



Shepherd Gilmour
Consulting Engineers

PHASE I GEOENVIRONMENTAL SITE ASSESSMENT

Land West of Magna Park
Cross in Hand
Rugby

Prepared for:

Nurton Developments (Lutterworth) Ltd.

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QUALITY ASSURANCE

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EXECUTIVE SUMMARY

Site Address	Land west of Magna Park, Cross in Hand	
Grid Reference	E450800 N283800	
Site Area	92 Ha	
Proposed Development	The client intends to redevelop the site for commercial end use.	
Current Site Use	The subject site is a large irregular shaped parcel of arable agricultural land, with several large fields divided by hedgerows and fences. An area of dense woodland is recorded in the northeast corner.	
Site History	The site has largely remained undeveloped land.	
Environmental Setting	Drift Geology	Glacial Till – Predominantly Cohesive.
	Bedrock Geology	Blue Lias Formation –Mudstone
	Faults	None recorded within 250m of the site.
	Hydrogeology	Glacial Till – Secondary Undifferentiated Aquifer Blue Lias Formation – Secondary A Aquifer There are not potable groundwater abstraction boreholes located within 2km m of the site.
	Hydrology	There are two watercourses recorded within or adjacent to the site boundary, within the southern parcel and the western boundary respectively. These watercourses converge to the southwest of the site.
	Flood Risk	Flood Risk Zone 1 and therefore unaffected by flooding from rivers.
Utility Locations	Service infrastructure may be present in Lutterworth Road and Coal Pit Lane, however services across the site are not anticipated.	
Landfill Sites and Ground Gases	A historic landfill is recorded at the western boundary of the site associated with an infilled railway cutting. The railway cutting was backfilled during the early 1970s following the line being decommissioned. No other licensed or historic landfill sites or waste treatment sites are located within 250 m of the site.	
Radon	No radon protection measures are required.	
Coal Mining / Land Stability	The site is not located within a ‘Development High Risk Area’ as designated by the Coal Authority. In the absence of any shallow recorded coal seams, probable workings or mine entries, the site is considered to be at low risk of land subsidence.	
Hazardous Installations	No hazardous installations that could potentially prejudice the proposed construction of low sensitivity commercial development have been identified within influencing distance of the subject site.	

CONTAMINATED LAND RISK ASSESSMENT

Human Health	<p>Given the undeveloped nature of the site, there are unlikely to be any significant sources of contamination present that would pose a significant risk to human health or prejudice the future commercial development at the site.</p> <p>However, local low-level impact associated with any Made Ground deposits cannot be entirely discounted. Furthermore, a historic landfill is located at the western boundary associated with an infilled railway cutting.</p> <p>Investigation is required to determine the levels of contamination, prior to developing remediation strategies, if necessary.</p>
Controlled Waters	<p>The Initial Conceptual Site Model has not identified any potentially significant on-site sources of mobile contamination or a viable receptor, as such the site is deemed to pose no unacceptable level of risk to controlled waters.</p>
Ground Gas	<p>The infilled railway cutting at the western boundary is a potential source of hazardous ground gases, however, the presence of cohesive soils underlying the site would serve to limit migration of ground gases from this source.</p> <p>Investigation and ground gas assessment will be required to determine if mitigation measures are required for the proposed structures.</p>
Potable Water Supply	<p>In the likely absence of any elevated concentration of hydrocarbons (and other contaminants of concern), standard PE pipe will likely be suitable for potable supply.</p> <p>A full UKWIR will be required to confirm.</p>

GEOTECHNICAL ASSESSMENT

The following potential geotechnical constraints have been identified at the site:

- The site has remained largely undeveloped agricultural land, and as such, the presence of site wide deep Made Ground is not anticipated. However, local areas of Made Ground cannot be discounted.
- In the absence of any structures, no relict foundations or buried sub-structures (which may require deep excavations) are considered likely.
- The site is not underlain by any recorded historic shallow mine workings, or instability issues which may pose a future subsidence risk.
- The underlying superficial geology comprises a predominantly cohesive soils and as such is not likely to offer the required degree of permeability to make soak-away drainage viable in this instance.
- The proposed commercial buildings will likely require shallow foundations based on the likely structural loads and anticipated depth of competent strata. Proposed development levels and the ground conditions will however dictate this.

RECOMMENDATIONS

A detailed Phase II intrusive Geoenvironmental Ground Investigation should be undertaken in order to confirm the findings of the initial conceptual site model and value engineer a development solution.

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DRAWING LIST

17-235-001	Site Location Plan
17-235-002	Existing Site Plan
C1602-101	North Site Constraints Plan

1. INTRODUCTION

1.1. BACKGROUND

The Client Nurton Developments (Lutterworth) Ltd. has commissioned SGI Consulting Engineers Ltd to undertake a detailed Phase I Geo environmental Site Assessment of a parcel of land West of Magna Park herein referred to as the site.

This report is required to determine potential contaminated land liabilities and geotechnical constraints as part of a proposed commercial development.

1.2. PROPOSED DEVELOPMENT

The client intends to redevelop the site for commercial end use, however a development layout has not been provided at this stage.

The Site Boundary & Constraints Plan is presented in Figure 1.1 below and Appendix III.



The Existing Site Plan is presented in Drawing No. 17-235-002 in Appendix III.

1.3. OBJECTIVES

The objectives of the geoenvironmental investigation are as follows:

- Review historical plans, geology, hydrogeology, site sensitivity, floodplain issues, mining records and any local authority information available in order to complete a desk study in line with Environment Agency (EA) document Land Contamination: Risk Management (LC:RM) (2019).
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the Site in relation to the future use of the Site and in relation to off-site receptors.
- Assess the desk-study information and, where possible, provide preliminary recommendations in relation to foundations, pavement construction and floor slabs.
- Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

1.4. SOURCES OF INFORMATION

Background information was sought from the following sources:

- Groundsure Search (Ref: GS-T8D-M73-6ZK-KM3)
- Historical mapping dated 1880s to 2023. A selection of historical maps are reproduced in Appendix V;
- On-line planning records held by Rugby Borough Council;
- Consultations with representatives of Rugby Borough Council;
- Magic Map Groundwater Vulnerability Map;
- Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007);
- British Geological Survey Map;
- Groundsure IO database;
- <https://zeticauxo.com/downloads-and-resources/risk-maps/>; and,
- <https://flood-map-for-planning.service.gov.uk>.

1.5. LIMITATIONS

The limitations of this report are presented in Appendix I.

1.6. CONFIDENTIALITY

SGi has prepared this report solely for the use of the client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from SGi; a charge may be levied against such approval.

1.7. RISK CLASSIFICATION

SGi has utilised the available data to classify the Site on the basis of its likely contaminated land liability and potential for geotechnical constraints in relation to the site development. The risk classification definitions are summarised in Table 1.1.

TABLE 1.1 RISK CLASSIFICATION

RISK	DEFINITION
Low	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property.
Low Moderate	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property with regard to the proposed use. However, minor issues may require further consideration in the event of future redevelopment of the Site.
Moderate	Some potential contaminated land liabilities/geotechnical constraints are likely to affect the property as a result of historical and/or current activities. The risks identified are unlikely to pose an immediate significant issue but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the Site will likely require further site investigation.
Moderate High	Some potentially significant contaminated land liabilities/geotechnical constraints have been identified at the property that requires further assessment, including intrusive ground investigations.
High	Significant potential contaminated land liabilities/geotechnical constraints have been identified at the property. Further assessment including intrusive ground investigation will be required to determine the level of risk and associated liability.

1.8. PREVIOUS REPORTS

SGi has not been provided with any previous reports for the application site.

2. SITE SETTING

2.1. SITE DETAILS

Site Address	Land West of Magna Park, Rugby,
National Grid Reference	E450800 N283800
What3Words	global.clinking.retract
Site Area	92 Ha

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 17-235-001.

2.2. CURRENT SITE USE

SGi completed a site walkover survey and a summary is presented in Table 2.1 below.

TABLE 2.1 SITE DESCRIPTION

Occupancy / Use	The subject site is a large irregular shaped parcel of vacant agricultural land, with several large fields divided by hedgerows and fences. An area of dense woodland is recorded in the northeast corner.	
Surface Cover (%)	Buildings	Nil
	Hardstand	Nil
	Soft Cover	100%
Structures	There are no structures within the site boundary.	
Access	Primary access is from Lutterworth Road to the east and south.	
Slope	The Site gradient undulates gently but is largely flat in overall topography.	
Retaining Structures	No retaining structures were noted during the site walkover.	
Vegetation / Ecology	Mature trees are present in the northeast corner, western boundary and sporadically along field boundaries.	
Hazardous Material Storage	No hazardous materials are stored within the site boundary.	
Asbestos-Containing Material (ACM)	In the absence of any historical development, the presence of ACM within the underlying Made Ground is not anticipated, though cannot be discounted.	
Polychlorinated Biphenyls (PCBs)	No electrical substations (which may contains PCBs) are present on site.	
PFAS/PFOA	No sources of PFAS/PFOA are present within the site boundary.	
Waste Storage	No potentially hazardous waste streams are generated at the Site.	
Drainage	A formal drainage survey has not been completed; however, in the absence of any historic development, site wide drainage is not anticipated.	

2.3. SURROUNDING AREA

The surrounding area land uses are summarised in Table 2.2.

TABLE 2.2 SURROUNDING LAND USES

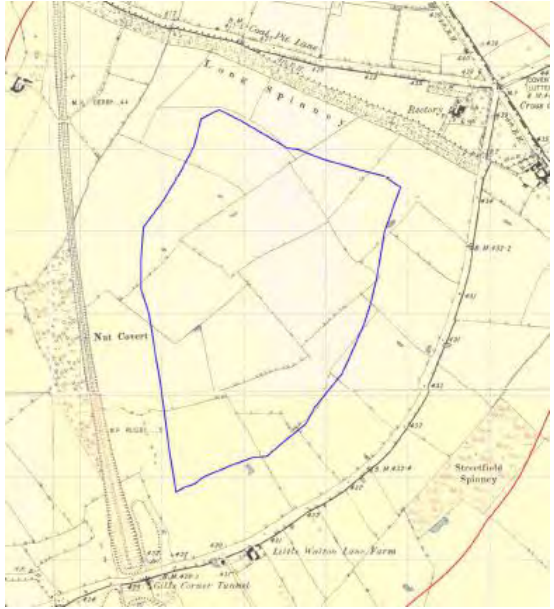

DIRECTION	LAND USE
North	Coal Pit Lane & Agricultural Land.
East	Lutterworth Road & Agricultural Land.
South	Lutterworth Road & Agricultural Land.
West	Agricultural Land.




3. SITE HISTORY

3.1. ON-SITE HISTORICAL DEVELOPMENT

A review of historical mapping and historical aerial imagery pertinent to the Site is summarised in Table 3.1. In addition, historical site features are presented in Drawing No 17-235-003 in Appendix III.

TABLE 3.1 HISTORICAL DEVELOPMENT

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
<p>1886 1:10,560</p>	<p>The site is recorded as undeveloped agricultural land divided with several field boundaries.</p> <p>Ten ponds are situated across the site.</p> <p>An embankment / heap is located on the southwestern corner of the site, likely arising from the railway cutting.</p> <p>A railway and cutting works are located along the western site boundary.</p> <p>A path follows the northern site boundary through woodland.</p>	
<p>1904/5 1:10,560</p>	<p>No significant changes recorded.</p>	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
<p>1954 1:10,560</p>	<p>A drain is recorded in the southwestern sector of the site with the direction of flow going west towards the railway cutting.</p> <p>No other significant changes recorded.</p>	
<p>1968 1:10,560</p>	<p>No significant changes recorded</p>	
<p>2001 1:10,000</p>	<p>The railway has been decommissioned and infilled. The mound in the southwest corner is likely to have been used for infilling, though this cannot be confirmed.</p> <p>Some of the site ponds appear to have been infilled.</p> <p>No other significant changes recorded.</p>	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
<p>2023 1:10,000</p>	<p>No significant changes recorded</p>	

3.2. OFF-SITE HISTORICAL DEVELOPMENT

A review of potentially contaminative uses identified on historical Ordnance Survey maps within 250m of the site summarised in Table 3.2 below.

TABLE 3.2 SURROUNDING HISTORICAL DEVELOPMENT

SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
<p>Railway Then: Landfilled</p>	<p>Boundary</p>	<p>Pre 1893–Pre 1978 Pre 1978 – Present</p>	<p>West</p>
<p>Sewage Works Then: Disused</p>	<p>20m</p>	<p>Pre 1978–Pre 2010 Pre 2010–Present</p>	<p>Southwest</p>
<p>Airfield Then: Industrial Estate</p>	<p>200m</p>	<p>Pre 1950–Pre 1992 Pre 1992–Present</p>	<p>Northeast</p>

3.3. PLANNING HISTORY

SGi has undertaken a review of online planning records held by Rugby Borough Council and no environmentally pertinent information was recorded.

3.4. ANECDOTAL INFORMATION

No anecdotal geotechnical or environmentally pertinent information was identified following a web-based search of the area.

4. ENVIRONMENTAL SETTING

4.1. GEOLOGY AND HYDROGEOLOGY

The British Geological Survey (BGS) map (Sheet 85) for the Site, (1:50,000, Solid and Drift editions) and online records indicate the Site is underlain by the geological sequence presented in Table 4.1.

