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PHASE 1 ENVIRONMENTAL DESK STUDY & COAL MINING RISK ASSESSMENT REPORT

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5	Consultants Coal Mining Report



Report on a Phase One Desk Study

Location: **29 Hermit Lane**
Higham, Barnsley, South Yorkshire, S75 1PL

For: Mr & Mrs R Cook

Consultant: Fox Architecture & Design

Report No. C5966/26/E/9239

Report date: May 2026

For and on behalf of **Rogers Geotechnical Services Ltd**



Steven Hale BSc FGS
Geo-environmental Engineer



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Senior Geo-environmental Engineer

1. Introduction

The site comprises an existing residential dwelling with associated car parking and garden areas located on Hermit Lane. The site is approximately 0.18 hectares in size and its National Grid reference is centred around 431418 406925.

It is understood that the development proposals currently comprise the demolition of the existing dwelling followed by the subsequent construction of a new residential dwelling. In order to assist with this decision-making process, and any planning and construction aspects of the development, a phase one environmental desk study has been commissioned and is the subject of this report.

This report may be regarded as a Preliminary Risk Assessment in accordance with the Environment Agency's guidance document Model Procedures for the Management of Land Contamination (CLR 11, 2004). This Phase 1 Desk Study has been undertaken with due regard to current contaminated land guidance issued by the Royal Institution of Chartered Surveyors (RICS) together with BS 10175:2011+A2:2017, "Investigation of Potentially Contaminated Land - Code of Practice" and relevant sections of BS 5930: 2015+A1:2020, "Code of Practice for Ground Investigations".

As a part of this desk study the following data has been considered.

- | | |
|----------------------------------|--------------|
| • Site Plan | - Appendix 1 |
| • Historical maps | - Appendix 2 |
| • Groundsure Reports | - Appendix 3 |
| • Photographs | - Appendix 4 |
| • Consultants Coal Mining Report | - Appendix 5 |

The data obtained from the above-mentioned sources has been summarised below¹ in the following sections.

¹ This report is a summary only and reference must be made in full to the information provided in the Groundsure Report.

1.1 Site Walkover and Description

In accordance with issued guidance, a site walkover was conducted on the 7th May 2026 and the following observations were made:

General site description/current site use

The site is currently occupied by an existing residential dwelling with associated car parking and garden areas.

Site boundaries/access

The is accessible via a driveway off Hermit Lane.

Topography

The site lies relatively flat.

Surface cover of site

Block paving is present to the driveway, with flagstones present to the patio areas. The garden is covered in grass and planted areas.

Visible evidence of contamination/ contaminative sources

At the time of the walkover no obvious sources of contamination was observed.

Presence of vegetation and wildlife

Various decorative shrubs and trees are present to the site, along with grassed garden areas. No obvious signs of fauna was observed.

Services

The status of underground services is unknown. There are no overhead cables present onsite.

Site neighbours

Residential dwellings are present to the west of the site, with agricultural fields present in all other directions.

In order to ensure that the site is fully characterised and to comply with the Environment Act 1995², a Phase One Desk Study has been commissioned by Fox Architecture & Design on behalf of the client. The desk study is intended to assess the environmental impact of historical, current and future factors on the development. This report will present the data obtained and provide a conceptual ground model and preliminary risk assessment as well as discussing the scope of any intrusive investigation that may be required. This report does not consider ecological impacts (e.g. bats) or botanical risks (e.g. Japanese Knotweed).

²S57 of the Environment Act 1995 inserted the contaminated land regime into the Environmental Protection Act 1990 (Part 2A). The regime 'provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment' See <http://www.environment-agency.gov.uk/research/planning/40405.aspx>. This places a duty on local authorities to inspect their areas for contaminated land and require its remediation using the 'suitable for use' approach. Much of this duty is discharged via the planning regime under the Town and Country Planning Act 1990 as historical land contamination is a 'material planning consideration.' The local authorities are required to secure the removal of unacceptable risks via remediation of the land, to therefore ensure the site is suitable for its new use. This is fulfilled via completion of a Phase One Environmental Desk Study, Phase Two Intrusive Investigation, Phase Three Remediation Strategy and Phase Four Validation Report. Therefore, as a minimum, once a site has been developed it should not be capable of being designated as 'contaminated land' under Part 2A of the Environmental Protection Act 1990, as inserted by the Environment Act 1995 (see also PPS 23 Planning and Pollution Control Section 8)

2. Site History

2.1 Historical Land Use

In order to determine the history of the site, previous editions of Historical Maps and Ordnance Survey Plans were inspected. The Historical Maps are presented in Appendix 2. Excerpts of overhead imagery are presented in the Groundsure Report in Appendix 3.

Table 1 below presents a summary of the history of the site and the immediate surrounding area.

Table 1: Historical Land Use ³		
HISTORICAL MAPPING SUMMARY		
Map Dates and Source	On site	Within 250m
1855	The site is undeveloped during this period and appears to be part of a larger field.	The surrounding land use consists of undeveloped fields.
1890 – 1893	Structures are now present to the southern half of the site.	A large number of structures presumed to be residential in nature are now present to the west of the site.
1904 – 1956	The site remains unchanged.	The surrounding land use remains largely unchanged.
1962 – 1966	The site remains unchanged.	A large area of opencast workings are now present adjacent to the northeast of the site and beyond.
1970 – 1973	The structures present to site appear to have been demolished.	The opencast workings present northeast of the site are no longer present. The M1 motorway is now present 170m SW of the site.
1977 – 1982	The site remains unchanged.	The surrounding land use remains largely unchanged.
1991 – 1993	The residential dwelling recorded on site as of the writing of this report is now present to the southern end.	The surrounding land use remains largely unchanged.
2001 – 2025	The site remains unchanged.	The surrounding land use remains largely unchanged.

NB. All distances given are approximate only from closest boundary.

The available aerial photography present within the Groundsure report shows that the site lies unchanged between the year 1999 and 2025 comprising a residential dwelling.

³ See Appendix 2

3. Review and Summary of Published Data

The following summarises the published data obtained for the site.

3.1 Published Geology and Geological Hazards

The appropriate map sheets, the geology viewer and the Groundsure Report have been examined the table below outlines the following geological data is present for the site:

Table 2: Summary of Geological Data for the Site			
BGS MAPPING DATA			
Strata Type	Strata Name ⁴	Parent Name	Description ⁵
Artificial Geology	Made Ground	N/A	Not indicated on site although previous construction may have resulted in the presence of made ground.
Superficial Geology	-	-	None recorded.
Solid Geology	Pennine Middle Coal Measures Formation	Pennine Coal Measures Group	Interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams, with a bed of mudstone containing marine fossils at the base, and several such marine fossil-bearing mudstones in the upper half of the unit.
MADE GROUND & INFILLED GROUNDWORKINGS			
Description	Location	Comments	
Records of Artificial Deposits, Groundworkings and infilled features	On Site	Opencast workings (1962-1966)	
	176m SW	Cuttings (1973-1993)	
GEOLOGICAL FEATURES			
Type	Location	Features	Comments
Mining Activity	On site	Coal mining	The study site is located within a coal mining area. A coal mining risk assessment has been undertaken as part of this report.
		Non-coal Mining	Underground mine workings may have occurred for iron ore in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.
Faults	101m NE	Fault	Normal fault, displacement unknown. This fault is not anticipated to affect the site.
Landslip Deposits	No data	No data	No data.
MINERAL FEATURES			
Seam Name	Seam thickness	Outcrop distance from site	Anticipated depth below site
Top Haigh Moor Coal (THM)	0.69m to 1.19m	20m N 105m SW	10-15m
Low Haigh Moor Coal (LHM)	0.43m to 1.02m	190m SW	20-25m

⁴ Sources: British Geological Survey (NERC) Map Sheets SE30NW & 87; Barnsley; Solid and Drift Edition, and GeoIndex Onshore Viewer [online resource from www.bgs.ac.uk]

⁵ Sources: British Geological Survey (NERC) Lexicon of Named Rock Units [online resource from www.bgs.ac.uk]

BGS BOREHOLE DATA			
Reference ⁶	Location	Strata Description	Depth
	No relevant boreholes present.	-	-
NATURAL GROUND SUBSIDENCE & HAZARDS ⁷			
Type		Risk Rating	
Potential for shrinking or swelling clay ground stability		Very low.	
Potential for running sand ground stability		Very low.	
Potential for compressible ground stability		Moderate.	
Potential for collapsible ground stability hazards		Very low.	
Potential for landslide ground stability		Very low.	
Potential for ground dissolution stability		Negligible.	

3.2 Mining, Quarrying and Natural Cavities

3.2.1 Coal Mining

The Groundsure Report states that the site is within an area that may be affected by coal mining, The report is presented as Appendix 5 and has been summarised below:

Table 3: Summary of the Consultant's Coal Mining Report

Has the report highlighted evidence or potential of:		
Mining Feature	Yes/No	Comments
Underground Coal Mining	Yes	Four coal seams are reported to have been worked within the local area at depths of between 158m and 275m between the years 1891 and 1966.
Probable Unrecorded Shallow Workings	Yes	No further information given.
Spine Roadways at Shallow Depth	No	No spine roadway recorded at shallow depth.
Mine Entries	No	No mine entries recorded within 100m of the site.
Abandoned mine plans	Yes	Plans of abandoned mine workings below the site are suggested to be available by the Coal Authority. The abandoned mine plan catalogue number NE498 shows the opencast working present directly adjacent to the site.
Outcrops	No	None recorded.
Geological Faults	No	No faults, fissures or breaklines recorded.
Opencast Mines	Yes	Multiple large, unlicensed opencast sites within close proximity to the site.
Coal Authority Managed Tips	No	None recorded within 500 metres of the enquiry boundary.
Site Investigations	No	None recorded within 50 metres of the enquiry boundary
Remediated Sites	No	None recorded within 50 metres of the enquiry boundary.
Coal Mining Subsidence	No	The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31st October 1994.

⁶ <https://mapapps2.bgs.ac.uk/geoindex/home.html>

⁷ See Groundsure report

		There is no current Stop Notice delaying the start of remedial works or repairs to the property. The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
Mine Gas	No	None recorded within 500 metres of the enquiry boundary.
Mine Water Treatment Schemes	No	None recorded within 500 metres of the enquiry boundary.
Future underground mining	No	For further information please see section 3 of the Consultant's Coal Mining Report.
Coal mining licensing	No	
Court orders	No	
Section 46 notices	No	
Withdrawal of support notices	No	
Payments to owners of former copyhold land	No	

3.2.2 Non-Coal Mining

Underground mining of iron-ore may have occurred in the past or may be currently worked at significant depth. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.

3.3 Radon Risk

Table 4: Summary of Geological Data for the Site

RADON RISK ⁸	
Radon Risk:	The property is in a Radon Affected Area where between 1% and 3% of properties are at or above the action level. No protective measures are required.

3.4 Hydrogeology

Table 5: Summary of Hydrogeological Data

ENVIRONMENT AGENCY AQUIFER DESIGNATION ⁹		
Strata	Designation	Description
Superficial Geology	-	None recorded beneath the site.
Solid Geology 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.
GROUNDWATER SENSITIVITY AND VULNERABILITY ¹⁰		
Description	Location	Details
Groundwater Vulnerability	On Site	Bedrock aquifer – medium vulnerability.
Source Protection Zone	Within 250m	None recorded within 250m.

⁸ See Groundsure Report. Radon data is subject to periodic review and is only applicable from date of purchase of data. Further information regarding radon risk is present in the online Radon interactive map [online resource <https://www.ukradon.org/radonmaps/>]

⁹ See Groundsure report

¹⁰ See Groundsure report

Abstraction Licences	Within 250m	None recorded within 250m.
Soil Leaching Potential	On Site	Leaching class: Low.

3.5 Hydrology

Table 6: Summary of Hydrological Data

CONTROLLED WATERS¹¹		
Description	Location	Details
Surface Water Features	Within 250m	No surface water records present within 250m..
Records of Licensed Discharge Consents	Within 250m	None recorded within 250m.
ENVIRONMENT AGENCY FLOOD RISK¹²		
Description	Location	Details
Zone 2	Within 250m	The site is not situated within a Zone 2 flood plain.
Zone 3	Within 250m	The site is not situated within a Zone 3 flood plain.
Flood Defences	Within 250m	None recorded within 250m.
Groundwater Flooding Area	On site	Negligible potential for groundwater flooding to occur.

3.6 Waste Management

Table 7: Summary of Published Regulated Waste Management Facilities

ENVIRONMENT AGENCY, LOCAL AUTHORITY, BGS & HISTORIC LANDFILLS		
Waste Type	Location	Comments
Active Landfill	Within 250m	None recorded within 250m
Historic Landfill	19m NW	Waste Type: Commercial.
Historic waste sites	Within 250m	None recorded within 250m
Licensed waste sites	Within 250m	None recorded within 250m
Waste Exemptions	Within 250m	None recorded within 250m

¹¹ See Groundsure report

¹² See Groundsure report

3.7 Regulated Industries and Industrial Land Uses

Table 8: Summary of Industrial Land Uses and Contaminative Sources

HISTORICAL			
Land Use	Location	Classification	
Opencast Workings	Adjacent to NE of site and beyond	Mining and Quarrying	
Historical Construction	On Site	Historical Construction. Former ponds infilled on site.	
CURRENT			
Land Use	Location	Classification	
-	None recorded within 250m.	-	
TANKS (Buried and Above Ground)			
Land Use	Location	Classification	
Underground Storage Tanks	Within 250m	None recorded.	
Overground Storage Tanks	Within 250m	None recorded.	
POLLUTION INCIDENTS ¹³			
Description	Receptor	Location	Date
-	-	None recorded within 250m.	-
REGULATED INDUSTRIES			
Description	Location	Details	
Records of Part A(2) and Part B Activities and Enforcements	-	None recorded within 250m.	
HAZARDOUS OR CONTROLLED SUBSTANCES			
Description	Location	Details	
Control of Major Accident Hazard (COMAH) Sites	-	None recorded within 250m.	
Regulated Explosive Sites	-	None recorded within 250m.	
Hazardous Substance Storage/Usage	-	None recorded within 250m.	

3.8 Unexploded Ordnance Risk

Table 9: Unexploded Ordnance Risk

Location	Risk Rating
On Site	the Zetica ¹⁴ online maps indicate that the site is at low risk from UXO.

¹³ See Groundsure report

¹⁴ Pre-desk study assessment [online resource from www.zeticauxo.com].

3.9 Sensitive Land Use

Table 10: Summary of Sensitive Land Uses

REGISTERED SENSITIVE LAND USES ¹⁵		
Description	Location	Details
Designated Ancient Woodland	Within 250m	None recorded within 250m
Green Belt	132m SW	South and West Yorkshire Green Belt - Barnsley
Nitrate Vulnerable Zones	On Site	

¹⁵ See Groundsure Report

4. Preliminary Conceptual Site Model and Risk Assessment

4.1 Anticipated Ground Conditions

Deep made ground is not anticipated to be present beneath the site. Superficial soils are also unlikely to be present. Bedrock is likely to comprise of undifferentiated mudstone, sandstone and siltstone with coal seams of the Pennine middle Coal Measures Formation.

While a large area of Opencast Workings were historically present adjacent to the site, it is not anticipated that this worked ground will be present on site.

4.2 Mining Assessment

The site is located in a recorded coal mining affected area as defined by the Coal Authority.

Based on the published geological and historical data the coal seams that are reported to outcrop within the local area are summarised as follows:

Table 11: Summary of Coal Seams Within the Vicinity of the Site			
Seam Name	Seam Thickness ¹⁶	Outcrop Distance from Site ¹⁷	Anticipated Depth below Site
Top Haigh Moor Coal (THM)	0.69m to 1.19m	20m N 105m SW	10-15m
Low Haigh Moor Coal (LHM)	0.43m to 1.02m	190m SW	20-25m

4.2.1 Risks Posed by Shallow Coal Workings

On the basis of all of the information provided above, there is a potential for worked seams to be present within 30m of the surface at the site. Whilst these seams may be of limited thickness, the possibility of these seams being worked below the site cannot be ruled out, particularly as the Top Haigh Moor included fireclay which were historically used as refractory clays. Historic coal mining activity is evident in the nearby area, and therefore, it is considered that if coal was known to be close to ground level it could have been removed illicitly via shallow mining methods with relative ease. In particular, given the opencast workings present directly adjacent to the site. The plan for this opencast working can be found within the abandoned mine plan catalogue NE498.

It may be noted that guidance available from both the NHBC and the CIRIA publication, SP32 - *construction over abandoned mine workings*, suggests that competent overburden thickness above a coal seam should be greater than 10 times the thickness of a seam plus seam thickness in order that the collapse of workings would pose a low risk to surface structures. However, due to the uncertainty of the thicknesses of these seams it is not possible to suggest the thicknesses of competent overburden required to mitigate any instability.

¹⁶ Sources: British Geological Survey (NERC) Map Sheets 121; Wrexham; Solid and Drift Edition, and GeoIndex Onshore Viewer [online resource from www.bgs.ac.uk]

¹⁷ See Groundsure Report

Based on the above information, at this time it is unknown whether there will be a sufficient thickness of competent overburden above the shallowest seam in order to prevent the risk of instability posed by the presence of any illicit workings. Therefore, a moderate risk rating has been placed on these seams, and further investigation is recommended to prove or disprove the presence of illicit mining activity.

4.2.2 Risks Posed by Coal Workings at Depth

In regard to deeper mining which could affect the site, the property is in an area identified by the Coal Authority to be within a surface area that could be affected by past underground mining. Given that these workings are present in excess of 90m, it is considered that sufficient cover will be present such that the risk of instability to surface structures will be mitigated.

4.2.3 Risks Posed by Mine Gas

This assessment has identified that there is potential for shallow mine workings to be present beneath the proposed development. Whilst the Consultants Coal Mining Report has not reported any incidents of mine gas within the vicinity of the development, shallow mining activity represents a credible source of ground gas. It is possible that seams such as the Top Haigh Moor and Lower Haigh Moor may be source of mine gas. Additionally, the site is present adjacent to large, historic opencast workings which may also be a source. As such, a high-risk rating has been assigned, and further assessment may be required.

In view of the above, following intrusive investigation, it is strongly recommended that a detailed gas risk assessment is undertaken in accordance with relevant guidance. The risk assessment should take into consideration the current site conditions, and should be subject to reassessment after the formulation and/or completion of any remedial measures and proposed foundation solution. These documents should be prepared by a suitably experienced and qualified specialist.

4.2.4 Mining Risk Assessment

The risk to the stability of the proposed residential development has been evaluated from the data obtained and with reference to the following ratings and definitions:

- Low - The possibility of instability is unlikely therefore no further action is necessary.
- Moderate - The possibility of instability is likely and further investigation or remedial action may be required.
- High - The possibility of instability is highly likely and further investigation or remedial action will be necessary.

