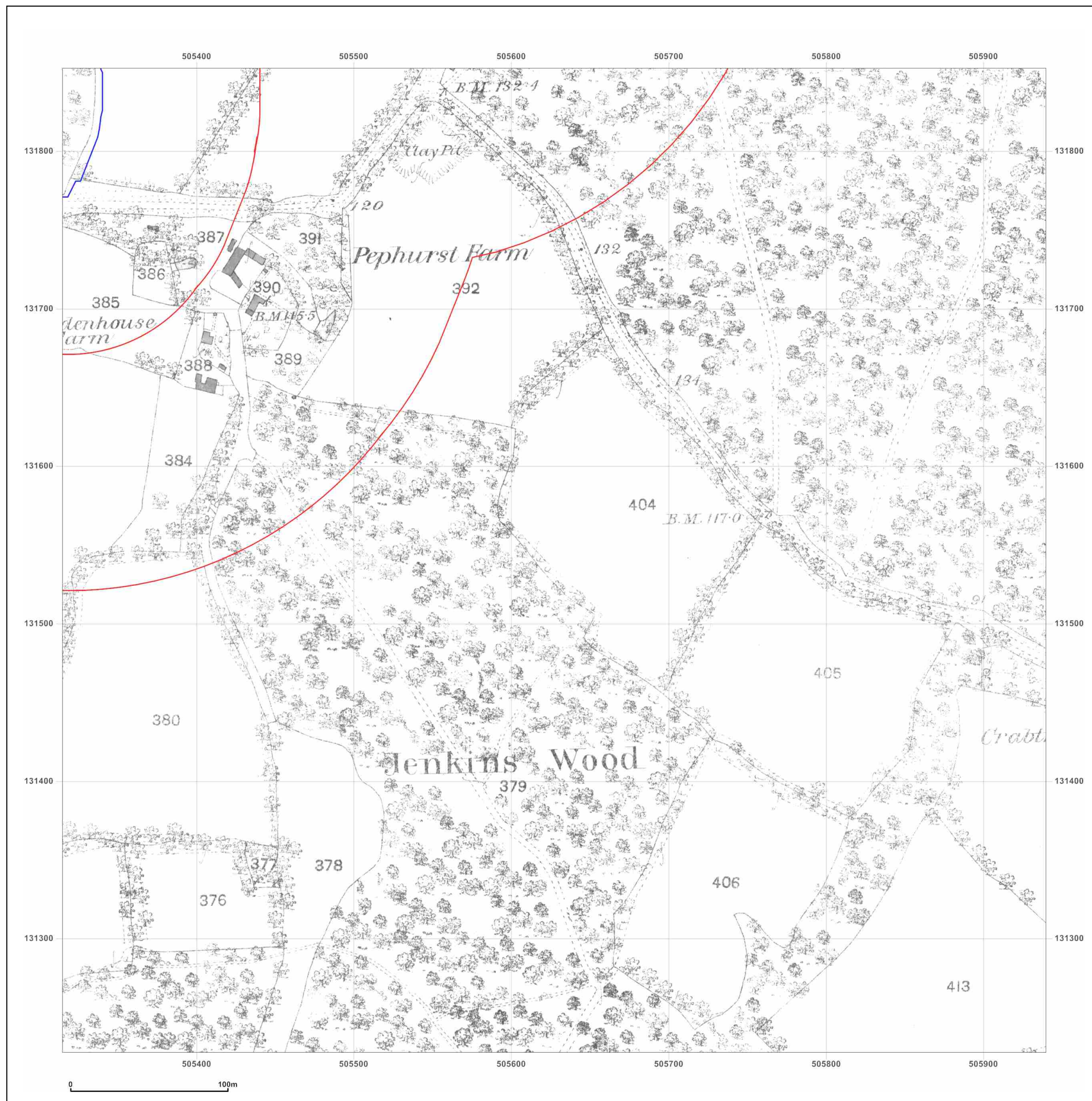


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_3\_1  
**Grid Ref:** 505627, 131540

**Map Name:** County Series

**Map date:** 1897

**Scale:** 1:2,500

**Printed at:** 1:2,500



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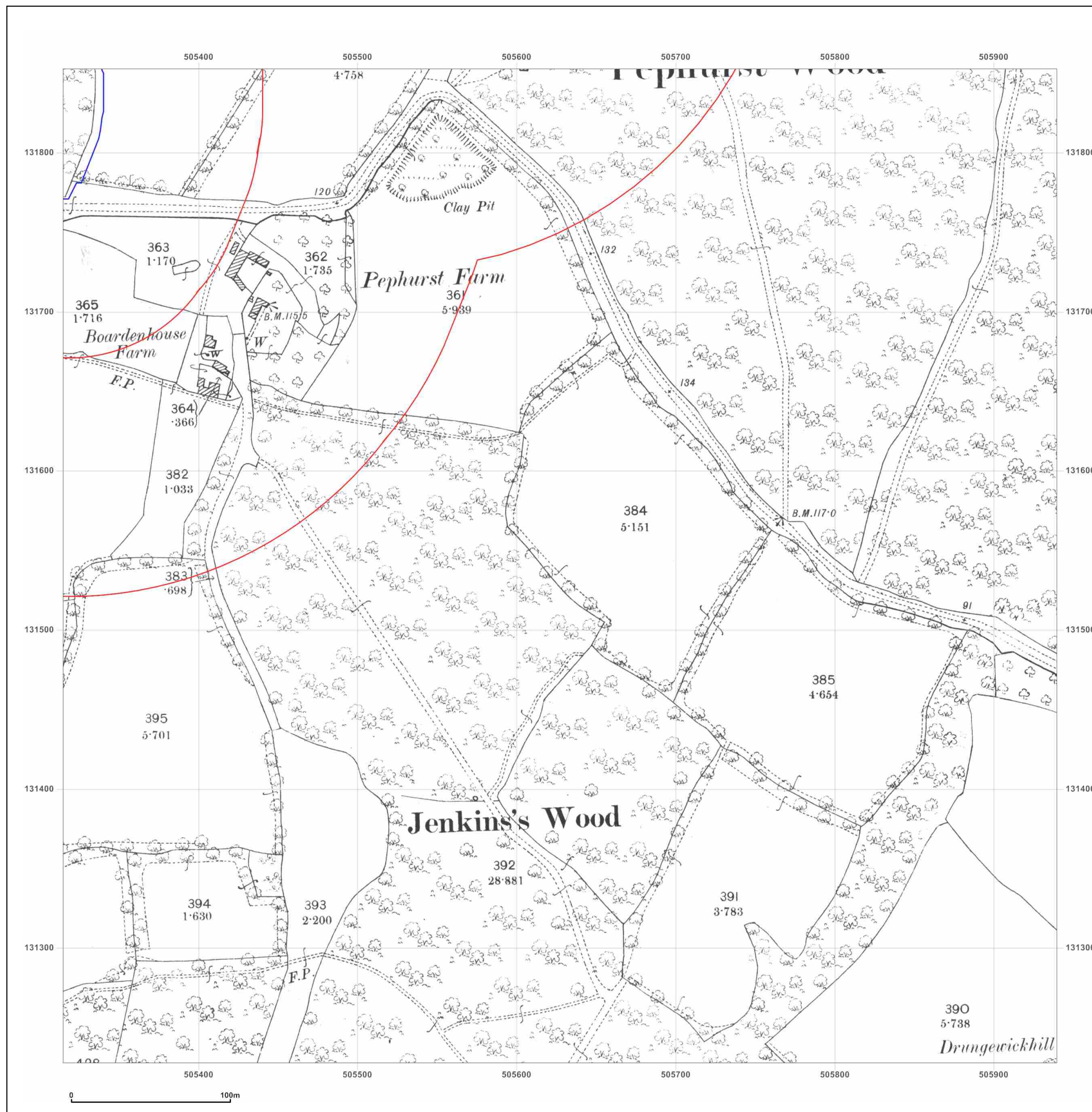