TABLE 4.1 SUMMARY OF UNDERLYING GEOLOGY

GEOLOGICAL UNIT	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Drift	Glacial Till	Diamicton (likely cohesive)	Secondary Undifferentiated
Solid	Blue Lias Formation	MUDSTONE	Secondary A Aquifer

Made Ground deposits are recorded along the western boundary, likely associated with groundworks to excavate and subsequently backfill the railway cutting.

SGi has reviewed the BGS database, whilst no historic boreholes are recorded within the site boundary, a series of boreholes within 250m of the site have been reviewed, from which to compare the published geology above. A selection of these exploratory hole records are summarised in Table 4.2 below.

TABLE 4.2 SUMMARY OF BGS BOREHOLE RECORDS

LOCATION	DEPTH	MADE GROUND	TOPSOIL	DRIFT	BEDROCK
80m Northeast (Ref: SP58SW184)	8.65m	0.30 – 0.70m	GL – 0.30m	Clay 0.70 – 8.65m	N/A
230m Northeast (Ref: SP58SW185)	12.65m	GL – 0.25m	N/A	Clay 0.25 – 6.00m Gravel 6.00 – 6.50m Clay 6.50 - 12.65m	N/A
250m Northeast (Ref: SP58SW76)	17.00	N/A	GL – 0.20m	Clay 0.20 – 0.90m Sand 0.90 – 1.60m Clay 1.60 – 7.35 Silt 7.35 – 9.30 Clay 9.30 – 17.00m	N/A

There are no recorded geological faults within 500m of the site boundary.

The Environmental Agency (EA) indicates the study site is not located within a Groundwater Source Protection Zone.

There are no active surface water abstraction points or groundwater abstraction boreholes recorded within 2000m of the site.

4.2. GEOTECHNICAL DATA

Geotechnical data presented within a commercially available environmental database is summarised in Table 4.3.

TABLE 4.3 SUMMARY OF GEOTECHNICAL DATA

HAZARD	DESIGNATION (within 50m)
Shrink-Swell Clay	Low Risk
Landslides	Very Low Risk
Ground Dissolution	Negligible Risk
Compressible Ground	Negligible Risk
Collapsible Deposits	Very Low Risk
Running Sand	Very Low Risk
Natural and Anthropogenic Cavities	None recorded within 250m of the site.

4.3. COAL MINING

The site is not located within a Coal Authority defined 'Development High Risk Area' and the Groundsure report states the site is in an area which may not be affected by coal mining activity. For the avoidance of doubt, SGI have obtained a CON29 Mining Report (Ref: 51003387038001) which confirmed the below:

- The property is not within a surface area that could be affected by any past recorded underground coal mining.
- The property is not within a surface area that could be affected by present underground mining.
- There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.
- The property is not in an area likely to be affected from any planned future underground coal mining.
- The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.
- The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.
- The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.
- 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 31 October 1994.
- The Coal Authority has no record of a mine gas emission requiring action.
- The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

Therefore, SGI do not believe any further assessment is required at this stage.

4.4. RADON RISK POTENTIAL

The Groundsure report indicates the site is predominantly situated in an area where <1% of properties are above the “Action Level”.

The western boundary indicates 1-3% of properties are above the action level and that the BGS reports that basic radon protective measures are not required in the construction of new structures.

4.5. HYDROLOGY

A stream is located in the southern portion of the site, flowing southwest. A further stream is located at the northwestern boundary of the site flowing south, which converges with the aforementioned site stream.

The site is located within a currently defined “Flood Risk Zone 1”; defined as land assessed as having less than 1 in 1,000 annual probability of river or sea flooding (< 0.1%), and as such is considered to be unaffected by river flooding.

In addition, the Groundsure report states there is a low potential for groundwater flooding to occur at the site.

The Environment Agency (EA) Flood Risk Map for the Site is presented in Figure 4.1 below.



Source - <https://flood-map-for-planning.service.gov.uk/>

4.6. SOIL CHEMISTRY

The UK Soil Observatory Map Viewer datasets detail the topsoil concentrations of five potentially harmful elements (PHEs): Arsenic (As), Cadmium (Cd), Chromium (Cr), Nickel (Ni) and Lead (Pb). Elevated concentrations of these PHEs can exist because of natural geological conditions or possible anthropogenic sources.

The following estimated soil chemistry levels (detailed in Table 4.4 below) are attributed to the site:

TABLE 4.4 ESTIMATED SOIL CHEMISTRY

POTENTIALLY HARMFUL ELEMENT	ESTIMATED GEOMETRIC MEAN CONCENTRATION RANGE WITHIN THE SITE BOUNDARY (mg/kg)
Arsenic	~15
Cadmium	<1.8
Chromium	60 – 90
Lead	~100
Nickel	15 – 30

A comparison of these estimated concentrations with relevant Tier I values would indicate that these heavy metal compounds would not pose a development constraint.

However, actual concentrations within any local Made Ground deposits will need to be confirmed through ground investigation.

4.7. INDUSTRIAL LAND USES

A telephone mast is recorded in the northeast corner of the site. No other industrial land uses are recorded within 100m of the site boundary.

A 900mm high pressure gas pipeline is located within the central portion of the site, traversing the site in a southeast to northwest orientation and a no-build easement will apply to this infrastructure.

There are no sites determined as Part 2a (Contaminated Land) within 500m of the site.

4.8. SENSITIVE LAND USES

A woodland is located in the northeastern corner of the site.

No environmentally sensitive land uses have been identified within close proximity to the Site.

4.9. SITE SENSITIVITY ASSESSMENT

The Site is assessed to be located within a “Low” sensitivity setting as discussed within Table 4.5.

TABLE 4.5 SITE SENSITIVITY ASSESSMENT

SENSITIVITY PROFILE	DISCUSSION	RATING
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	The Site is not located within a: <ul style="list-style-type: none"> ▪ Groundwater Source Protection Zone; or ▪ Drinking Water Safeguard Zone. 	Low
Distance to the Closest Groundwater Abstraction Point	There are no potable groundwater abstractions within 2000m of the site.	Low
Aquifer Classification in Superficial Drift Deposits	Secondary Undifferentiated Aquifer	Low
Aquifer Classification in Bedrock	The bedrock aquifer within the Blue Lias Formation is a Secondary A Aquifer and not considered a sensitive receptor. Furthermore, the overall sensitivity is reduced due to the absence of any potable water supply boreholes within 2000m of the site.	Low
Is the Site Underlain by Low-Permeability Drift to Depths in Excess of 10 m?	The underlying superficial deposits are likely to comprise impermeable cohesive soils and will therefore limit the potential for downward migration of any mobile contaminants.	Low
Is the Site Located Within 50 m of a Surface Watercourse?	There are two surface watercourses within influencing distance of the site.	Moderate
Sensitive Land Uses	An area of dense woodland is located in the northeast corner of the site. No other sensitive land uses are identified within 50m of the site boundary.	Low
OVERALL SITE ENVIRONMENTAL SENSITIVITY		Low

4.10. PRELIMINARY GEOTECHNICAL ASSESSMENT

SGi has completed an assessment of potential geotechnical constraints based on the available desk-study information within the context of the proposed residential/commercial development.

This assessment is summarised in Table 4.6 below.

TABLE 4.6 SUMMARY OF POTENTIAL GEOTECHNICAL CONSTRAINTS

POTENTIAL ABNORMAL CONSTRAINT	LOCATION ON SITE	ESTIMATED AREA OF SITE AT RISK (%)	ASSESSMENT AND MITIGATION
Remediation of Contaminated Soils	Site	TBC	No significant sources of contamination have been identified. Investigation is required to determine the presence of any local Made Ground and any levels of contamination, prior to developing remediation strategies, if necessary.
Steep Slope to Adjacent Site	N/A	N/A	The wider landform is largely flat although undulates naturally. No significant slopes are noted in the surrounding areas.
Obstructions	N/A	N/A	In the absence of any historic development, the presence of obstructions is not anticipated.
Artificially Levelled and Filled Platforms	N/A	N/A	The site is not likely to have been levelled, however local areas may have been infilled historically.
Infilled Pond / Hedges	Site	Nominal	Some small ponds appear to have been infilled.
Mature Trees	Site	TBC	Mature trees are present in the northeast corner, western boundary and sporadically along field boundaries. An Arboriculture Survey is required to determine areas of potential tree influence.
Volume Change Potential Clay	All	100	Heave precautions likely to be needed at the site within areas of shallow cohesive soils. The full extent of precautions will only be determined after site investigation.
Running Sands	N/A	N/A	Data searches indicate Very Low Risk.
Ground Dissolution	N/A	N/A	Data searches indicate Negligible Risk.
Shallow Bedrock	N/A	N/A	The presence of shallow bedrock is not anticipated.
Peat	TBC	-	Not anticipated.
Low-Permeability Ground	TBC	-	Soakaways unlikely to be effective in areas where low permeability cohesive deposits are present.
Services/Sensitive Structures	N/A	N/A	No services / sensitive structures anticipated.
Abnormal Foundation Solutions	N/A	N/A	A deeper foundation solution is not anticipated.

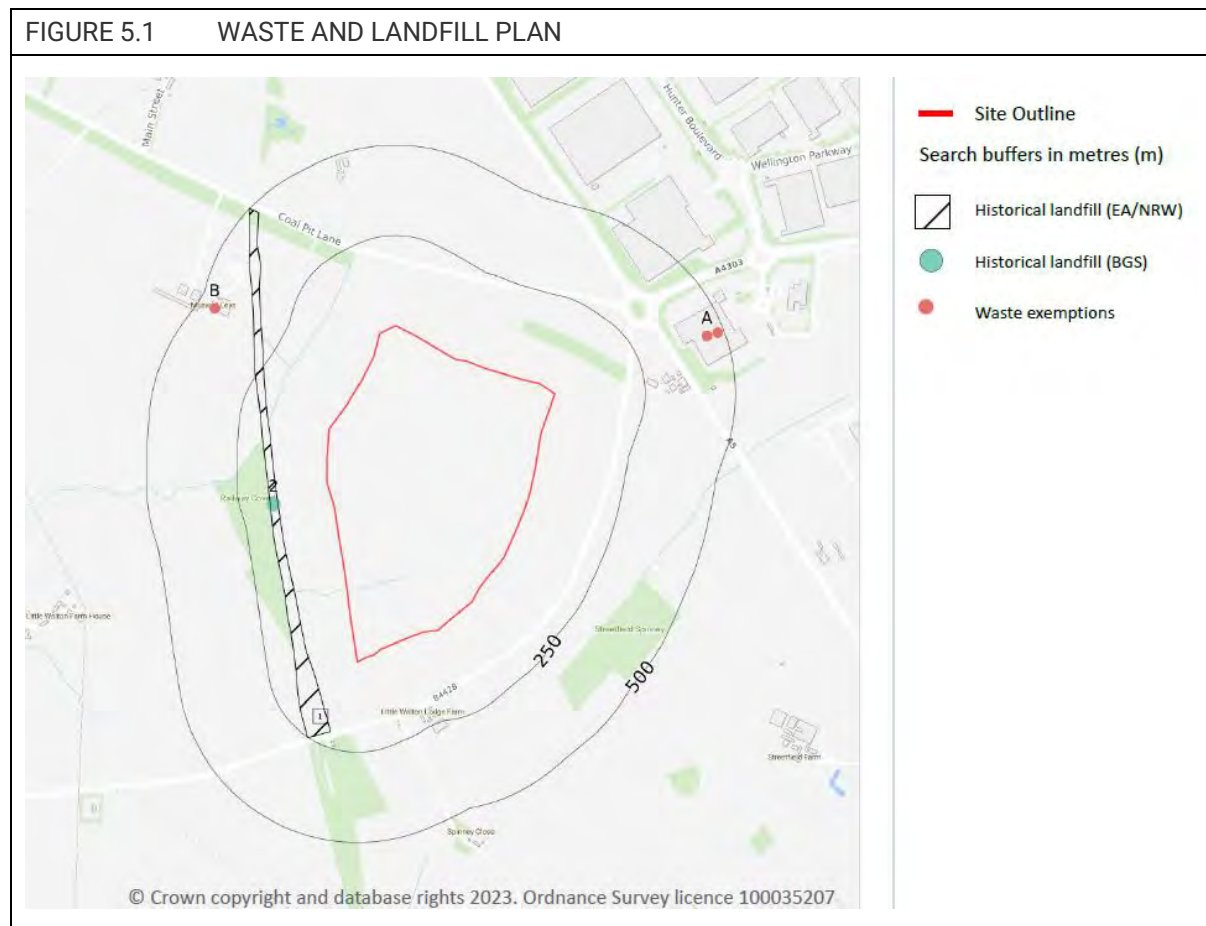
5. REGULATORY DATA

5.1. LANDFILL SITES AND WASTE TREATMENT SITES

A historic landfill is recorded at the western boundary of the site associated with an infilled railway cutting. A historic mound of spoil was located in the southwest of the site and is believed to have been arising from the original excavation for the cutting during construction of the railway infrastructure. This stockpile of material was likely used to backfill the railway after the line was decommissioned.

Environment Agency records indicate this cutting was infilled between c. 1970 and 1972.

The location of the landfill is presented in Figure 5.1 below.



Source - <https://flood-map-for-planning.service.gov.uk/>

No other licensed or historic landfill sites or waste treatment sites are located within 250 m of the site.

5.2. REGULATORY DATABASE

The information summarised in Table 5.1 has been obtained from a commercially available environmental database. The summary table only includes records from within 250 m of the subject site and are not otherwise detailed in the report.