Table 12: Development Specific Risk Assessment

Item	Risk attributed to	Feature(s) Considered	Risk Rating
3.1	Shallow coal workings	Top Haigh Moor and Lower Haigh Moor coal seams.	Moderate
3.2	Coal workings at depth	Underground mining has taken place in seams between 158m and 275m depth.	Low
3.3	Mine gas	Potential shallow workings and adjacent, historic opencast site.	High

Based on the information provided in the table above it is considered that further investigation is required of coal seams which may be present beneath the site. Furthermore, monitoring for potential mine gas should be undertaken during the Phase 2 works.

4.3 Contamination Assessment

In order for a conceptual site model and preliminary risk assessment to be completed the historical maps and Groundsure data requires analysis to identify any past or present activities on the site and in the area that may have the potential to cause contamination on the site. Guidance has been issued by the Environment Agency, NHBC and Chartered Institute of Environmental Health.¹⁸¹⁹ Within this document, annex 3 provides examples of important contaminants that are associated with individual uses of land. This data assists in the formulation of any chemical testing regime.

The table below combines all identified potential current and historical aspects of the site and lists those that we consider potentially contaminative according to the guidance are given below:

Table 13: Potentially Contaminative Sources			
Land Use	Location	Contamination Risk and Profile	Monitoring Profile
Historical construction	Whole site	Made ground from demolitions of previous structures, immediately around the site over the documented history. This may include brick, concrete, timber, asbestos and metals. Historically road construction used ash as a sub-base material.	Ground gas may be generated from made ground.
Made/Infilled Ground	Whole site	Materials used to infill depressions and form a level area for access or building. This may include brick, concrete, timber, ash, slag, coal and metals.	Ground gas may be generated from made ground. Volatile Organic Compounds may be produced from hydrocarbons which may be present in soils on the site.
Mining activity waste and spoil heaps	Adjacent to site	Potential contaminants could include metals, hydrocarbons and coal tar from previous mining activity.	Ground gas may be generated from made ground.

4.4 Preliminary Qualitative Risk Assessment

The potential of contamination hazards on the land has been identified and the risks associated with them are assessed in the following preliminary risk assessment in accordance with industry practice and the 'suitable for use' approach. This has been conducted using the source-pathway-receptor approach. This method dictates that there must be a risk contaminant produced at a 'source' in sufficient concentration to cause harm and there must be a 'pathway' for the contaminant to reach an identifiable 'receptor' for the linkage to be proved and a contamination hazard to be considered present. Not all substances are contaminants and not all contaminants are considered to be a risk. Indeed, DEFRA and The Environment Agency state that **'a contaminant is a substance which has the potential to cause harm, while a risk itself is considered to exist if such a substance is present in sufficient concentration to cause harm and a pathway exists for a receptor to be exposed to the substance.'**

R&D Publication 66: 2008 states that the groups at risk of harm (receptors) can be identified by the following categorisation:

¹⁸ Guidance for the Safe Development of Housing on Land Affected by Contamination, R&D Publication 66: 2008 Volume 1 and 2.

1. Humans: site personnel, end users, visitors and adjacent land users.
2. The water environment – receptors: groundwater, surface water, coastal waters and artificial drainage.
3. Ecosystems: plants and animals.
4. Construction/building materials/services

In order to complete a conceptual site model and therefore a preliminary risk assessment, an appraisal of the sources of contamination, potential and actual, on and in the area of the site has therefore been completed with reference to this pollution linkage.²⁰

4.4.1 Conceptual Ground Model & Preliminary Qualitative Risk Assessment

It is understood that the development proposals currently comprise the demolition of the existing dwelling followed by the subsequent construction of a new residential dwelling. In view of the sensitivity of the end users it is considered that the soil screening values (SSVs) for a residential with plant uptake end use should be employed.

The preliminary risk assessment has been evaluated with reference to the following ratings and definitions:

N/A -	A source-pathway-receptor linkage is not considered to exist and therefore a risk assessment is not required.
Low -	A pollution linkage is unlikely and/or the likelihood of harm occurring is low and of minor consequence.
Moderate -	The linkage exists but further data is required to confirm that the contaminant has reached the receptor and the levels of contaminant are harmful.
High -	The linkage exists and the available data indicates that significant harm may be caused and remedial action could be necessary.

²⁰ This assessment has been based on the information as to the proposed development that has been provided by the client. If the plans should change, the assessment should be re-evaluated.

Table 14: Conceptual Site Model and Preliminary Qualitative Risk Assessment

CONCEPTUAL SITE MODEL			PRELIMINARY RISK ASSESSMENT	
Pathways	Receptor	Linkage	Risk Rating	Action Required
Direct contact/dermal absorption/soil ingestion	Operative	Yes – Made ground likely to be present on site. Operatives are likely to come in contact with the soil.	Moderate	Further testing required to reach a firm conclusion.
	End User	Yes – Made ground likely to be present on site. End users are likely to come in contact with the soil.	Moderate	
	Neighbours	Yes – Made ground likely to be present on site. Residential houses present directly adjacent to the site.	Moderate	
Inhalation of Dust/Vapours	Operative	Yes – Made ground likely to be present on site. Dust and vapours may be generated during site activity.	Moderate	Further testing required to reach a firm conclusion.
	End User	Yes – Made ground likely to be present on site. Dust may be produced by end users.	Moderate	
	Neighbours	Yes – Made ground likely to be present on site. Residential properties present directly adjacent to the site. Dust and vapours may be generated during site activity which may migrate offsite to offsite receptors.	Moderate	
Ingestion of fruit/vegetables and/or waters	Operative	No – no edible plants or contained water sources in the area of the proposed new works.	N/A	Further testing required to reach a firm conclusion.
	End User	No – It is not anticipated that any new garden areas are present as part of the proposed development.	N/A	
	Neighbours	Yes – Made ground likely to be present on site. Residential dwellings present within directly adjacent to the site.	Moderate	
Migration of hazardous gases via permeable strata	Operative	Yes – Made ground likely to be present on site. Possible sources of ground gas and made ground may be present in surrounding area.	High	A programme of monitoring is recommended to be undertaken with an initial six visits over a period of three months. At this point the results should be reviewed and whether monitoring can be curtailed or should continue to fully quantify the risks.
	End User		High	
	Neighbours	Yes – Made ground likely to be present on site. Possible sources of ground gas and made ground may be present from historical construction on site and in surrounding area.	Moderate	

Migration of mine gas via permeable strata	Operative	Yes – Site and surrounding area have evidence of historical shallow and deep coal mining. Potential pathway to the surface by mine entry, and via permeable unsaturated strata.	High	Gas monitoring should be undertaken as set out above.
	End User			
Spillage/loss/run off direct to receiving water	Water Environment	No – There are no surface water features within 250m of the site.	N/A	Further testing required to reach a firm conclusion.
Migration via permeable unsaturated strata	Water Environment	Yes – Made ground likely on site. Secondary aquifer located beneath the site. Cohesive soils anticipated to be present beneath the site.	Low to moderate	
Run off via drainage/sewers etc	Water Environment	Yes – Existing services and drainage may be present on site.	Low	
Direct contact with contaminated soils	Plants	No – It is not anticipated that any new garden areas are present as part of the proposed development.	N/A	Further testing required to reach a firm conclusion.
Uptake via root system			N/A	
Direct contact with contaminated soils/ Direct contact with contaminated groundwater	Building Materials	Yes – Made ground likely to be present on site which may contain aggressive ground conditions. Foundation and service installation materials may be affected by the site soil.	Moderate	Further testing required to reach a firm conclusion.
Exposure to Radon	Operative	Yes – site currently indicated to be present in a risk radon affected area ²¹ .	Low	Between 1% and 3% of properties are affected. The publication BR211 states that no protection measures are necessary.
	End User			

²¹ Radon interactive map [online resource <https://www.ukradon.org/radonmaps/>] It should be appreciated that radon maps are subject to change and are updated regularly.

Notes:

1. The above data and table is a qualitative assessment of the probable risks identified at this site, based on the information made available to us from the client, third party professional data and walkover survey.
2. Should any additional or new data come to light, the risk assessment should be revisited and any necessary changes made to any recommendations resulting from this study.
3. Where further testing is recommended as part of the risk assessment, this is in order to provide a quantitative assessment of any contamination issues. It should at all times be considered that uncertainties may remain, and therefore any testing regime and ground investigation philosophy should be ready to accommodate any necessary alterations should any data come to light or it become evident that it has not been previously considered.

5. Intrusive Investigation

5.1 Site Investigation Philosophy

The information from the Phase 1 Desk Study shows there are potential sources of contamination on the site and in the surrounding area. In view of the above, any intrusive investigation should be undertaken in accordance with the sampling strategies given in BS10175: 2011 +A2:2017 and CLR4:1994. These two sampling strategies may be classified as:

- Non-Targeted – using a defined sampling pattern (BS10175)
- Targeted – based on prior knowledge and professional judgement (CLR4)

These sampling strategies are considered in more detail below. However, it is emphasised that they can be used individually or in combination depending on the depth of site knowledge.

Non-Targeted Sampling

If no obvious 'hot spots' of contamination have been identified on a site, it would be recommended that a stratified random pattern of sampling points be considered. This work should be undertaken with reference to BS10175: 2011 +A2: 2017 *Investigation of potentially contaminated sites – Code of practice: 7.6*, and BS5930 2015 + A1:2020, *Code of practice for ground investigations*.

Targeted Sampling

If a possible 'hot spot' of contamination has been identified on a site, it is recommended that a herringbone pattern of sampling points be considered in the immediate vicinity. If strong evidence of contamination has then been identified, it is recommended that sampling be highly focused to reflect that evidence and the investigator's experience. This work should be undertaken with reference to CLR4, *Sampling Strategies for Contaminated Land, 1994*.

The density of sampling required is defined in BS10175: 2011: +A2: 2017: 7.7.2.2.3, which indicates that an *exploratory* investigation usually requires a lower density sample spacing than does a *main* investigation. The BS goes on to state that *the actual density should depend upon the confidence and robustness required of decisions that will be based on the information obtained. Thus, the area and depth of interest will be related to the contaminants present, the pathways and the receptors. Typical densities of sampling grids can vary from 25m to 50m centres for exploratory investigations, and 10m to 25m centres for main investigations*.

5.2 Site Specific Investigation and Testing Rationale

In view of the information provided above it is considered that an investigation of the site should include the following main elements.

5.2.1 Geotechnical Assessment

An assessment of the geological strata and geotechnical parameter should be undertaken for the site this should include in-situ testing and collecting samples for subsequent laboratory testing.

5.2.2 Contamination Assessment

It may be appreciated that BS 10175 clause 7.7.2.2.3 suggests that the number of sampling points at the site should be based on a minimum of three testing locations or the size of the site with respect to the appropriate grid spacing, whichever the greater. On the basis of the site area being 0.18ha, the number of sampling points at the site should be considered with respect to the table below.

Table 15: Summary of Sampling Strategy				
NUMBER OF SAMPLING POINTS				
	Soil	Water	Standpipes	Standpipe Readings
Exploratory Investigation 50m x 50m grid	4	-	3	A minimum of six visits over three months should be undertaken in the first case. The monitoring results should be reviewed following the initial phase and depending on the results, further visits may be required.
Target Areas	No specific target areas identified.			

Chemical testing should be undertaken on the above grid spacing and the following testing regime should be undertaken based on the contamination source identified:

- **Metals** – Cd, Cr, Cu, Hg, Ni, Pb, Zn, V.
- **Semi Metals and Non-Metals** – As, Se, Free Cyanide and Phenols.
- **Hydrocarbons** – Polycyclic aromatic hydrocarbons (PAH EPA16), Total petroleum hydrocarbons (TPH CWG).
- **Others** – pH, Organic Content, soluble sulphates.
- **Asbestos**

5.2.3 Gas Monitoring

The final gas monitoring regime should be undertaken in accordance with Table 4.2 of CIRIA C665: 2007: *Assessing risks posed by hazardous ground gasses to buildings*. In that document guidance for the frequency of monitoring is provided on tables 5.5a and 5.5b *Typical/idealised frequency and period of monitoring* on page 60. For convenience, these tables have been combined and reproduced below.

Table 16: Typical/idealised Frequency and Period of Monitoring.					
Sensitivity of development	Generation potential of source				
	Very low	Low	Moderate	High	Very High
Low (commercial)	4/1	6/2	6/3	12/6	12/12
Moderate (flats)	6/2	6/3	9/6	12/12	24/24
High (residential + gardens)	6/3	9/6	12/6	24/12	24/24

Notes:

- a) The first number is the minimum number of readings and the second number is the minimum period in months, for example 4/1 – four sets of readings over 1 month.
- b) At least two sets of readings must be at low and falling atmospheric pressure (but not restricted to periods below 1000mb) known as worst case conditions.
- c) The frequency and period stated are considered to represent typical minimum requirements. Depending on specific circumstances fewer or additional readings may be required (e.g. any such variation subject to site specific justification). The NHBC guidance is also recommending these periods/frequencies of monitoring.
- d) Historical data can be used as part of the data set.
- e) Not all sites will require gas monitoring. However, this would need to be confirmed with demonstrable evidence.
- f) Placing high sensitivity end use on a high hazard site is not normally acceptable unless the source is removed or treated to reduce its gassing potential. Under such circumstances long-term monitoring may not be appropriate or required.
- g) This guidance should be read in conjunction with BS 8576:2013 figure 6 which may justify fewer readings in the first instance, where the generation potential is considered to be very low to low. However, this should be undertaken pragmatically, and further readings obtained according to the above table, where a potentially significant source is identified and initial readings suggest that remedial measures are not necessary.

5.2.4 Coal Mining Investigation

An investigation into the presence of recorded/unrecorded coal workings beneath the site should be undertaken. This should prove/disprove the presence of workings within the seams thought to be present beneath the site.

5.2.5 Sustainable Drainage

Should sustainable Drainage Systems (SuDS) be required for the site, an investigation into the efficacy of such drainage systems should be undertaken. In the first stage this would be through identification of potentially permeable stratum and then investigation of the suitability of such deposits by soakaway tests in line with the guidance in BRE Digest 365.

5.3 Proposed Methods of Investigation

The table below outlines the methods of investigation which are considered necessary to identify and investigate the risks outlined in the conceptual model. The location of these investigation locations will be completed in line with the guidance outlined in the sampling methodology.

Table 17: Proposed Methods of Investigation

Method of Investigation	Purpose/Target	Notes
Hand dug trial pits	Hand dug trial pits excavated to 1.20m to ensure positions are clear of underground services.	To be undertaken prior to drilling of all boreholes. To be undertaken alongside CAT scan and inspection of service plans.
Windowless sample boreholes drilled to 4.00m depth	To prove strength and composition of near surface deposits To collect samples for geotechnical and chemical testing. To allow for installation of ground gas / groundwater monitoring standpipes.	To be undertaken at target locations in the first instance, then on random stratified sampling pattern across the remainder of the site. Insitu Standard Penetration tests (SPT) to be undertaken at regular intervals.
Dynamic Probes	To prove the strength and competency of near surface soils to significant depth. To attempt to prove depth to bedrock which may extend beneath termination depth of windowless sample boreholes.	To be undertaken at target locations in the first instance, then on random stratified sampling pattern across the remainder of the site.
Rotary Boreholes 3no to 30m	Drilled by open hole methods to prove the presence of coal working within the Top Haigh Moor and Lower Haigh Moor.	To be undertaken in accordance with coal permit.
Ground Gas Monitoring	To undertake ground gas monitoring and quantify risks from presence of hazardous ground gases identified in CSM.	Gas monitoring to be undertaken over an initial six visits over 3 months, whereupon results will be reviewed. Further monitoring may be required depending on findings of initial phase.
Chemical Testing	To identify presence of contamination arising from potential sources identified in CSM.	Samples collected should cover contaminants highlighted in Section 5.2.1 Samples to be collected in appropriate plastic tubs and glass jars.
Geotechnical Testing	To confirm the properties and geotechnical parameter of the soils. To aid in construction and development of foundations for new structures. To confirm concrete classification.	Typical tests may include water content, Atterberg tests, particle size distribution, sedimentation, triaxial testing and oedometer testing.

5.4 Reporting

The above data will need to be formulated into a formal assessment that should include the following:

- o Geotechnical recommendations.
- o Contamination assessment.
- o Contamination remediation strategy.
- o Investigation of mining legacy.
- o Any recommendations for further work, if required and including remediation where required and validation of completion of remedial measures reports.

As soon as is practicable, and prior to the above, this Phase 1 report should be forwarded to the relevant authorities, in order to ensure they have sufficient time to review and discuss any issues.

6. References

- British Standards Institution (2015), BS5930 2015 + A1:2020: *Code of practice for site investigations*, B.S.I., London.
- British Standards Institution (2007), Amendment No 1 to BS5930: *Code of practice for ground investigations*, B.S.I., London.
- British Standards Institution (2011) +A2:2017, BS 10175: *Investigation of potentially contaminated sites – Code of Practice*, British Standards Institute.
- British Standards Institution (2013), BS 8576 Guidance on Investigations for Ground Gas – Permanent Gases and Volatile Organic Compounds.
- Department for Environment, Food and Rural Affairs and the Environment Agency, DEFRA R&D Publications, Environment Agency, Bristol.
- CLR 2, 1994, *Guidance on preliminary site inspection of contaminated land*, Volume 1.
- CLR 4, 1994, *Sampling Strategies for contaminated land*.
- R&D Publication 66: 2008 Guidance for the Safe Development of Housing on Land Affected by Contamination.
- CIRIA Report C665 (2007), Assessing risks posed by ground gasses in buildings.
- The Environment Agency: Groundwater source protection.