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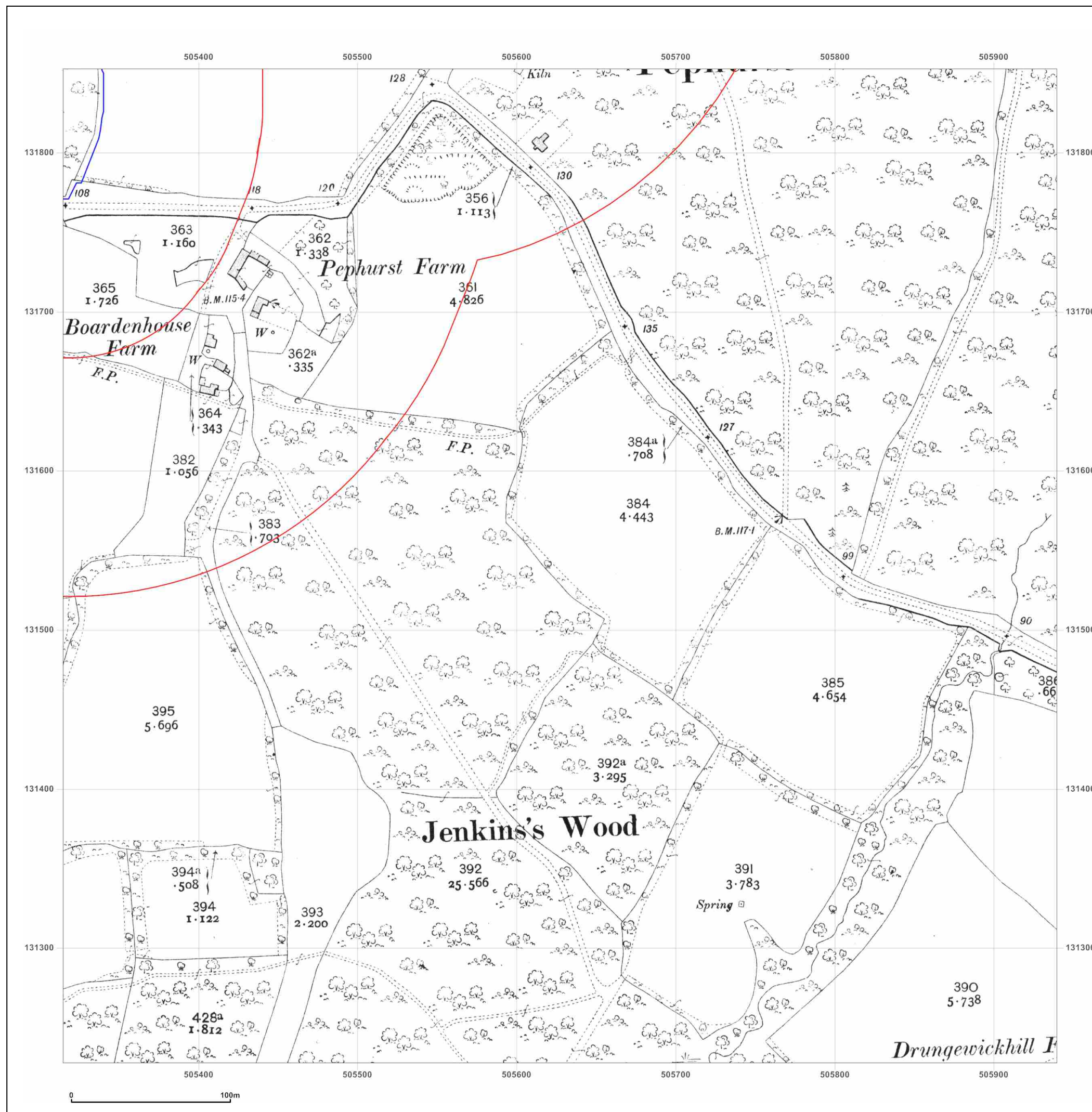
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#### Site Details:

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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_3\_1  
**Grid Ref:** 505627, 131540

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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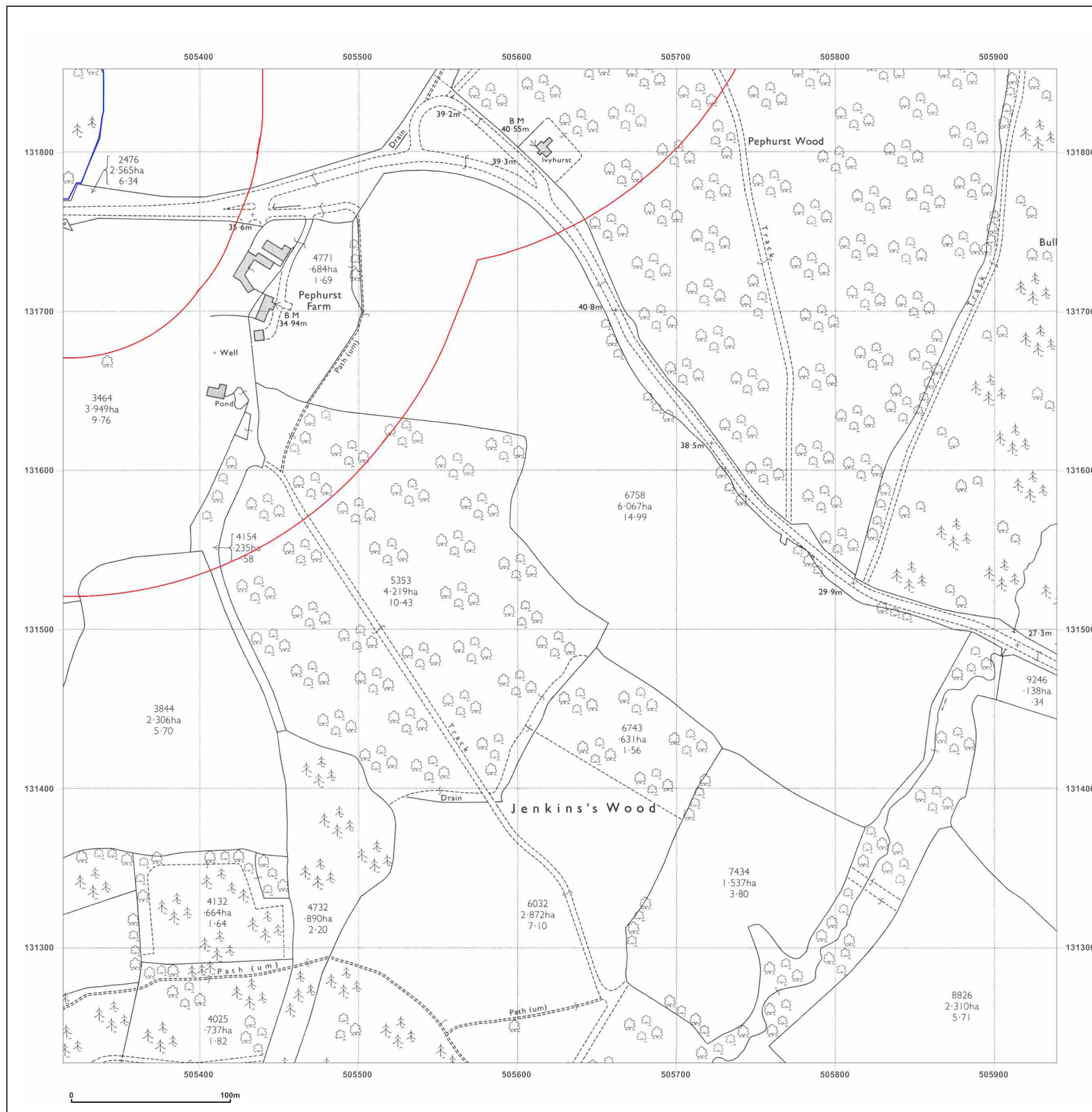