TABLE 5.1 SUMMARY OF ENVIRONMENTAL DATA

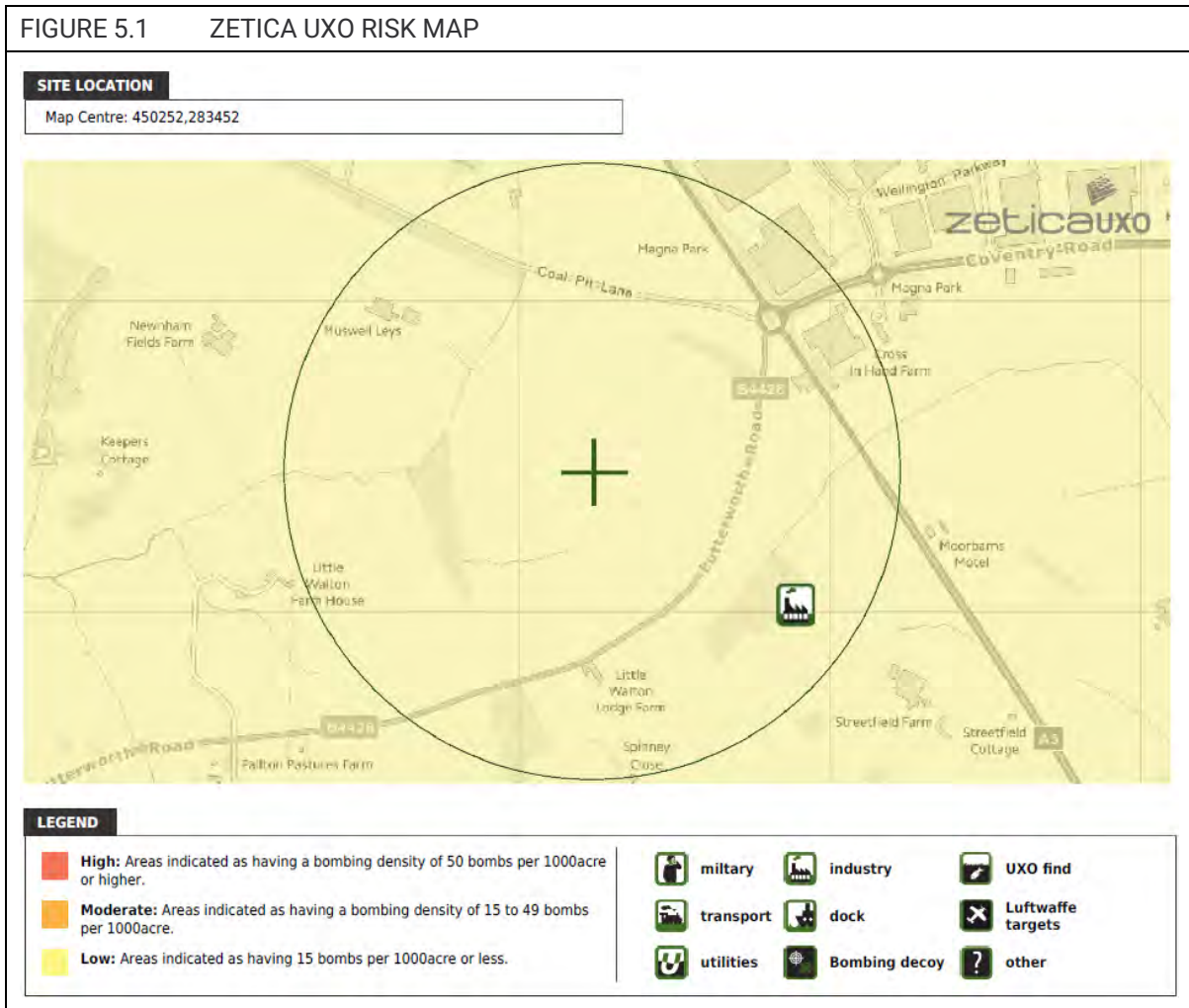
RECORD	ENTRIES WITHIN 250 m	DETAILS
Contaminated Land Register Entries and Notices	0	None Identified.
Authorised Industrial Processes (IPC/IPPC/LAPPC)	0	None Identified.
Fuel Stations Entries	0	None Identified.
Licensed Radioactive Substances	0	None Identified.
Enforcements, Prohibitions or Prosecutions	0	None Identified.
Discharge Consents	0	None Identified.
Pollution Incidents	0	None Identified.
Consents Issued Under the Planning (Hazardous Substances) Act 1990	0	None Identified.
Control of Major Accident Hazard (COMAH) Sites	0	None Identified.
Regulated Explosive Sites	0	None Identified.

5.3. EXPLODED ORDNANCE

The regional unexploded bomb risk map from Zetica (2014) indicates that the Site is in an area of Leicestershire at low risk from possible unexploded ordnance (UXO) resulting from the Second World War.

The Zetica UXO Risk Map is presented as Figure 5.1.

FIGURE 5.1 ZETICA UXO RISK MAP



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

No further assessment with respect to UXO is considered necessary at this time.

6. INITIAL CONCEPTUAL SITE MODEL

In accordance with EA LCRM (2019) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), SGI has developed an initial conceptual site model (CSM) to identify potential contamination sources, migration pathways and receptors within the study area.

This is summarised within Table 6.1.

ON-SITE SOURCES OF CONTAMINATION

The site was historically open farmland, separated by field boundaries. Drainage ditches and access tracks are present, however no structures are recorded throughout its mapped history.

The historic activity at the western boundary to excavate a railway cutting (later backfilled) may have resulted in some ground disturbance and Made Ground in this locality.

Furthermore, there may be local infilled ponds which contain anthropogenic materials. The Made Ground may contain low-level concentrations of asbestos, heavy metals, hydrocarbons, PAHs. However, site-wide contamination is not anticipated.

OFF-SITE SOURCES OF CONTAMINATION

The site is bound by agricultural land in all directions.

No potentially significant off-site sources have been identified and therefore, the potential for off-site contamination is considered to be very low.

6.1. CONCEPTUAL SITE MODEL

Following the completion of the intrusive site investigation, chemical analysis and risk assessment, the conceptual model shown in Table 6.1 has been prepared for the Site.

TABLE 6.1 CONCEPTUAL MODEL

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL1	Heavy Metals, Non-volatile PAH, TPHs (Made Ground)	Dermal contact. Dermal contact and ingestion.	Future site users. Off-site receptors.	Unlikely	Low	Low
<p>Discussion: No significant sources of heavy metals, non-volatile PAH and TPH compounds have been identified, however the presence of low-level exceedances within local areas of Made Ground (such as infilled ponds or at the western boundary) cannot be entirely discounted, as such, there is considered to be a very low risk to human health.</p> <p>Recommendation: If impacted soils are present, localised remediation may be required, however, any low-level impact will likely be capped by hardstand or a cover system in soft landscaped areas thereby removing the exposure pathway be removed.</p>						
PL2	ACM in Made Ground	Inhalation of dust.	Future site users. Buildings. Off-site land users.	Unlikely	Low	Low
<p>Assessment: The potential for ACM within the underlying Made Ground is unlikely but cannot be discounted.</p> <p>Dust associated with any Made Ground underlying the site may potentially contain ACMs which could be released during future earthworks and then subsequently inhaled by construction workers, third party property and future end users within landscaped areas.</p>						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
<p>Recommendation: An intrusive site investigation and laboratory analysis are required to determine the presence and quantification of any asbestos in the soils.</p> <p>The risks associated with potential asbestos and ACM within Made Ground can be mitigated through the development of a detailed enabling works strategy following guidance and protocol specified within the <i>Control of Asbestos Regulations (2012)</i> and industry best practice as detailed in <i>CIRIA733 (Asbestos in Soil and Made Ground: A guide to understanding risk)</i>. Construction works completed with PPE and provision of suitable welfare.</p>						
<p>PL3</p>	<p>Methane, carbon dioxide (Made Ground)</p>	<p>Inhalation of gas.</p> <p>Migration through permeable strata and preferential pathways.</p> <p>Explosion in confined spaces.</p>	<p>Future site users.</p> <p>Buildings.</p> <p>Off-site land users.</p>	<p>Unlikely</p>	<p>Low</p>	<p>Low</p>
<p>Assessment: No significant sources of hazardous ground gases have been identified at the site. Made Ground is a potential low-level source, however these features are not likely to generate significant volumes of ground gas which may pose a risk to human health. The infilled railway cutting at the western boundary is a potential source of hazardous ground gases, however the potential for gases to migrate laterally onto the site is limited by the likely presence of cohesive soils.</p> <p>Carbon dioxide and methane have associated asphyxiation and explosive risks, respectively. Should the underlying Made Ground soils be actively gassing the risk to construction workers can be mitigated through appropriate management of confined space entry, whereas the risk to future end users can be mitigated through the adoption of appropriate gas protection measures in accordance with BS8485 (<i>Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (2015+A1:2019)</i>)</p> <p>Recommendation: Should a ground gas risk be identified to end users, the risks can be mitigated through the adoption of suitable control measures within the building construction using guidance presented within BS8485 (<i>Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments</i>).</p>						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL4	Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds (Made Ground)	Surface runoff. Migration through permeable strata and preferential pathways. Perched waters migration.	Groundwater Ponds (Campbell Park)	Unlikely	Low	Low
<p>Assessment: The presence of significant soluble phase contaminants within the soils is not anticipated, however, the presence of low-level local hydrocarbon impact to shallow soils associated with local Made Ground cannot be entirely discounted.</p> <p>The Blue Lias is a Secondary A Aquifer and is therefore not considered a critical receptor, furthermore, in the absence of any potable groundwater abstraction boreholes within influencing distance, the overall sensitivity of this receptor is further reduced.</p> <p>Surface watercourses are present both within and adjacent to the site boundary, however the likely absence of any gross site-wide impact to the soils would negate any impact to this receptor. In light of the above, the site is considered to pose a very low risk to controlled waters.</p> <p>Recommendation: Groundwater sampling is required to inform the controlled waters risk assessment.</p>						
PL5	Sulphate (potential ash within Made Ground)	Sulphate attack on concrete.	Building structure.	Unlikely	Low	Low
<p>Assessment: The presence of low pH and high sulphate within any Made Ground deposits may result in corrosion of buried concrete within the proposed development. Assessment must be undertaken to confirm the levels of pH and sulphate within Made Ground deposits and thus determine the concrete classification.</p> <p>Recommendation: An intrusive investigation and chemical analysis is required.</p>						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL6	Organic contaminants such as hydrocarbons, solvents (Made Ground)	Ingestion of tainted water supply.	Future site users. Water pipes.	Unlikely	Low	Low
<p>Assessment: In the likely absence of any significant contaminants within the soils, the use of standard barrier pipe is anticipated.</p> <p>Recommendation: An intrusive investigation is required to inform a UKWIR risk assessment and confirm requirements for the proposed water supply.</p>						
PL7	Phytotoxic contaminants (Made Ground)	Direct Contact (Plant uptake).	Flora	Low Likelihood	Low	Low
<p>Discussion: Although the likelihood is low, contamination may be present within shallow Made Ground which may be taken up by flora in any soft landscaping areas.</p> <p>Recommendation: Intrusive investigation to determine risk on a site wide basis. If identified, a cover system may be required within any future proposed landscaped areas.</p>						

Main exposure pathways:

PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation; PL5 = Vertical / Lateral Migration; PL6 = Corrosion of concrete; PL7=Tainting of water supply; PL8 = Uptake by plants.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. CONTAMINATED LAND ASSESSMENT

Human Health	<p>Given the undeveloped nature of the site, there are unlikely to be any significant sources of contamination present that would pose a significant risk to human health or prejudice the future industrial/employment development at the site.</p> <p>However, local low-level impact associated with any Made Ground deposits cannot be entirely discounted. Investigation is required to determine the levels of contamination, prior to developing remediation strategies, if necessary.</p>
Controlled Waters	<p>The Initial Conceptual Site Model has not identified any potentially significant on-site sources of mobile contamination or a viable receptor, as such the site is deemed to pose no unacceptable level of risk to controlled waters.</p> <p>However, the infilled railway cutting at the western boundary is a potential source of leachable contaminants which may impact shallow groundwater in the locality.</p>
Ground Gas	<p>The infilled railway cutting at the western boundary is a potential source of hazardous ground gases, however, the presence of cohesive soils underlying the site would serve to limit migration of ground gases from this source.</p> <p>Investigation and ground gas assessment will be required to determine if mitigation measures are required for the proposed structures.</p>
Potable Water	<p>In the likely absence of any elevated concentration of hydrocarbons (and other contaminants of concern), standard PE pipe will likely be suitable for potable supply. A full UKWIR will be required to confirm.</p>

7.2. COAL MINING

Coal Mining	<p>The site is not located within a 'Development High Risk Area'. Therefore, in the absence of any recorded shallow coal seams, probable workings or mine entries, the site is considered to be at low risk of land subsidence.</p>
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7.3. GEOTECHNICAL ASSESSMENT

Geological	<p>No significant geological constraints are anticipated.</p>
Civil and Structural	<p>No significant civil or structural restraints are anticipated.</p>
Abnormal Foundations	<p>Shallow foundations will likely be suitable for the proposed development. Further site investigation will be required to confirm this.</p>

END OF REPORT

APPENDIX I LIMITATIONS

Land West of Lutterworth Road, Rugby

Phase I Geoenvironmental Site Assessment

November 2023

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between SGI and the client as indicated in Section 1.3.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the Site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the Site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the Site limited the locations where sampling locations could be installed and the techniques that could be used.
6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and do not constitute or replace full and proper surveys.
8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
9. SGI cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by SGI is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by SGI in this connection without their explicit written agreement there to by SGI.
10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II