Appendix 1

Site Plans



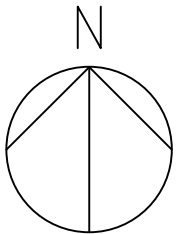
Site Layout: 1:500

NOTES
DO NOT SCALE FROM THIS DRAWING.
It is the Contractor's responsibility to check all governing dimensions and verify all dimensions on site before commencing any work or making any shop drawings.
The Building Safety Act is Applicable to this project
Any changes to the design to be assessed by the principal designer and agreed with the principal contractor before being carried out.
Work and materials are to be in accordance with the Building Regulations and to comply with the relevant British Standards.
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Site Location
1:1250



Rev:	Date:	Notes:
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& DESIGN

Fox Cottage, Whitley Road, Whitley
West Yorkshire, WF12 0LU
T 01924 459231
E info@foxarchitecture.co.uk
www.foxarchitecture.co.uk

Client: Mr & Mrs R Cook	
Project: Replacement Dwelling 29 Hermit Lane, Higham, S75 1PL	
Drawing: Existing Site Layout & Location	
Date: March 2026	Scale: 1:500, 1:1250@A3
Drawing No: 2539/SK100	
Rev:	

Appendix 2

Historical Maps

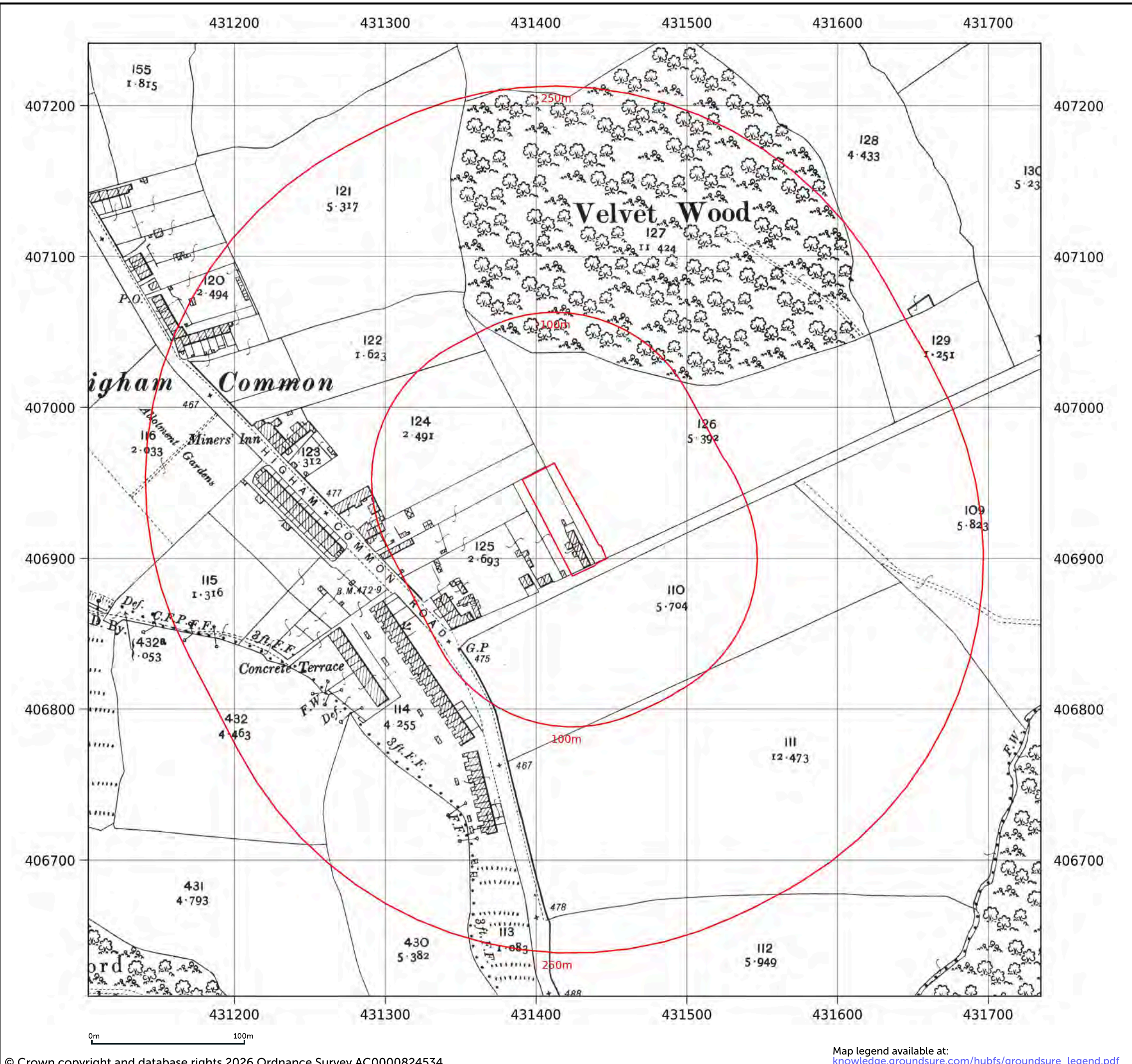
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Map name:	County Series
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Scale:	1:2,500
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Date: 1906
Surveyed: 1906
Revised: 1906

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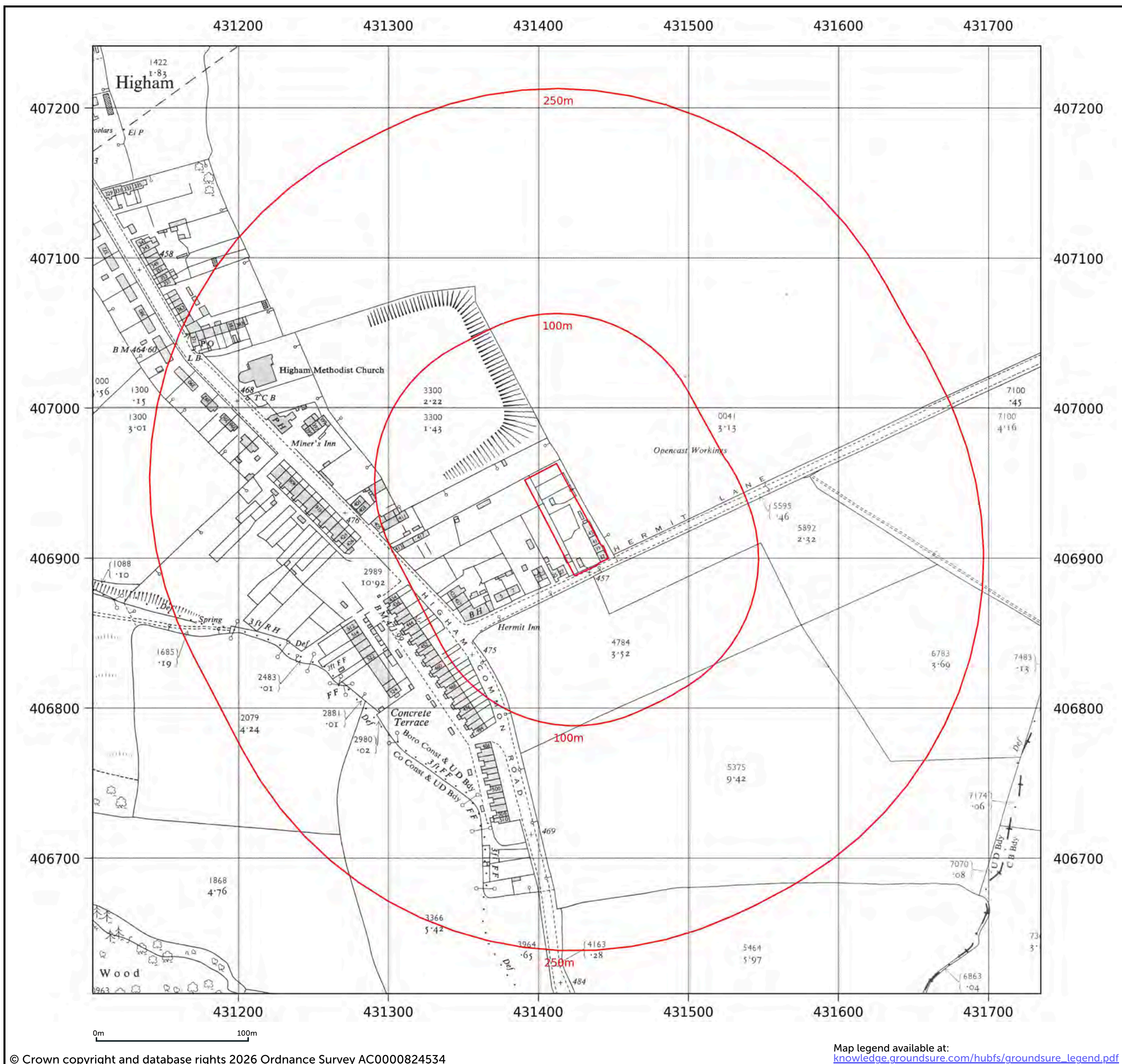
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 Revised: 1961
 Copyright: 1962
 Levelled: 1959

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 Revised: 1961
 Copyright: 1962
 Levelled: 1959

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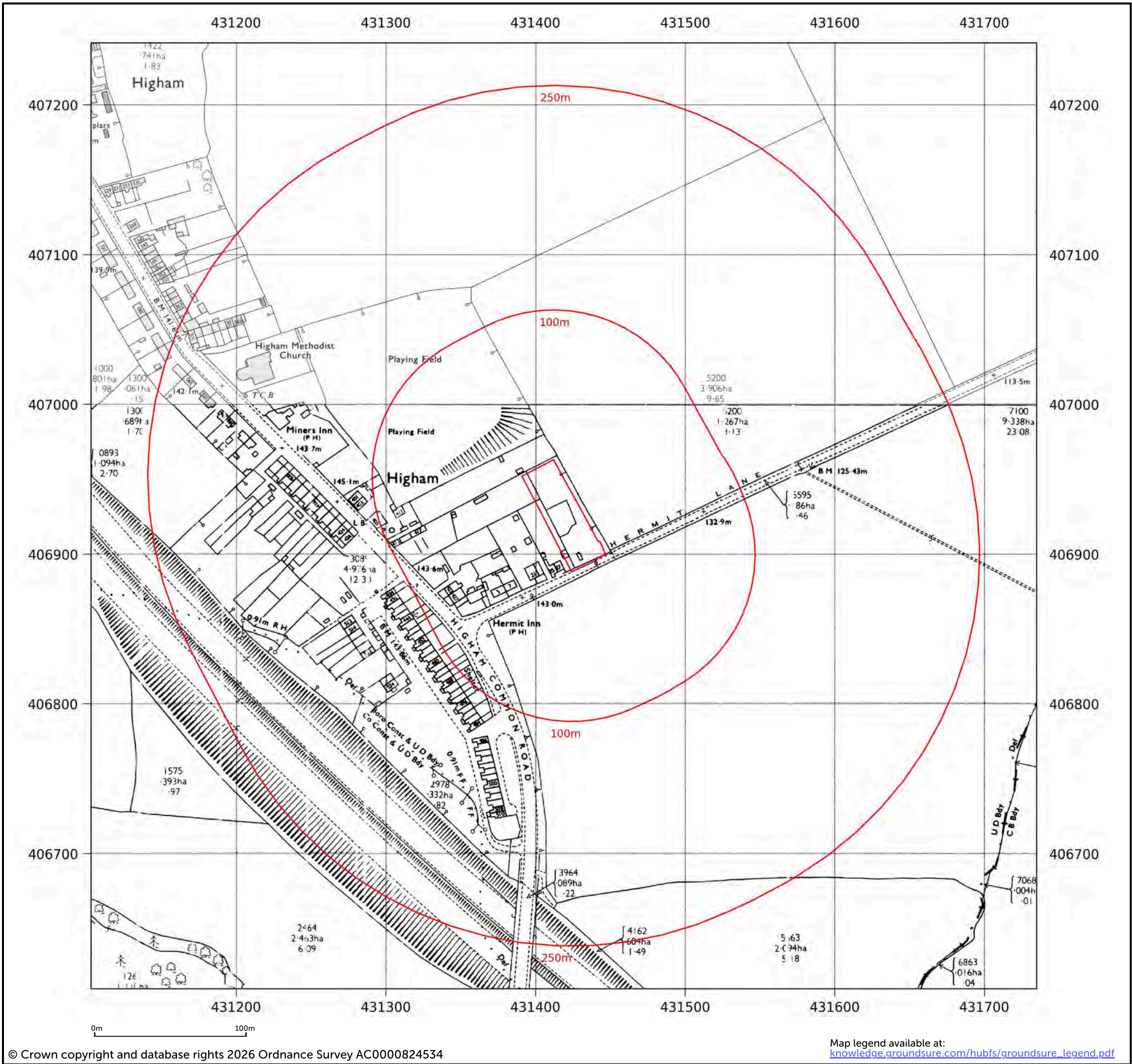
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Date: 1970 Surveyed: 1969 Revised: 1969 Copyright: 1970 Levelled: 1963
Date: 1971

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Client ref:

Report ref:

Grid ref:

Production date:

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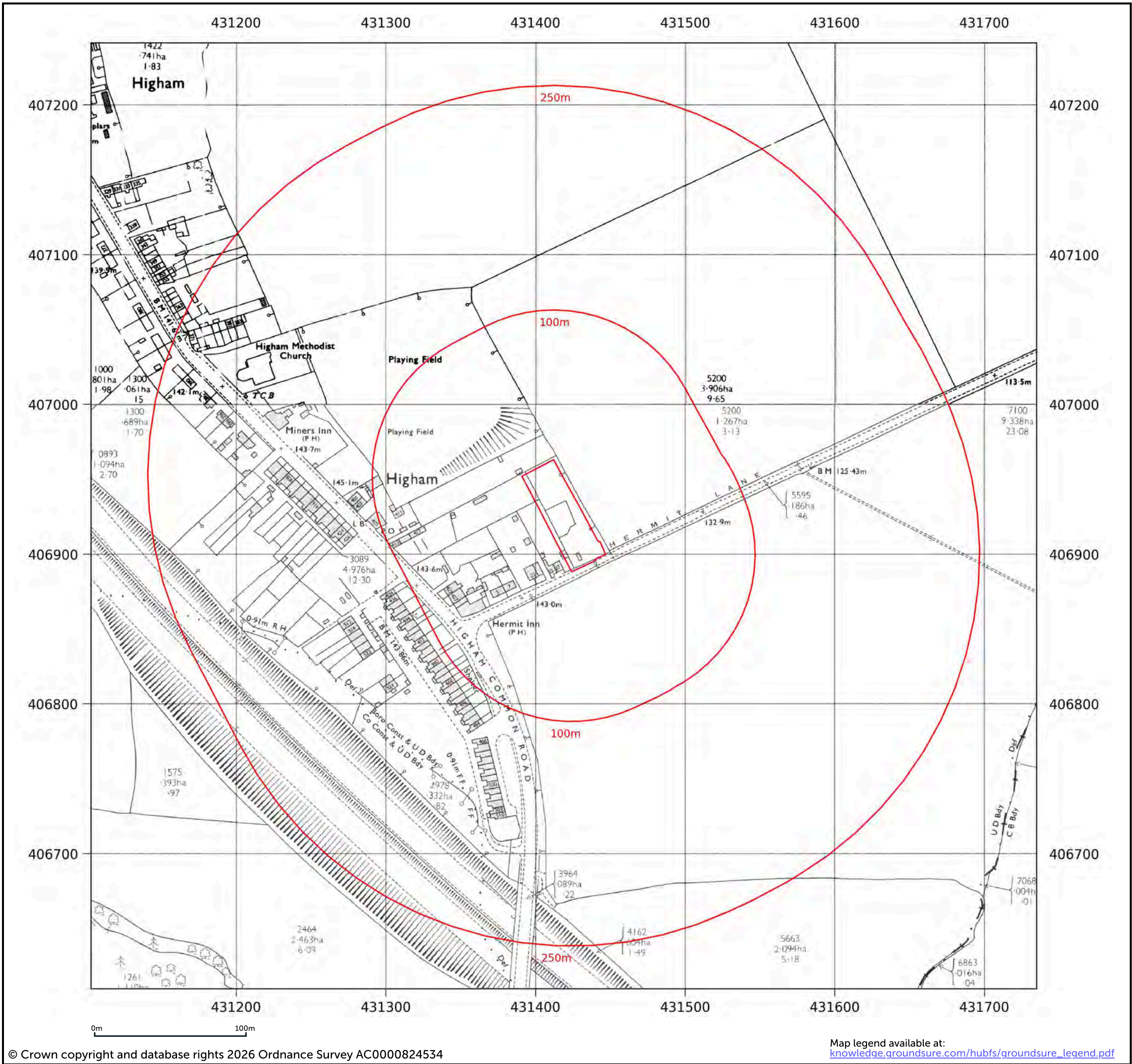
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Levelled: 1963

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Grid ref:

Production date:

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GS-8XL-PHU-9MO-ECN

431418.77, 406925.28

21 May 2026

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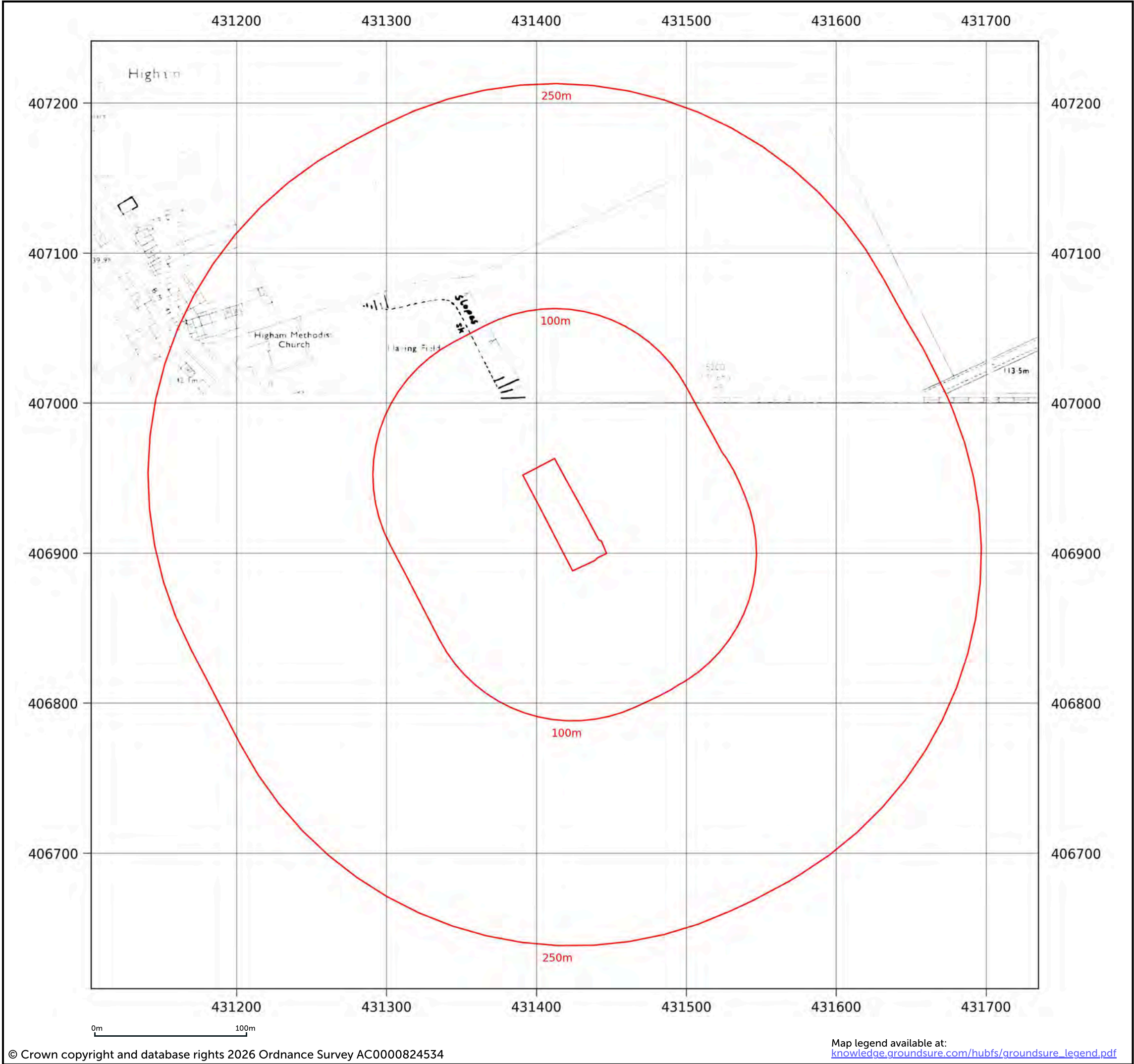
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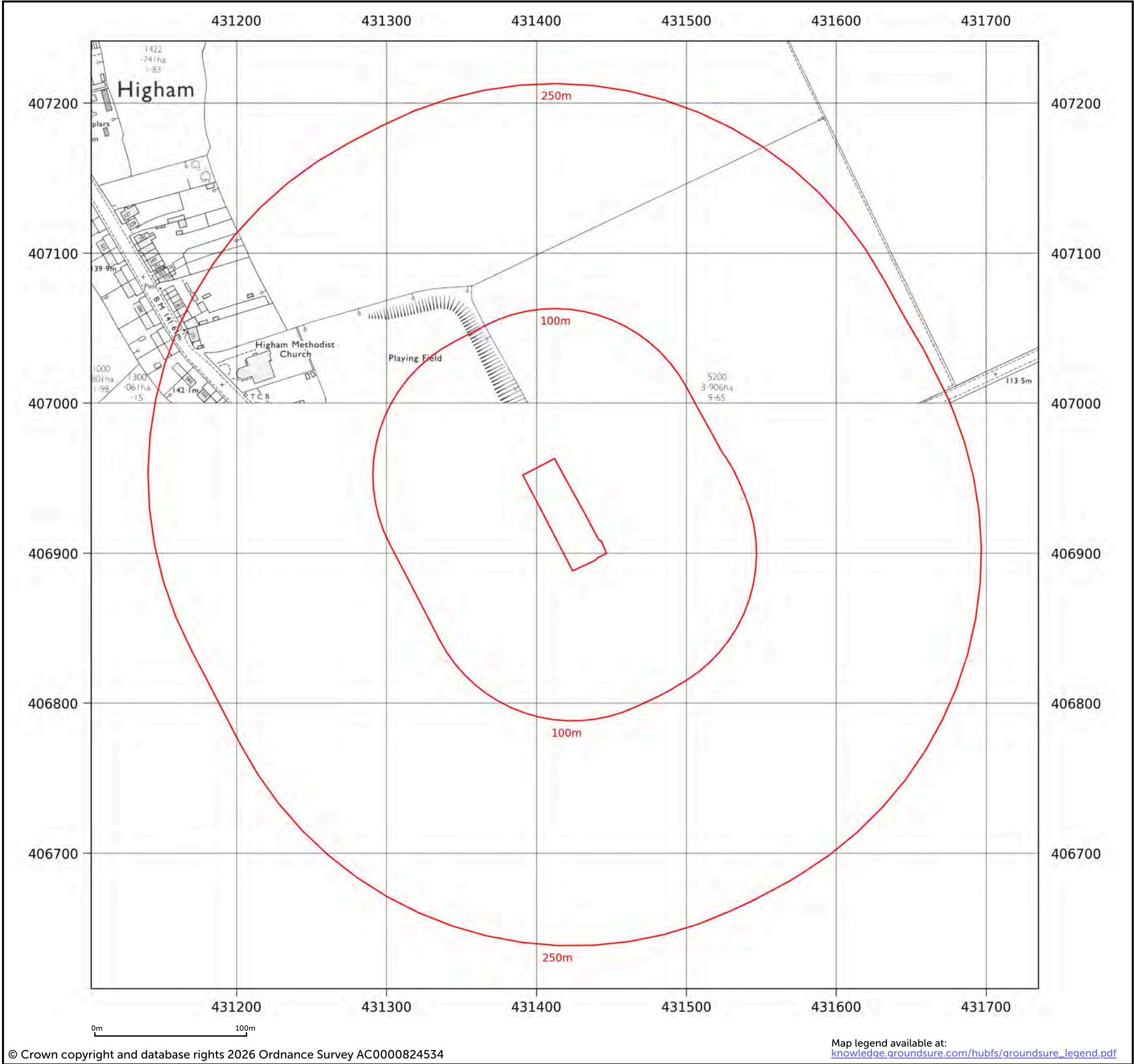
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Copyright: 1977
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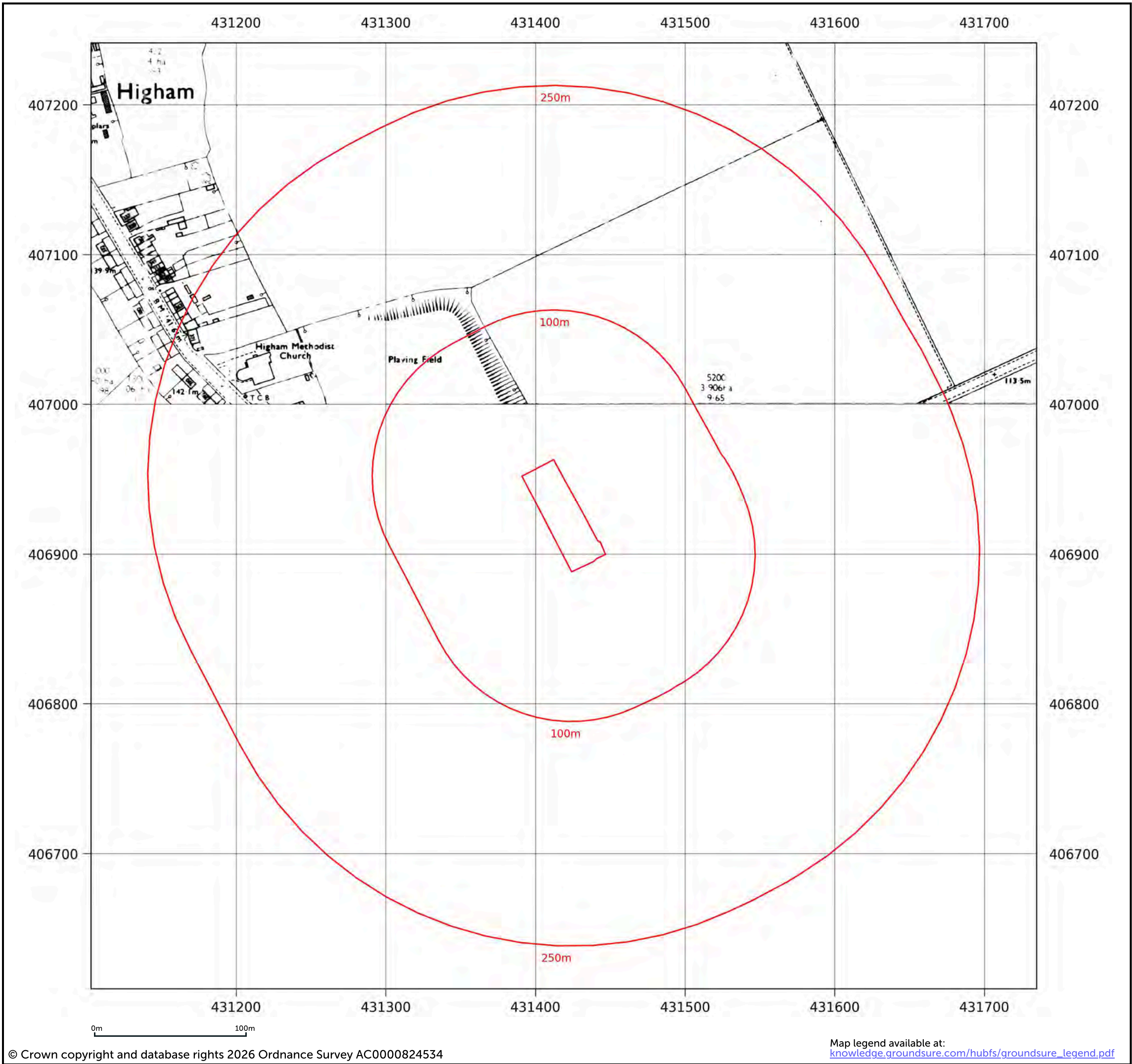


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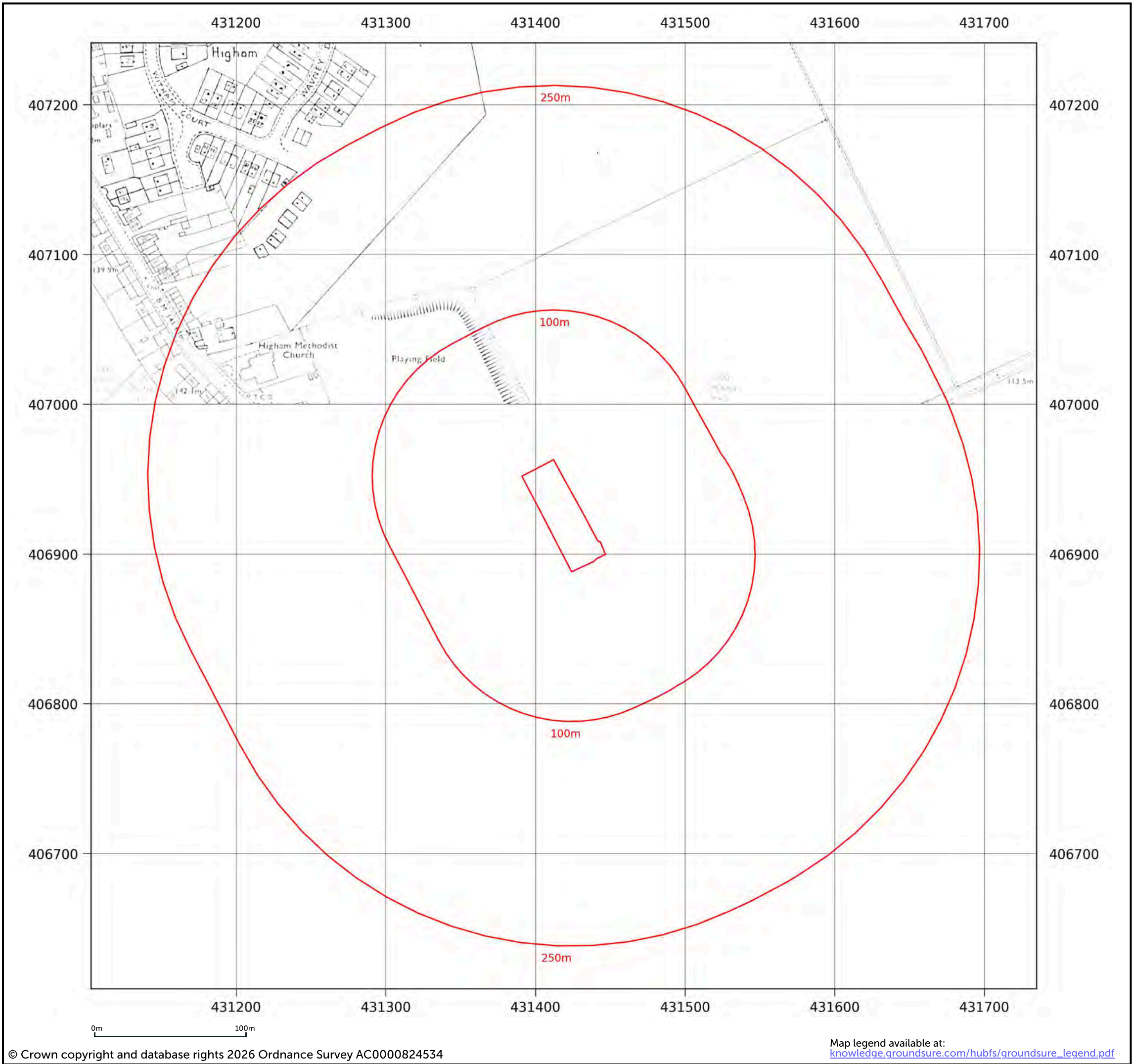
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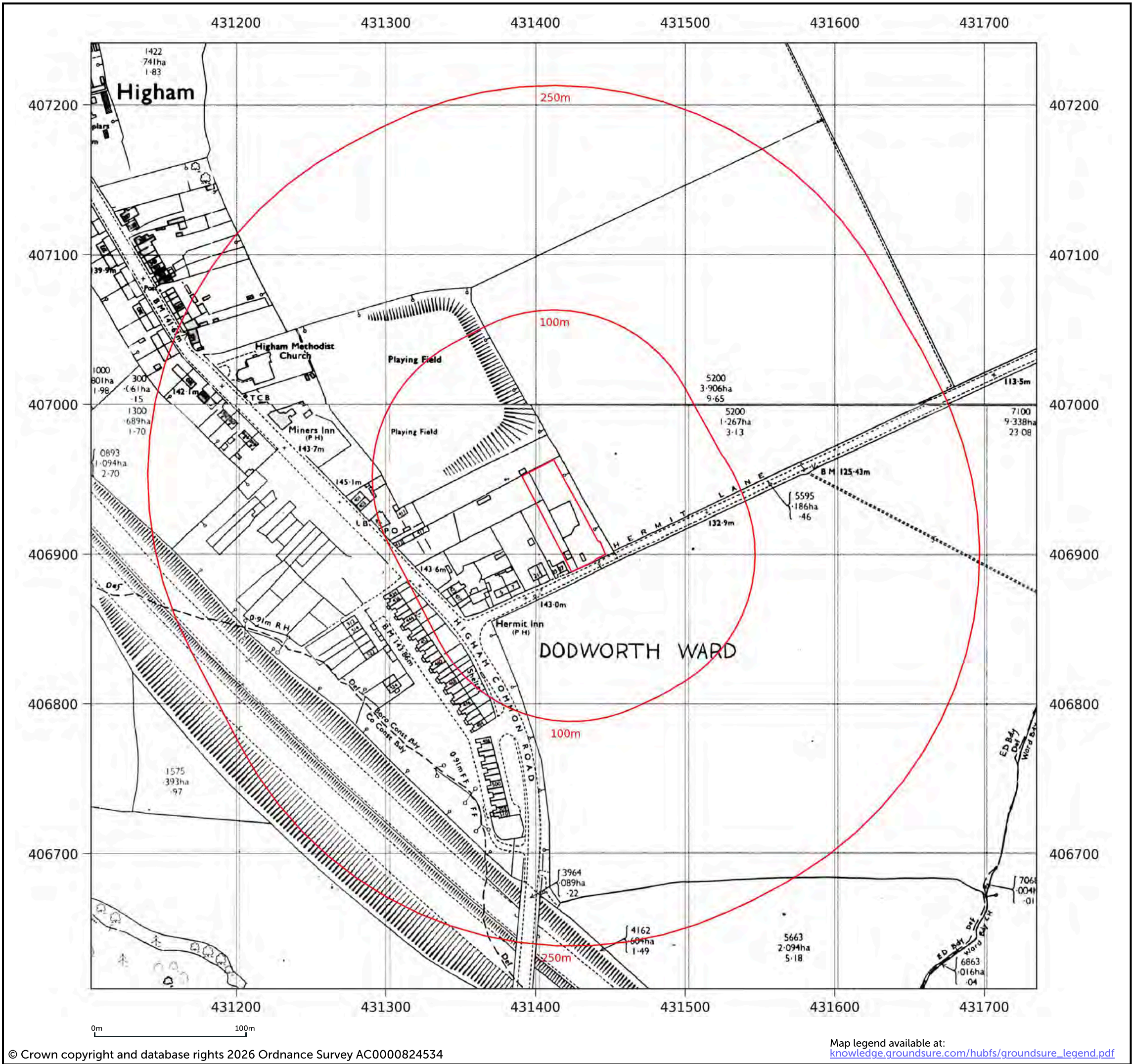
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Date: 1982
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3842

Report ref:

GS-8XL-PHU-9MO-ECN

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21 May 2026

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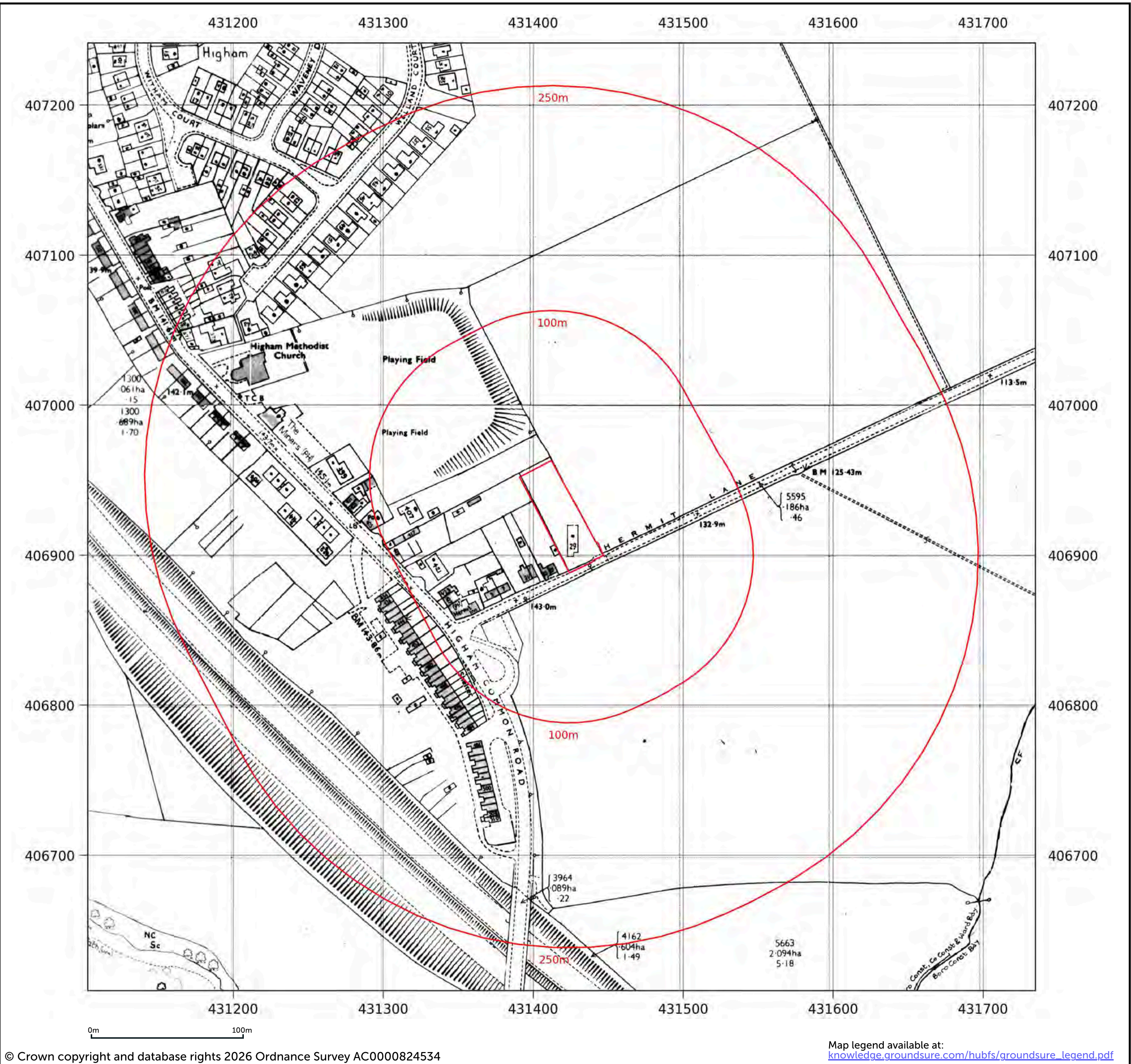
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Copyright: 1991