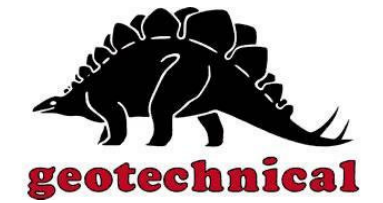
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#### Site Details:

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ORW

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**Grid Ref:** 505627, 131540

**Map Name:** National Grid

**Map date:** 1994

**Scale:** 1:2,500

**Printed at:** 1:2,500



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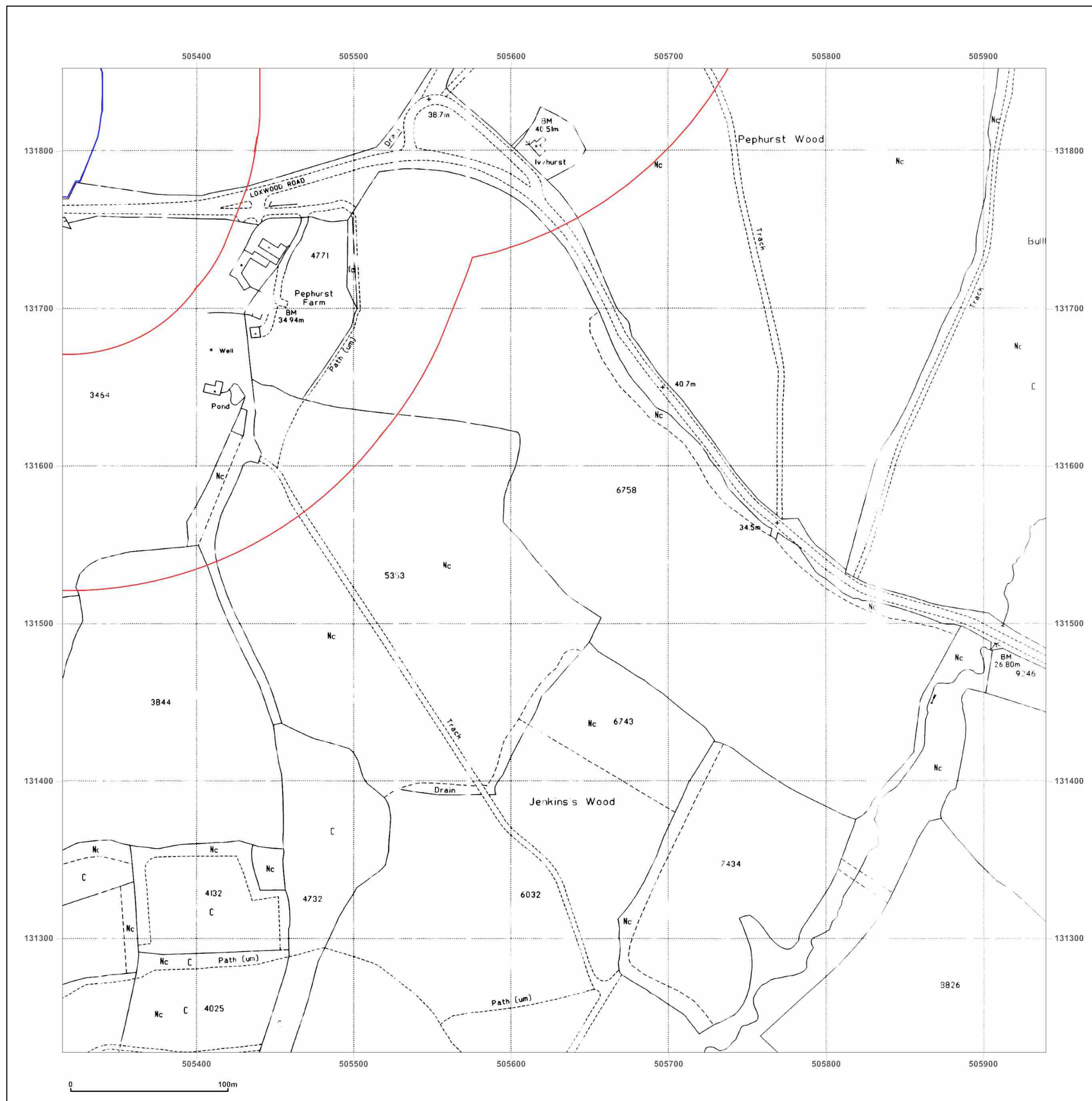


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**Site Details:**

Loxwood (Chichester), RH14  
ORW

**Client Ref:** 38143  
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**Map Name:** County Series

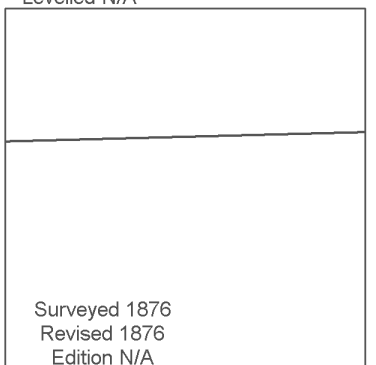
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**Scale:** 1:2,500

**Printed at:** 1:2,500



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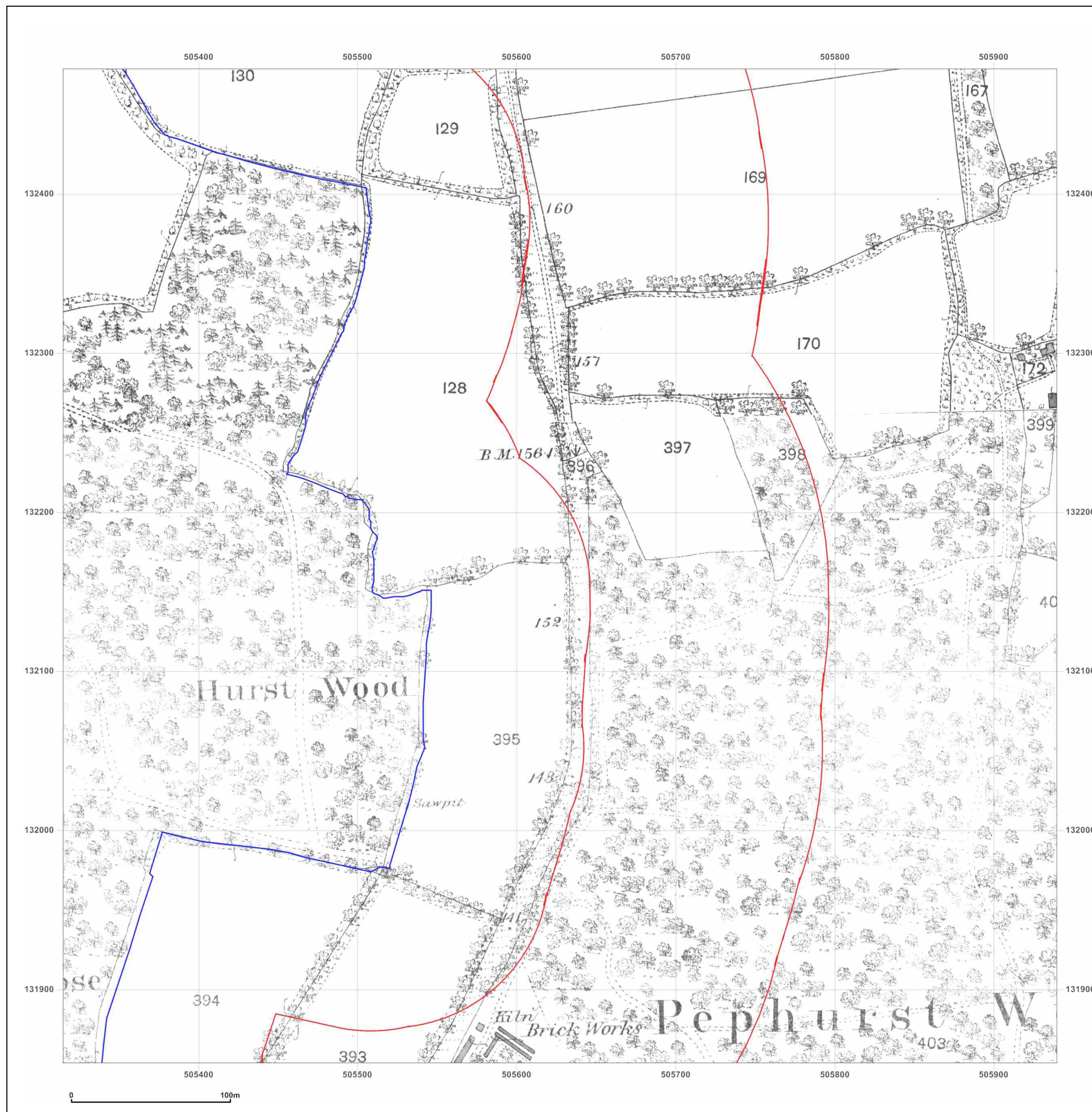