GLOSSARY

TERMS

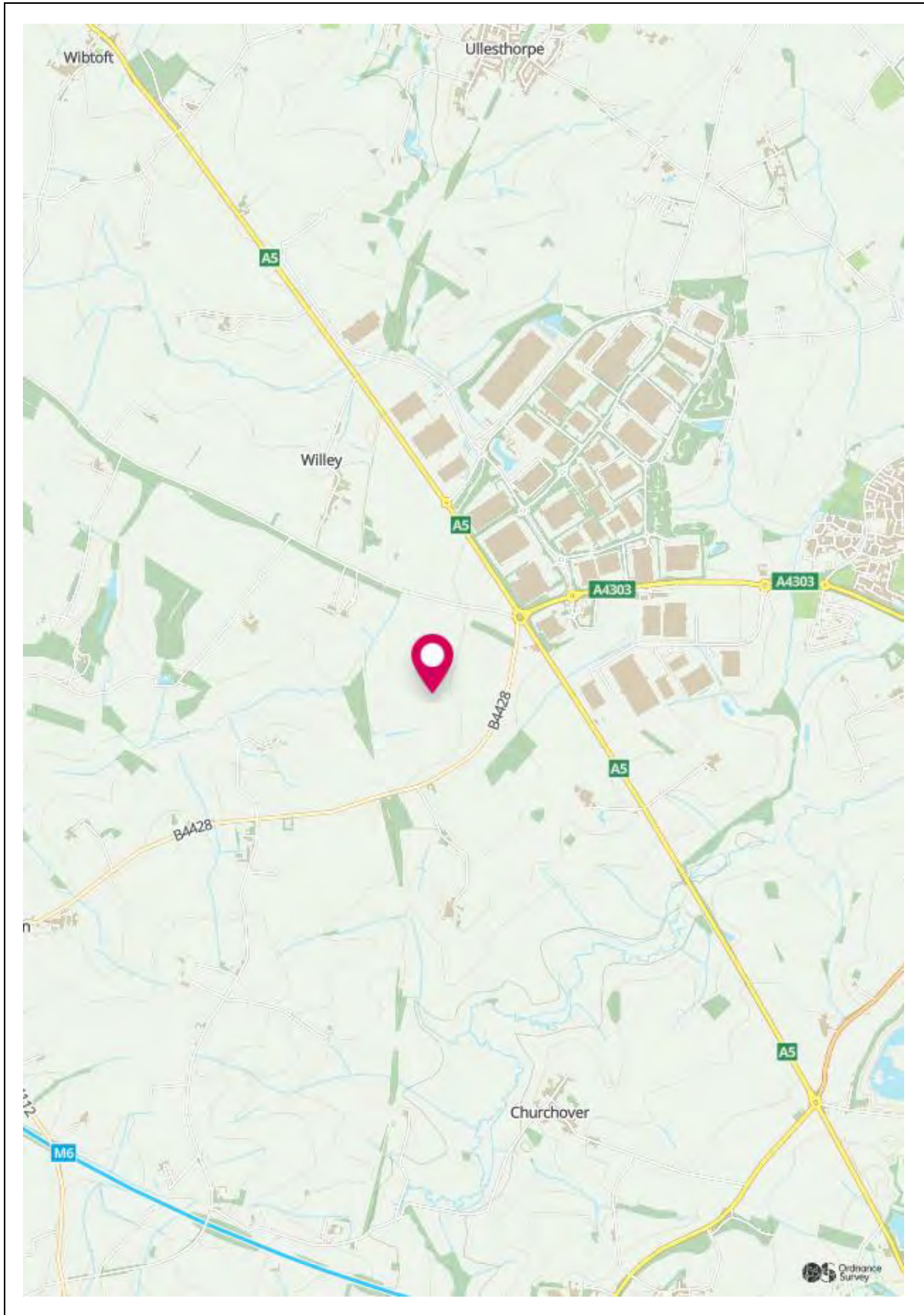
ACM	Asbestos-containing material	MMP	Materials management plan
ADS	Acoustic design statement	ND	Not detected
AST	Above-ground storage tank	NDP	Nuclear density probe
BGS	British Geological Survey	NMP	Noise management plan
BSI	British Standards Institute	NPSE	Noise policy statement for England
BTEX	Benzene, toluene, ethylbenzene, xylenes	NR	Not recorded
CA	Coal Authority	PAH	Polycyclic aromatic hydrocarbon
CBR	California bearing ratio	PCB	Polychlorinated biphenyl
CIEH	Chartered Institute of Environmental Health	PI	Plasticity index
CIRIA	Construction Industry Research Association	PID	Photo ionisation detector
CLEA	Contaminated land exposure assessment	POS	Public open space
CML	Council of Mortgage Lenders	PPE	Personnel protective equipment
CoC	Contaminants of concern	ProPG	Professional practice guidance
CSM	Conceptual site model	QA	Quality assurance
DNAPL	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	SGV	Soil guideline value
DWS	Drinking water standard	SPH	Separate-phase hydrocarbon
EA	Environment Agency	SPT	Standard penetration test
EQS	Environmental quality standard	SVOC	Semi-volatile organic compound
FFL	Finished floor level	TPH	Total and speciated petroleum hydrocarbon
GAC	General assessment criteria	TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group)
GL	Ground level	UKWIR	United Kingdom Water Infrastructure Risk
GSV	Gas screening value	UST	Underground storage tank
HCV	Health criteria value	VCC	Vibro-concrete column

Land West of Lutterworth Road, Rugby
Phase I Geoenvironmental Site Assessment
November 2023

ICSM	Initial conceptual site model	VOC	Volatile organic compound
LEL	Lower explosive limit	VRSC	Vibro-replacement stone columns
LMRL	Lower method reporting limit	VSC	Vibro-stone columns
LNAPL	Light non-aqueous phase liquid (petrol, diesel, kerosene)	WHO	World Health Organisation
MCV	Moisture condition value	WRAP	Waste and Resources Action Programme
MIBK	Methyl isobutyl ketone	WTE	Water table elevation
m	Metres	ppm	Parts per million
km	Kilometres	mg/m³	Milligram per metre cubed
% v/v	Percent volume in air	m bgl	Metres below ground level
mb	Millibars (atmospheric pressure)	m bcl	Metre below cover level
l/hr	Litres per hour	mAOD	Metres above ordnance datum (sea level)
µg/l	Micrograms per litre (parts per billion)	kN/m²	Kilonewtons per metre squared
ppb	Parts per billion	µm	Micrometre
mg/kg	Milligrams per kilogram (parts per million)	SSRT	Site Specific Remediation Target
PSD	Particle Size Distribution	DD	Dry Density
CL:AIRE	Contaminated Land: Applications in Real Environments	Mc	Moisture Content
ρ	Bulk Density	GPR	Ground Penetrating Radar
NDP	Nuclear Density Probe	FFL	Finished Floor Level
LEL	Lower Explosive Limit	UKWIR	UK Water Industry Research
CIRIA	Construction Industry Research and Information Association	LOD	Limit of Detection

APPENDIX III DRAWINGS

DRAWING 17-235-001 – SITE LOCATION PLAN



DRAWING 17-235-002 – EXISTING SITE PLAN





Site Location
 Lutterworth Road,
 Willey,
 Rugby
 CV23 0SL



KEY

- INNER EXPLOSION ZONE FROM HSE PLANNING ADVICE WEB APP
- OUTER EXPLOSION ZONE FROM HSE PLANNING ADVICE WEB APP
- EXISTING DENSE WOODLAND
- EXISTING WATERCOURSES
- CONJECTURED 8m GREEN ZONES
- NATIONAL GRID GAS PIPE ASSET NO. 718_1451
- EXTENT OF SURVEY REQUIRED

Rev.	Description	Rev. by	Date

Shepherd Gilmour
 Consulting Engineers
 3rd Floor Phoenix House,
 45 Cross Street,
 Manchester, M2 4JF
 T: 0161 837 1500 W: www.sginfrastructure.co.uk

Client
NURTON DEVELOPMENTS

Architect

Project
**STREETFIELDS FARM
 LUTTERWORTH**

Title
CONSTRAINTS PLAN

Date	17.08.2022	Drawn By	NU
Size	A1	Checked By	WC
Scale	1:2500	Approved By	EAJ

Dwg. No. **C1602-101** Rev. **P01**

APPENDIX IV PHOTOGRAPHS

PLATE 1 TYPICAL VIEW OF SITE COVERAGE



PLATE 2 TYPICAL VIEW OF SITE COVERAGE & MATURE TREES



PLATE 3 TYPICAL VIEW FIELD BOUNDARY AND HEDGEROWS



PLATE 4 TYPICAL VIEW OF FIELD DRAINAGE DITCH



PLATE 5 VIEW OF CULVERT [AS1]



Further photographs can be provided upon request.

APPENDIX V

HISTORICAL MAPS

Site Details:

MUSWELL LEYS FARM, COAL
PIT LANE, WILLEY, CV23 0SL

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Map date: 1886

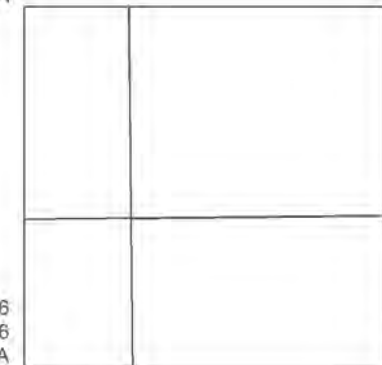
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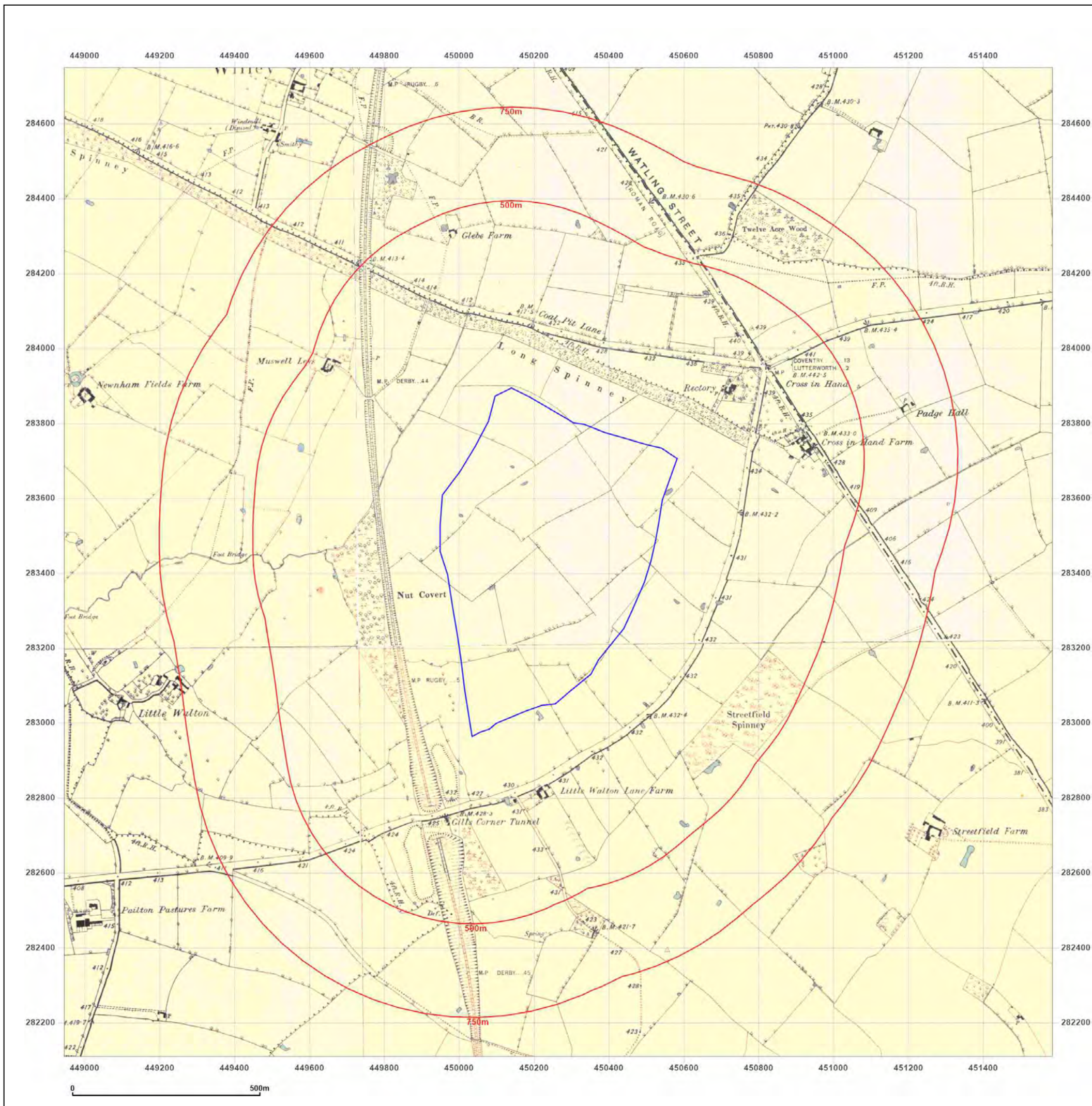