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Revised: 1991
Copyright: 1991
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Client ref:

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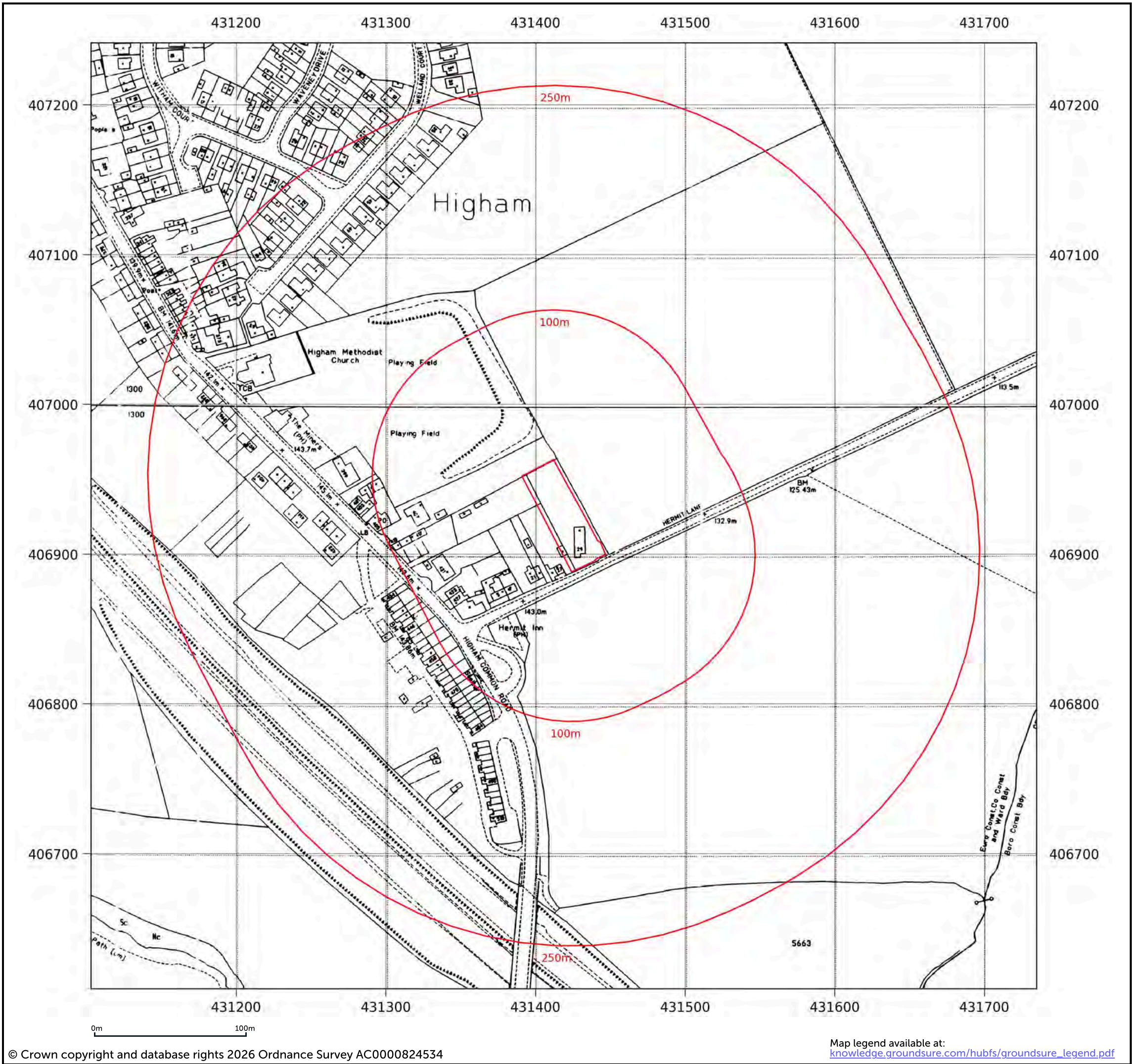
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Date: 2003

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GS-8XL-PHU-9MO-ECN

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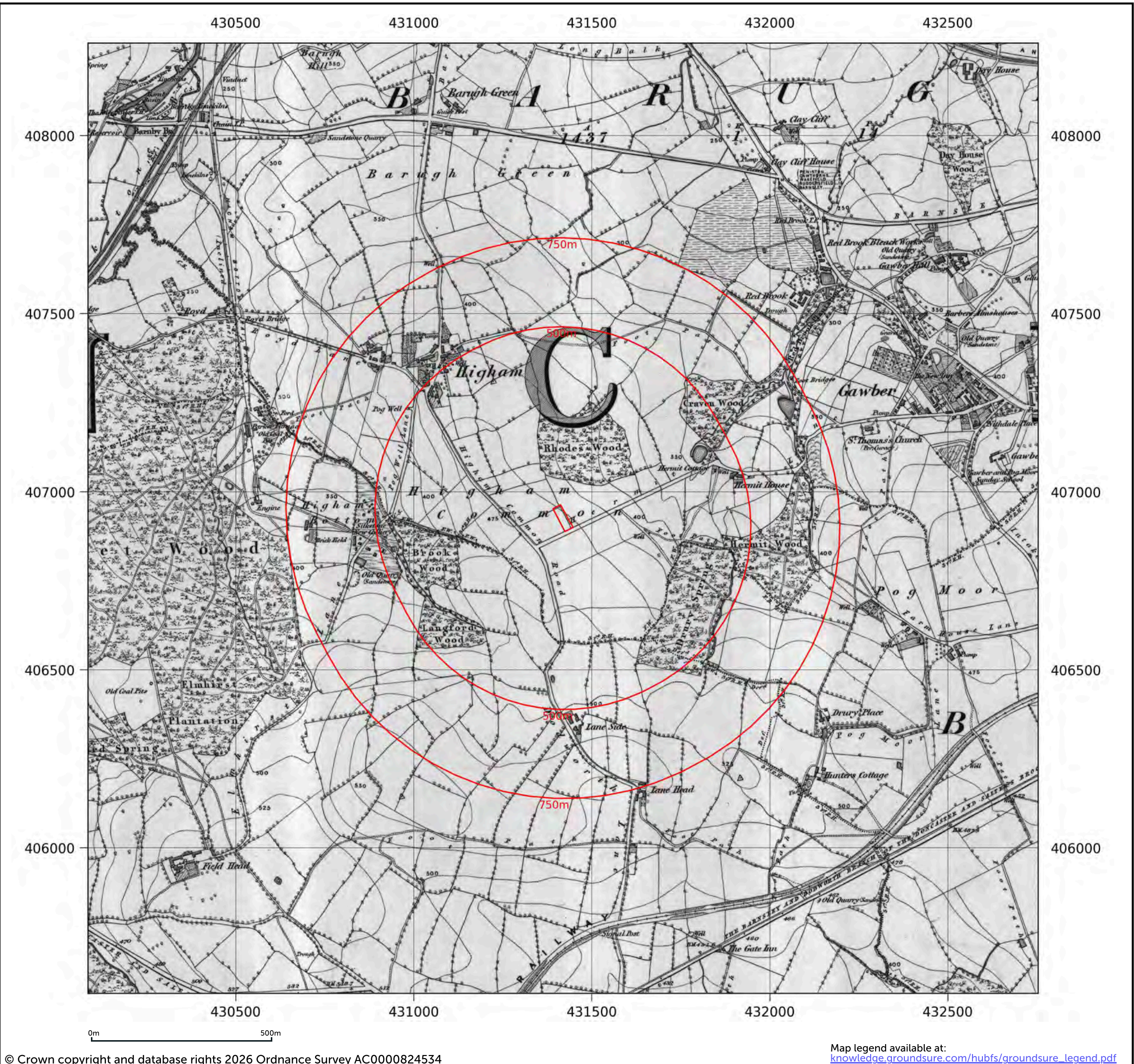
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Surveyed: 1851
Edition: 1855

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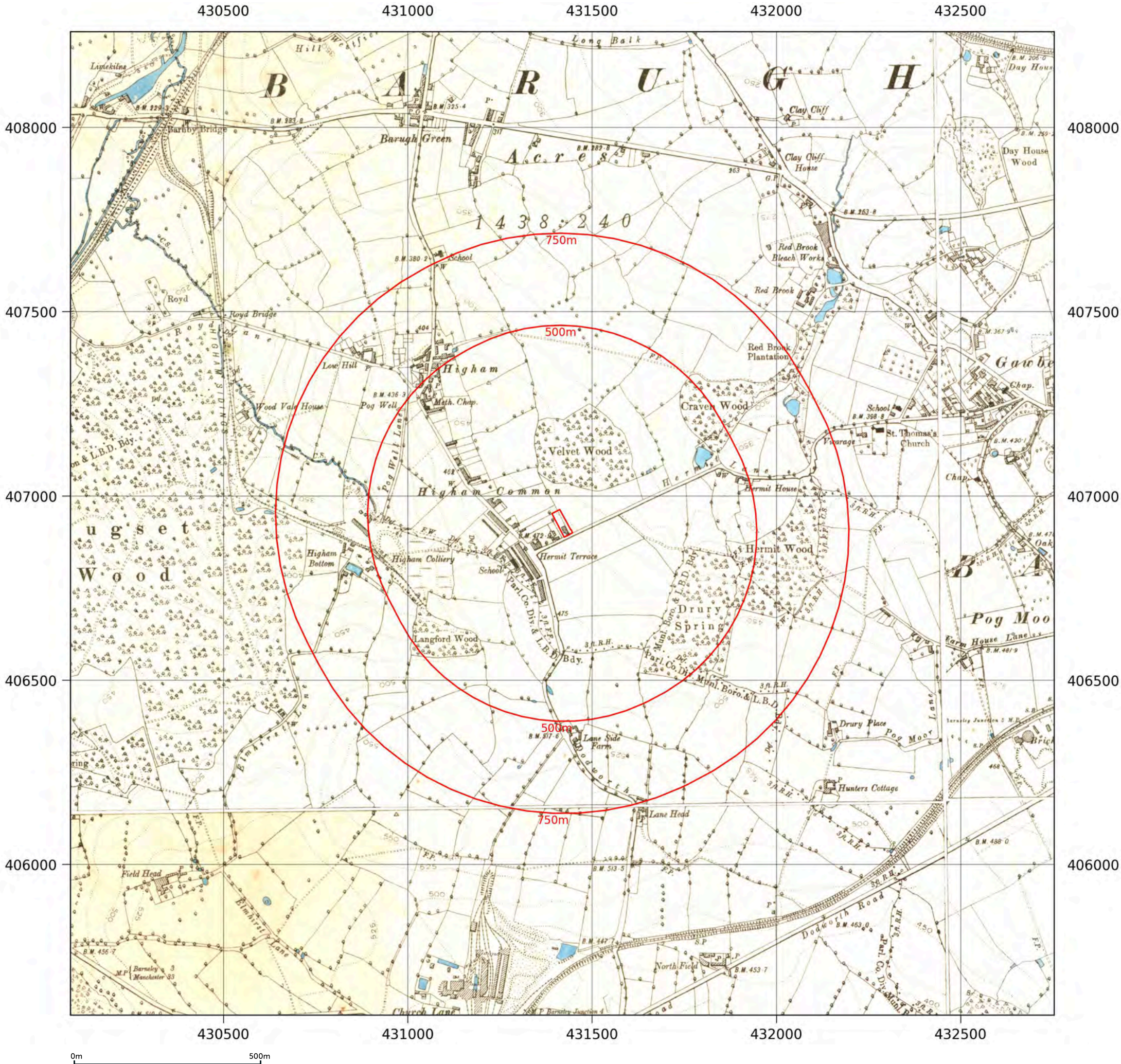
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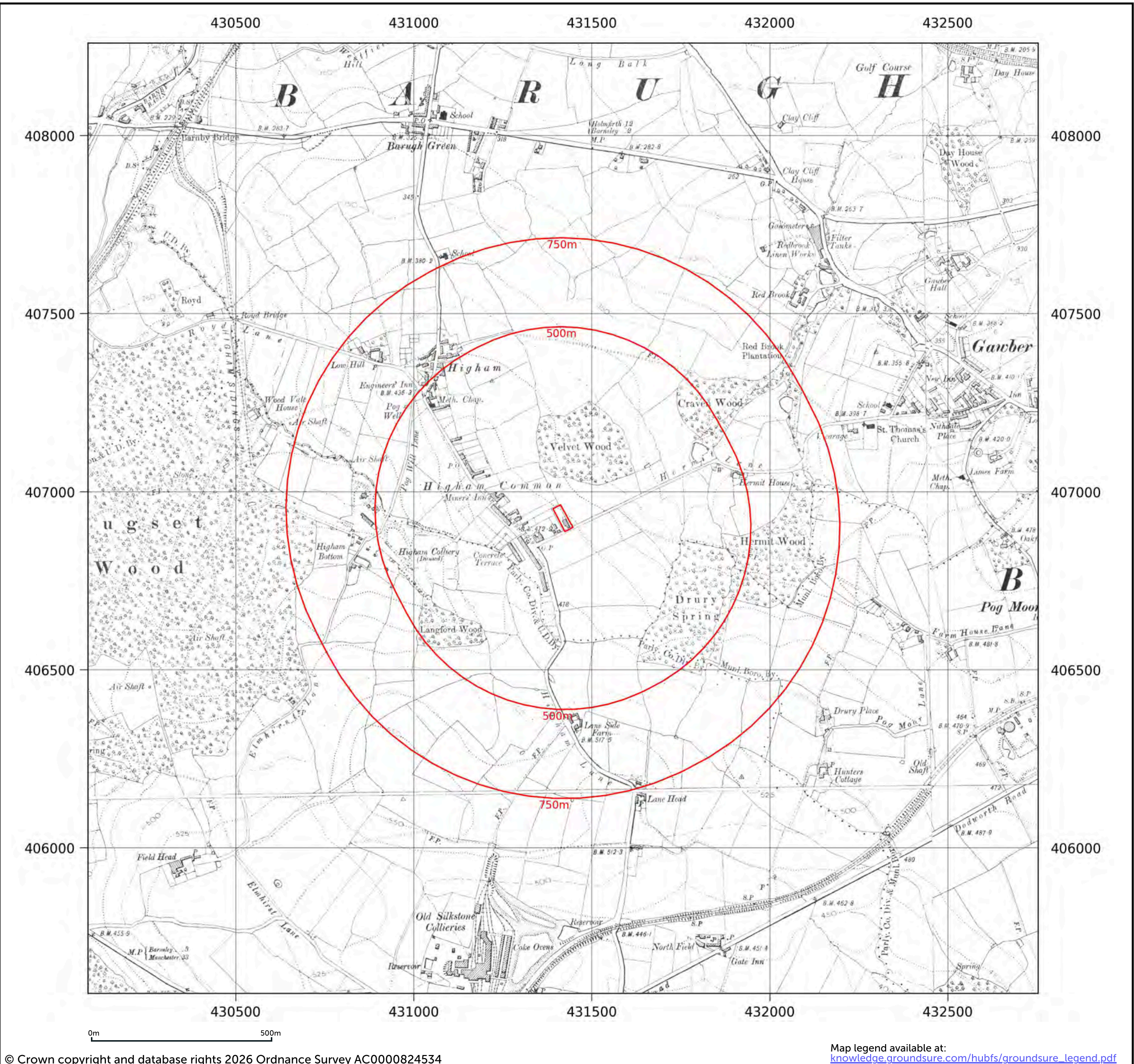
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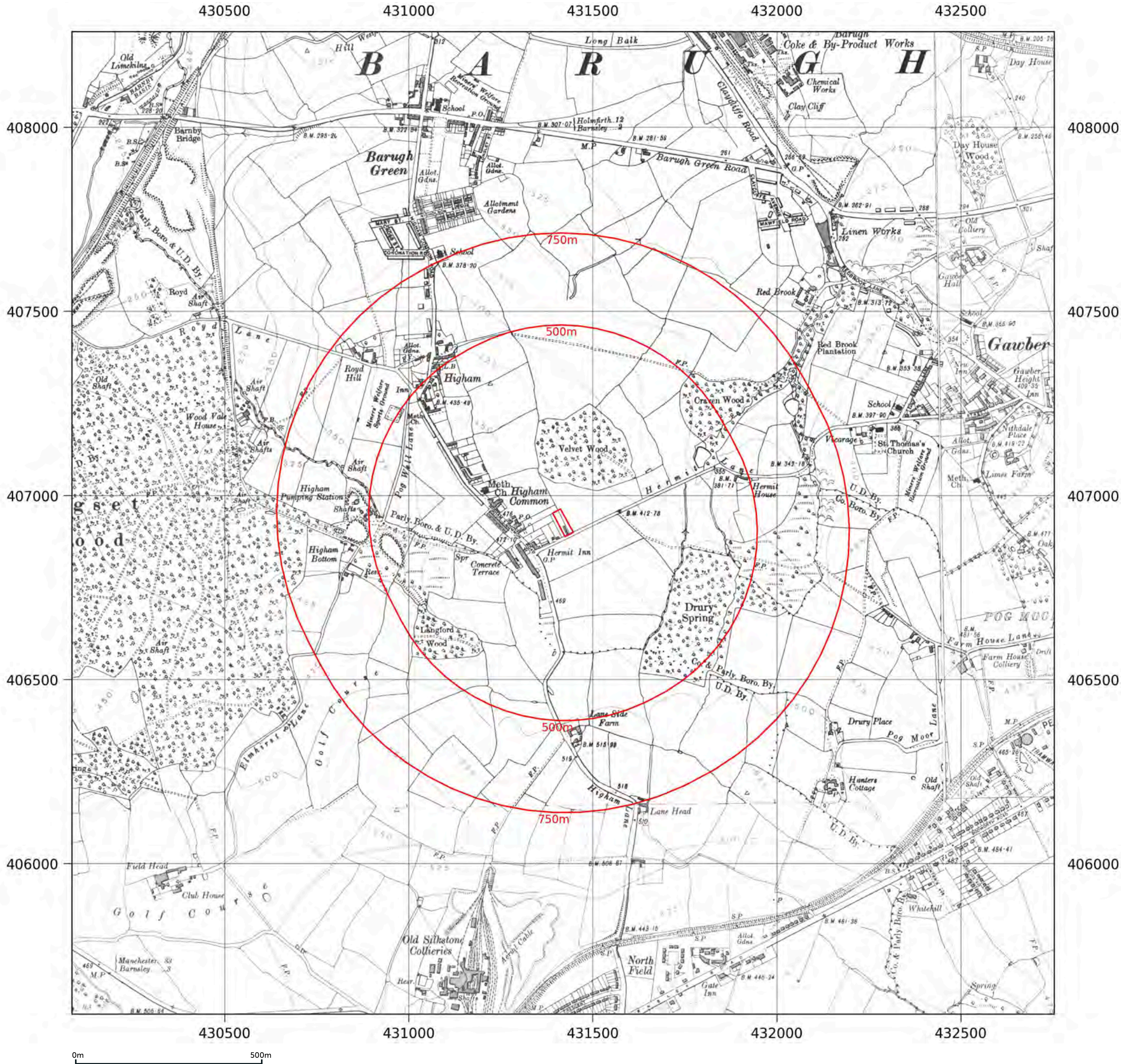
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Date: 1929 Surveyed: 1851 Revised: 1929	Date: 1929 Surveyed: 1851 Revised: 1929