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ORW

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**Grid Ref:** 505627, 132166

**Map Name:** County Series

**Map date:** 1897-1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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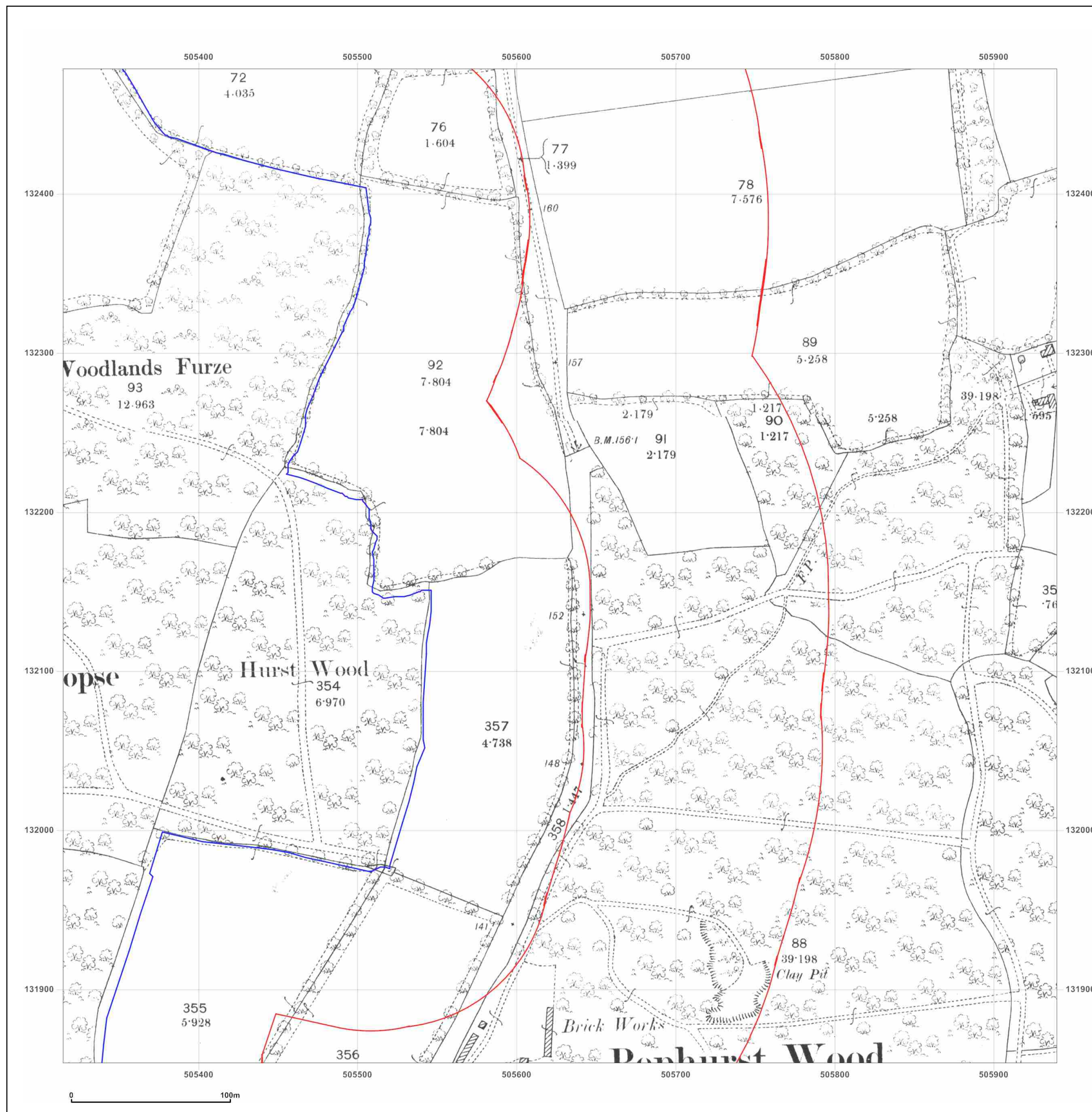


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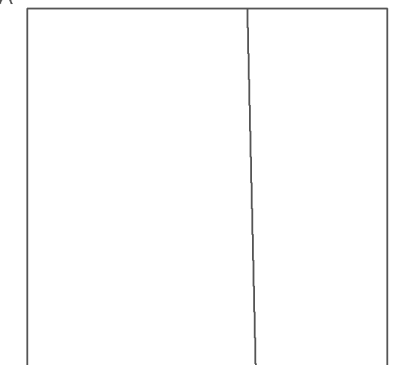
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**Printed at:** 1:2,500



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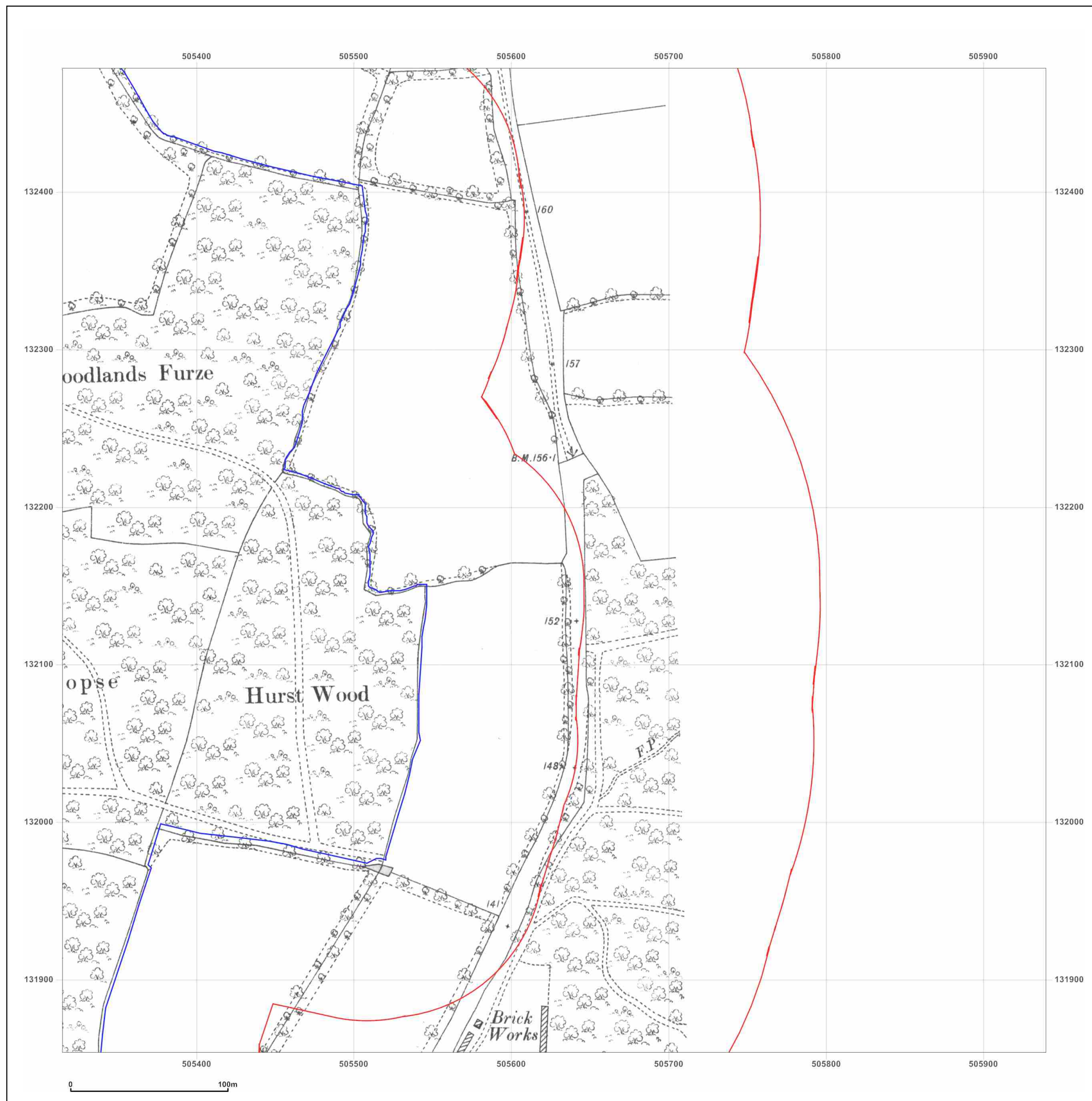


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ORW

**Client Ref:** 38143  
**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_3\_2  
**Grid Ref:** 505627, 132166

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:2,500

**Printed at:** 1:2,500



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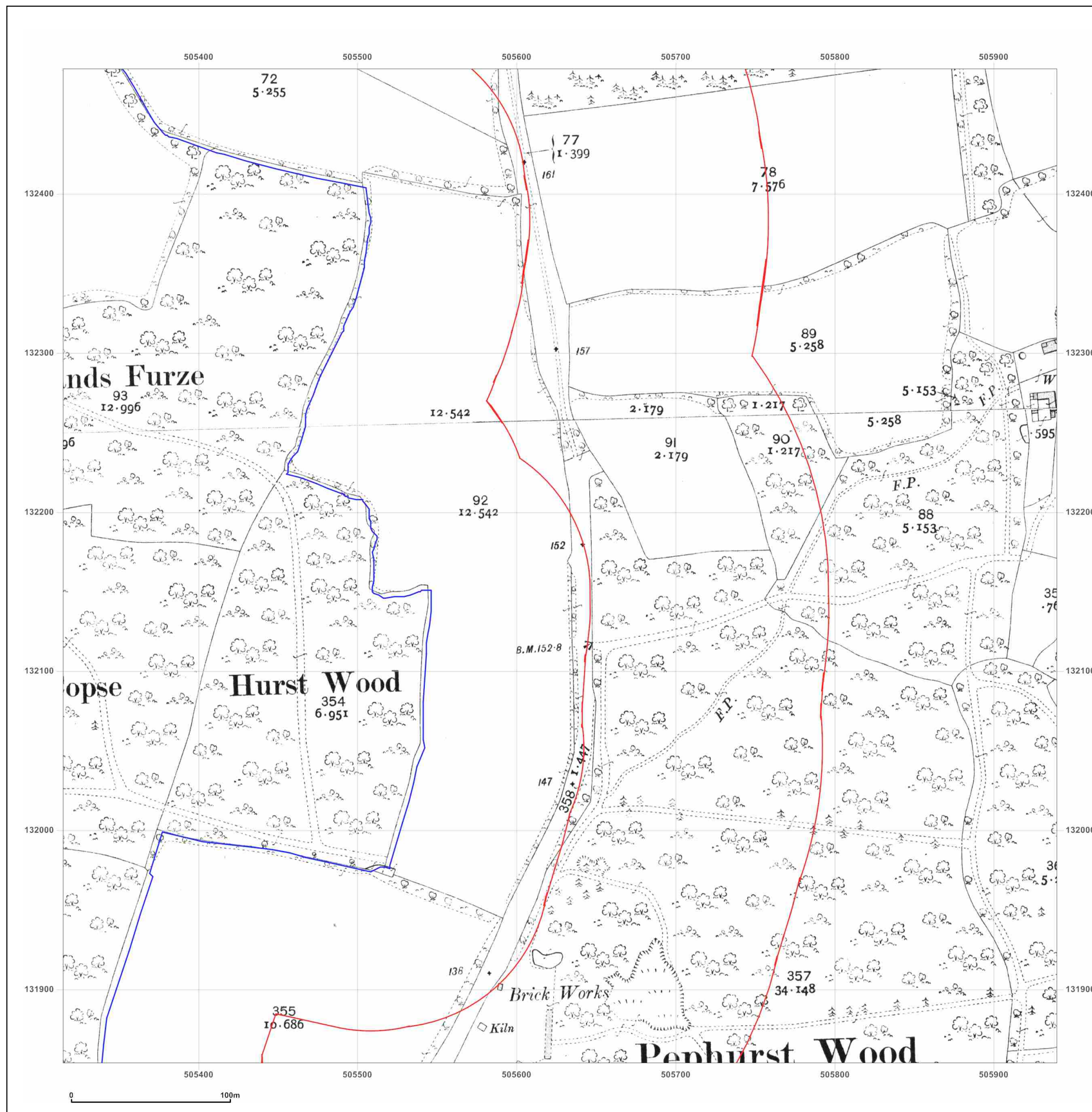


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**Grid Ref:** 505627, 132166

**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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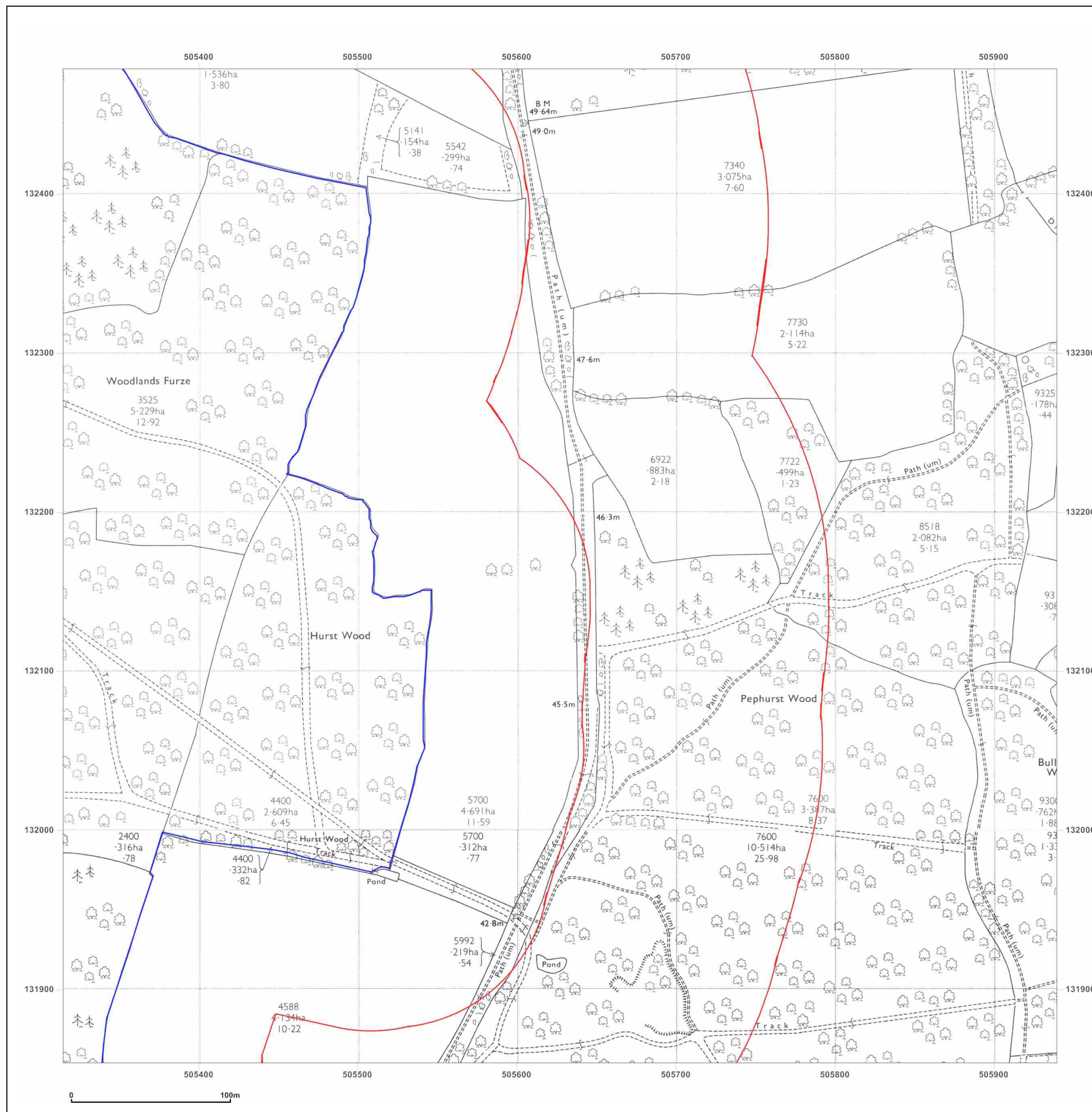


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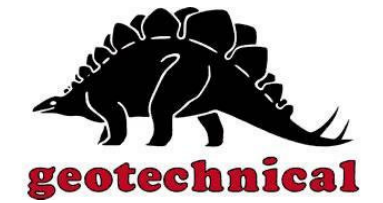
Production date: 06 January 2017

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ORW

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**Grid Ref:** 505627, 132791

**Map Name:** County Series

**Map date:** 1876

**Scale:** 1:2,500

**Printed at:** 1:2,500



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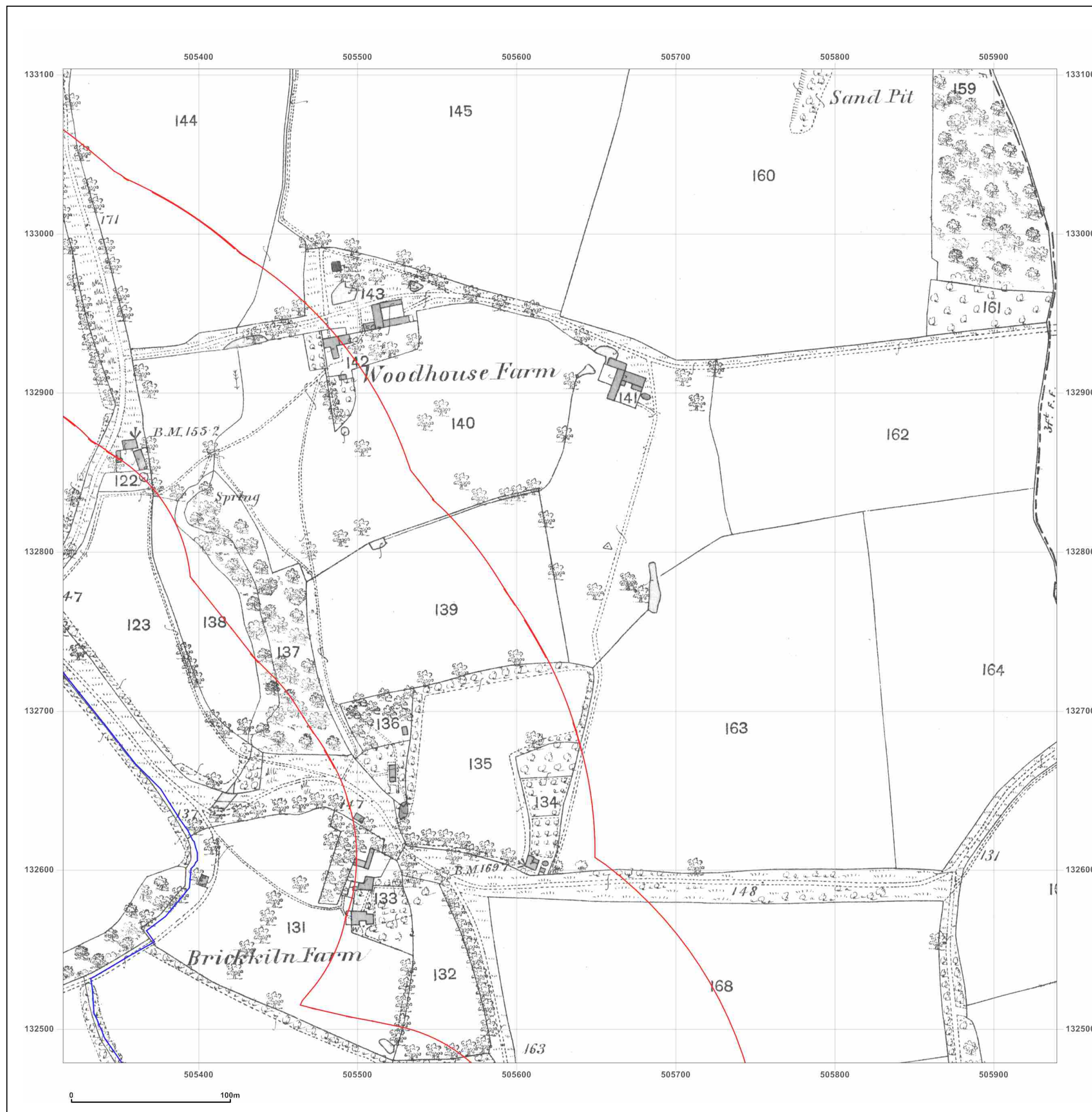


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**Map date:** 1898

**Scale:** 1:2,500

**Printed at:** 1:2,500



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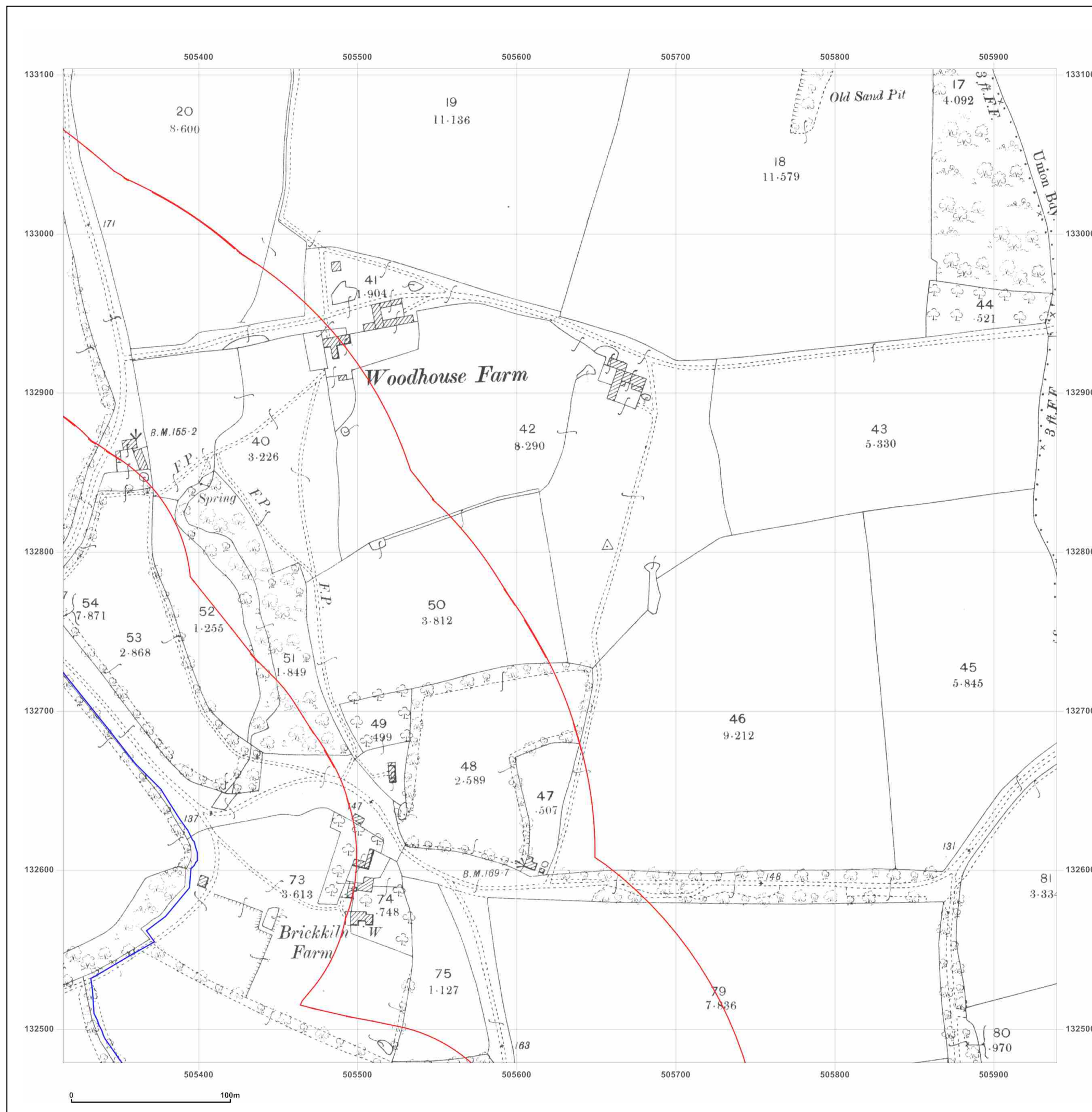


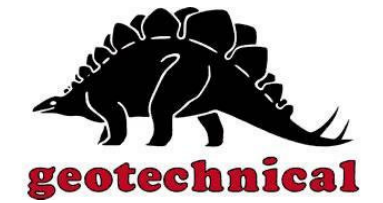
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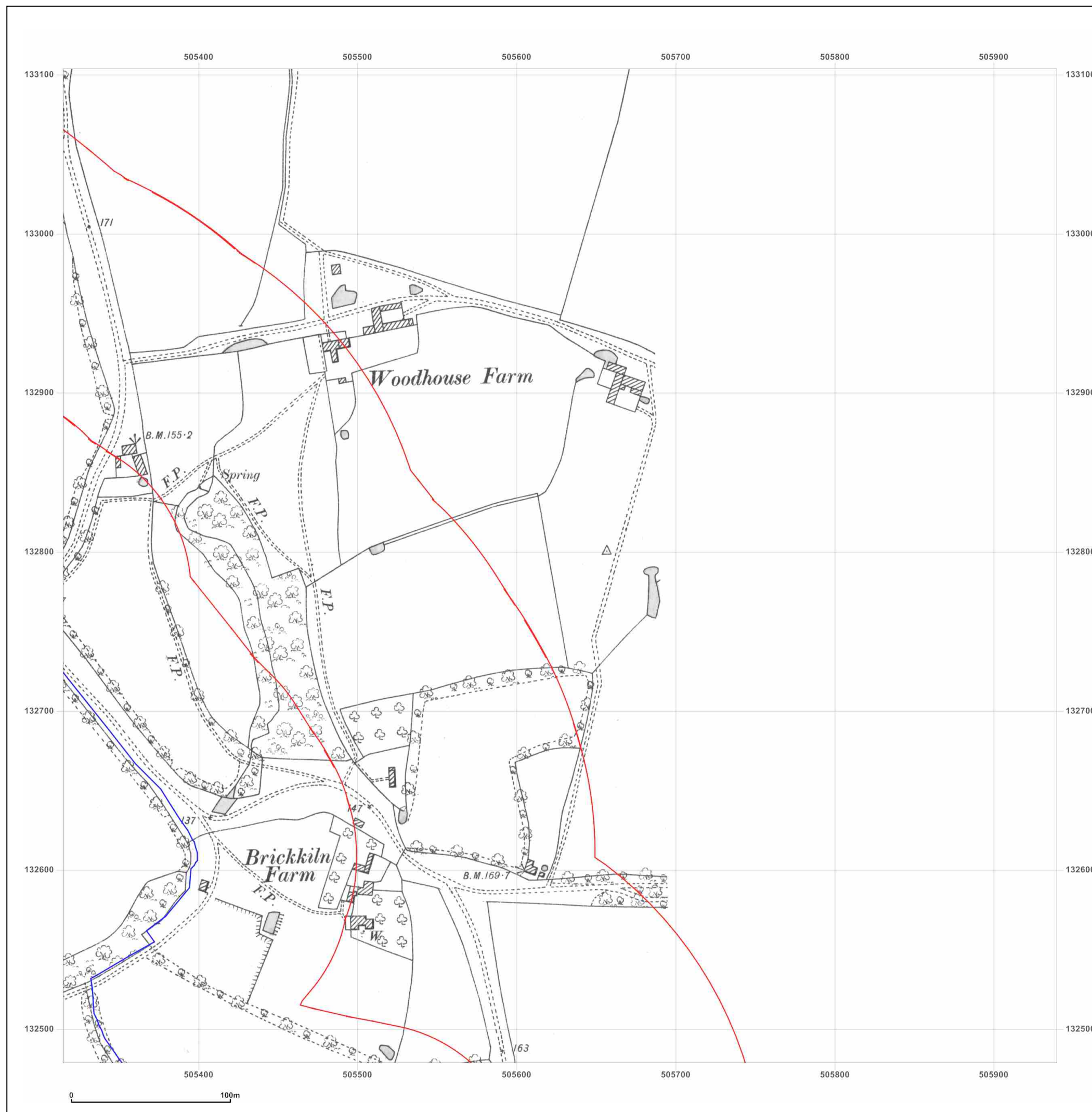