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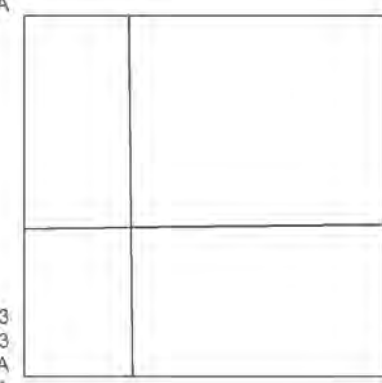
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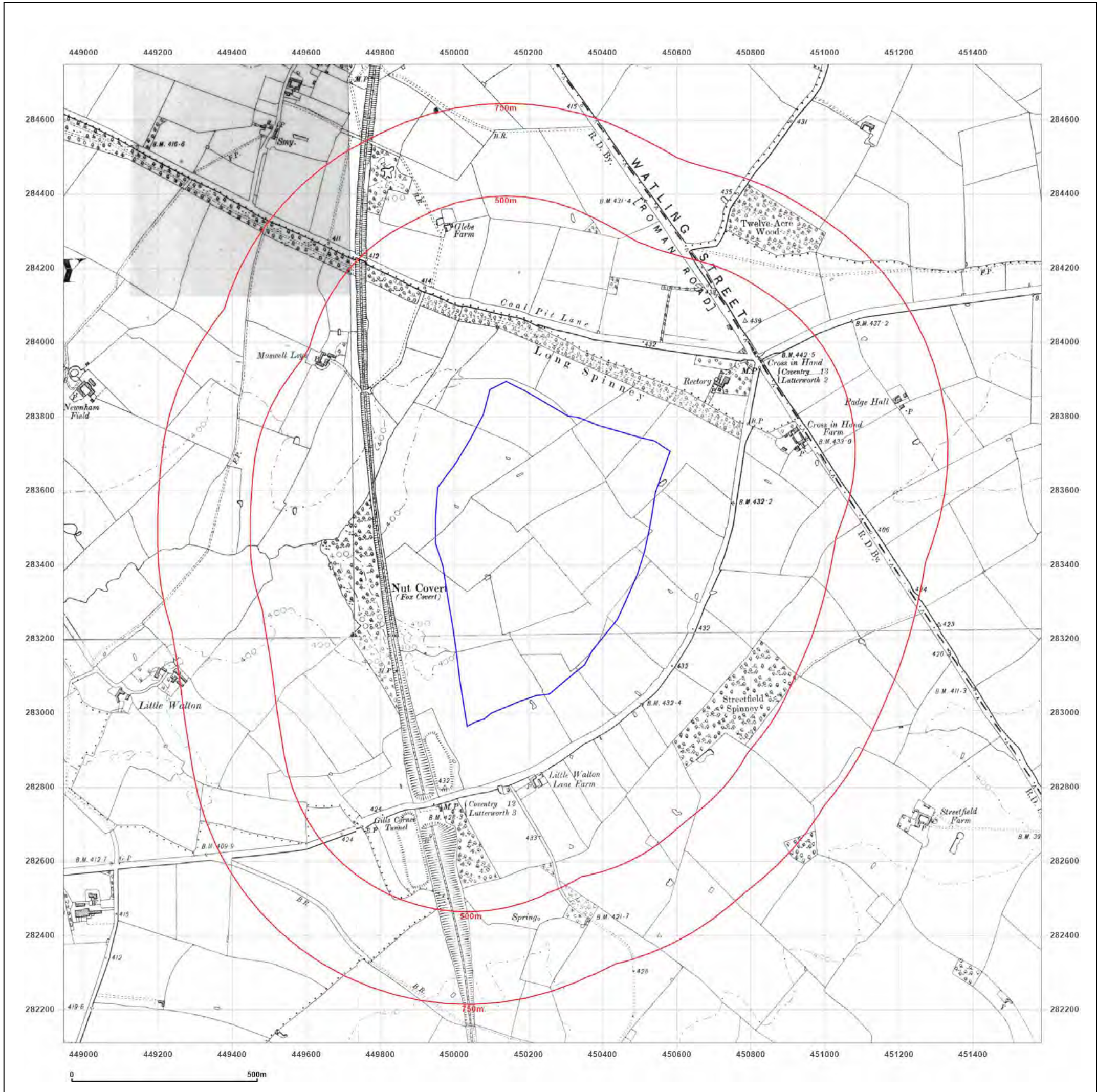


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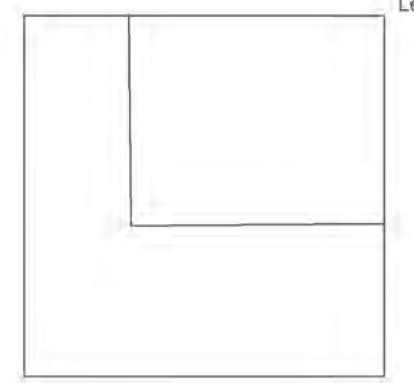
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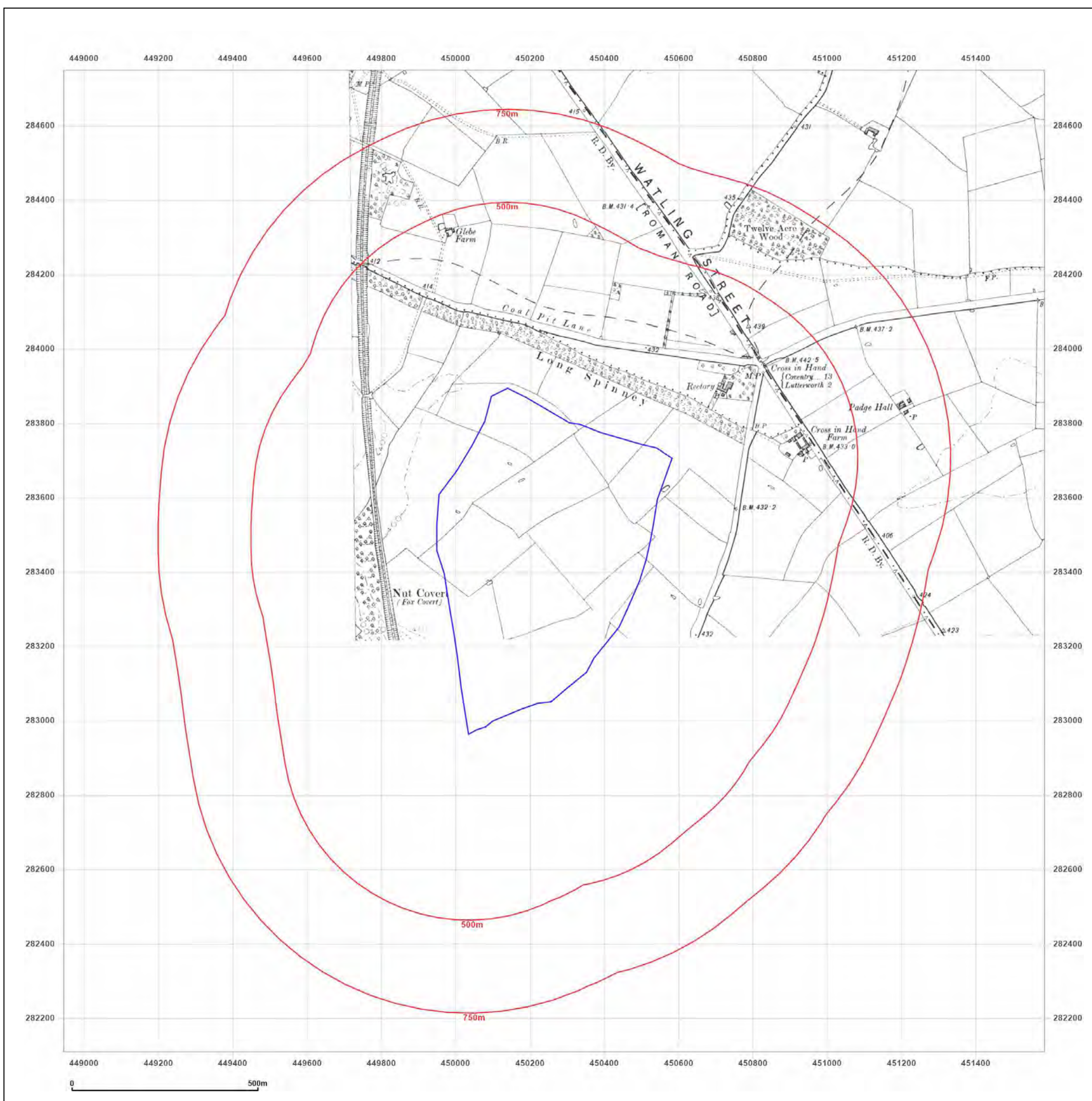


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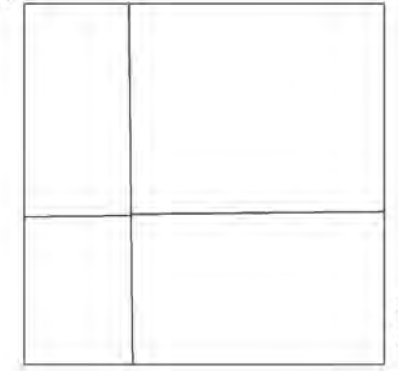
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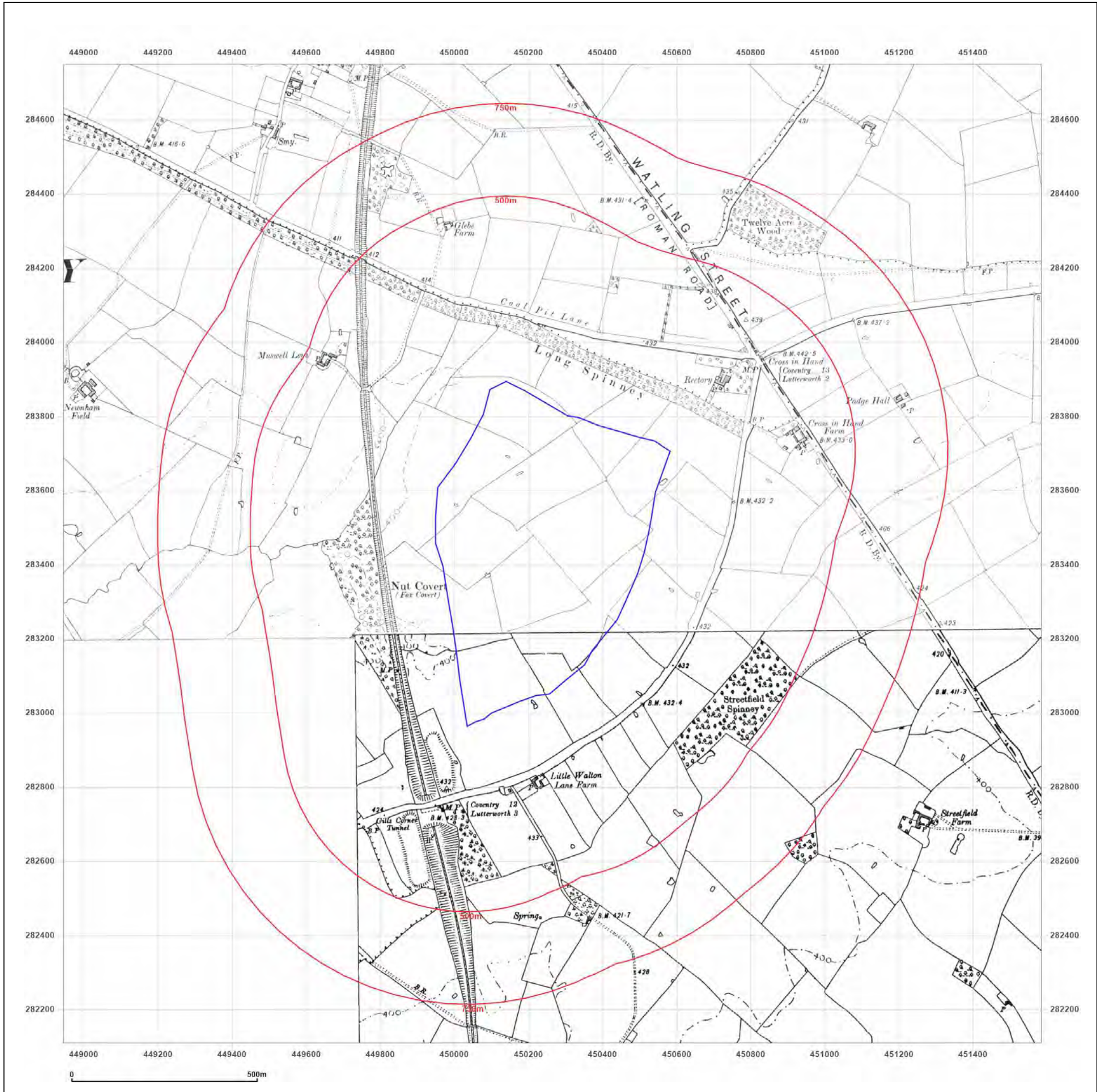