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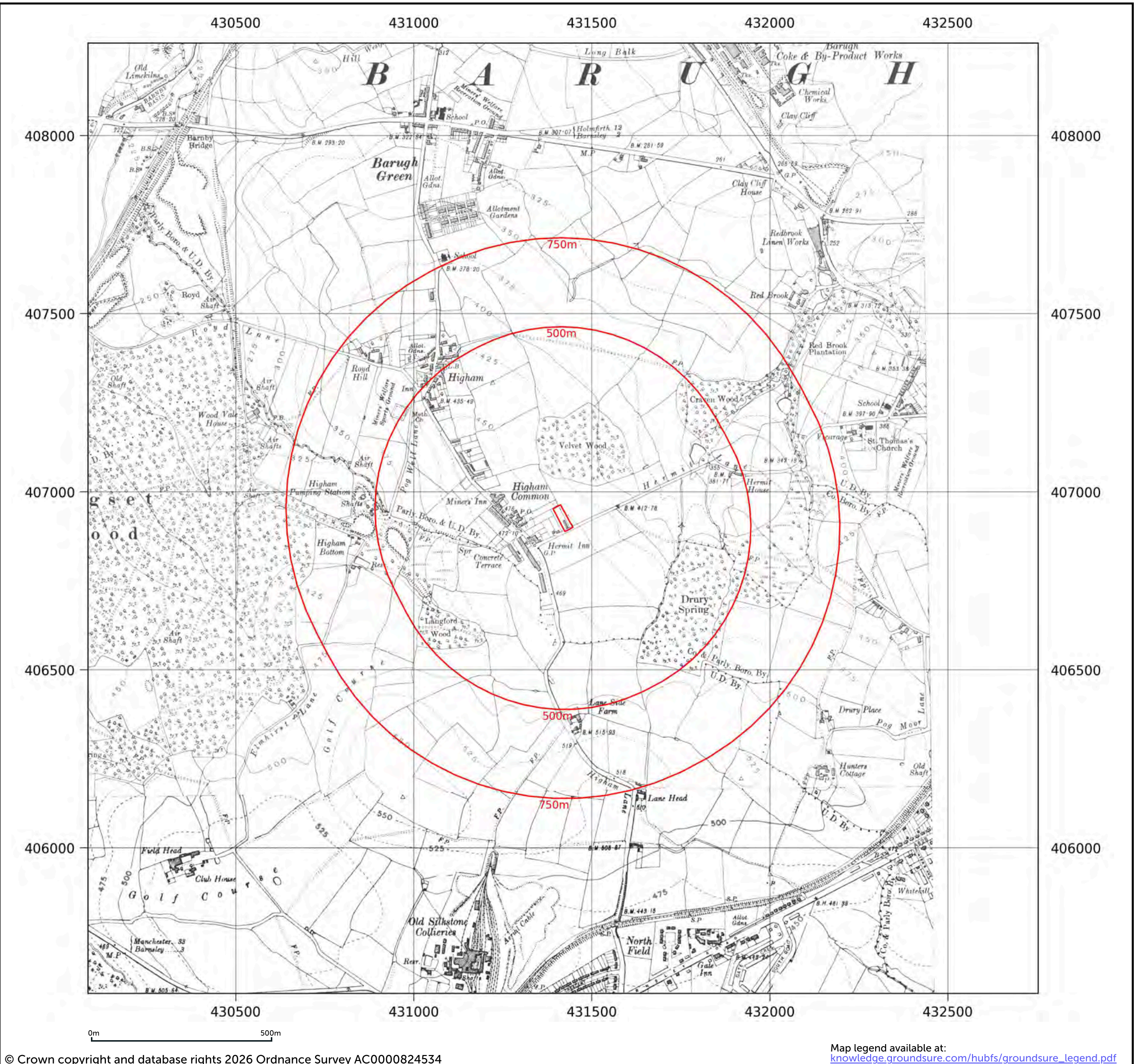
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Revised: 1929

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Revised: 1929

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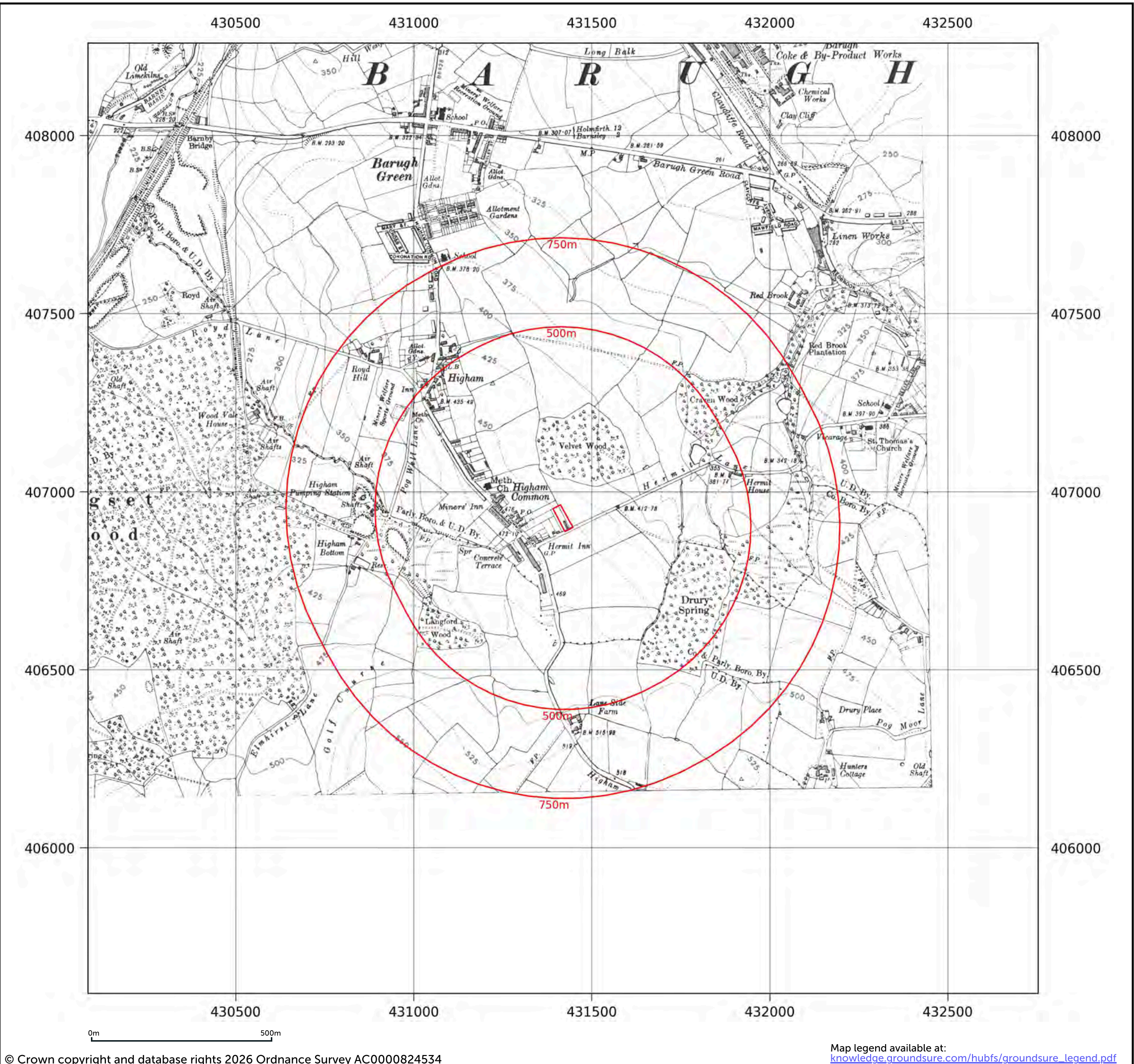
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Revised: 1929

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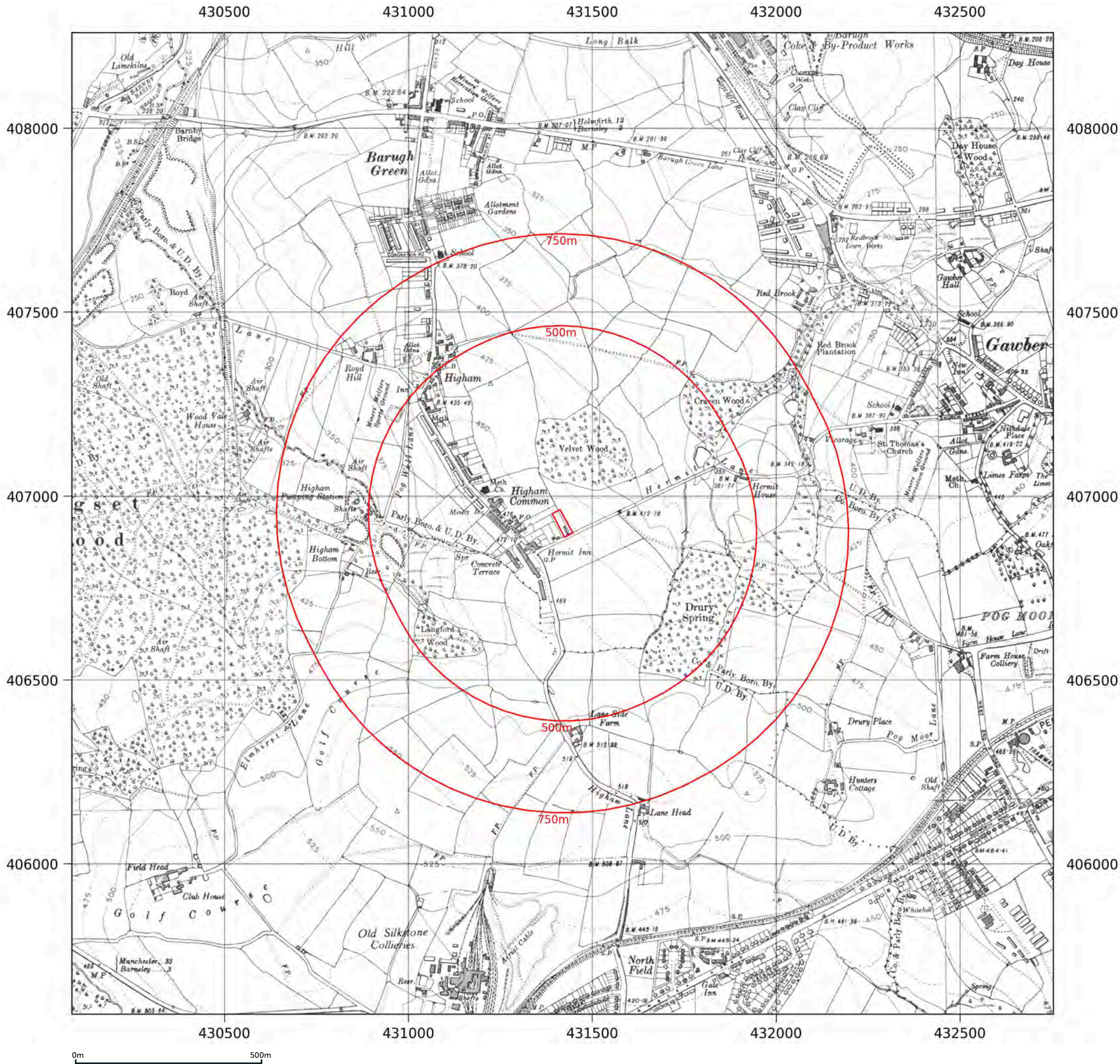
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Production date: 21 May 2026

Map name: County Series
Map date: 1948
Scale: 1:10,560
Printed at: 1:10,560



Date: 1948 Surveyed: 1851 Revised: 1948 Edition: 1948	Date: 1948 Surveyed: 1851 Revised: 1948 Edition: 1948
Date: 1948 Surveyed: 1851 Revised: 1948 Edition: 1948	Date: 1948 Surveyed: 1851 Revised: 1948 Edition: 1948

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info@groundsure.com
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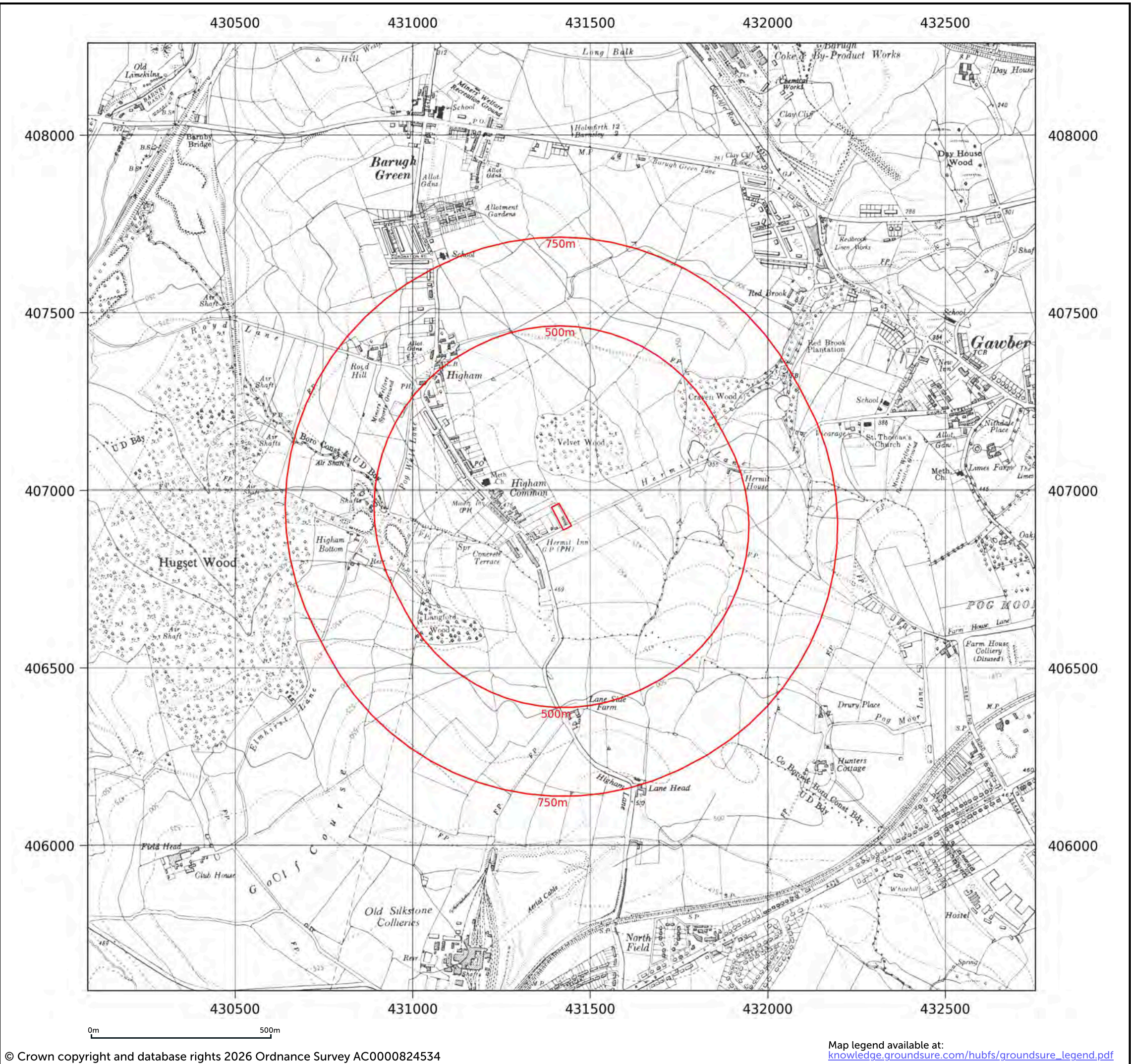
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Client ref: C/5966/26/E/9239 - PO-3842
Report ref: GS-8XL-PHU-9MO-ECN
Grid ref: 431418.77, 406925.28
Production date: 21 May 2026

Map name: Provisional
Map date: 1956
Scale: 1:10,560
Printed at: 1:10,560



Date: 1956
Revised: 1955
Copyright: 1956

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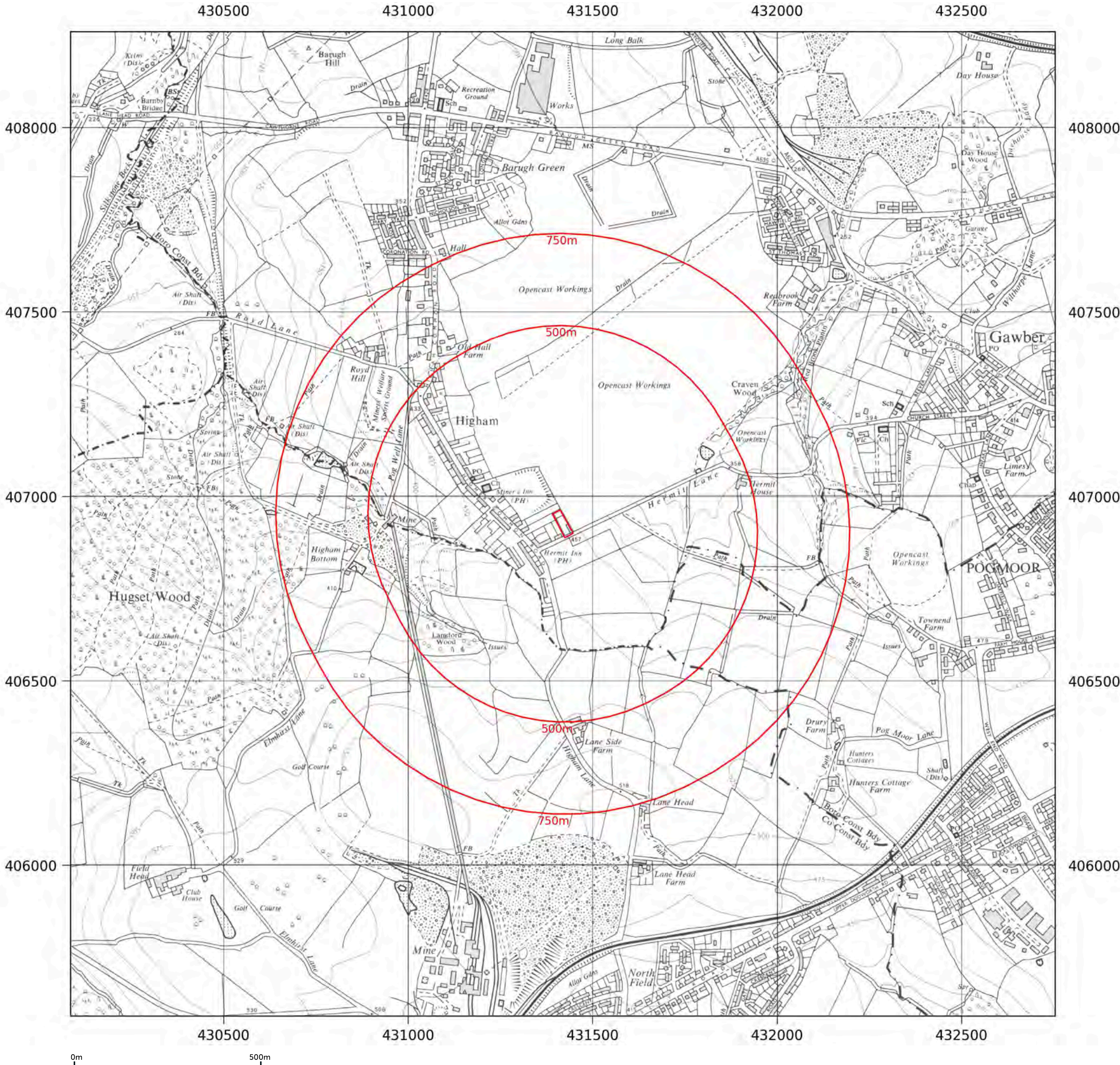
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Client ref: C/5966/26/E/9239 - PO-3842
Report ref: GS-8XL-PHU-9MO-ECN
Grid ref: 431418.77, 406925.28
Production date: 21 May 2026

Map name: Provisional
Map date: 1966
Scale: 1:10,560
Printed at: 1:10,560



Date: 1966
Surveyed: 1966
Revised: 1966

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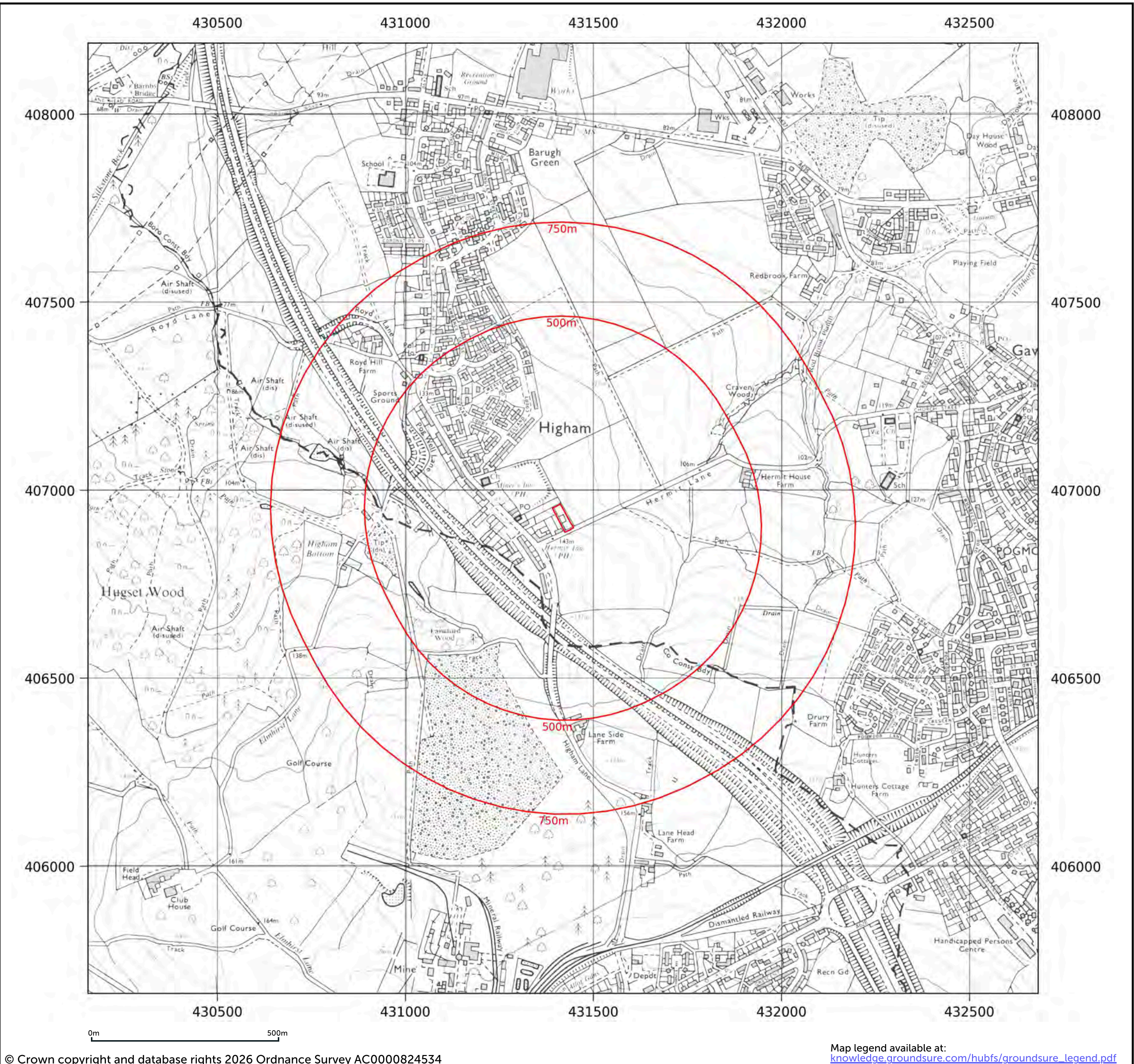
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Report ref:	GS-8XL-PHU-9MO-ECN
Grid ref:	431418.77, 406925.28
Production date:	21 May 2026

Map name:	National Grid
Map date:	1982
Scale:	1:10,000
Printed at:	1:10,000



Date: 1982 Surveyed: 1982 Revised: 1982

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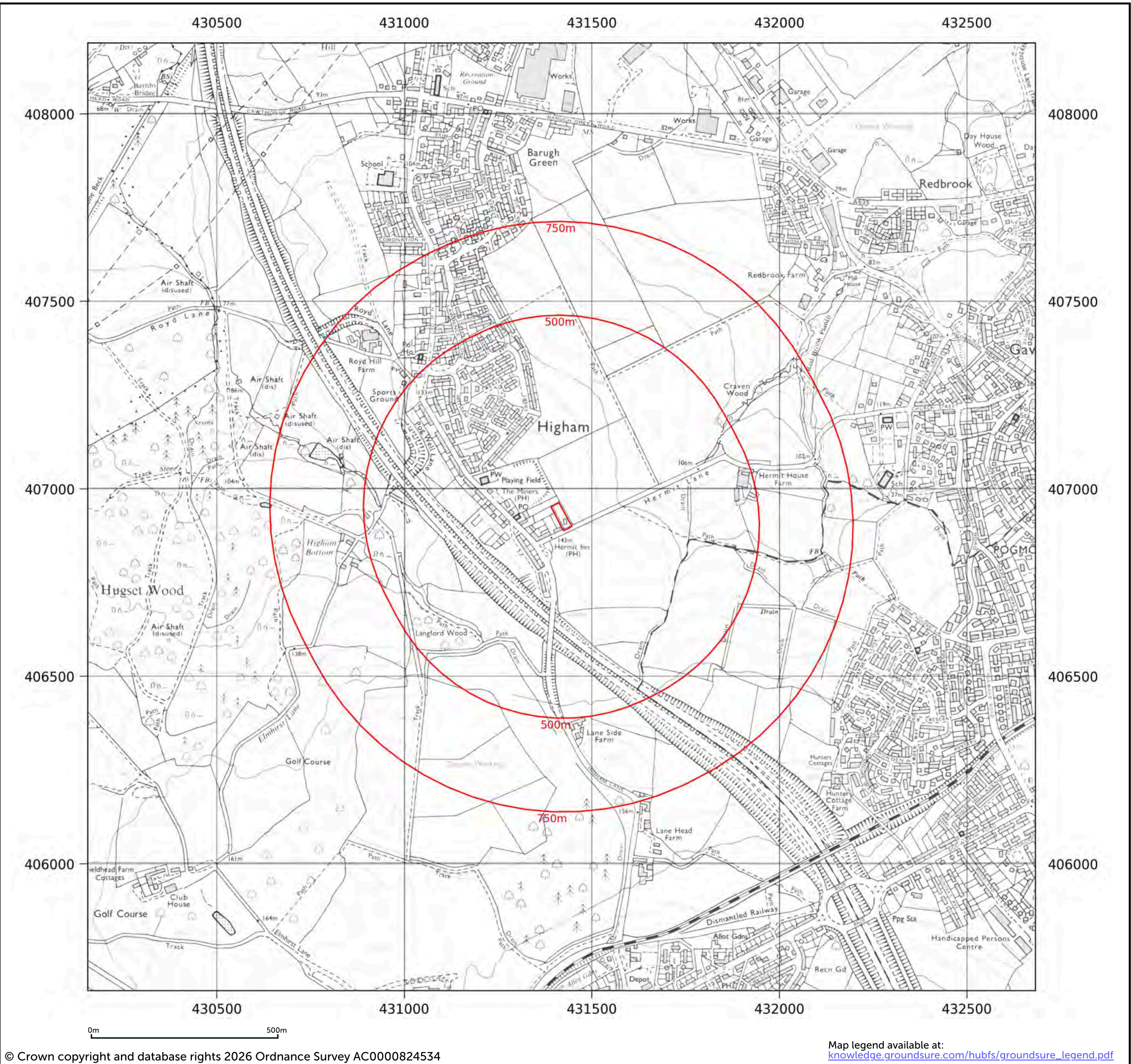
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Report ref: GS-8XL-PHU-9MO-ECN
Grid ref: 431418.77, 406925.28
Production date: 21 May 2026

Map name: National Grid
Map date: 1993
Scale: 1:10,000
Printed at: 1:10,000



Date: 1993
Surveyed: 1992
Revised: 1993

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Site details:

29, HERMIT LANE, HIGHAM, BARNSELY, S75 1PL

Client ref:

C/5966/26/E/9239 - PO-3842

Report ref:

GS-8XL-PHU-9MO-ECN

Grid ref:

431418.77, 406925.28

Production date:

21 May 2026

Map name:

National Grid

Map date:

2001

Scale:

1:10,000

Printed at:

1:10,000

N

W

E

S

Date: 2001

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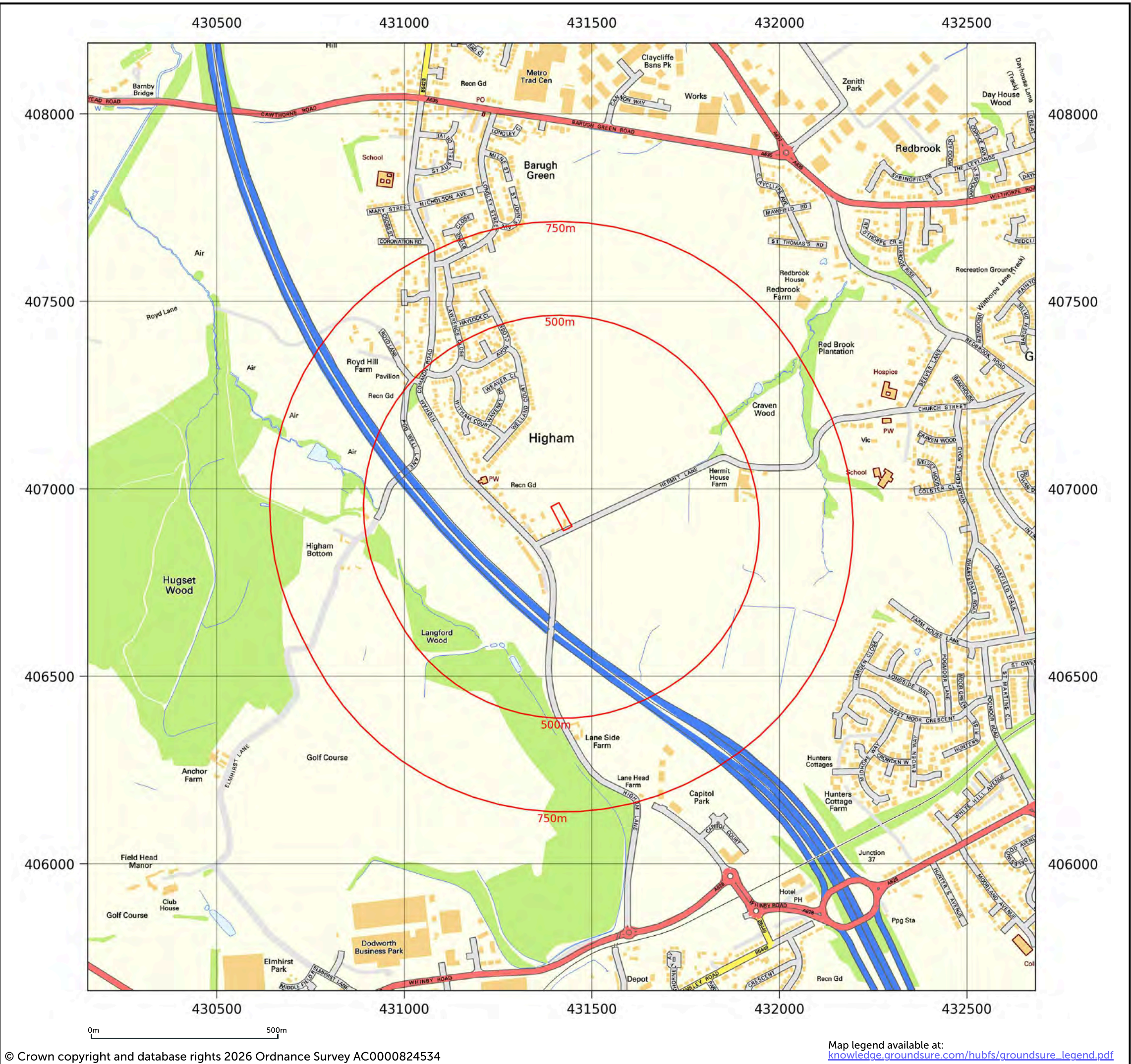
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Report ref: GS-8XL-PHU-9MO-ECN
Grid ref: 431418.77, 406925.28
Production date: 21 May 2026

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



Date: 2010

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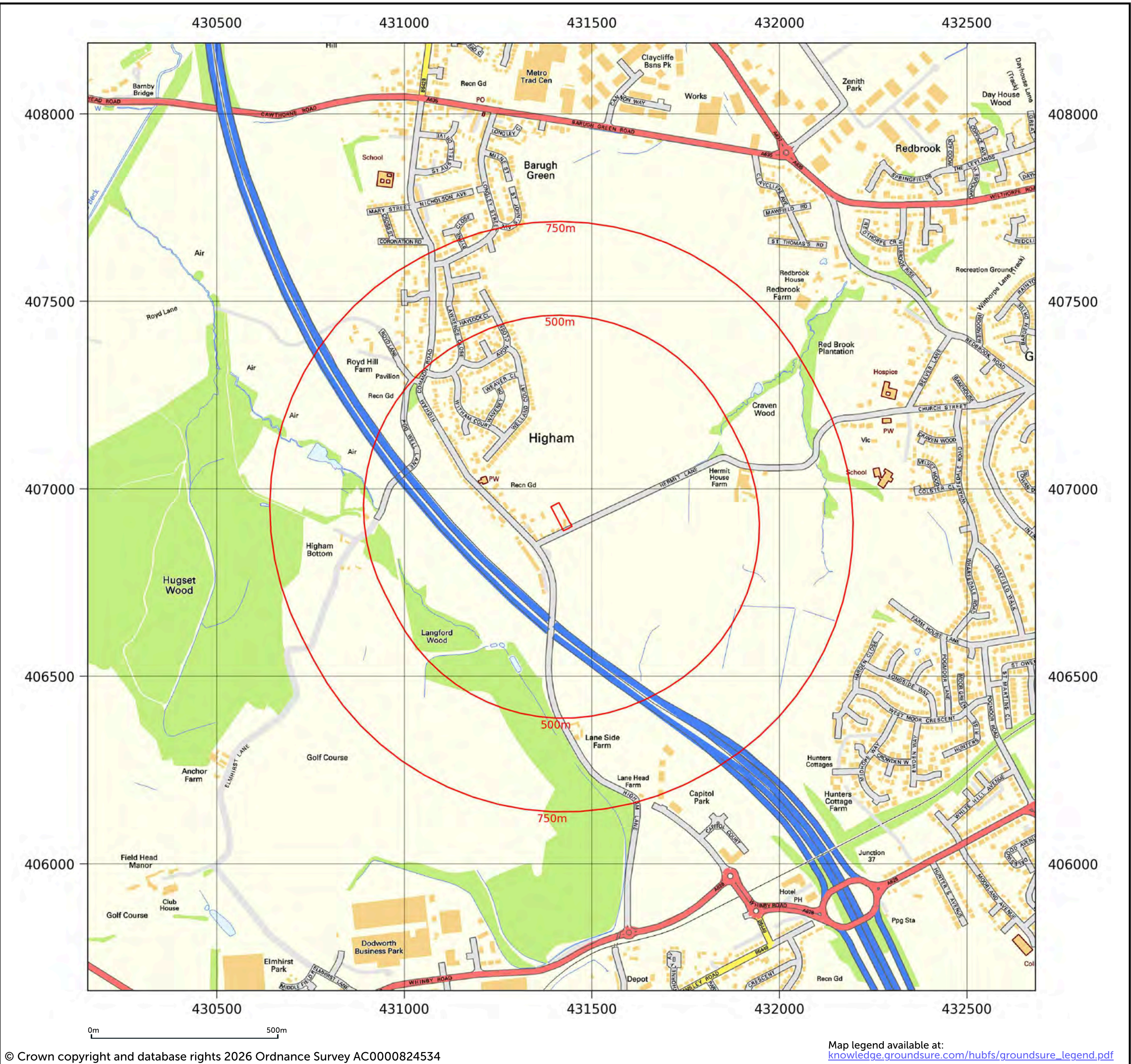
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Report ref: GS-8XL-PHU-9MO-ECN
Grid ref: 431418.77, 406925.28
Production date: 21 May 2026

Map name: National Grid
Map date: 2015
Scale: 1:10,000
Printed at: 1:10,000



Date: 2015

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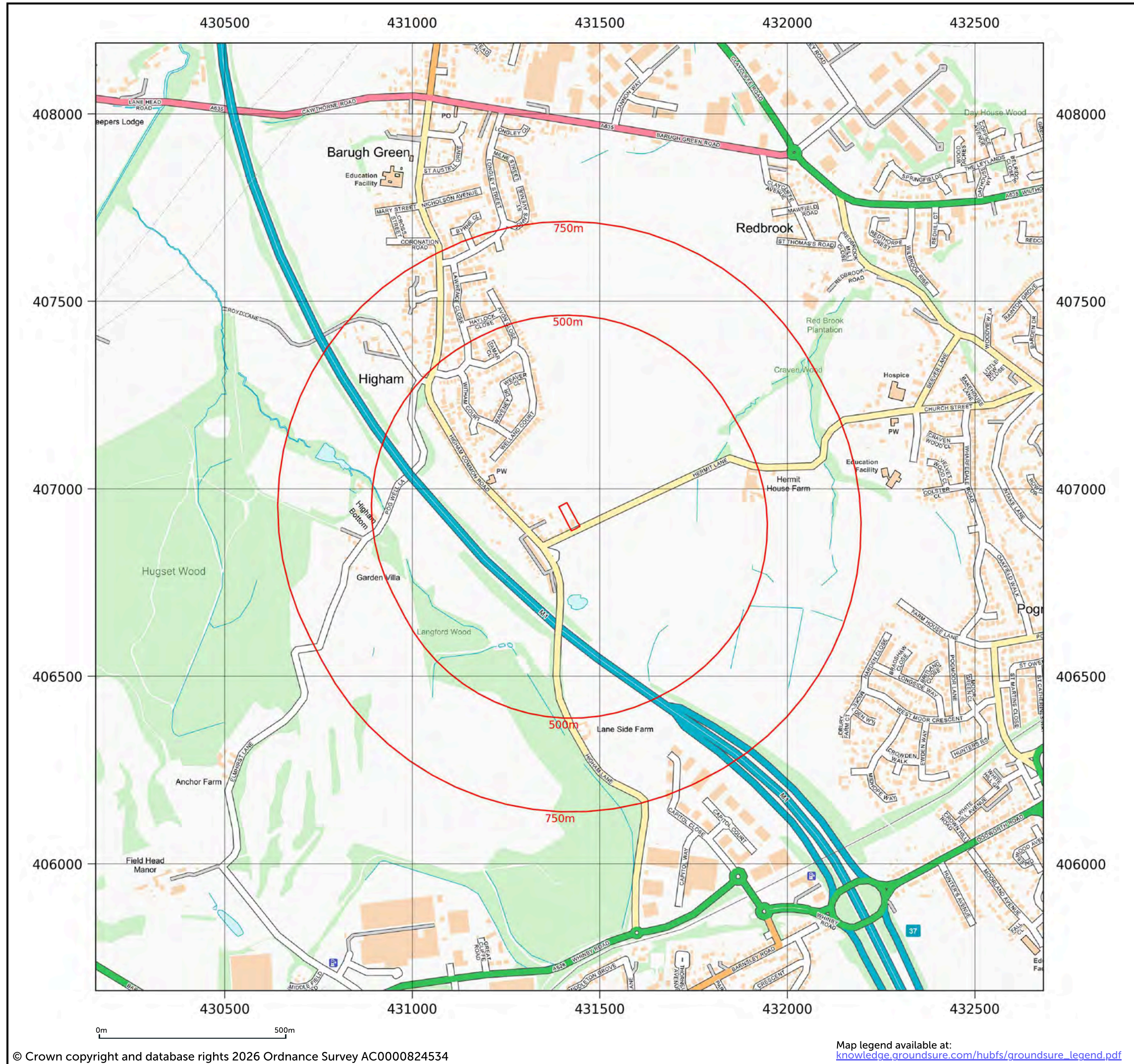


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Report ref:	GS-8XL-PHU-9MO-ECN
Grid ref:	431418.77, 406925.28
Production date:	21 May 2026

Map name:	National Grid
Map date:	2025
Scale:	1:10,000
Printed at:	1:10,000



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Appendix 3

Groundsure Reports

29, HERMIT LANE, HIGHAM, BARNSELEY, S75 1PL

Order Details

Date: 21/05/2026
Your ref: C/5966/26/E/9239 - PO-3842
Our Ref: GS-SBH-3T9-PSF-P5T

Site Details

Location: 431418 406925
Area: 0.18 ha
Authority: [Barnsley Metropolitan Borough Council](#) ↗

Site plan



Quick Links

Summary of findings [p. 2 >](#)
OS MasterMap site plan [p.14 >](#)
Aerial image [p. 9 >](#)

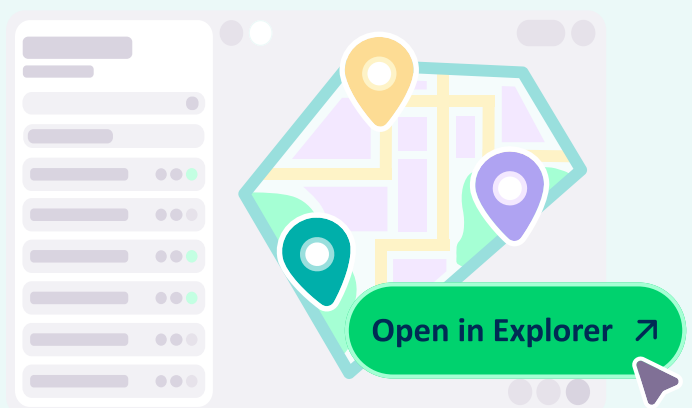
[Insight User Guide](#) ↗

Open this site in Explorer!

Access the data now in our interactive workspace.

- Map and interpret 130+ datasets across 170 years
- Generate insights and visuals quickly
- Revisit and collaborate with your team

Access to Groundsure Explorer requires an Insights account.
12 months access begins at purchase.



Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	1	1	27	-
17	1.2	Historical tanks	0	0	0	0	-
17 >	1.3 >	Historical energy features >	0	0	0	4	-
17	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	1	3	37	-
21	2.2	Historical tanks	0	0	0	0	-
21 >	2.3 >	Historical energy features >	0	0	0	9	-
22	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24 >	3.4 >	Historical landfill (EA/NRW records) >	0	1	0	0	-
24 >	3.5 >	Historical waste sites >	0	0	0	2	-
25	3.6	Licensed waste sites	0	0	0	0	-
25 >	3.7 >	Waste exemptions >	0	0	0	13	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
27	4.1	Recent industrial land uses	0	0	0	-	-
27	4.2	National Geographic Database (NGD) - Current or recent tanks	0	0	0	-	-
28	4.3	Current or recent petrol stations	0	0	0	0	-
28	4.4	Electricity cables	0	0	0	0	-
28	4.5	Gas pipelines	0	0	0	0	-



28	4.6	Sites determined as Contaminated Land	0	0	0	0	-
28	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.8	Regulated explosive sites	0	0	0	0	-
29	4.9	Hazardous substance storage/usage	0	0	0	0	-
29	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
29	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.13	Radioactive Substance Authorisations	0	0	0	0	-
30 >	4.14 >	<u>Licensed Discharges to controlled waters</u> >	0	0	0	6	-
31	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.16	Pollutant release to public sewer	0	0	0	0	-
31	4.17	List 1 Dangerous Substances	0	0	0	0	-
32	4.18	List 2 Dangerous Substances	0	0	0	0	-
32 >	4.19 >	<u>Pollution Incidents (EA/NRW)</u> >	0	0	0	1	-
32	4.20	Pollution inventory substances	0	0	0	0	-
32	4.21	Pollution inventory waste transfers	0	0	0	0	-
33	4.22	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
34	5.1	Superficial aquifer	None (within 500m)				
35 >	5.2 >	<u>Bedrock aquifer</u> >	Identified (within 500m)				
36 >	5.3 >	<u>Groundwater vulnerability</u> >	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38 >	5.6 >	<u>Groundwater abstractions</u> >	0	0	0	0	1
39	5.7	Surface water abstractions	0	0	0	0	0
39	5.8	Potable abstractions	0	0	0	0	0
39	5.9	Source Protection Zones	0	0	0	0	-
40	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology</u> >	On site	0-50m	50-250m	250-500m	500-2000m

41	6.1	Water Network (OS NGD)	0	0	0	-	-
41	6.2	Surface water features	0	0	0	-	-
42 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
42 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
43 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
44	7.2	Historical Flood Events	0	0	0	-	-
44	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
46	7.6	Flood Zone 2	None (within 50m)				
46	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
47 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
49 >	9.1 >	Groundwater flooding >	Negligible (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
50	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
51	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
51	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	10.4	Special Protection Areas (SPA)	0	0	0	0	0
51	10.5	National Nature Reserves (NNR)	0	0	0	0	0
52	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
52 >	10.7 >	Designated Ancient Woodland >	0	0	0	3	20
53	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
53	10.10	Marine Conservation Zones	0	0	0	0	0
54 >	10.11 >	Green Belt >	0	0	1	0	0



54	10.12	Proposed Ramsar sites	0	0	0	0	0
54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
55 >	10.16 >	Nitrate Vulnerable Zones >	1	0	0	0	1
56 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
57	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
58	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
58	11.3	National Parks	0	0	0	-	-
58	11.4	Listed Buildings	0	0	0	-	-
59	11.5	Conservation Areas	0	0	0	-	-
59	11.6	Scheduled Ancient Monuments	0	0	0	-	-
59	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
60 >	12.1 >	Agricultural Land Classification >	Grade 3 (within 250m)				
61	12.2	Open Access Land	0	0	0	-	-
61 >	12.3 >	Tree Felling Licences >	0	0	3	-	-
61	12.4	Environmental Stewardship Schemes	0	0	0	-	-
61	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
63	13.1	Priority Habitat Inventory	0	0	0	-	-
63	13.2	Habitat Networks	0	0	0	-	-
63	13.3	Open Mosaic Habitat	0	0	0	-	-
63	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
64 >	14.1 >	10k Availability >	Identified (within 500m)				
65 >	14.2 >	Artificial and made ground (10k) >	0	1	2	6	-



67	14.3	Superficial geology (10k)	0	0	0	0	-
67	14.4	Landslip (10k)	0	0	0	0	-
68 >	14.5 >	Bedrock geology (10k) >	1	0	1	4	-
69 >	14.6 >	Bedrock faults and other linear features (10k) >	0	2	20	28	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
72 >	15.1 >	50k Availability >	Identified (within 500m)				
73 >	15.2 >	Artificial and made ground (50k) >	0	1	1	4	-
74 >	15.3 >	Artificial ground permeability (50k) >	0	1	-	-	-
75	15.4	Superficial geology (50k)	0	0	0	0	-
75	15.5	Superficial permeability (50k)	None (within 50m)				
75	15.6	Landslip (50k)	0	0	0	0	-
75	15.7	Landslip permeability (50k)	None (within 50m)				
76 >	15.8 >	Bedrock geology (50k) >	1	0	1	5	-
77 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
77 >	15.10 >	Bedrock faults and other linear features (50k) >	0	1	4	20	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
79 >	16.1 >	BGS Boreholes >	0	0	30	-	-
Page	Section	Natural ground subsidence >					
81 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
82 >	17.2 >	Running sands >	Very low (within 50m)				
84 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
86 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
87 >	17.5 >	Landslides >	Very low (within 50m)				
88 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
90 >	18.1 >	BritPits >	0	0	0	1	-
91 >	18.2 >	Surface ground workings >	0	1	3	-	-
91 >	18.3 >	Underground workings >	0	0	0	4	37
93	18.4	Underground mining extents	0	0	0	0	-



93	18.5	Historical Mineral Planning Areas	0	0	0	0	-
94 >	18.6 >	Non-coal mining >	1	2	4	4	3
96	18.7	JPB mining areas	None (within 0m)				
96	18.8	The Coal Authority non-coal mining	0	0	0	0	-
96	18.9	Researched mining	0	0	0	0	-
96	18.10	Mining record office plans	0	0	0	0	-
97	18.11	BGS mine plans	0	0	0	0	-
97 >	18.12 >	Coal mining >	Identified (within 0m)				
97	18.13	Brine areas	None (within 0m)				
97	18.14	Gypsum areas	None (within 0m)				
97	18.15	Tin mining	None (within 0m)				
98	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
99	19.1	Natural cavities	0	0	0	0	-
99	19.2	Mining cavities	0	0	0	0	0
99	19.3	Reported recent incidents	0	0	0	0	-
99	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
101 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
103 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	4	-	-	-
103	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
104	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
105	22.1	Underground railways (London)	0	0	0	-	-
105	22.2	Underground railways (Non-London)	0	0	0	-	-
105	22.3	Railway tunnels	0	0	0	-	-
105	22.4	Historical railway and tunnel features	0	0	0	-	-
105	22.5	Royal Mail tunnels	0	0	0	-	-



106	22.6	Historical railways	0	0	0	-	-
106	22.7	Railways	0	0	0	-	-
106	22.8	Crossrail 2	0	0	0	0	-
106	22.9	HS2	0	0	0	0	-

Recent aerial photograph



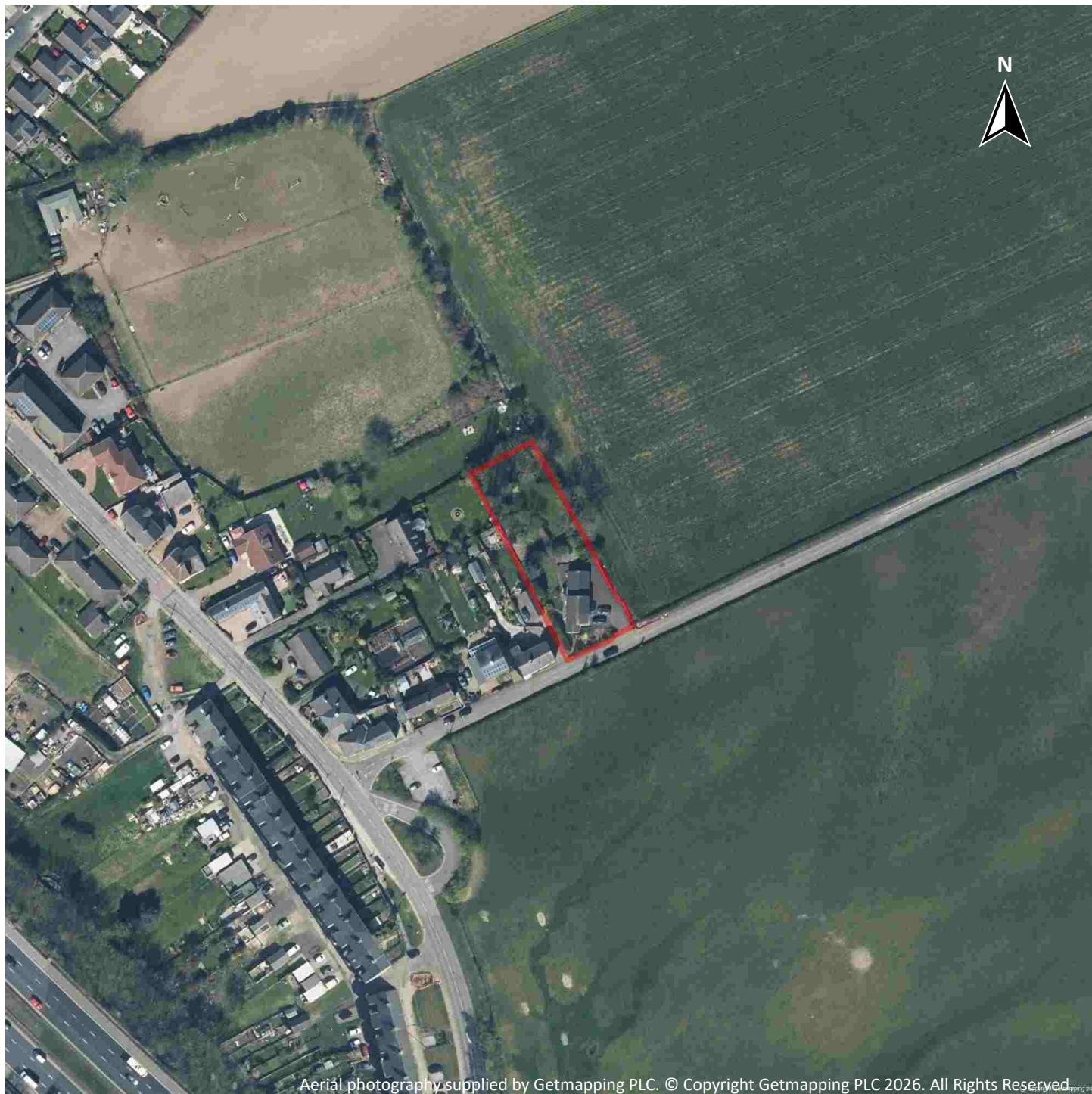
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Capture Date: 11/07/2025

Site Area: 0.18ha



Recent site history - 2021 aerial photograph



Capture Date: 19/04/2021

Site Area: 0.18ha



Recent site history - 2013 aerial photograph



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Capture Date: 07/06/2013

Site Area: 0.18ha