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**Map date:** 1912

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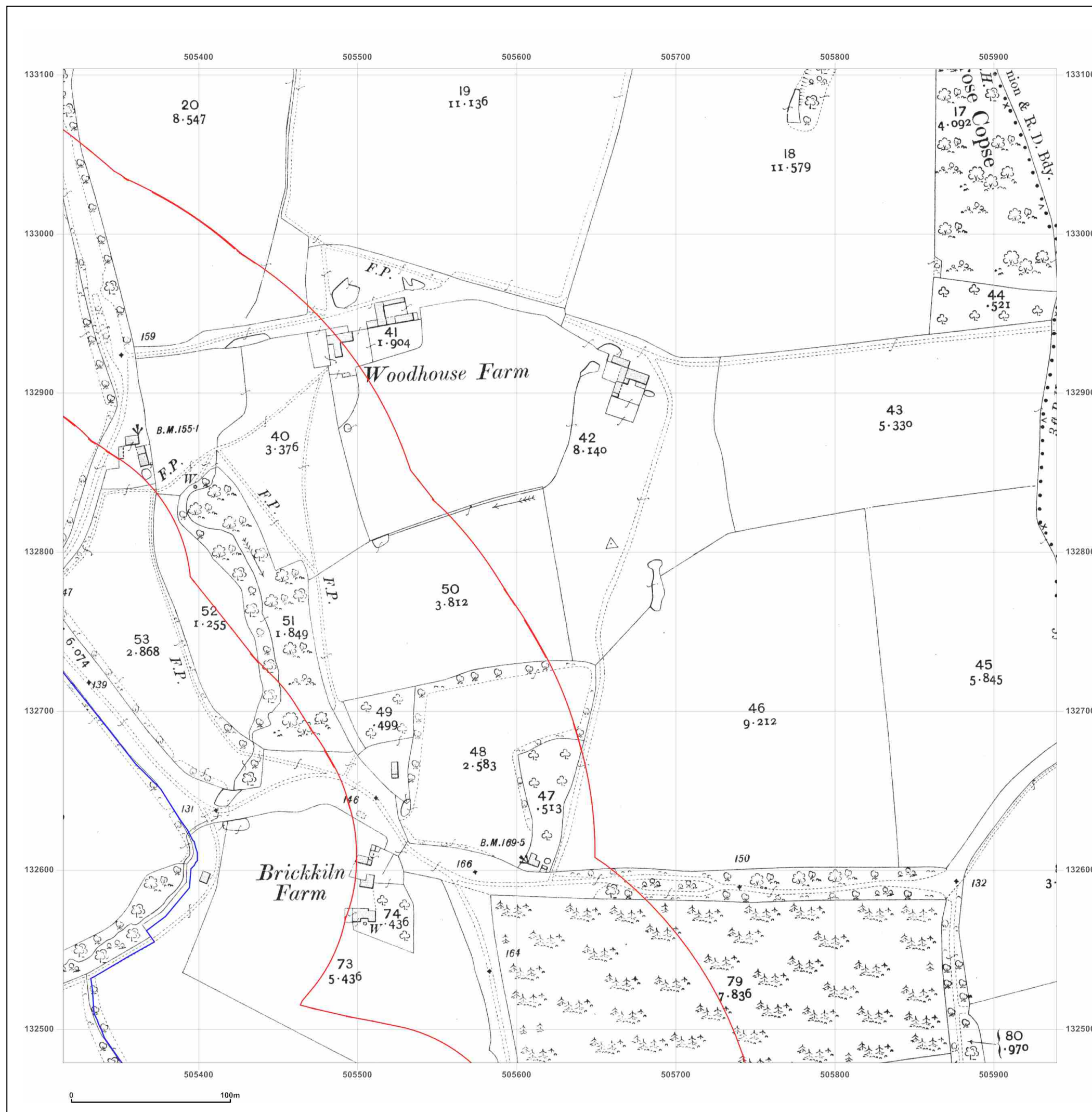


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**Report Ref:** CMAPS-AAC-589029-38143-060117HIS\_LS\_3\_3  
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**Map Name:** National Grid

**Map date:** 1973

**Scale:** 1:2,500

**Printed at:** 1:2,500



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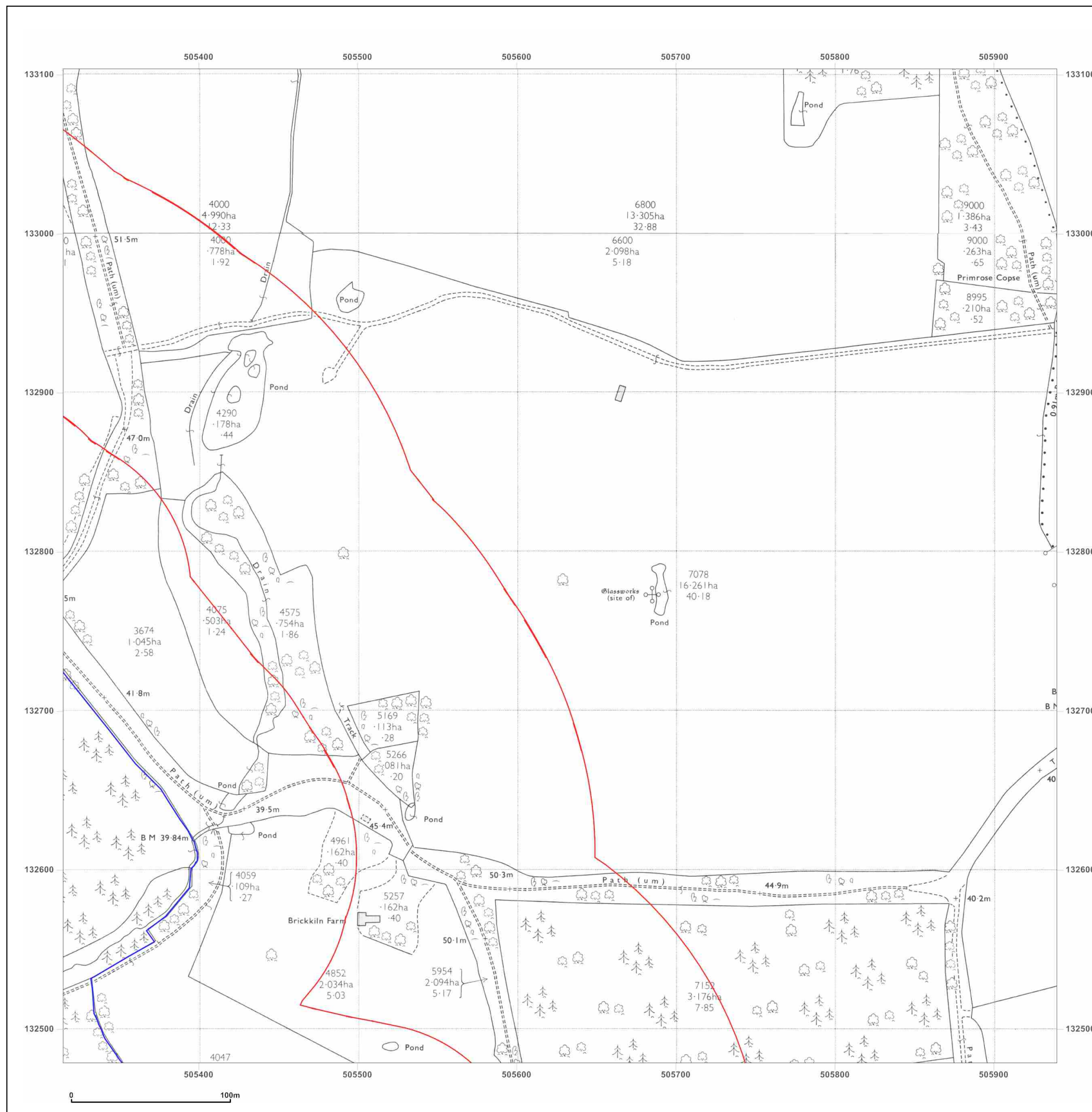


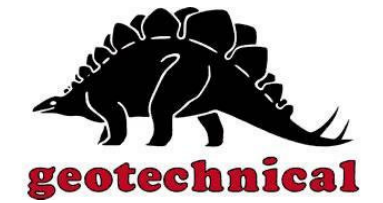
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**Map Name:** National Grid

**Map date:** 1994

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**Printed at:** 1:2,500



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