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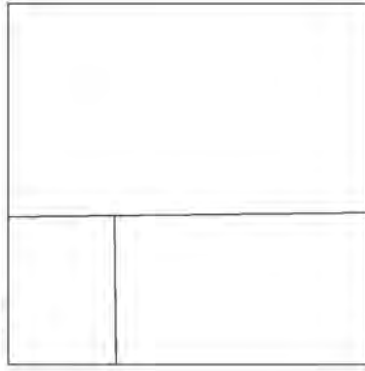
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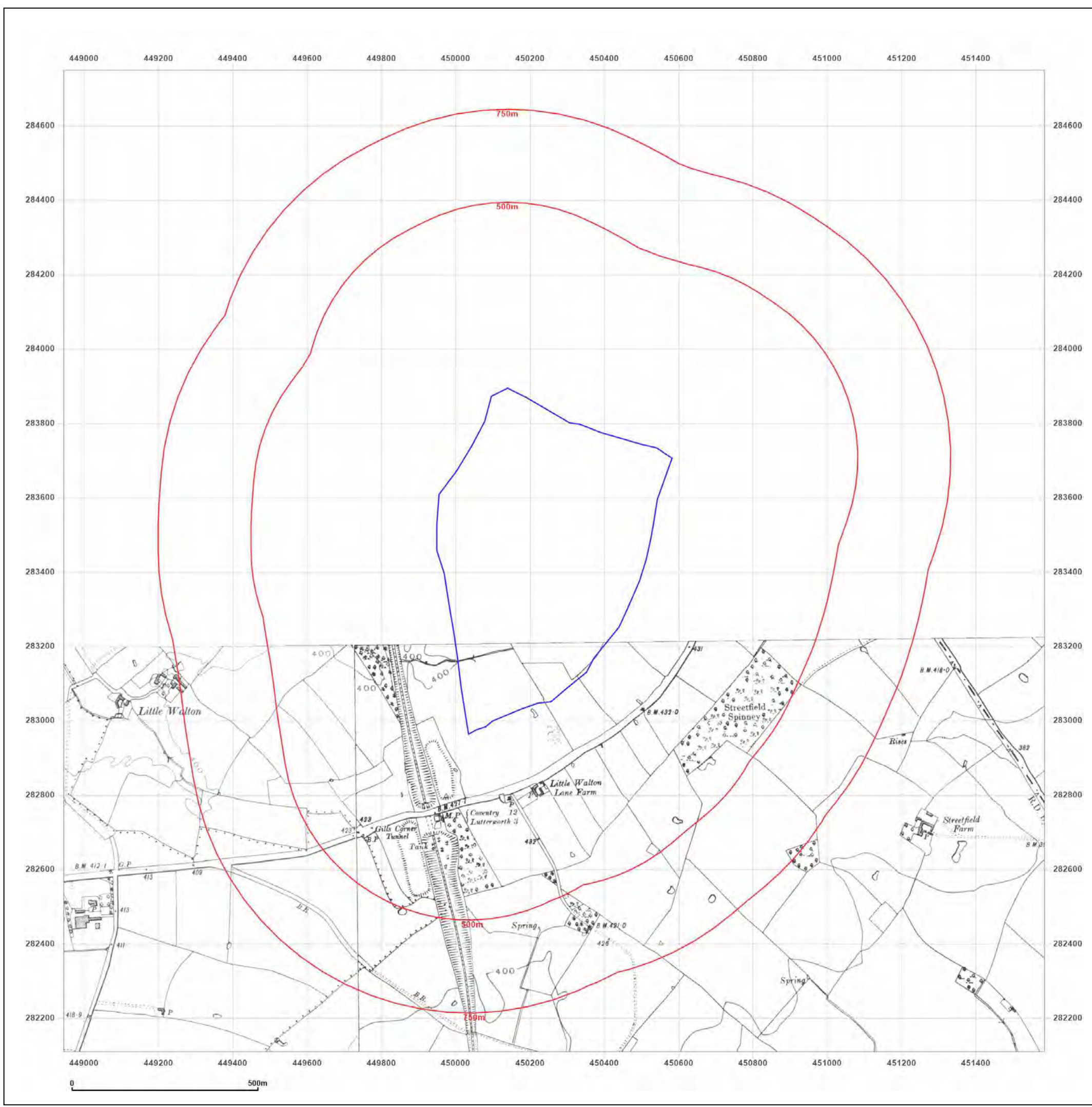


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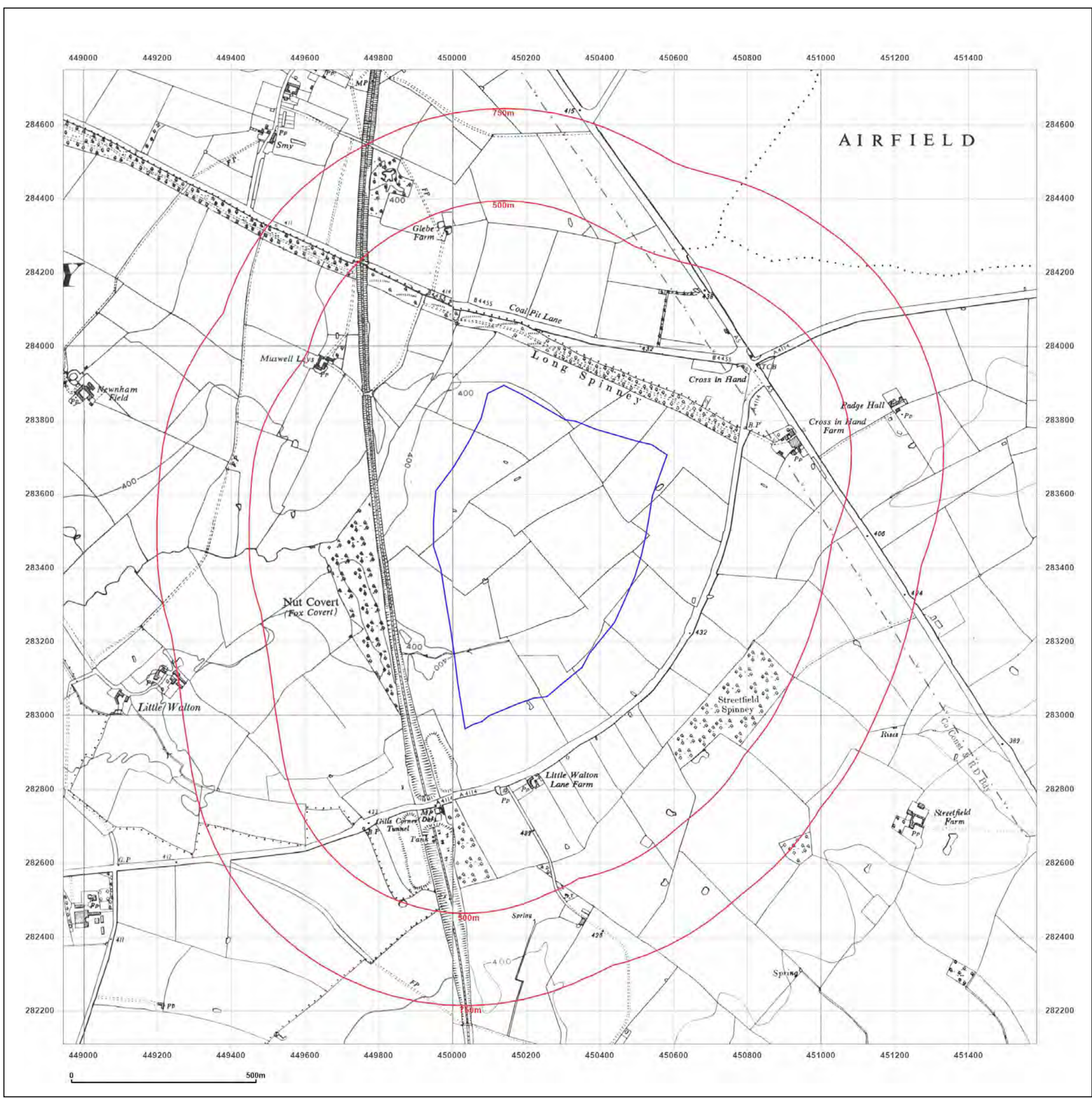


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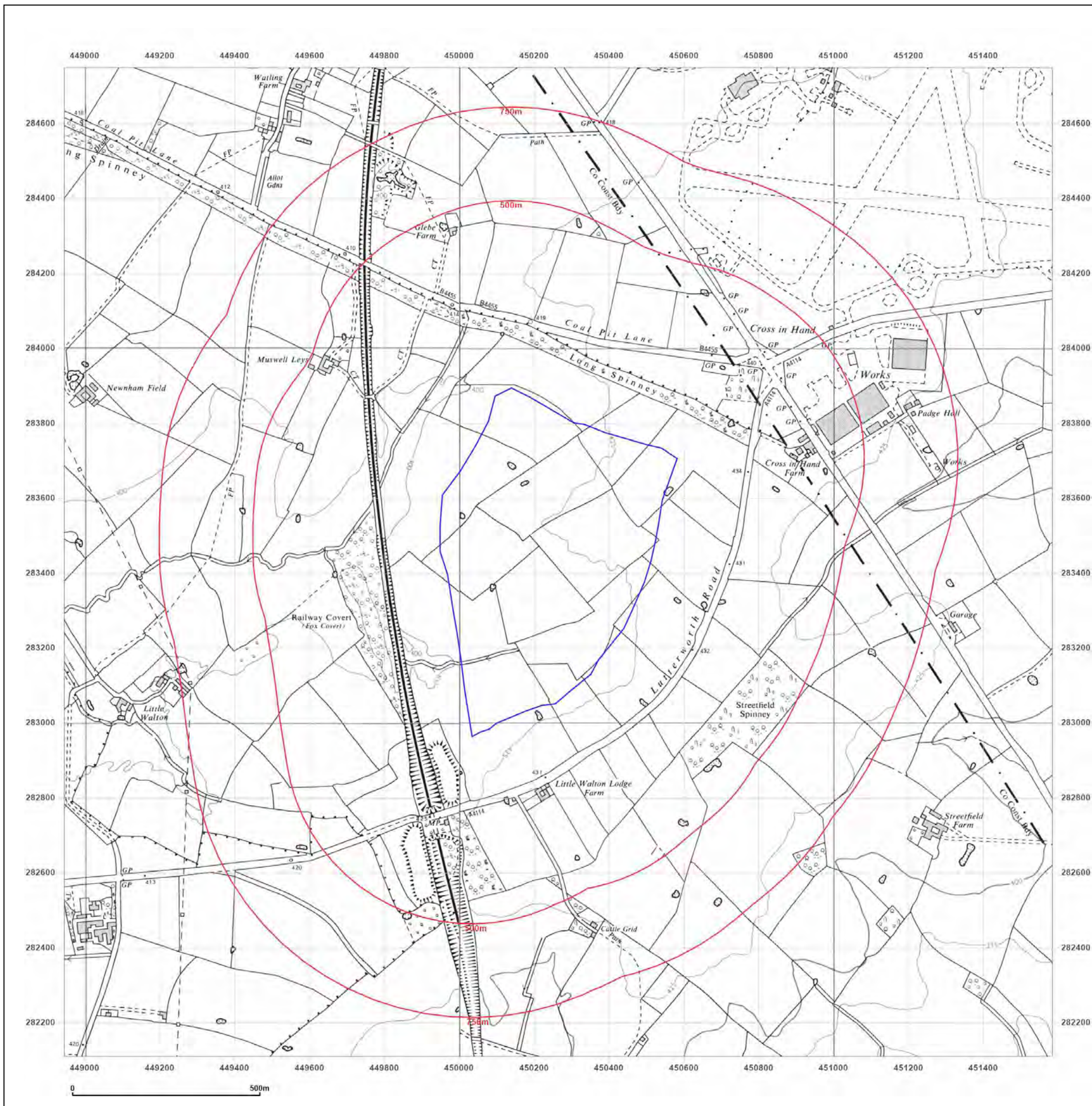


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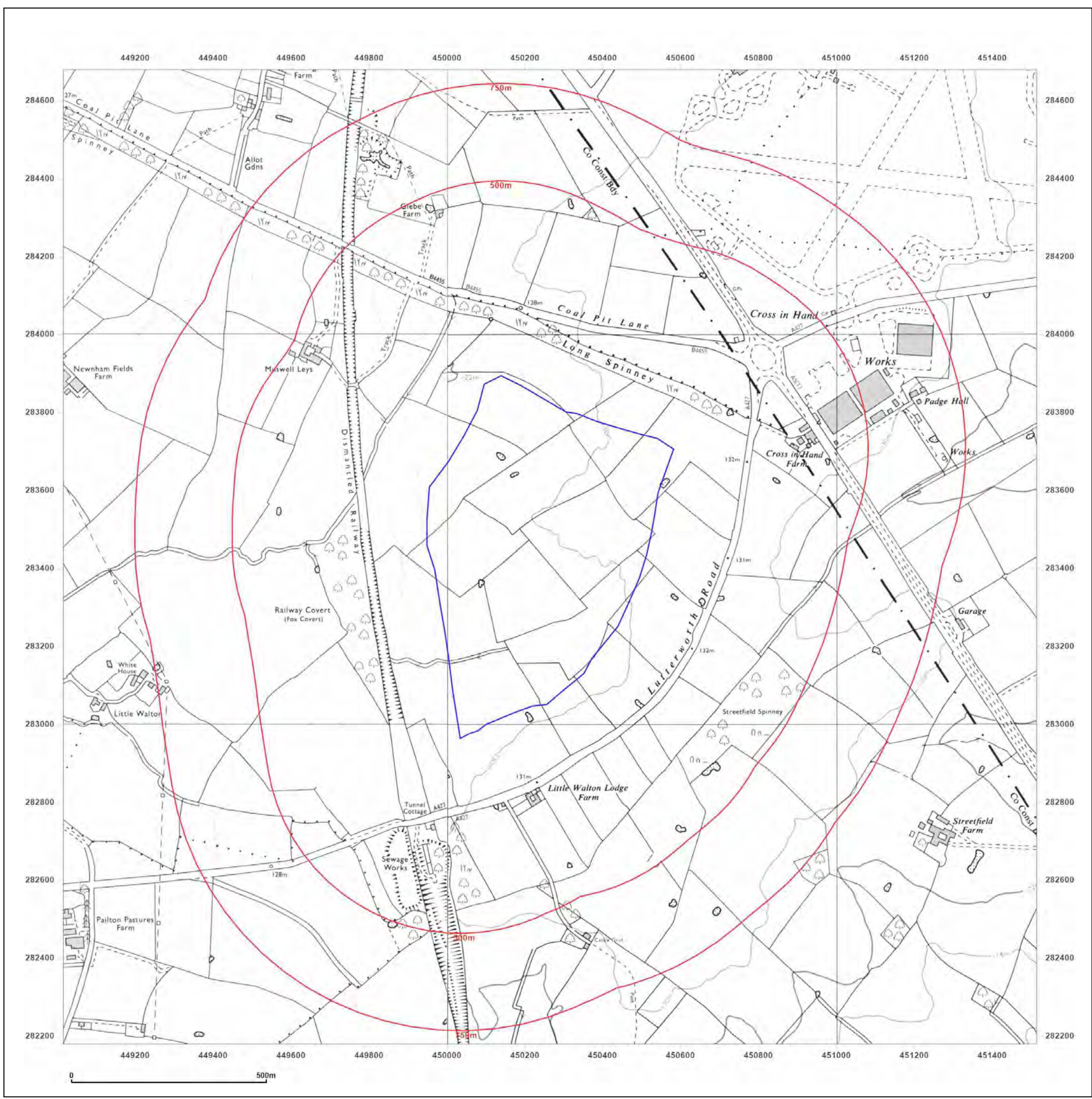


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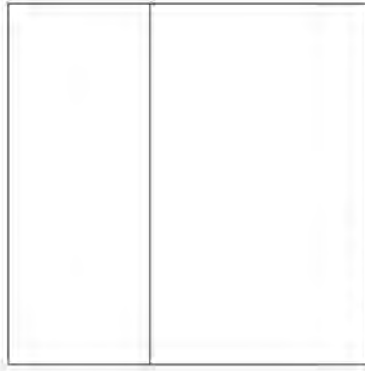
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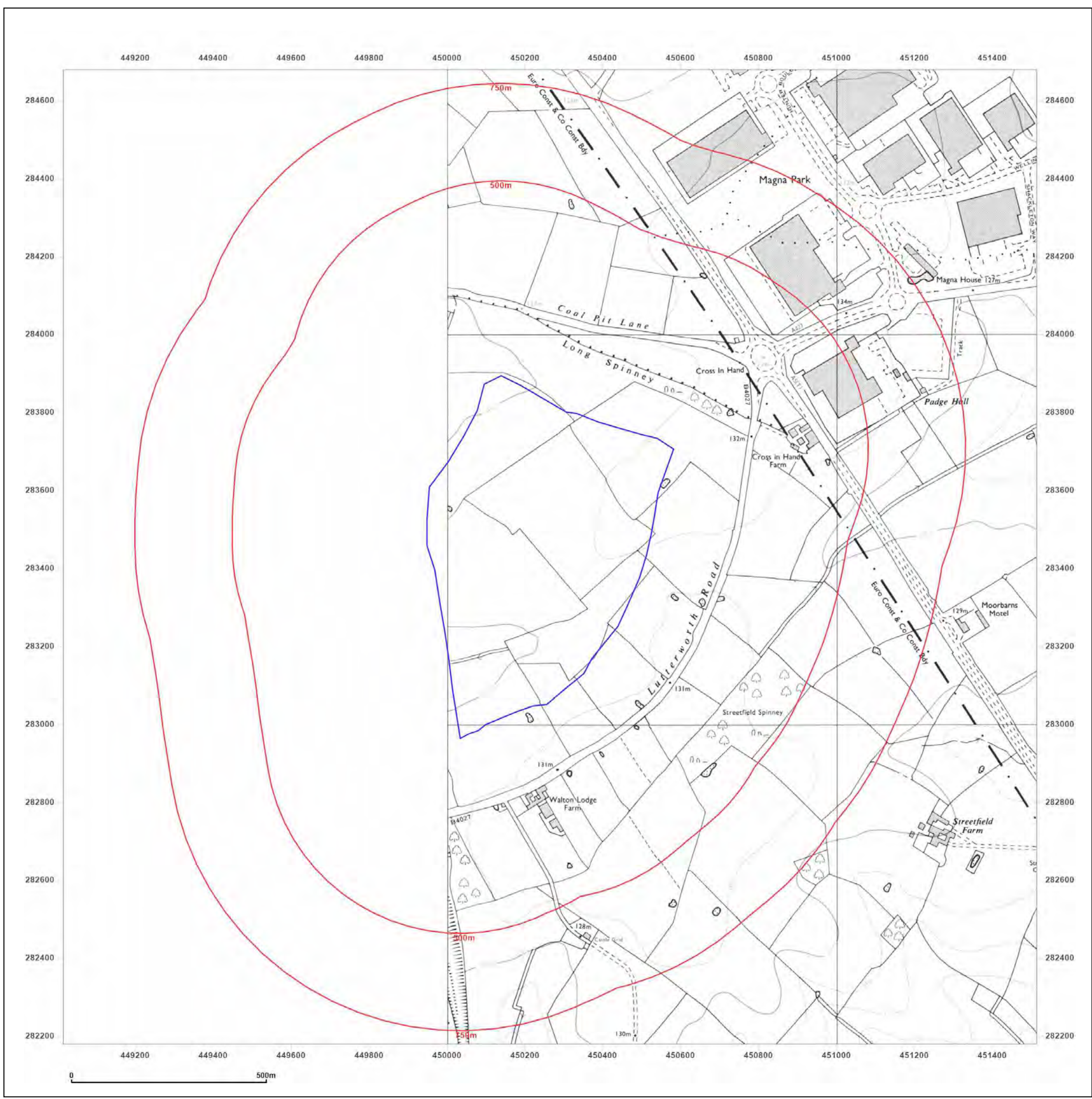


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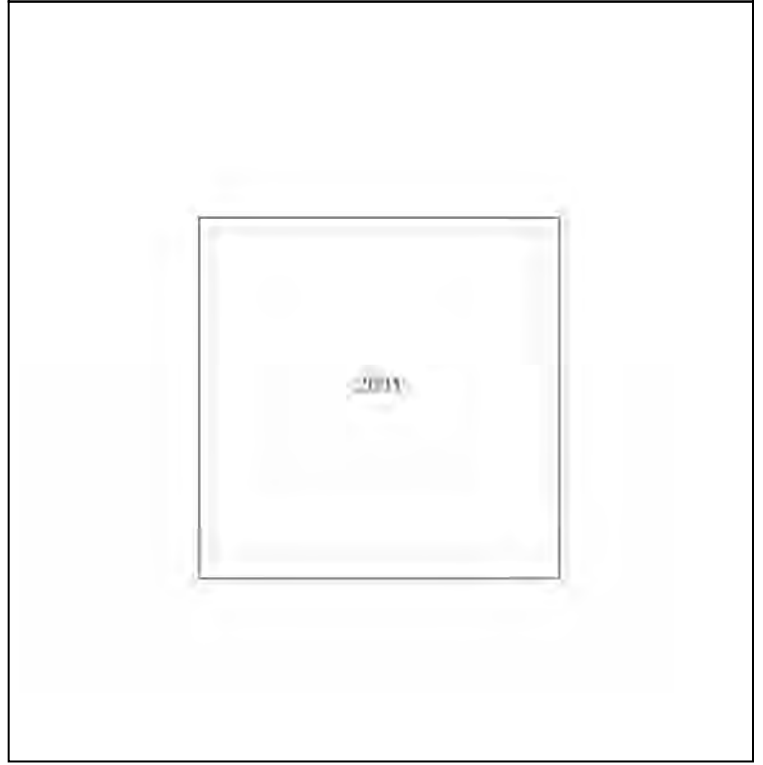
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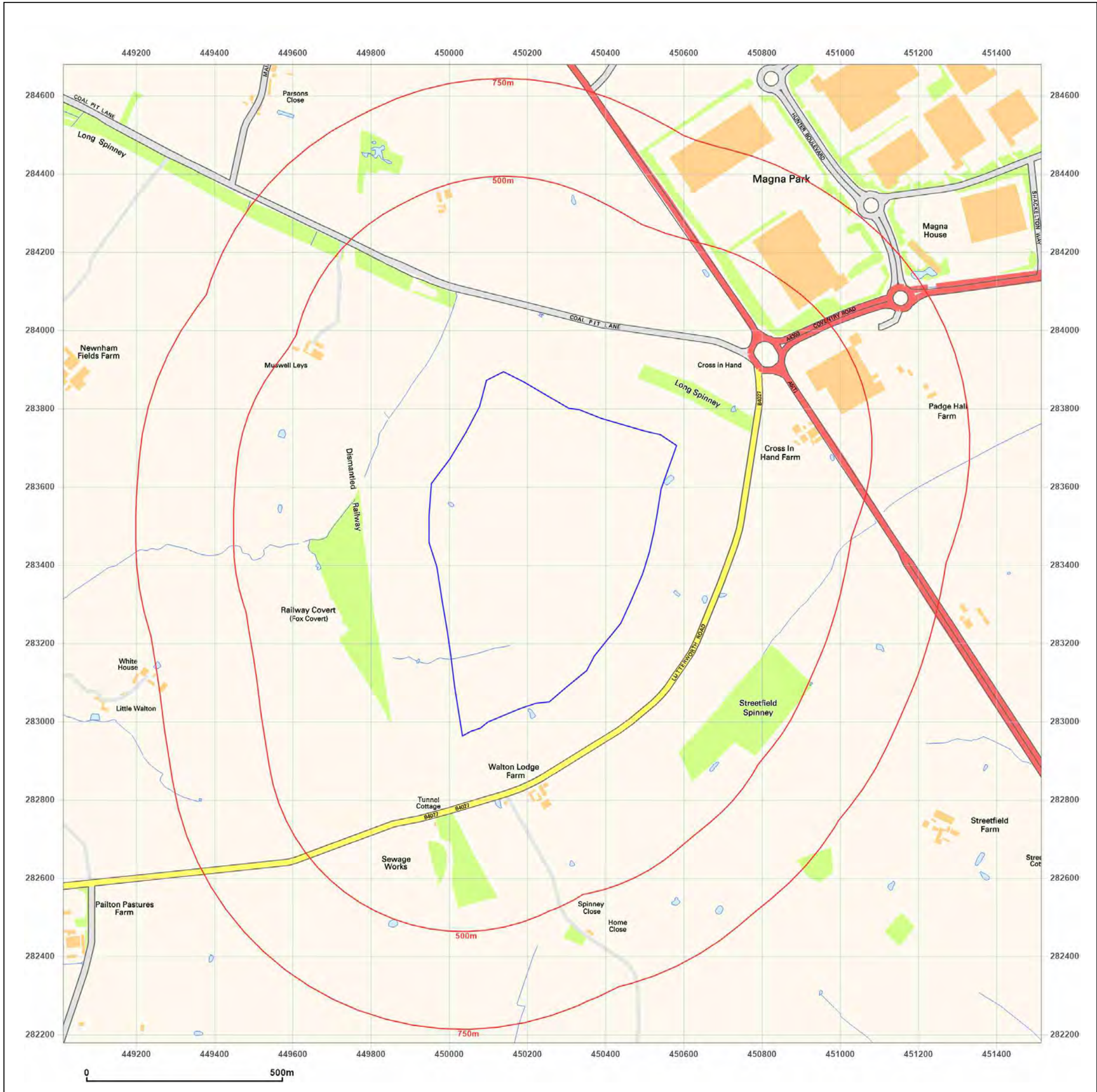


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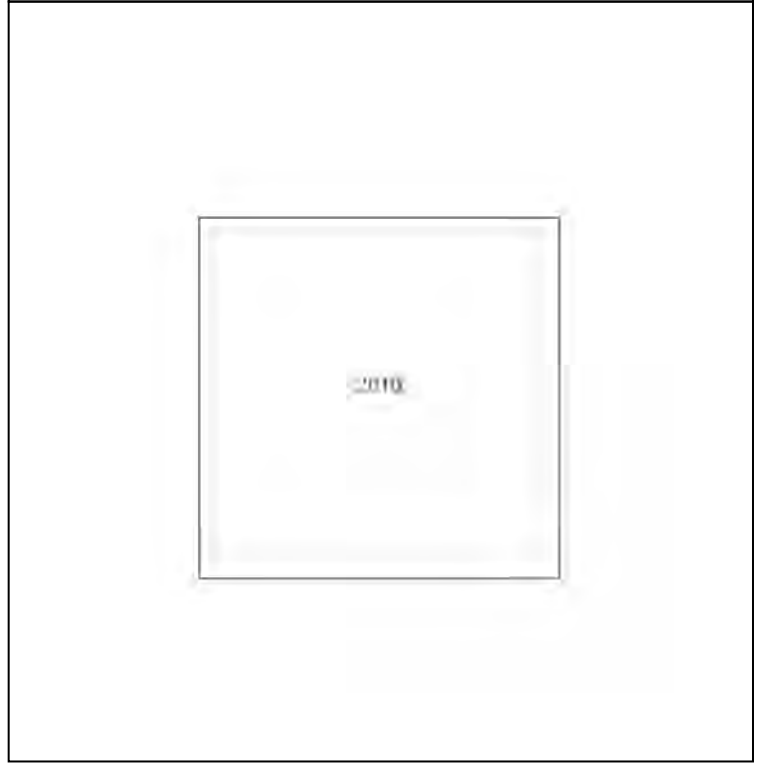
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Site Details:
 MUSWELL LEYS FARM, COAL PIT LANE, WILLEY, CV23 0SL

Client Ref: 006441
Report Ref: GS-WT9-JMA-UC8-9HU
Grid Ref: 450264, 283429

Map Name: National Grid
Map date: 2010
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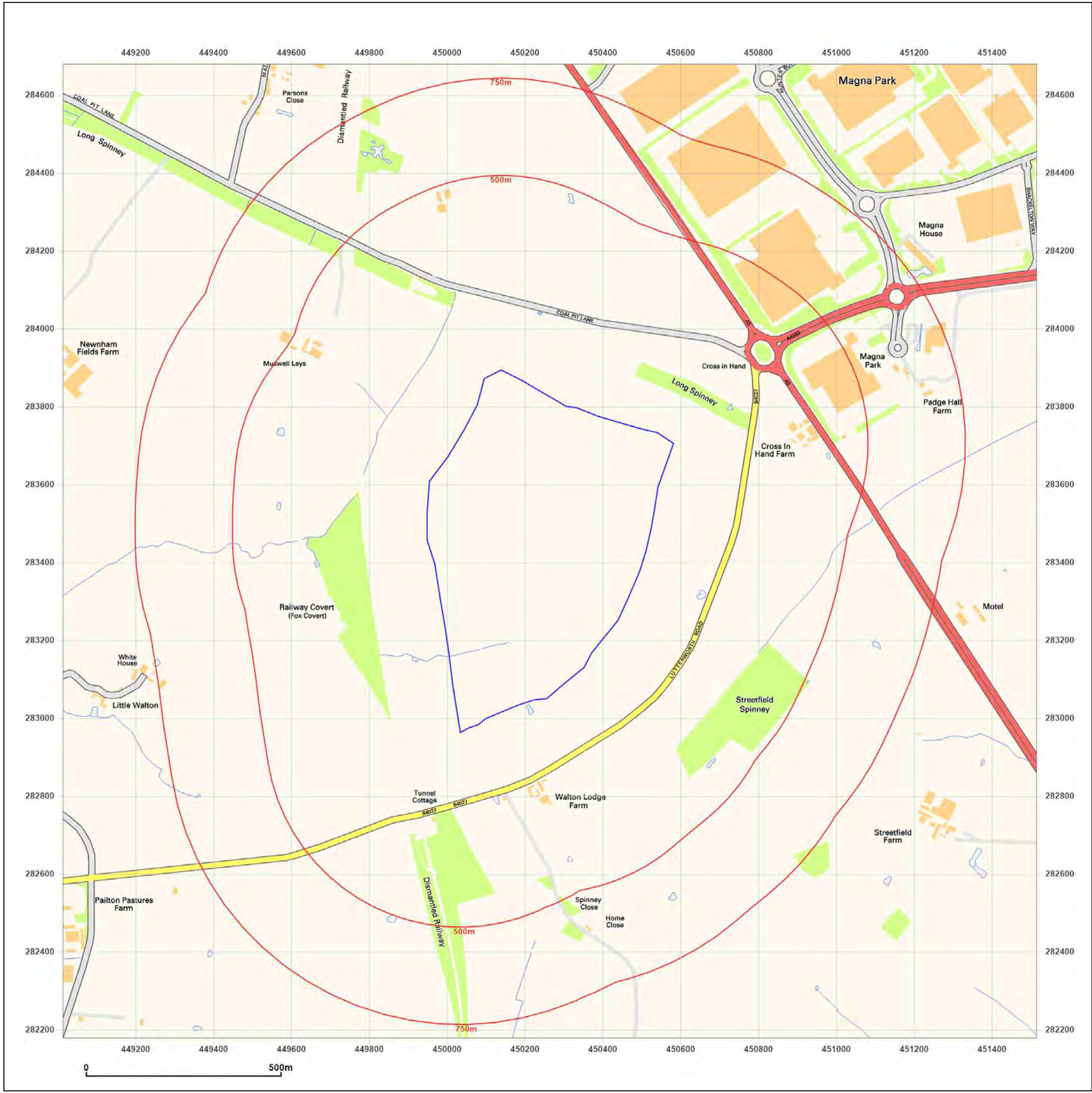


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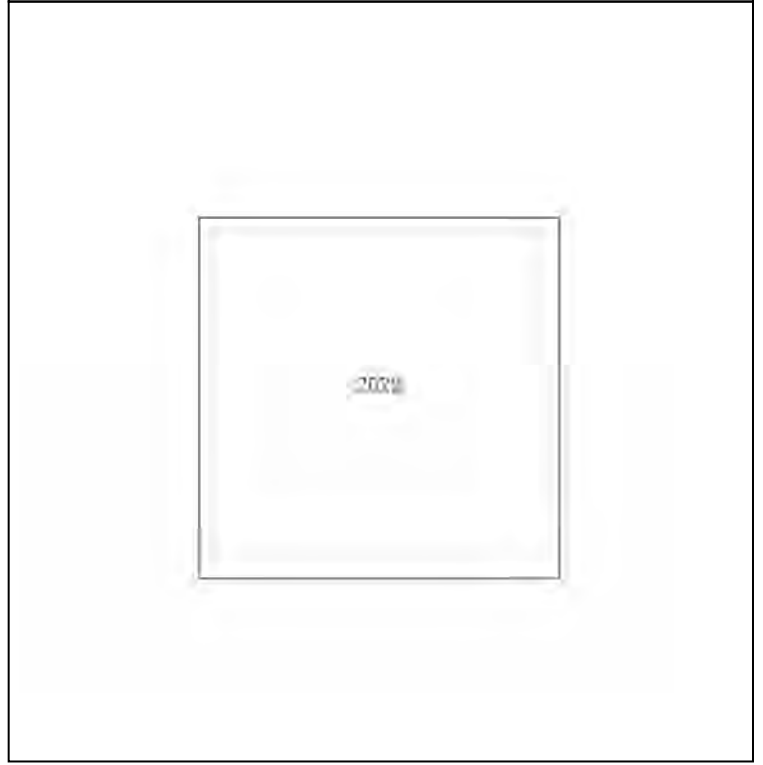
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www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:
 MUSWELL LEYS FARM, COAL PIT LANE, WILLEY, CV23 0SL

Client Ref: 006441
Report Ref: GS-WT9-JMA-UC8-9HU
Grid Ref: 450264, 283429

Map Name: National Grid
Map date: 2023
Scale: 1:10,000
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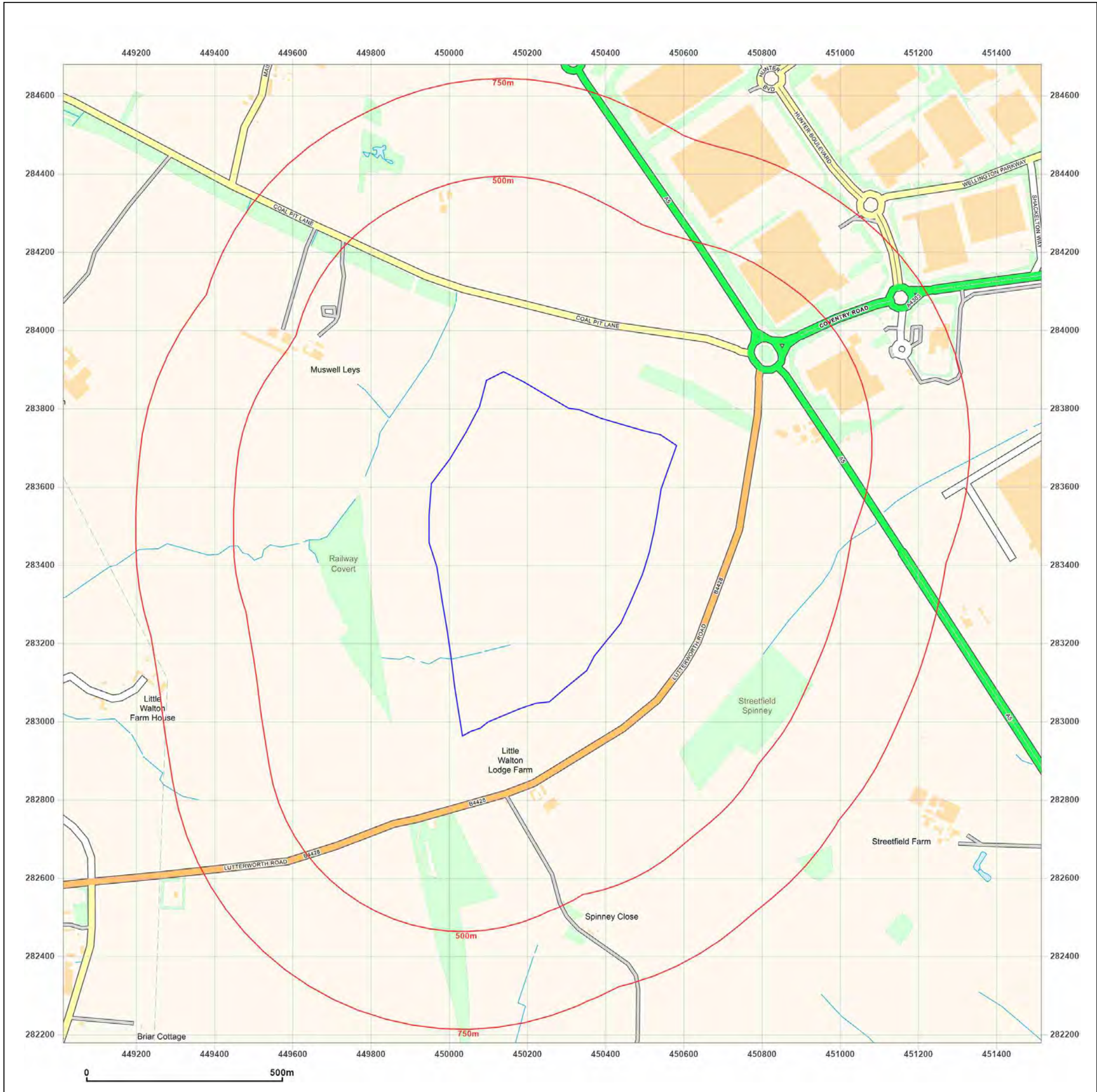
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Map legend available at:
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APPENDIX VI COAL AUTHORITY CON29 REPORT



The Coal
Authority

CON29M

coal mining report

STREETFIELD FARM COTTAGE, WATLING STREET, CHURCHOVER,
WARWICKSHIRE, LE17 4HU



No known or potential coal mining risks

No recorded or potential coal mining features have been identified in the report.



Further action

There are no further actions required as no known or potential coal mining risks have been identified.

For more information on our reports please visit
www.groundstability.com



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, there were no areas of concern relating to coal mining.

Your reference: **006648**
Our reference: **51003387038001**
Date: **2 November 2023**

Client name:
E3P

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

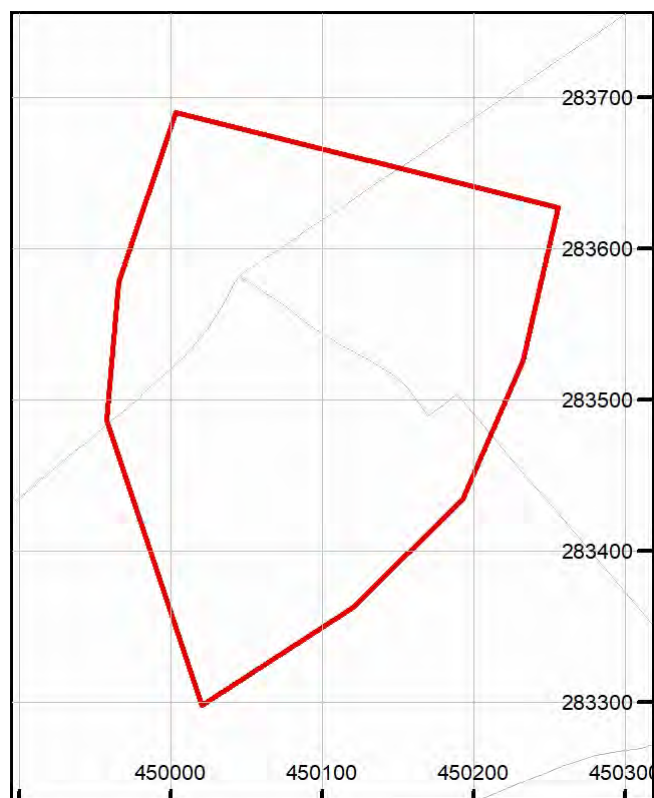


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
off the coalfield



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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Your reference: **006648**
Our reference: **51003387038001**
Date: **2 November 2023**

Client name:
E3P

If you require any further assistance please contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

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1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4 Mine entries

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 Coal mining subsidence

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 31 October 1994.

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.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **0800 288 4242**. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

mine gas - reports of alleged mine gas emissions received by the Coal Authority within the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings