

ACSSIS LTD

Desk Study (Phase 1) Report

Thorpe Hall, Mendham

Ref. 20-577-DS1

July 2021

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Summarised Findings and Recommendations

Site Description
The site in question is at Thorpe Hall, Mendham, Suffolk, IP20 0LX, the approximate centre of the site being identified by Ordnance Survey Grid Reference 627335 280255. It lies around 0.8km to the south of the hamlet of Withersdale Street and 3.5m to the south east of Harleston in north-central Suffolk.
Proposals
The proposals, as understood at the time of writing, are for conversion of an existing agricultural barn/outbuilding for residential purposes.
Background Geological Data
The site is indicated to lie within a wide area dominated by predominantly cohesive deposits ('diamicton'/'boulder clay', Lowestoft Formation). The glacial sequence frequently contains granular elements, and the 'superficial' deposits are underlain by predominantly granular Norwich Crag ('solid' geology), with chalk at significant depth.
Groundwater & Surface Water
There are no specific records or data to indicate the level of the groundwater beneath the site, however its elevation, geographical setting, and information for the wider area suggest that the base groundwater table would be expected at a depth of over 25m. There are a number of ponds in the vicinity of the site (reflective of the local geology), including immediately to the east of the subject building.
Site History
It is understood from the client that the subject barn building has historically been used as a tractor shed, pigsty, and more recently for the storage of straw and hay. Buildings to the north, associated with Thorpe Hall, are understood to have been used for various agricultural purposes, including livestock housing, stabling and storage. The subject building is indicated to date from prior to 1884, along with other outbuildings within the wider site. Some additional buildings present from the latter part of the 20th century have since been demolished/removed.
Geological/Geotechnical Hazards
The proposals are for the conversion of the existing barn for residential purposes, and as such there are unlikely to be any significant requirements for new substructures, assuming that the existing structure and foundations are considered by the consulting civil/structural engineer to be suitable for the purposes. Should any new structures be planned, some investigation is likely to be necessary with respect to design, including reference to the likely presence of shrinkable clay subsoils and the potential influence of vegetation.
Geoenvironmental Hazards and Contamination
The background study has identified a generally low likelihood of deleterious ground conditions resulting from historical uses relating to the subject barn. However, the wider site is associated with a long history of farming/agricultural activities, and specific instances of potentially contaminative practices cannot be ruled out. No landfill, or likelihood of, has been identified, and the possibility of harmful ground gases at the site has been discounted based on the available information.
Geoenvironmental Interpretation
With respect to geoenvironmental aspects there are considered unlikely to be any significant implications with respect to future site inhabitation. However, the existing barn/outbuilding, proposed for conversion, is associated with a long history of occupation, and the possibility of the presence of zones of contaminated soil cannot be discounted. Following clearance of the barn, internally, careful inspection of the flooring should take place, with the aim of identifying any areas of concern (indications of fuel etc.), and further assessment initiated if necessary. Additionally, should any odorous or otherwise apparently deleterious material be identified during the development work (internally or externally), further work may be warranted, which may include soil sampling, laboratory testing and assessment, this in any case being a general planning requirement.

Section 1: Project Details and Terms of Reference

The site in question is at Thorpe Hall, Mendham, Suffolk, IP20 0LX, the approximate centre of the site being identified by Ordnance Survey Grid Reference 627335 280255. It lies around 0.8km to the south of the hamlet of Withersdale Street and 3.5m to the south east of Harleston in north-central Suffolk.

The work covered by this report was carried out for the benefit of Mr David Alcock, in general accordance with ACSIS Ltd quotation ref. 20-577-Q1, dated 9 November 2020, and emailed instructions to proceed on behalf of the client on 8 June 2021 from Paul Robinson Partnership LLP, acting as architects/consultants for the project. It is proposed to convert existing farm buildings for residential purposes.

The purpose of this assignment is to provide a geoenvironmental Phase 1 report, incorporating desk-based information relating to ground conditions and the consequent implications for the proposed development. It is understood that as yet there are no specific planning conditions relating to these aspects, however are expected to be of relevance in due course. Reference should be made to the Post Script at the rear of this document, which details the limitations of, and general conditions relating to, this report.

Section 2: Background Information and Desk Study Findings

General Site Description
<p>Thorpe Hall is a substantial residential property located in a rural setting, with farm buildings to the south west, the southern most of which is the subject of the proposed residential conversion. The associated site in question includes the open land to the south/south west, and may be accessed via a rough track to the west, crossing arable land, and connecting to Pegg's Hill. The irregularly shaped site measures a maximum of around 110m north-south, and 100m east-west and the subject barn approximately 32m by 10m. Ground level across the approximately level site is estimated at around 45m aOD (above Ordnance Datum).</p> <p>The wider Thorpe Hall premises is associated with mature woodland and a number of ponds, largely surrounded by agricultural (arable) land. The subject site is associated with some trees around its margins, and a large pond directly to the east of the building earmarked for conversion.</p> <p>The site location is shown on drawing 20-577-DR01, with the key features indicated on drawing 20-577-DR02.</p>
Proposal Details
<p>The proposals, as understood at the time of writing, are for conversion of the existing agricultural barn building for residential purposes. It is intended for the land to the south west of the building to form a garden or paddock/pasture.</p>
Geological Setting
<p>The site is indicated to lie within a wide area dominated by predominantly cohesive deposits ('diamicton'/'boulder clay', Lowestoft Formation). The glacial sequence frequently contains granular elements, and the 'superficial' deposits are underlain by predominantly granular Norwich Crag ('solid' geology), with chalk at significant depth. Borehole records for the wider vicinity indicate that the Crag lies at a depth of 15 to 20m.</p>
Geological Hazards
<p>Given the expected ground conditions at the site consideration will be required relating to the possible presence of 'shrink-swell clay', there being no other potential geological hazards believed to likely be of significance based on the available background information.</p>
Groundwater and Surface Water
<p>There are no specific records or data to indicate the level of the groundwater beneath the site, however its elevation, geographical setting, and information for the wider area suggest that the base groundwater table would be expected at a depth of over 25m. Accumulations of perched water are</p>

commonly associated with granular soil bodies incorporated within the otherwise predominantly cohesive glacial sequence.

There are a number of ponds in the vicinity of the site (reflective of the local geology), including immediately to the east of the subject building.

Groundwater Vulnerability, Hydrogeology & Hydrology

The site lies in excess of 500m from the closest Groundwater Source Protection Zone (SPZ), and the nearest abstraction licence is listed for a location over 800m to the north.

The geoenvironmental data report suggests that the cohesive superficial deposits underlying the site and general area constitute a Secondary Aquifer ('Undifferentiated'), being associated with 'medium vulnerability' status. The Crag/Chalk 'bedrock' is classed as a Principal Aquifer.

Historical Maps and Information

The earliest large scale map edition available, from 1884 (and subsequent 1903 edition), shows the development location to be occupied by a building on broadly the same footprint as present, although with sufficient subtle variations to possibly indicate an earlier structure. A further small building was present nearby to the south east. The existing pond immediately to the east was present, along with various other ponds in the general vicinity. A small number of small farm (assumed) outbuildings were associated with Thorpe Hall, to the north. No annotation of significance is evident, with the premises surrounded by agricultural land.

The subsequent map edition available, being small scale, from 1946, indicates no significant changes to the site and vicinity, similarly through to the latter part of the 20th century. By 1975 the subject building appears to be as existing in footprint, possibly extended slightly to the west. Additional buildings/structures were present on the site to the south west, along with a small circular structure, possibly a tank or silo (no annotation). Additional buildings were also present to the south west of Thorpe Hall, again with no indication of their function, and presumably used for agricultural purposes. No significant changes are indicated on subsequent map editions, and there is no further informative annotation of note. The map data indicates that the majority of the buildings/structures on site, and nearby to the north, now absent, were present in c. 2003, with some remaining through to slightly later in the 21st century.

The client's association with the site dates from 1995. The on site buildings described above were present at that time, subsequently demolished in following years. The large building to the west was a relocated aircraft hanger, used as small workshop units, and for storage. The circular structure immediately to the north was a grain silo. The structure to the south of the subject building was a dilapidated open sided barn, unused from that time, and the small addition on its western end was no longer present. The buildings detailed here were provided with concrete flooring, removed following demolition of the above ground structures.

It is understood from the client that the subject barn building has historically been used as a tractor shed, pigsty, and more recently for the storage of straw and hay. Buildings to the north, associated with Thorpe Hall, are understood to have been used for various agricultural purposes, including livestock housing, stabling and storage.

Aerial Photography

The 'Recent' aerial photography image included in the geoenvironmental data report appears to show the site in its current form. The preceding images, from 2018 and 2014, indicate that the open part of the site was in use as paddocks/pasture, there being no other activity of note evident. In 2005 several additional farm buildings were in existence, including an extension of the subject barn at its western end, also immediately to the south, and to the west, the latter associated with activity in its vicinity. Other farm buildings, now not in existence, were present to the north of the site at this time. In the image from 1999 the part of the site to the south of the subject building appears reddish brown in colour, possibly indicating cultivation.

Geoenvironmental Data

There are no references to historical industrial land uses in the geoenvironmental data report (incorporated in the Appendix). It lists the closest pit (unspecified, disused) as lying in excess of 400m from the site, although a number of the existing ponds in the vicinity are designated as 'surface ground

workings', as referenced from historical mapping. A tank is listed for a location within the site to the west of the subject building, its function 'unspecified', the source information being 1974 historical mapping. It is understood that this was in reality a grain silo.

There are no contemporary or historical references of relevance to energy features for the site or nearby vicinity, nor petrol/fuel sites, or garage and motor vehicle repair sites within 250m of the site boundary.

There are no active or historical landfill or waste treatment/management sites listed in the geoenvironmental data report for within 250m of the site boundary. A number of waste exemptions are indicated for a location around 220 to 270m to the west of the site, indicated to relate to the storage of farm sludge adjacent to Pegg's Hill. There are no references to discharge consents, pollutant releases or pollution incidents for the near vicinity.

There are no sites designated as 'Contaminated Land' (ref. Part 2a of the Environmental Protection Act 1990) within 500m of the site, or other entries (environmental permits, pollution incidents/inventory records etc.) considered to be of relevance.

There are also no 'Environmental Designations' of significance relevant to the site highlighted in the report. It does lie within a large area defined as a 'SSSI Impact Risk Zone'.

Radon Potential

The site is not indicated to lie within a radon affected area (less than 1% estimated properties effected), and no protection measures are considered necessary.

Flooding Potential

Information on flood risk is included in the data document. Its assessment is beyond the scope of this report, however the risk would appear to be low.

Visual/Cultural and Agricultural Designations

The site does not appear to be associated with any visual/cultural designations, assessment of the significance of which is in any case beyond the scope of this report. Thorpe Hall itself is a listed building. Information is included in the data document relating to agricultural designation.

Existing Underground Utilities

The geoenvironmental data document indicates that there are no high voltage underground cables or high pressure gas pipelines beneath the site.

Section 3: Site Walkover

Detailed Site Description

The site lies to the south of Thorpe Hall and its associated farm buildings, having previously formed part of the wider premises. The subject barn is a single storey timber/concrete framed structure with asbestos sheet clad steel truss roof, and brick/block external walls to full or partial height, also with open sides in places. The site walkover took place on 22 June 2021. At this time it was in use for the storage of straw/hay, a little timber, and various extraneous household items, in the various bays formed by a series of low block walls. The concrete floors, where visible, appeared to be intact.

There was little in the way of external storage, with occasional old agricultural items, timber and a small heap of manure/straw. The land to the south west comprised open grass covered paddock/pasture. A large pond was in existence immediately to the east of the barn.

There was no evidence or information available to suggest the current/recent storage of fuels or chemicals in significant quantities.

Photographs are included below, with references shown on drawing 20-577-DR02.

Surrounding Area

The site is bordered by arable farmland or pasture/unused land to the west, south and east of the site. An area of paddock lies to the north, adjacent to a number of single storey farm buildings, used in part

as stables, otherwise for general storage.

Photographs

P01



P02



P03



P04



P05



P06





Section 4: Hazard Identification

The information gathered from the background study and site walkover has been considered in order to identify potential geotechnical and contamination hazards in advance of any sitework and laboratory testing. This method facilitates a targeted approach to the intrusive investigation and laboratory testing programme which may follow the desk study phase of assessment. Continued assessment of the hazards and the necessary associated measures required to reduce risk to an acceptable level is then undertaken as more information is obtained.

Geotechnical Hazards	
<p>Geotechnical hazards associated with a given site generally primarily relate to the physical properties of the soils present and groundwater, however, can also be related to the physical form of a site and its development history. Identification of the likely nature of the geotechnical hazards expected allows the selection of suitable invasive investigation methods and decision making relating to the intensity of investigation.</p> <p>The proposals are for the conversion of the existing barn for residential purposes, and as such there are unlikely to be any significant requirements for new substructures, assuming that the existing structure and foundations are considered by the consulting civil/structural engineer to be suitable for the purposes. The following should be considered if any significant new structures are to be incorporated into the development.</p>	
<p>Uncontrolled fill or deep Made Ground.</p>	<p>There is no indication from the background information available of significant previous activities at the site. However, some buildings were formerly present, and the presence of undocumented buried materials is not uncommon on agricultural sites.</p>

Pre-existing underground structures.	Some buildings were previously present on the site, in addition to the subject barn, however it is considered unlikely that they will have been associated with significant foundations/substructures. It is understood that former concrete flooring was removed following demolition.
Cohesive (impermeable) soils.	The likely presence of relatively impermeable cohesive (clay) natural deposits may significantly limit drainage potential for new surface water disposal infrastructure.
Groundwater.	Given the expected impermeable cohesive soils, perched water may be associated with any new excavations, however base groundwater level lies at significant depth.
Sulphate bearing soils.	The presence of elevated sulphate concentrations in deposits of the type anticipated is not common, however precautionary testing is generally considered in relation to new substructures.
Vegetation.	Given the anticipated presence of potentially shrinkable cohesive soils, some geotechnical laboratory testing will be required to enable the design of any new substructures, albeit with limited vegetation in the immediate vicinity of the subject building.
Contamination Hazards	
<p>Contamination hazards are typically related to the history of a site, and the deleterious effects of past site uses, usually industrial activities, but also general site occupation. Naturally occurring hazards are occasionally of relevance. As with geotechnical hazards, the identification of the likely nature of the contamination hazards (sources) allows the selection of investigation methodology and intensity, together with any laboratory testing programme deemed appropriate.</p> <p>The background study has identified a generally low likelihood of deleterious ground conditions resulting from historical uses relating to the subject barn. However, the wider site is associated with a long history of farming/agricultural activities, and specific instances of potentially contaminative practices cannot be ruled out. The same applies to potential off site sources of contamination, however given the available information off site sources are deemed to be sufficiently insignificant so as to warrant no further specific consideration in the risk assessment process.</p> <p>No landfill, or likelihood of, has been identified, and the possibility of harmful ground gases at the site has been discounted based on the available information.</p>	
On Site Sources	
Source	Implication
Contaminated soil resulting from historical use (agricultural activities).	Possible total and leachable contaminants.

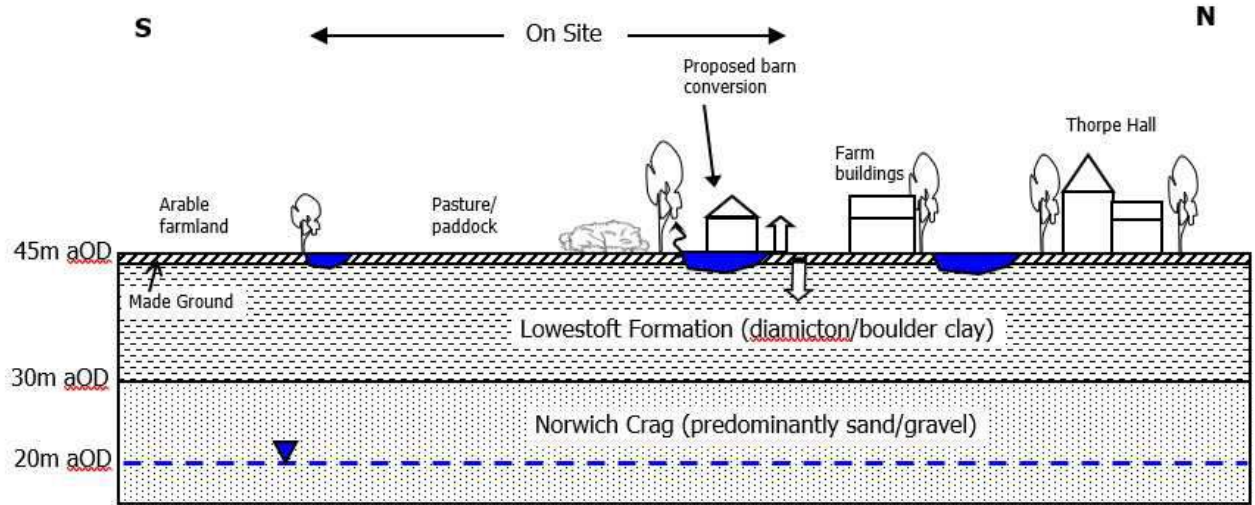
Section 5: Preliminary Contamination Assessment

The identification of contamination hazards is developed to incorporate source-pathway-receptor principles and highlight particular potential contaminants, with the level of risk being specifically related to the characteristics of the site and the intended end-use. Assessing risks from land contamination underpins the 'suitable for use' approach adopted for Part 2A of the Environmental Protection Act 1990 regulatory regime and the National Planning Policy Framework (NPPF), March 2012. For the purposes of this report the site will be assessed in line with the principles described in CLR11 'Model procedures for the management of land contamination' (EA, 2004, now withdrawn), LCRM 'Land Contamination Risk Management' (EA, 2020), and associated documents. In relation to LCRM, the current document is described as a 'Preliminary Risk Assessment'.

Intended Site Use
The site is under consideration for the residential conversion of the existing farm building ('barn').
Summarised Past Use
The available information does not indicate any particular significant contaminative processes specific to the site, the barn understood to have been used as a tractor shed, pigsty, and for the storage of straw and hay. However, the long history of farming/agricultural activities results in the possibility of

past undocumented potentially contaminative practices, worthy of some consideration.						
Sensitive Receptors						
Humans using the site during and post development construction						
Groundwater						
Local flora & fauna						
Building structures						
Key Contaminants						
A list of key contaminants can be derived from information relating to the past use of the site and the nature of the potential hazards identified, typically using documents such as CLR 8 'Potential Contaminants for the Assessment of Land' (whilst withdrawn, used as reference) and Industry Profiles.						
In this case, given the history of the site, a broad ranging suite of chemical testing may be considered to provide a general review of soil condition at the site, however the requirement for testing as a whole is assessed below, to be reviewed following consideration of the findings of any Phase 2 invasive investigation and observations from the construction process.						
If particularly deleterious fill or malodorous material were to be encountered during any further phases of investigation or during development, observations suggest the potential presence of other contaminants, or if initial test results indicate the requirement, additional analysis may be advised.						
Metals/metalloids (including arsenic, copper, lead and zinc)						
Hydrocarbons (TPH, PAH)						
Inorganic chemicals (including sulphate, cyanide)						
Acidity/alkalinity (pH)						
Preliminary Assessment of Risk (Hazard Ranking)						
The tables below provide an initial assessment of the risks attributable to each of the identified pollutant linkages relevant to the stated hazards and receptors (source-pathway-receptor relationships). This in turn has allowed a recommendation of the required site investigation (SI) to further assess the risks, or in some cases the action required (AR) necessary to address the issue. Where, based on the information available, the hazard ranking is considered sufficiently low, a recommendation of no action (NA) may be given.						
On Site Sources						
Link No.	Potential Pollutant Linkage			Hazard Ranking		
	Source	Pathway	Receptor	Probability	Consequence	Ranking
1	Contaminated soil resulting from historical use (impacted made ground/waste materials)	Ingestion of soil through direct contact, skin contact, fume/dust inhalation	Site users/occupiers (during construction)	Low	Moderate	Low
2		Ingestion of soil through direct contact, skin contact, fume/dust inhalation	Site users/occupiers (following construction)	Low	Moderate	Low
3		Leaching	Aquifer	Extremely low	Moderate	Very Low
4		Intake through growth	Flora and fauna	Low	Mild	Very low
5		Direct contact/leaching	Building structures	Extremely low	Mild	Very low
Recommended Actions						
Links 1,2						
SI - laboratory testing and assessment only if considered necessary based on the findings of any Phase 2 invasive site investigation and the construction process.						
Link 3-5						
NA - Hazard potential considered sufficiently low so as to warrant no further consideration.						

In order to provide a visual interpretation of the site, a schematic cross-section has been included below. This is based on the preliminary risk assessment provided above, incorporating the background information gathered.



Key

- Human health/direct contact/consumption pathway ↑
- Leachability pathway ↓
- Inhalation (dust/vapours) pathway ~
- Ground gas migration pathway ⊕
- Anticipated groundwater level ▼
- Existing ponds

Section 6: Conclusions and Recommendations

Geotechnical Hazards
<p>The background study has considered the potential for geotechnical hazards based on the information available. The proposals are for the conversion of the existing barn for residential purposes, and as such there are unlikely to be any significant requirements for new substructures, assuming that the existing structure and foundations are considered by the consulting civil/structural engineer to be suitable for the purposes. Should any new structures be planned, some investigation is likely to be necessary with respect to design, including reference to the likely presence of shrinkable clay subsoils and the potential influence of vegetation. Previous activity may have resulted in ground disturbance to a limited depth in some areas and the presence of undocumented buried materials is not uncommon on agricultural sites. The likely presence of relatively impermeable cohesive (clay) natural deposits is likely to significantly limit drainage potential for new surface water disposal infrastructure, and accumulations of perched water may be expected in new excavations, influenced by the weather (rainfall) conditions preceding construction.</p>
Geoenvironmental Interpretation
<p>This desk study has identified no noteworthy historical contaminative activities associated with the site and based on the available information there is subsequently considered unlikely to be any significant implications with respect to future site inhabitation. Given its depth, and the expected presence of relatively impermeable overlying cohesive deposits, any risk associated with groundwater is considered to be very low. There is however an obvious necessity for the avoidance of impact on existing surface</p>

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water bodies (principally the adjacent pond) during the construction process.

Notwithstanding the above, the existing barn/outbuilding, proposed for conversion, is associated with a long history of occupation, and the possibility of the presence of zones of contaminated soil cannot be discounted. The likelihood is significantly diminished by the presence of a concrete floor to the barn, believed to be continuous throughout the building, however it cannot be categorically established that this barrier to contaminant migration has been in place throughout the history of occupation. Following clearance of the barn, internally, careful inspection of the flooring should take place, with the aim of identifying any areas of concern (indications of fuel etc.), and further assessment initiated if necessary. Additionally, should any odorous or otherwise apparently deleterious material be identified during the development work (internally or externally), further work may be warranted, which may include soil sampling, laboratory testing and assessment, this in any case being a general planning requirement.

The roof to the subject building was noted to comprise asbestos cement sheeting, and this will be removed as part of the development. While its presence does not form part of this risk assessment with respect to ground conditions, it will evidently require appropriate handling and disposal by a suitable specialist contractor, ensuring that there will be no ongoing detrimental impact on the site as a whole.

Post Script

Limitations of and General Conditions Relating to this Report

This report has been prepared with consideration of the information available from the background study and where applicable from site work carried out (including the site walkover) and following the incorporation of professional opinion and interpretation. This may include information from external sources (commercial or otherwise) and ACSSIS Ltd will not be responsible for any opinions expressed, conclusions reached, or recommendations made in reliance upon such information which is subsequently proven to be inaccurate. The extent of the work may have been constrained by cost, timescale, access, and other factors which are detailed where possible within the report. In particular, observations relating to the presence of hazardous or potentially deleterious materials or conditions were made at the time of the walkover, and it must be noted that these features are liable to variation both before and following our involvement.

This report is for the sole and exclusive use and benefit of the named client for the specific purpose as defined in the report, unless formally assigned to others. Any other parties using the report (or elements of it) do so at their own risk, and any presumed duty of care and liability for claims, losses and damages to those parties is excluded.

Where it is our brief to suggest the amount of exploratory work necessary, we will have used our experience to identify a reasonable threshold level of confidence with consideration of the ground conditions and requirements as understood. It must nevertheless be recognized that the soil strength, soil composition and contamination profile may vary laterally as well as vertically; therefore, we cannot guarantee that our exploratory hole findings are indicative of conditions in all parts of the site. In the case of groundwater and of landfill gas, measurable levels commonly fluctuate over a short time period (including seasonal variations) and cannot always be determined accurately in exploratory holes during the limited site period available. With respect to groundwater, the normal rate of drilling does not necessarily permit the recording of an equilibrium water level for any one water strike.

Where given, the Ordnance Datum levels (or other reduced levels) shown on our data sheets have been provided by third party surveyors, and ACSSIS Ltd will not be responsible for their accuracy. Where estimated in order to provide a basis for comparison, this is stated within the report and/or on the relevant data sheets.

We will have safely backfilled our exploratory holes on completion of the fieldwork to the best of our ability, but subsequent subsidence or collapse at these positions is possible, for which we can accept no long-term responsibility. Samples from this investigation will be retained for a period of eight weeks from the date of this report.

This Report does not constitute a full site investigation, flood risk assessment, invasive plant assessment, waste classification exercise, contamination, geotechnical or asbestos survey except where stated explicitly. Further stages of investigation and assessment may be necessary, dependent on the findings of the current phase of work and client/regulatory requirements. The report does not constitute a Geotechnical Design Report as defined in EC7. Specifically relating to a Preliminary Geoenvironmental Assessment or Phase One/Desk Study, these reports are not intended to be used to facilitate the design of foundations/structures or advise on specific geoenvironmental/contamination aspects in the absence of ground investigation and laboratory testing. They will allow the efficient and appropriate planning of ground investigation and testing, with an indication of the likely implications for planning and construction.

We would be pleased to have the opportunity of visiting the site again during any construction operation in order to gain feedback information for use in future site investigations. All queries relating to this report should be referred to the undersigned.

Report compiled and checked by:



Andrew Soanes BSc
Director

Appendix A: Desk Study Sources of Information and References

Site Description
<ul style="list-style-type: none"> • Ordnance Survey mapping (online sources). • General mapping (online sources). • Aerial photography (online sources).
Geological Setting and Archive Log Data
<ul style="list-style-type: none"> • British Geological Survey data (online sources). • ACSSIS Ltd archive. • Groundsure 'Enviro + Geo Insight' report ref. GS-7993506.
Groundwater and Surface Water
<ul style="list-style-type: none"> • Ordnance Survey mapping (online sources). • General mapping (online sources). • British Geological Survey data (online sources). • Aerial photography (online sources). • Groundsure 'Enviro + Geo Insight' report ref. GS-7993506.
Site History
<ul style="list-style-type: none"> • Historical mapping (online sources). • Groundsure 'Map Insight' report ref. GS-7993505. • Groundsure 'Enviro + Geo Insight' report ref. GS-7993506.
Geoenvironmental Data
<ul style="list-style-type: none"> • Groundsure 'Enviro + Geo Insight' report ref. GS-7993506.

Appendix B: Contamination Aspects Risk Assessment Methodology

The preliminary contamination assessment is based upon 'source-pathway-receptor' principles and incorporates the background information presented in this report. Qualitative risk assessment then allows for a consideration of the relative risk or hazard due to each potential linkage. Risk assessment is a continuous process, and as such should generally become more specific as more cycles are performed based on an ever more robust dataset. An initial estimation of risk is typically undertaken using a simple matrix, as detailed below, adapted from appropriate guidance.

Probability Definitions					
The following definitions provide a basis for the assessment of hazard likelihood.					
Probability		Definition			
High		Identifiable evidence of hazard, pathway & receptor			
Medium		Realistic possibility of hazard, pathway & receptor, potentially in the long term			
Low		Theoretical possibility of hazard, pathway & receptor			
Extremely low		Hazard, pathway & receptor relationship not considered feasible			
Consequence Definitions					
In line with accepted methodology, the consequences of a particular hazard are defined based on documents such as CIRIA C552 'Contaminated Land Risk Assessment'. The definition of 'severe' in terms of human health assumes the potential for 'significant harm', as defined in the Environmental Protection Act 1990, likely to involve List I and/or List II substances.					
		Consequence			
		Definition			
Human Health	Severe	Acute or chronic permanent impact on human health			
	Moderate	Chronic long term impact on human health			
	Mild	Chronic temporary impact on human health			
	Negligible	Readily preventable, non permanent health effects			
Controlled Waters	Severe	Controlled water pollution ongoing or imminent			
	Moderate	Gradual pollution of sensitive controlled water			
	Mild	Gradual pollution of non-sensitive controlled water			
	Negligible	Readily preventable, non permanent effects			
Ecological Systems	Severe	Catastrophic changes to protected environment			
	Moderate	Significant changes to particular ecosystem			
	Mild	Significant damage to crops, damage to the environment			
	Negligible	Readily preventable, non permanent effects			
Buildings & Services	Severe	Catastrophic collapse			
	Moderate	Degradation of building material			
	Mild	Noticeable non structural change, requiring repair			
	Negligible	Noticeable non structural change of no consequence			
Standard Risk Matrix					
Both the probability of an event occurring, and the consequences of that event to the receptors is assessed on an individual linked basis, which then leads to an overall initial Risk Ranking (estimation). With some types of hazard the risk may change with time, and some element of this may have been considered in the risk estimation.					
		Probability			
		High	Medium	Low	Extremely Low
Consequence	Severe	Very High	High	Medium	Low
	Moderate	High	Medium	Low	Very Low
	Mild	Medium	Low	Very Low	Very Low
	Negligible	Low	Very Low	Very Low	Very Low
Risk Ranking Definitions					
Ranking		Definition			
Very High Risk		Demonstrable contaminated land situation, high liability level, urgent action required			
High Risk		Probable contaminated land situation, risk assessment and action required			
Medium Risk		Plausible contaminated land situation, risk assessment and action likely required			
Low Risk		Possible (unlikely) contaminated land situation, risk assessment/action considered			
Very Low Risk		Negligible risk, no action required unless unforeseen adverse circumstances identified			

Appendix C: Data Sheets and Drawings

- **Groundsure Map Insight report ref. GS-7993505**
- **Groundsure Enviro + Geo Insight report ref. GS-7993506**
- **Site Location Plan (DR-01)**
- **Site Plan (DR-02)**

Site Details:

THORPE HALL, MENDHAM,
IP20 0LX

Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

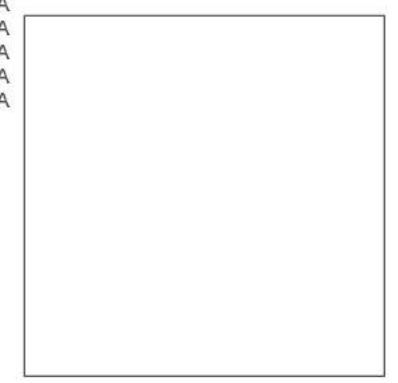
Map date: 1884

Scale: 1:2,500

Printed at: 1:2,500



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

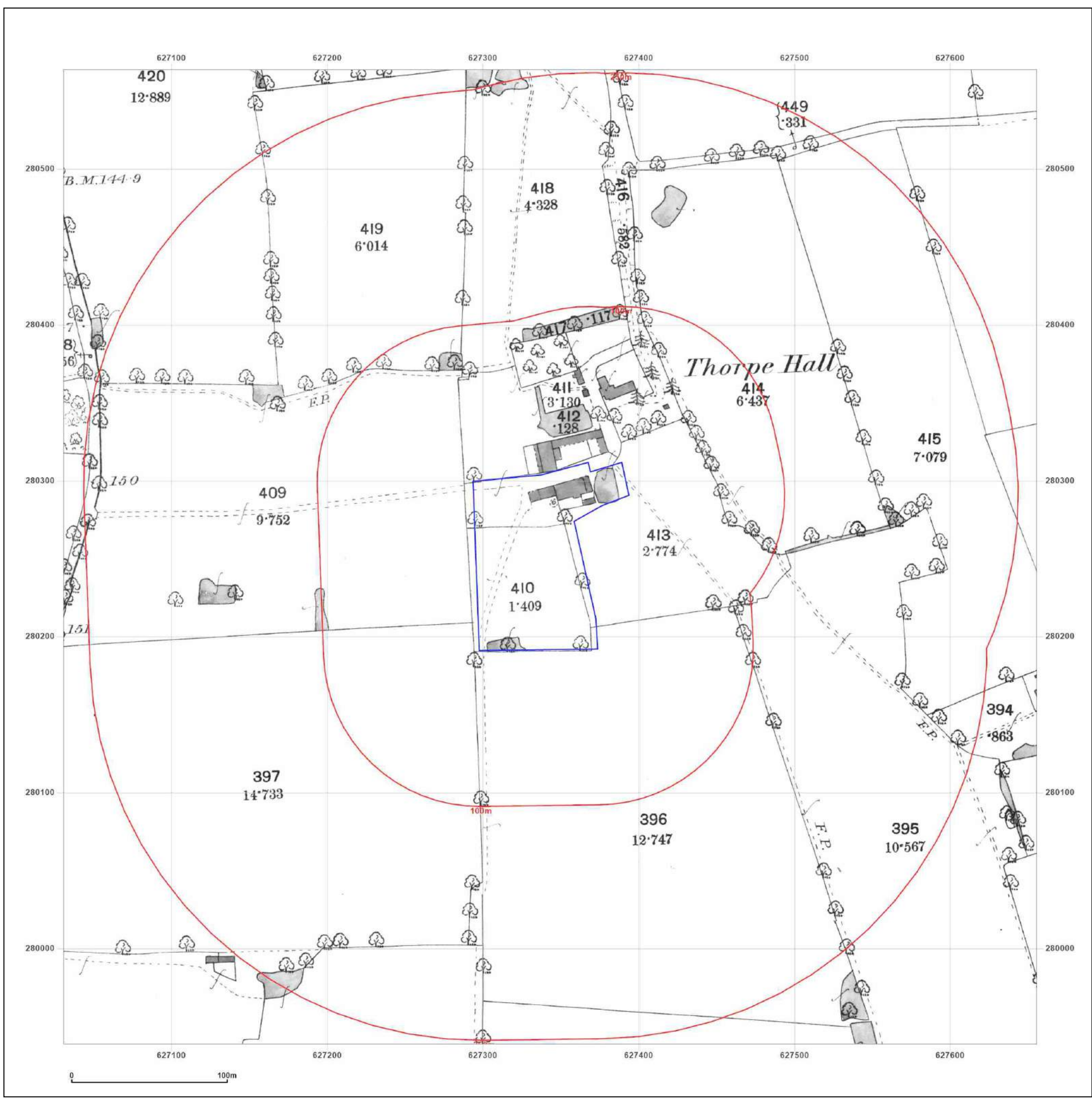


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Production date: 29 June 2021

Map legend available at:
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Site Details:

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IP20 0LX

Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

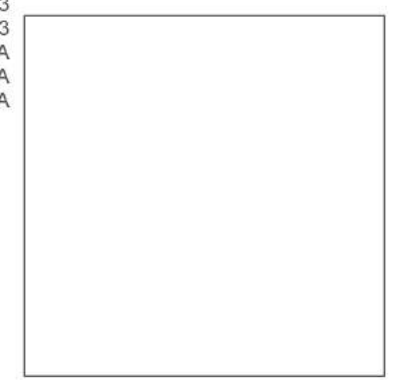
Map date: 1903

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1903
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

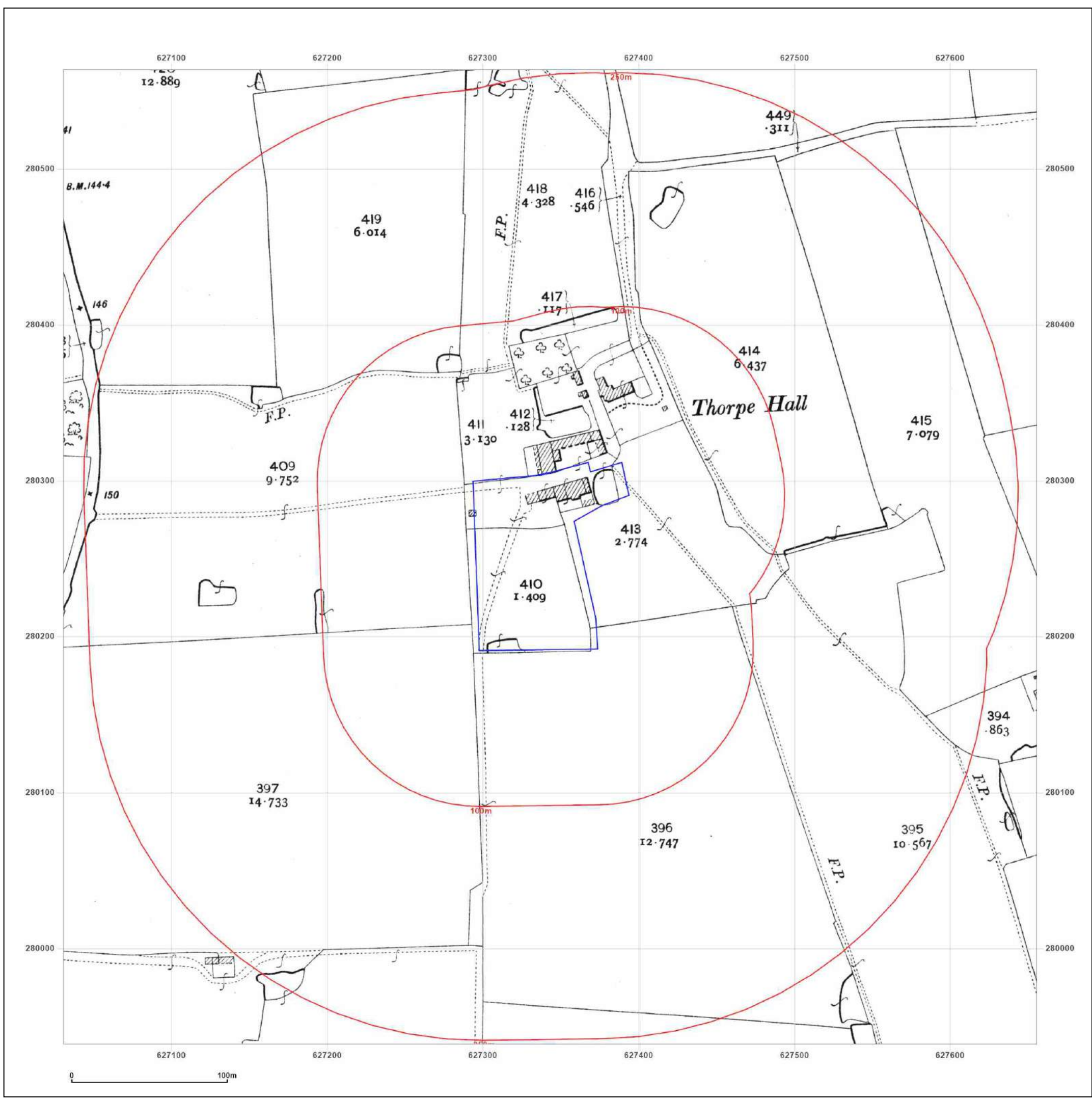


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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid

Map date: 1975-1977

Scale: 1:2,500

Printed at: 1:2,500



<p>Surveyed 1977 Revised 1977 Edition N/A Copyright 1979 Levelled 1968</p>	<p>Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A</p>
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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid

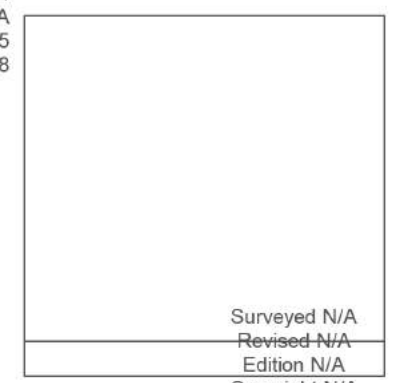
Map date: 1974-1979

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1968



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

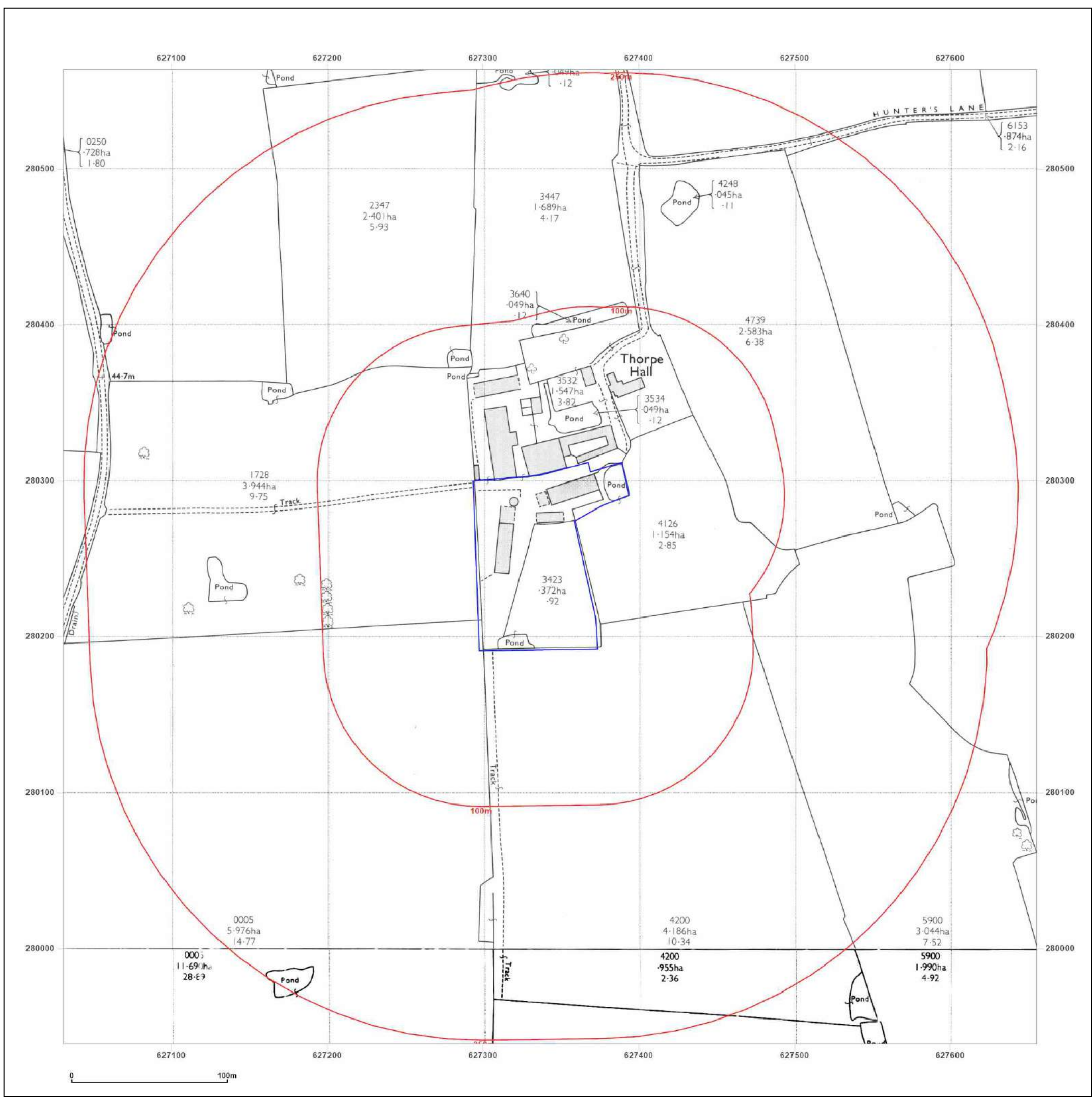


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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid

Map date: 1994

Scale: 1:2,500

Printed at: 1:2,500



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

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

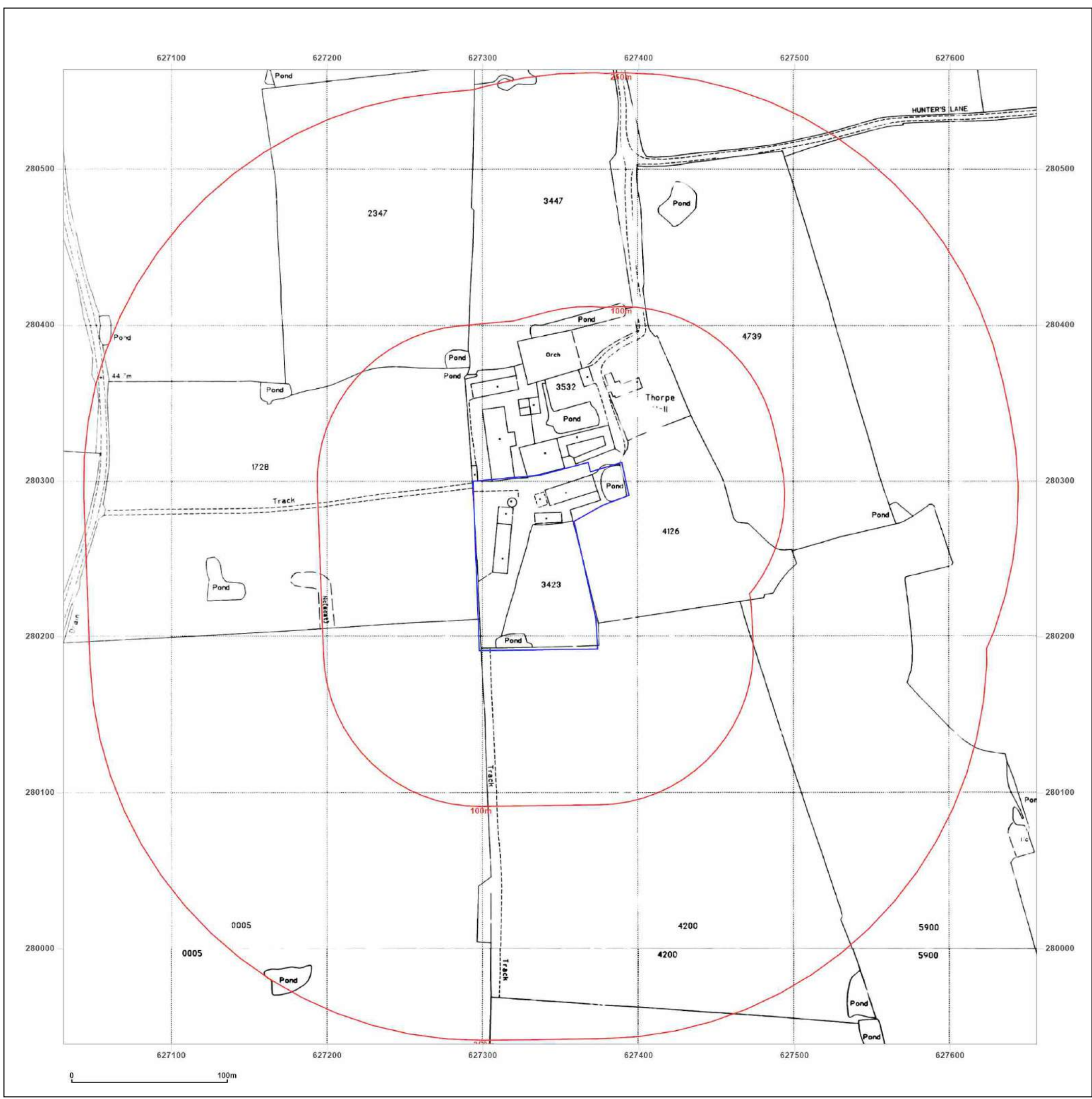


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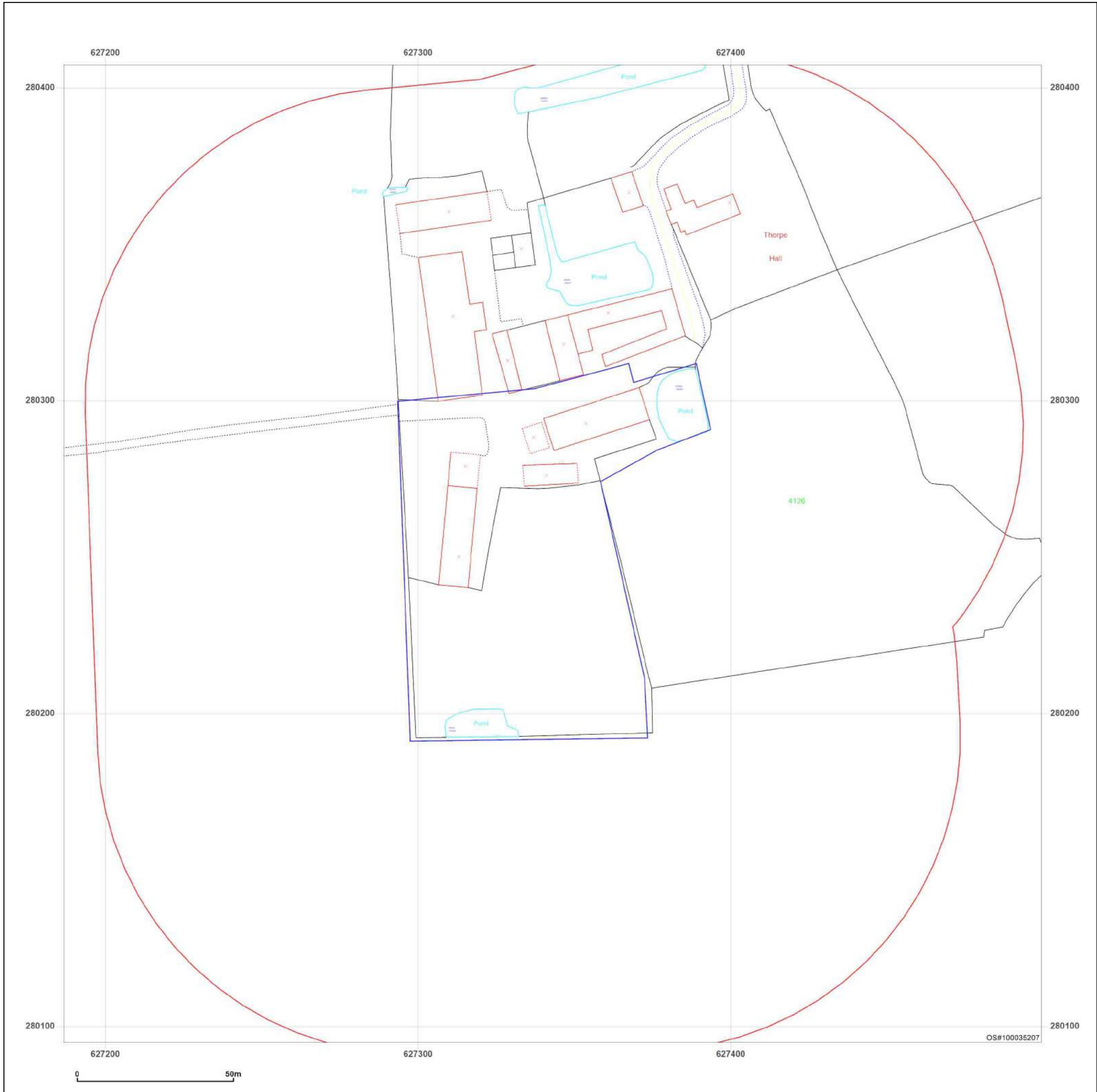
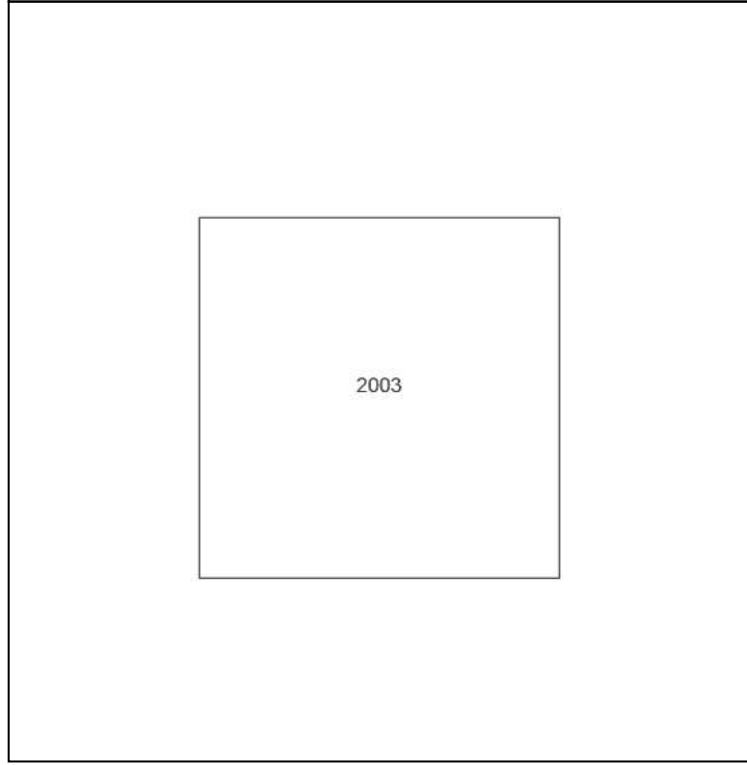
Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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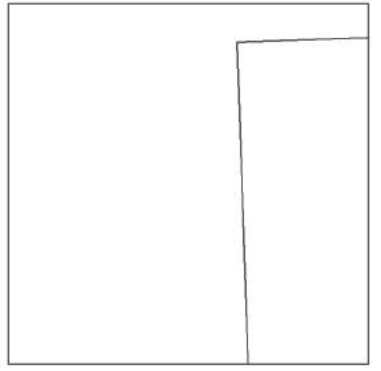
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Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

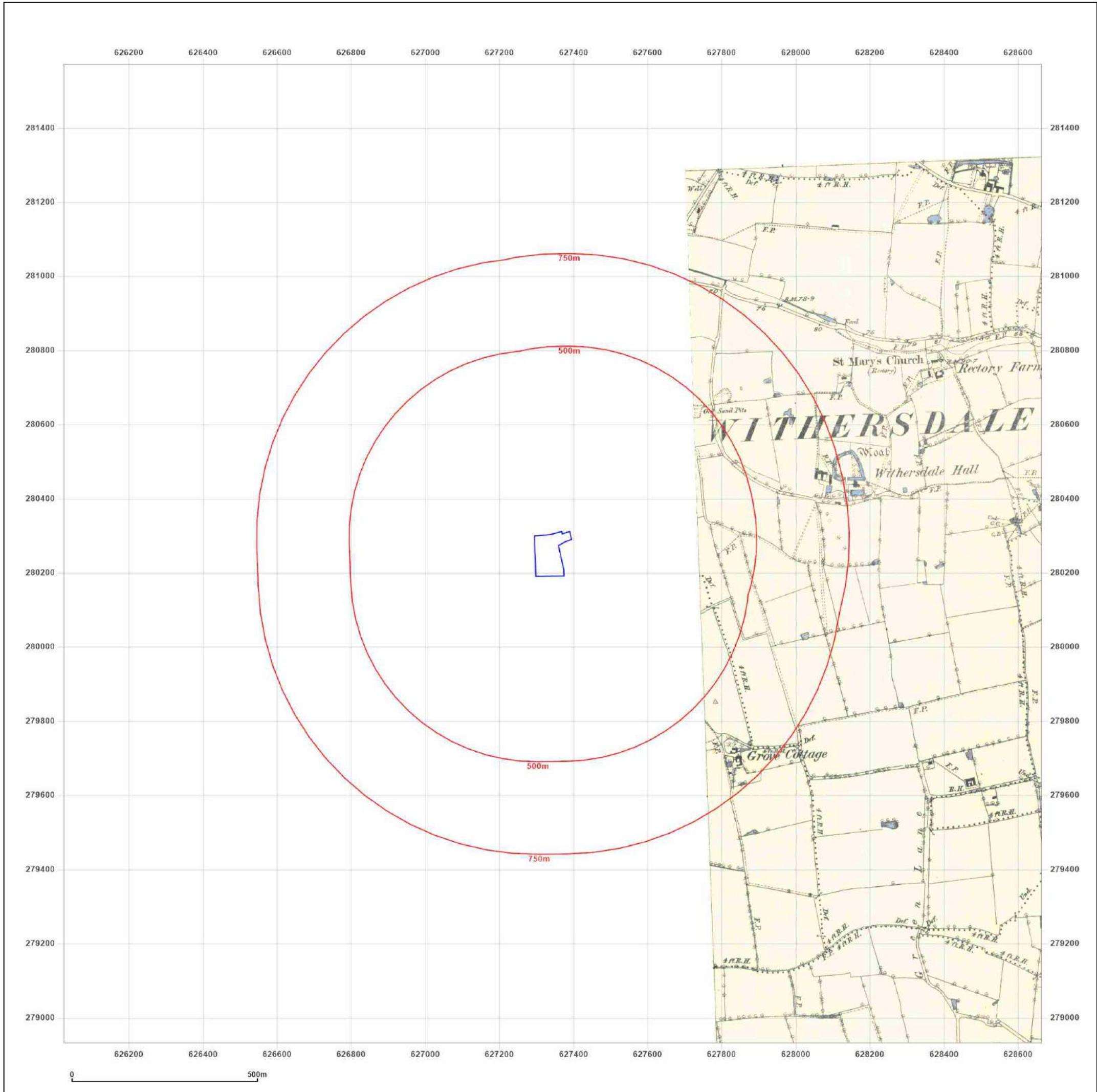
Map date: 1882

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1882
Revised 1882
Edition N/A
Copyright N/A
Levelled N/A



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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

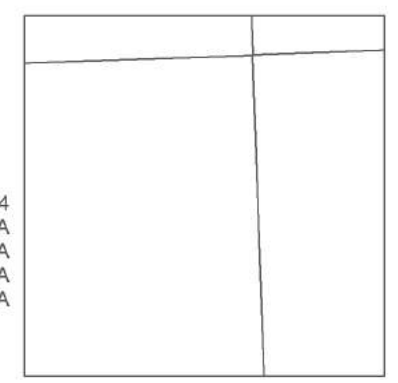
Map date: 1884-1885

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1883
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1884
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

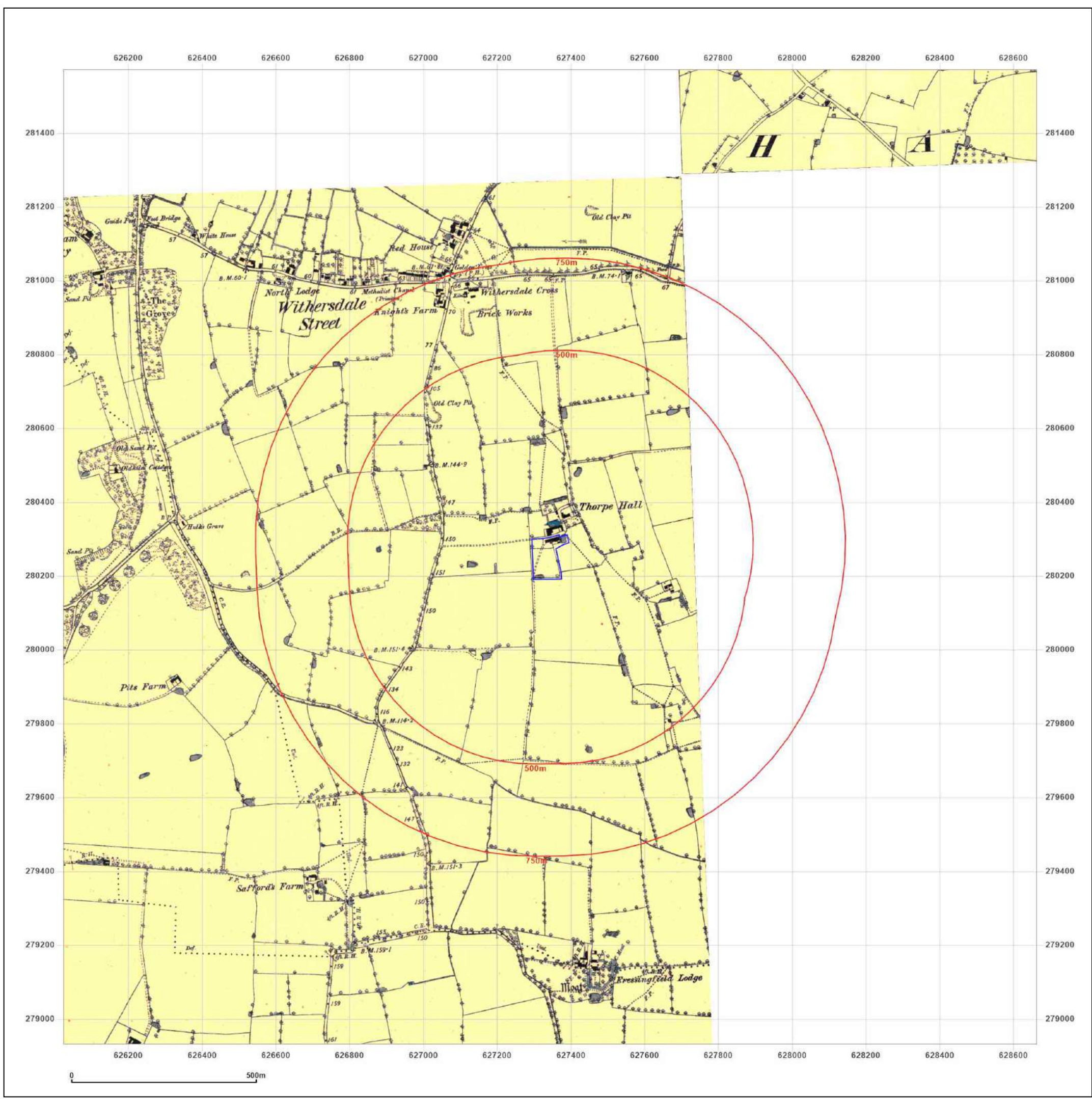


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IP20 0LX

Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

Map date: 1883-1888

Scale: 1:10,560

Printed at: 1:10,560

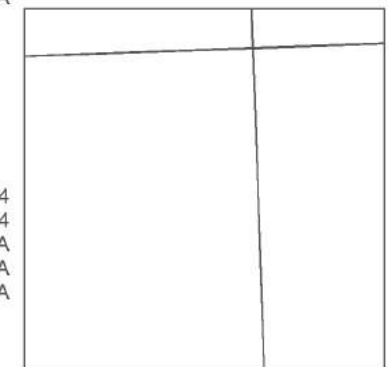


Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1884
Revised 1884
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

Map date: 1903-1905

Scale: 1:10,560

Printed at: 1:10,560

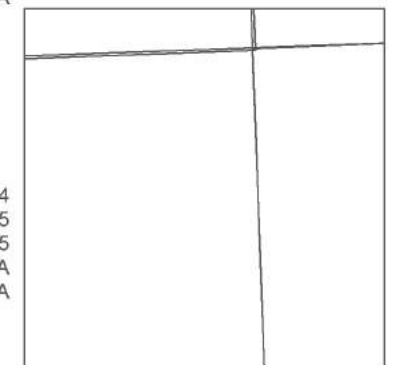


Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1883
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1884
Revised 1905
Edition 1905
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

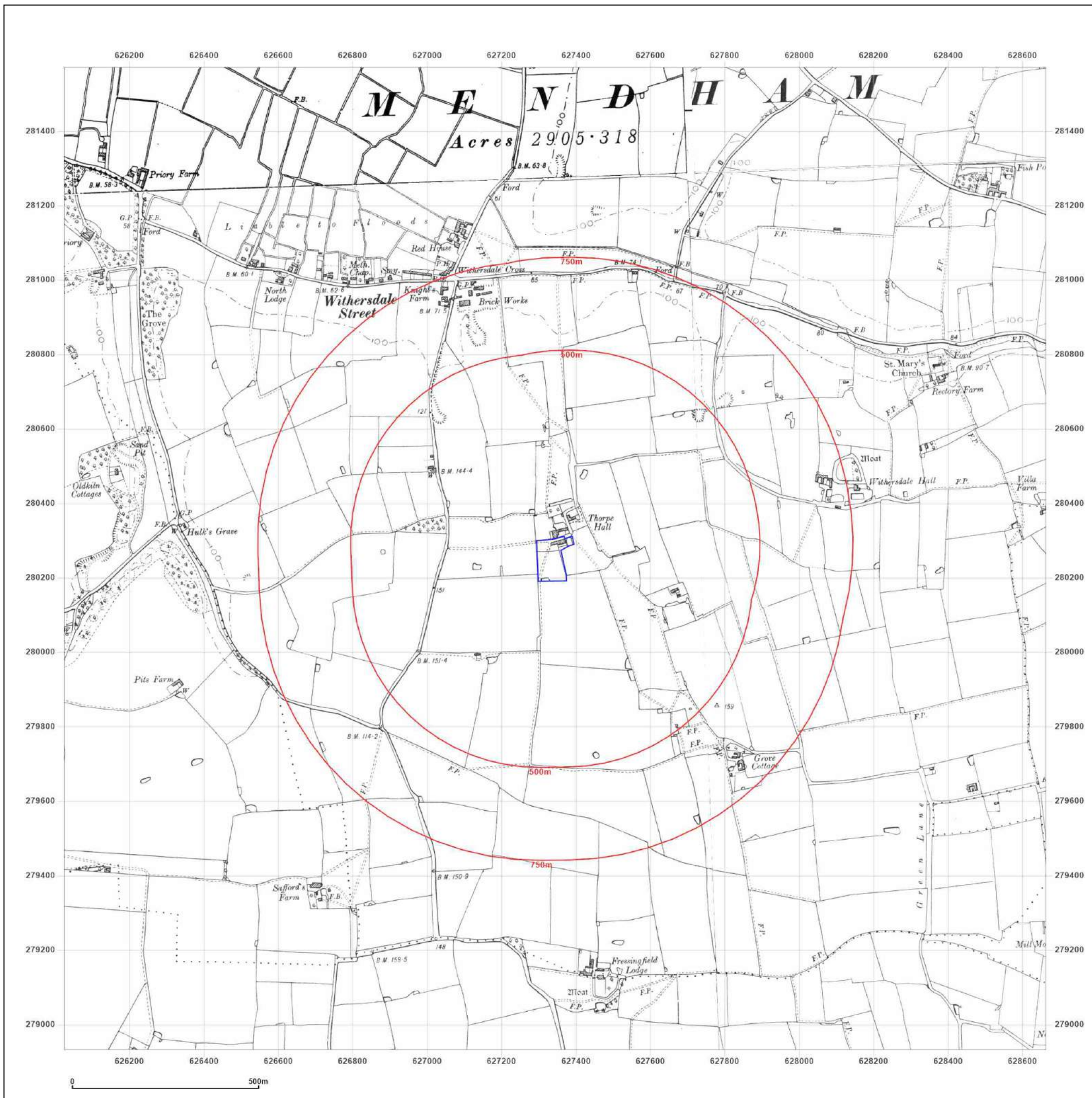


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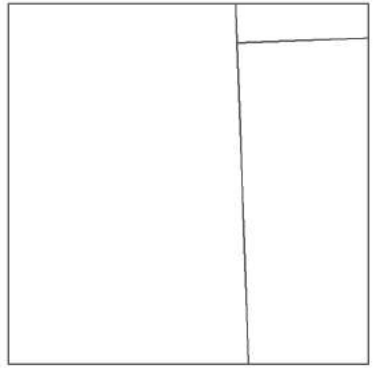
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Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

Map date: 1928

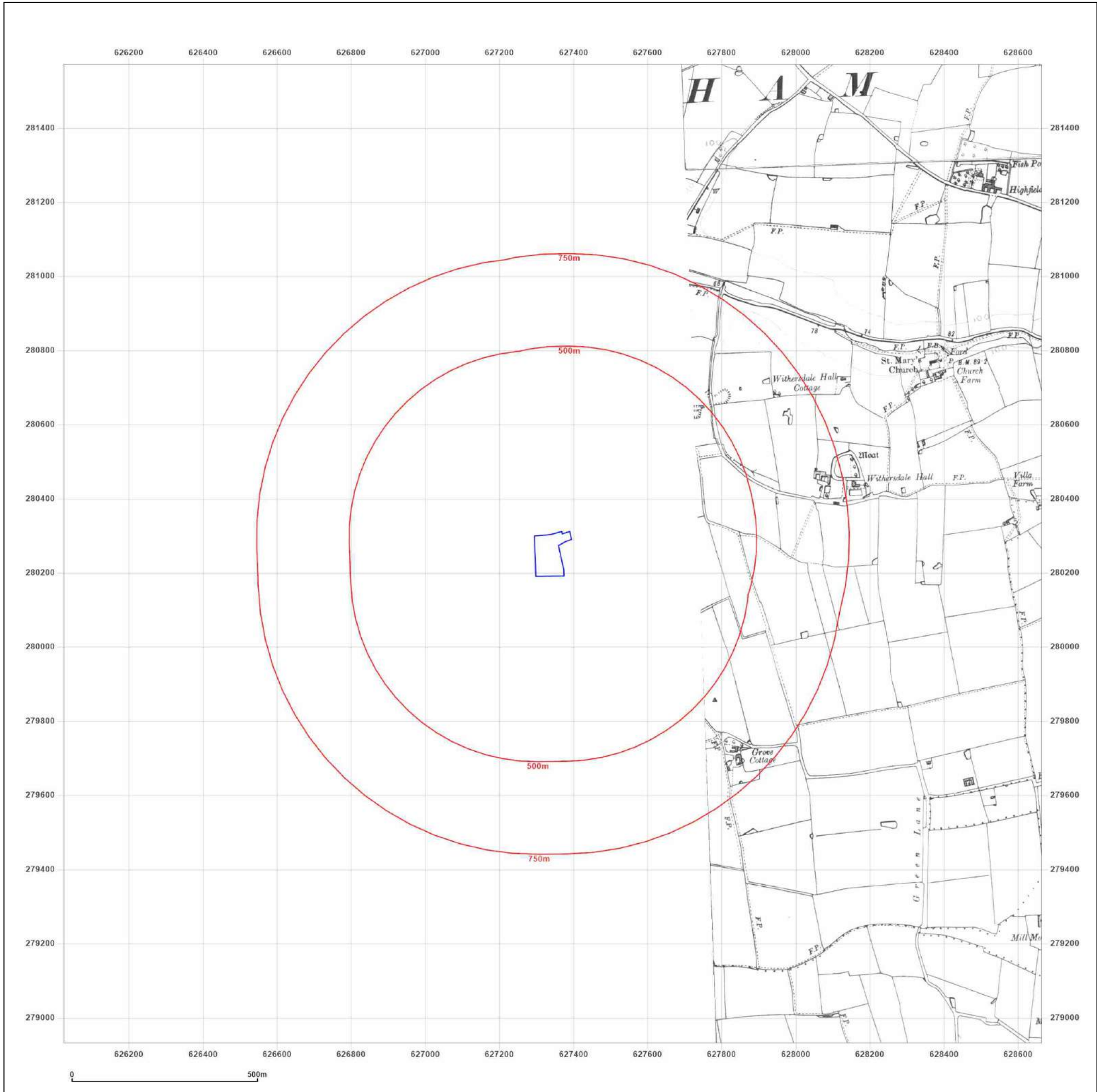
Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1883
Revised 1928
Edition 1928
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1928
Edition 1928
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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

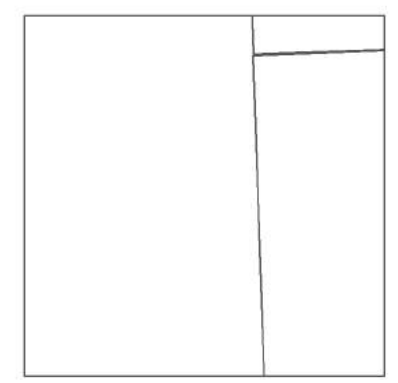
Map date: 1925-1928

Scale: 1:10,560

Printed at: 1:10,560



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



Surveyed 1882
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

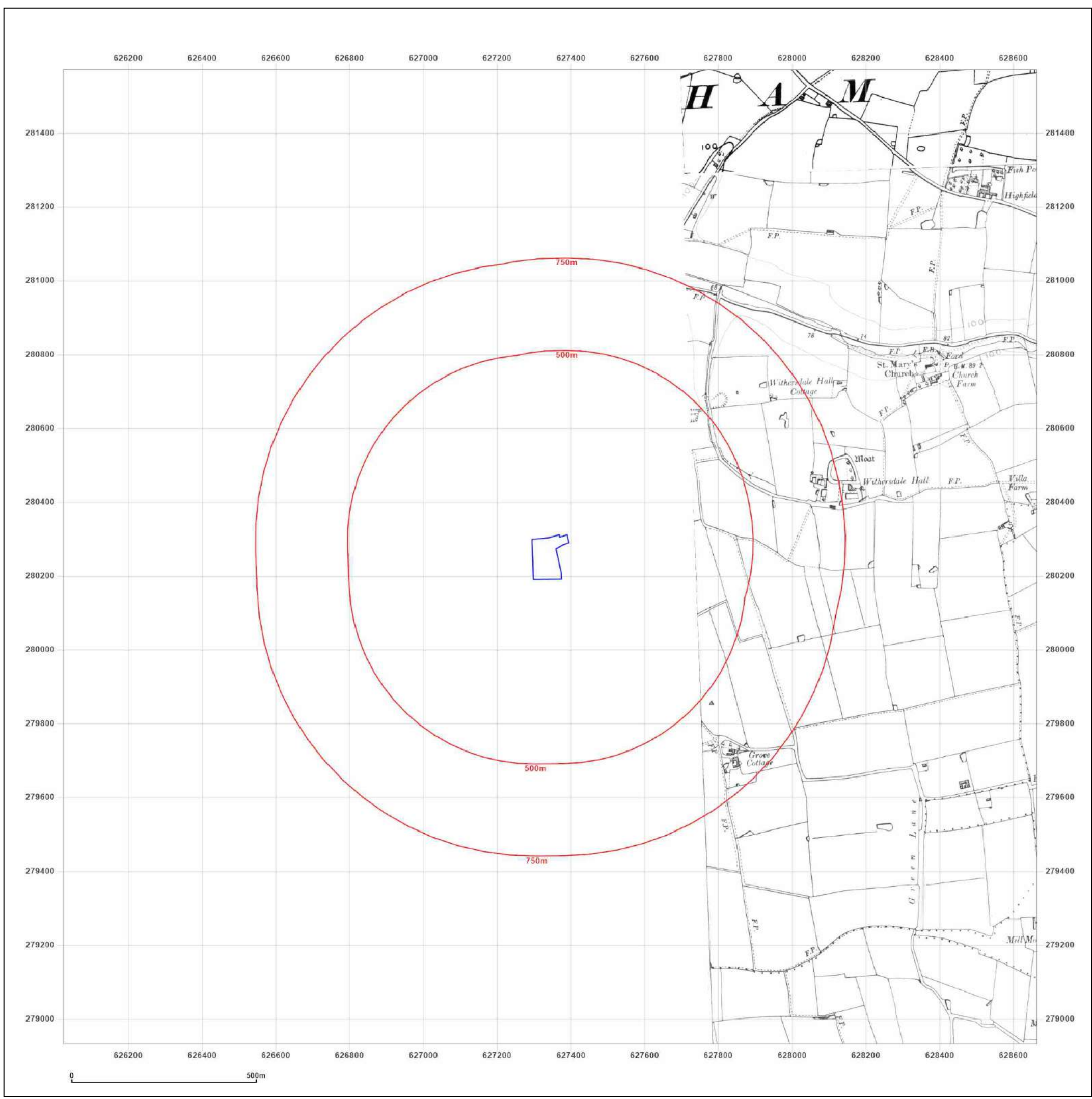


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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

Map date: 1946

Scale: 1:10,560

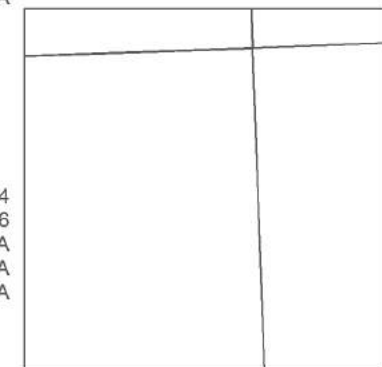
Printed at: 1:10,560



Surveyed 1883
Revised 1946
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1883
Revised 1946
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1884
Revised 1946
Edition N/A
Copyright N/A
Levelled N/A

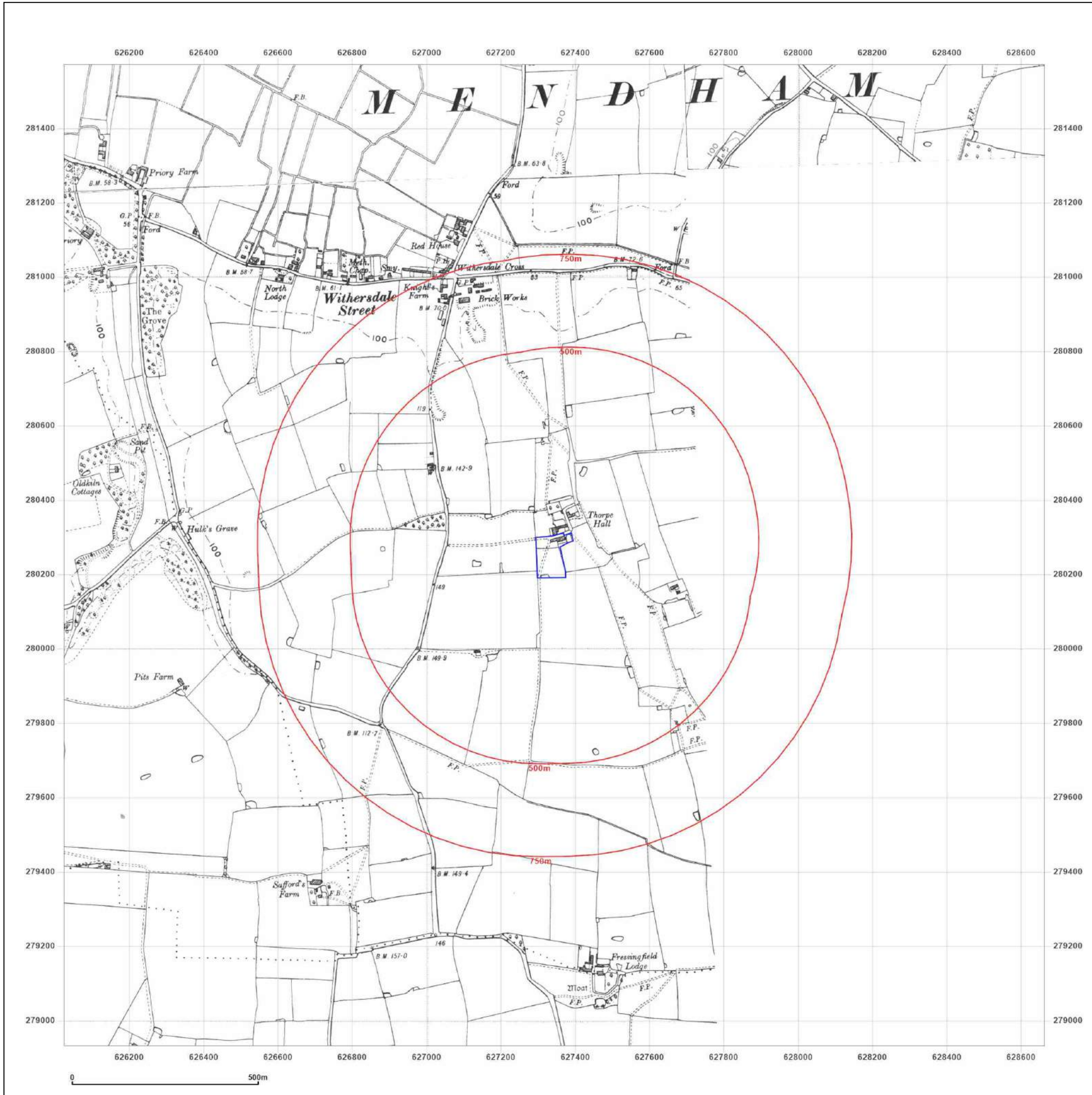


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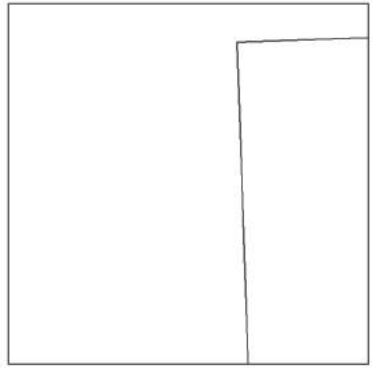
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Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: County Series

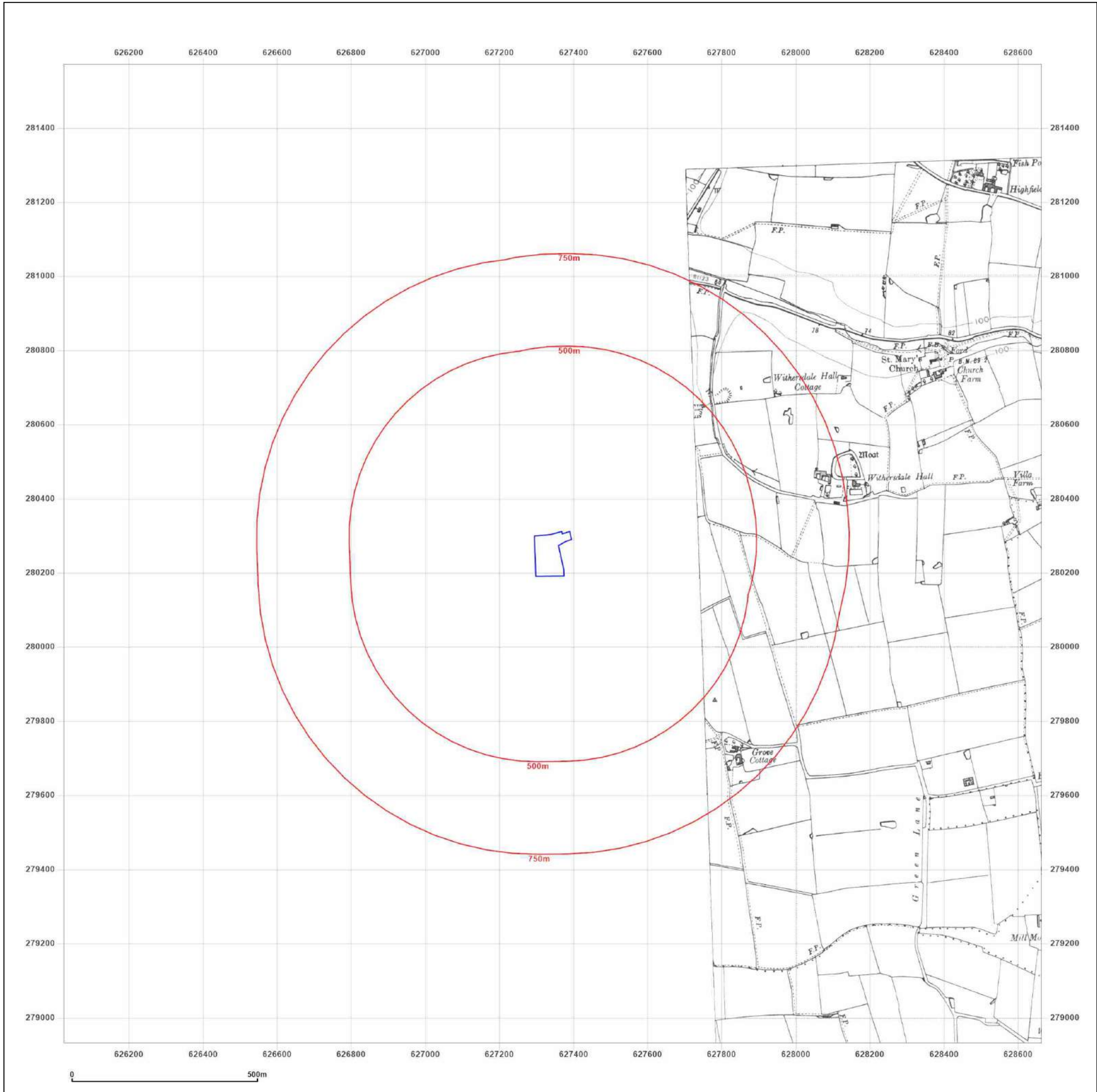
Map date: 1947

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1882
Revised 1947
Edition N/A
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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: Provisional

Map date: 1952-1953

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1953
Revised 1953
Edition N/A
Copyright N/A
Levelled N/A

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

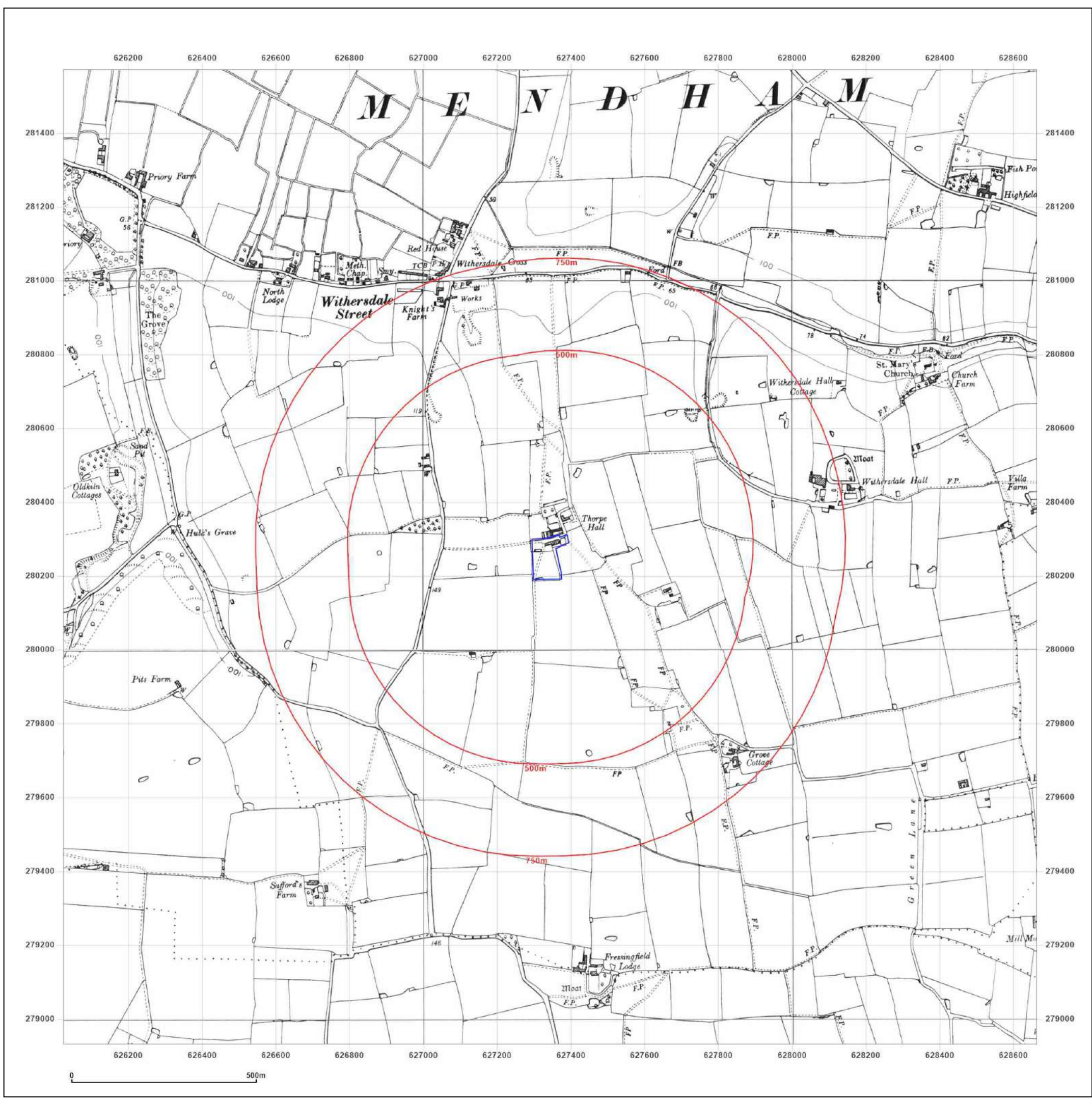


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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid

Map date: 1978-1983

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1974
Revised 1978
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1978
Revised 1983
Edition N/A
Copyright N/A
Levelled N/A

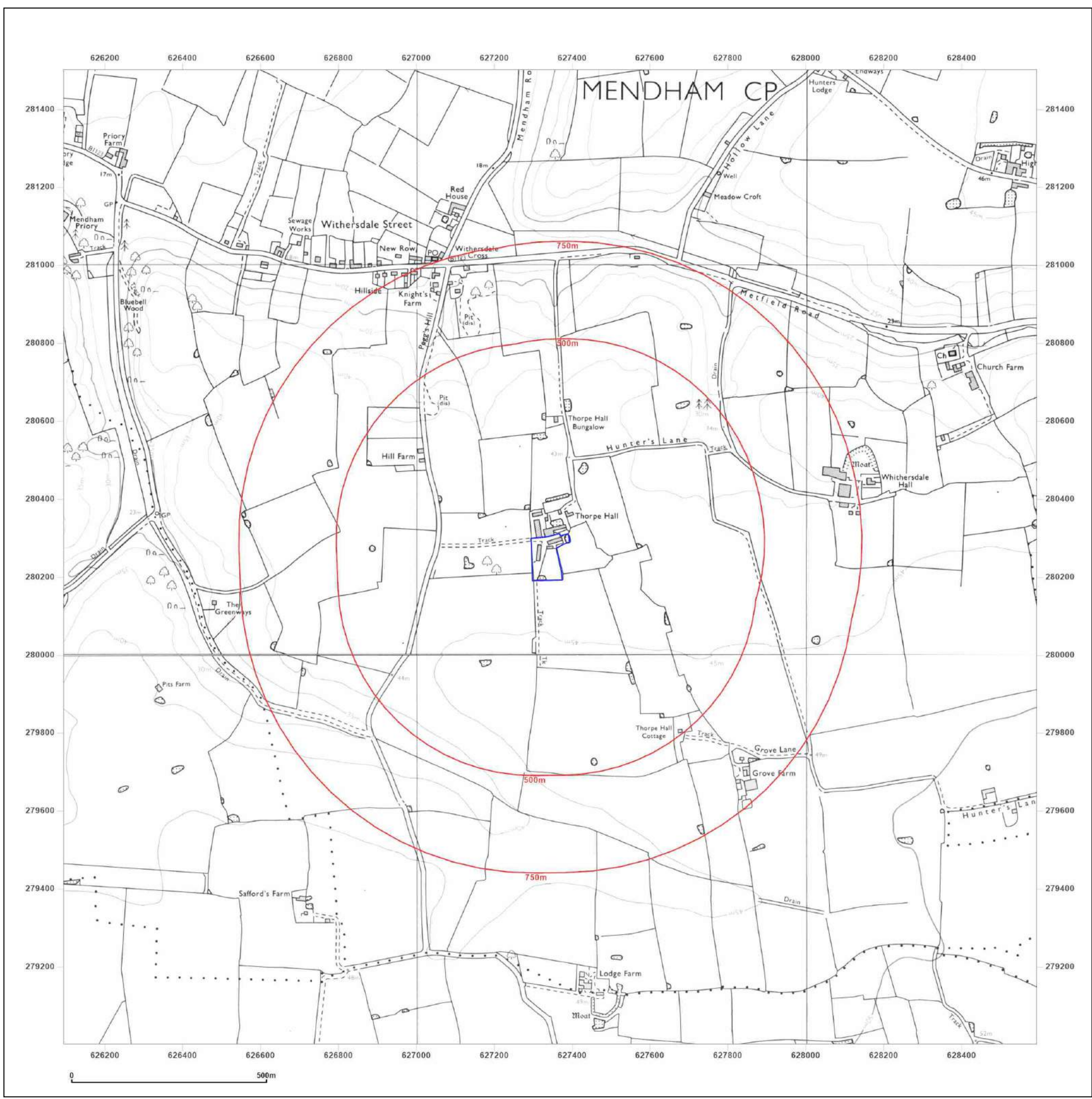


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Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid

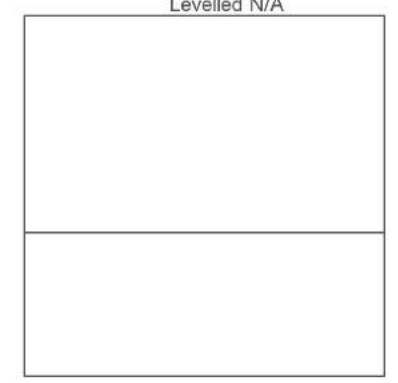
Map date: 1992

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1974
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

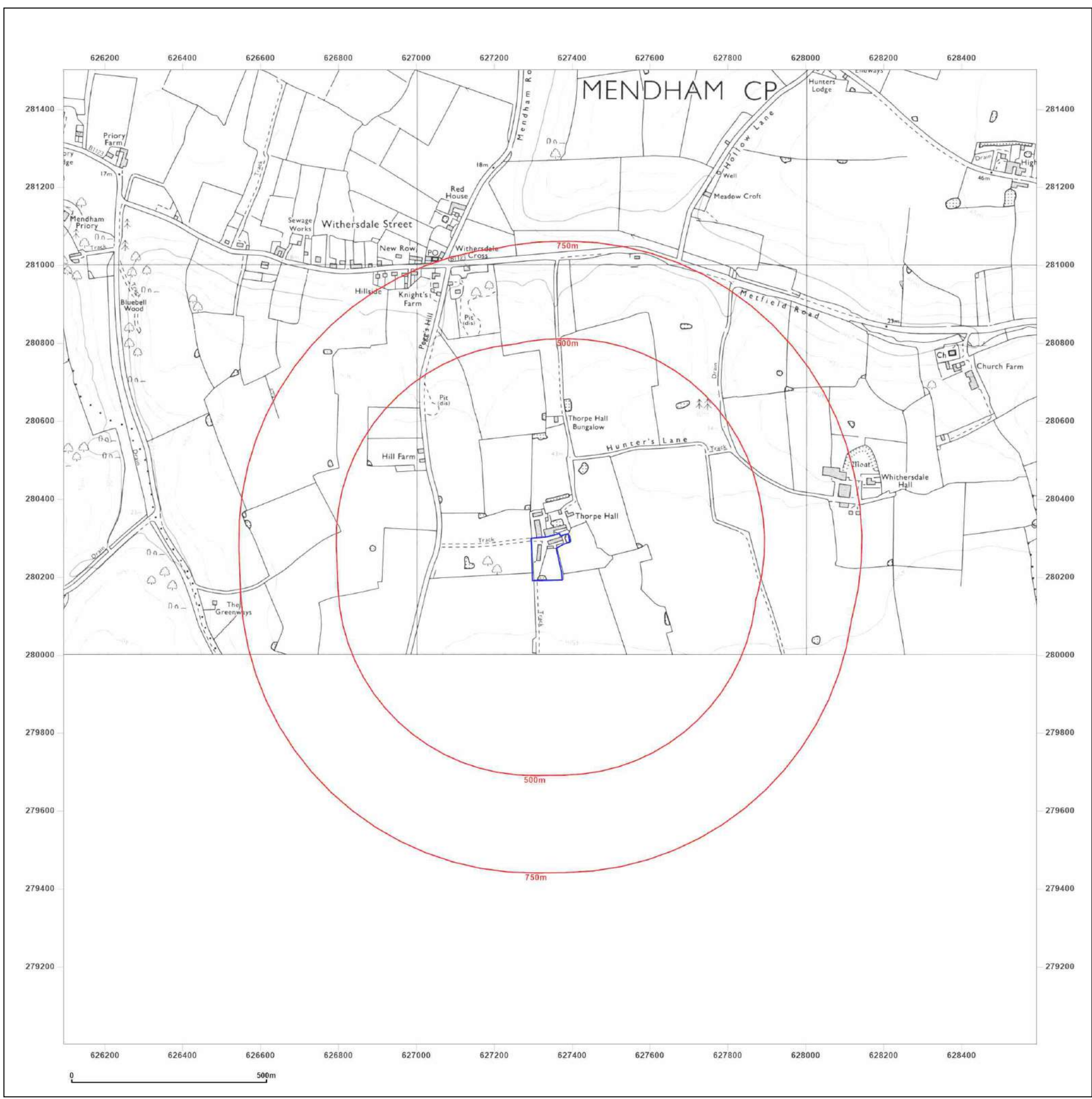


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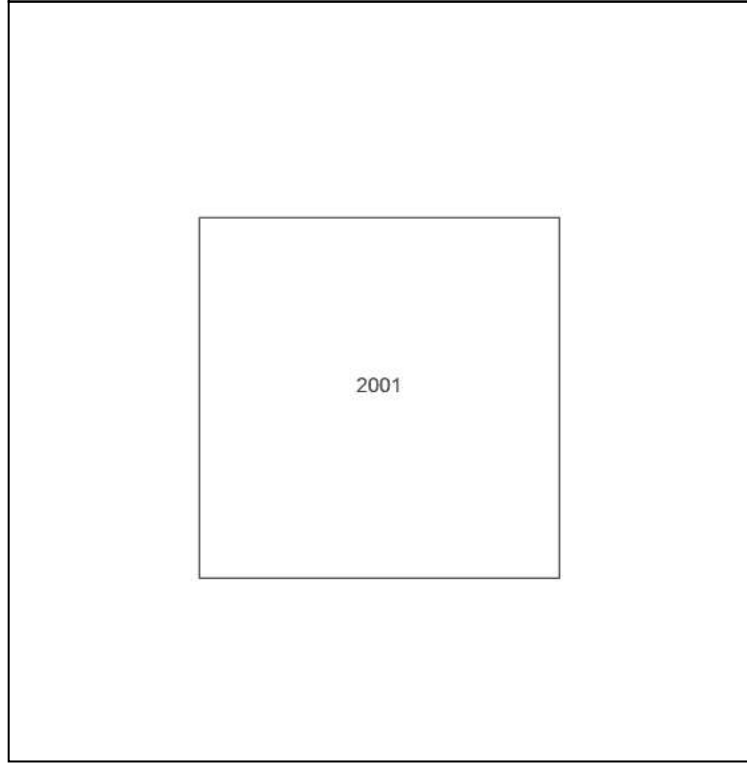
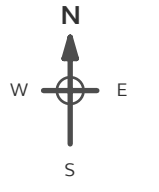
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Site Details:
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 IP20 0LX

Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid
Map date: 2001
Scale: 1:10,000
Printed at: 1:10,000

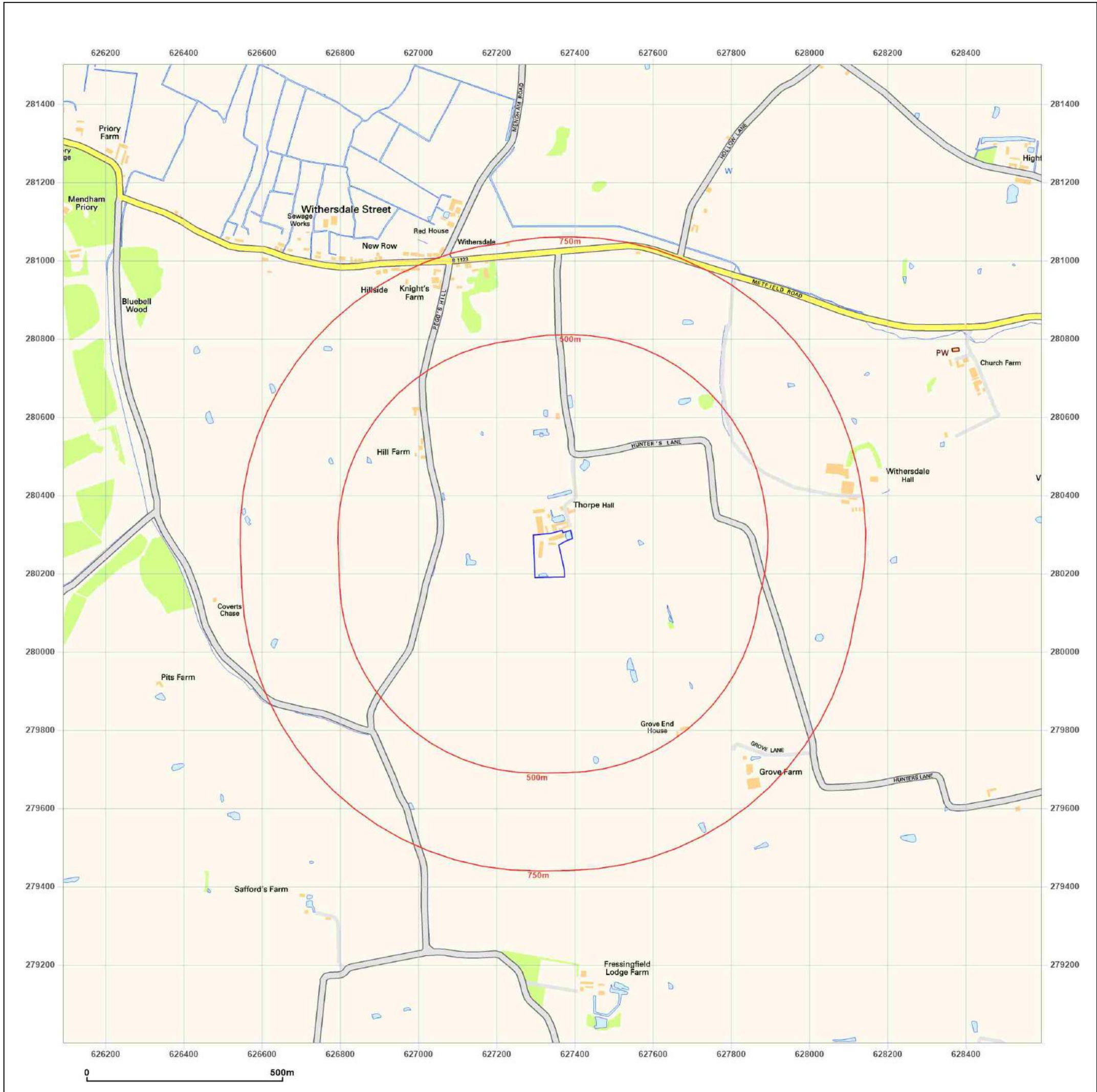


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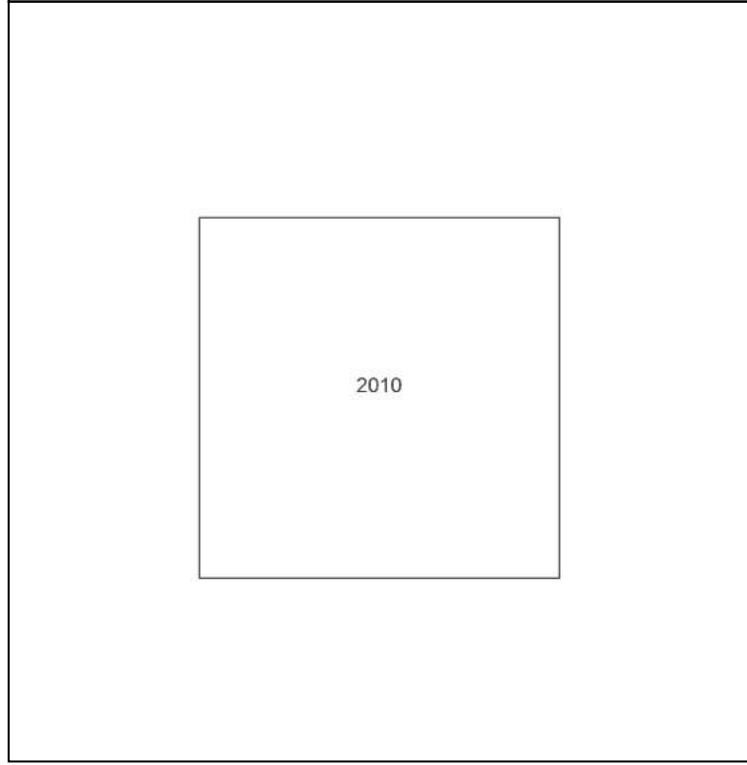
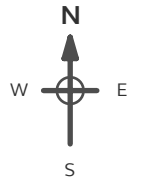
Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:
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 IP20 0LX

Client Ref: 20-577_Mendham
Report Ref: GS-7993505
Grid Ref: 627343, 280251

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

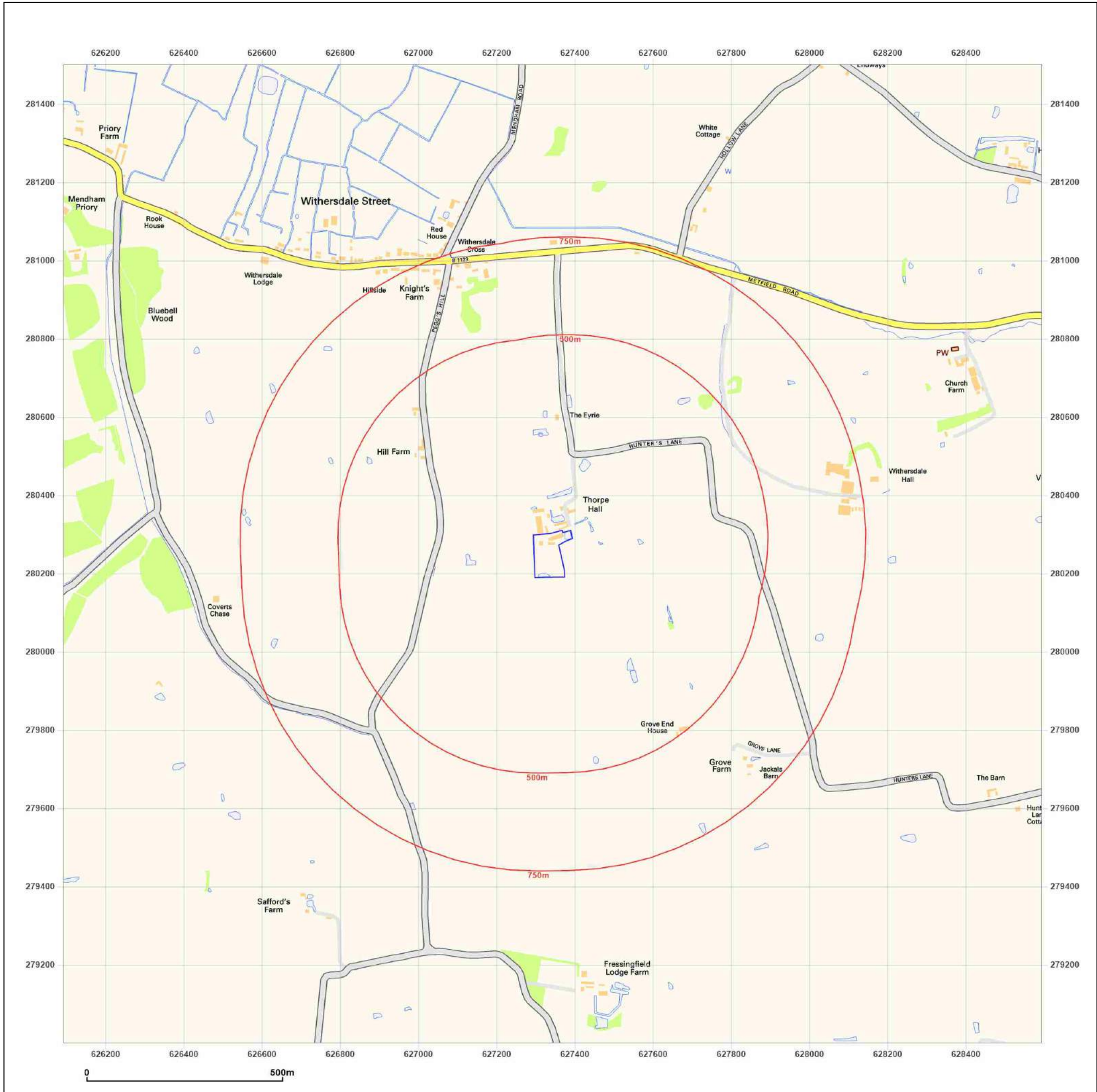


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Site Details:

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IP20 0LX

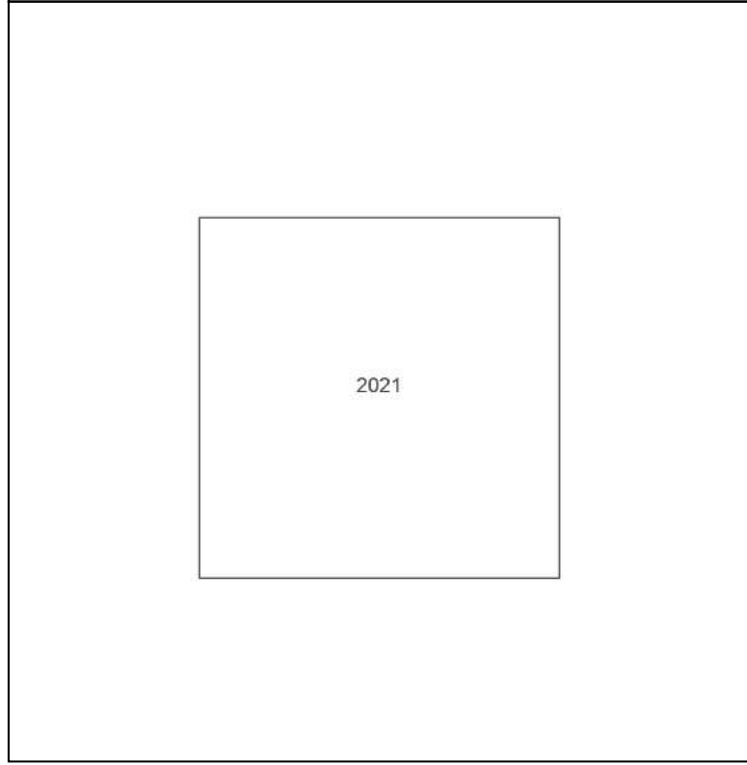
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Report Ref: GS-7993505
Grid Ref: 627343, 280251

Map Name: National Grid

Map date: 2021

Scale: 1:10,000

Printed at: 1:10,000

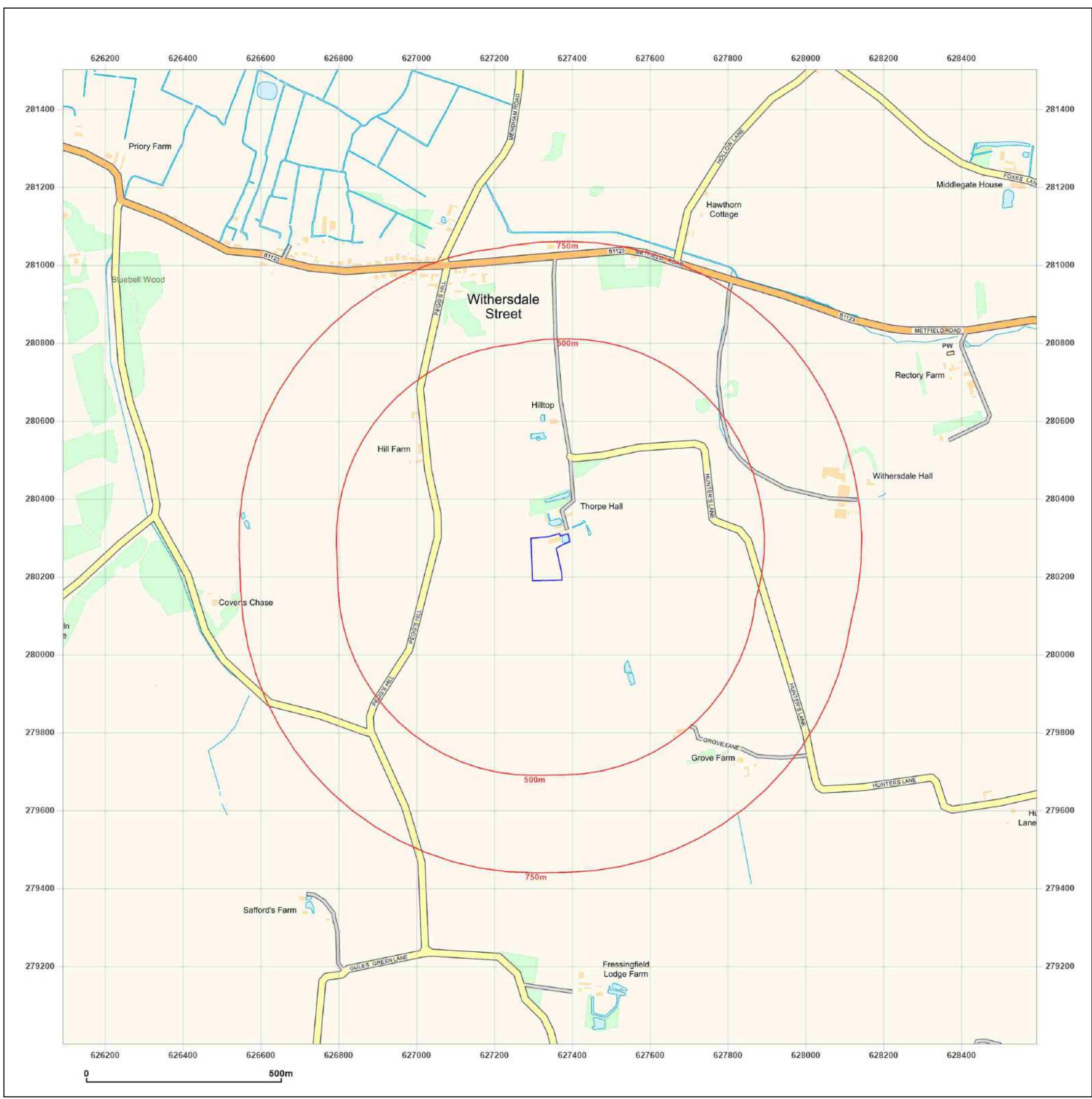


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THORPE HALL, MENDHAM, IP20 0LX

Order Details

Date: 29/06/2021
Your ref: 20-577_Mendham
Our Ref: GS-7993506
Client: ACSSIS Ltd

Site Details

Location: 627355 280293
Area: 0.86 ha
Authority: [Mid Suffolk District Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

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Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	0	0	0	14	-
15	1.2	<u>Historical tanks</u>	1	0	0	0	-
16	1.3	Historical energy features	0	0	0	0	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	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
17	2.1	<u>Historical industrial land uses</u>	0	0	0	18	-
18	2.2	<u>Historical tanks</u>	1	0	0	0	-
19	2.3	Historical energy features	0	0	0	0	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
21	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
21	3.5	Historical waste sites	0	0	0	0	-
21	3.6	Licensed waste sites	0	0	0	0	-
21	3.7	<u>Waste exemptions</u>	0	0	2	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
23	4.1	Recent industrial land uses	0	0	0	-	-
23	4.2	Current or recent petrol stations	0	0	0	0	-
23	4.3	Electricity cables	0	0	0	0	-
23	4.4	Gas pipelines	0	0	0	0	-
23	4.5	Sites determined as Contaminated Land	0	0	0	0	-



24	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
24	4.7	Regulated explosive sites	0	0	0	0	-
24	4.8	Hazardous substance storage/usage	0	0	0	0	-
24	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
24	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
25	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
25	4.12	Radioactive Substance Authorisations	0	0	0	0	-
25	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
25	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
25	4.15	Pollutant release to public sewer	0	0	0	0	-
26	4.16	List 1 Dangerous Substances	0	0	0	0	-
26	4.17	List 2 Dangerous Substances	0	0	0	0	-
26	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
26	4.19	Pollution inventory substances	0	0	0	0	-
26	4.20	Pollution inventory waste transfers	0	0	0	0	-
27	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
28	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
30	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
32	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
33	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
33	5.5	Groundwater vulnerability- local information	None (within 0m)				
34	5.6	<u>Groundwater abstractions</u>	0	0	0	0	2
35	5.7	Surface water abstractions	0	0	0	0	0
35	5.8	Potable abstractions	0	0	0	0	0
36	5.9	Source Protection Zones	0	0	0	0	-
36	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
37	6.1	Water Network (OS MasterMap)	0	0	0	-	-



37	6.2	<u>Surface water features</u>	1	2	3	-	-
38	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
38	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
39	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
40	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
40	7.2	Historical Flood Events	0	0	0	-	-
40	7.3	Flood Defences	0	0	0	-	-
40	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
41	7.5	Flood Storage Areas	0	0	0	-	-
42	7.6	Flood Zone 2	None (within 50m)				
42	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding					
43	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				

Page	Section	Groundwater flooding					
45	9.1	<u>Groundwater flooding</u>	Low (within 50m)				

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
46	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
46	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
46	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
46	10.4	Special Protection Areas (SPA)	0	0	0	0	0
47	10.5	National Nature Reserves (NNR)	0	0	0	0	0
47	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
47	10.7	Designated Ancient Woodland	0	0	0	0	0
47	10.8	Biosphere Reserves	0	0	0	0	0
48	10.9	Forest Parks	0	0	0	0	0
48	10.10	Marine Conservation Zones	0	0	0	0	0
48	10.11	Green Belt	0	0	0	0	0
48	10.12	Proposed Ramsar sites	0	0	0	0	0



48	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
49	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
49	10.15	Nitrate Sensitive Areas	0	0	0	0	0
49	10.16	<u>Nitrate Vulnerable Zones</u>	1	0	0	0	0
50	10.17	<u>SSSI Impact Risk Zones</u>	2	-	-	-	-
51	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
52	11.1	World Heritage Sites	0	0	0	-	-
53	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
53	11.3	National Parks	0	0	0	-	-
53	11.4	<u>Listed Buildings</u>	0	1	0	-	-
54	11.5	Conservation Areas	0	0	0	-	-
54	11.6	Scheduled Ancient Monuments	0	0	0	-	-
54	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
55	12.1	<u>Agricultural Land Classification</u>	Grade 3 (within 250m)				
56	12.2	Open Access Land	0	0	0	-	-
56	12.3	Tree Felling Licences	0	0	0	-	-
56	12.4	Environmental Stewardship Schemes	0	0	0	-	-
56	12.5	<u>Countryside Stewardship Schemes</u>	1	1	2	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
58	13.1	Priority Habitat Inventory	0	0	0	-	-
58	13.2	Habitat Networks	0	0	0	-	-
58	13.3	Open Mosaic Habitat	0	0	0	-	-
58	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
59	14.1	<u>10k Availability</u>	Identified (within 500m)				
60	14.2	Artificial and made ground (10k)	0	0	0	0	-
61	14.3	Superficial geology (10k)	0	0	0	0	-



61	14.4	Landslip (10k)	0	0	0	0	-
62	14.5	Bedrock geology (10k)	0	0	0	0	-
62	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
63	15.1	<u>50k Availability</u>	Identified (within 500m)				
64	15.2	Artificial and made ground (50k)	0	0	0	0	-
64	15.3	Artificial ground permeability (50k)	0	0	-	-	-
65	15.4	<u>Superficial geology (50k)</u>	1	0	1	8	-
66	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
66	15.6	Landslip (50k)	0	0	0	0	-
67	15.7	Landslip permeability (50k)	None (within 50m)				
68	15.8	<u>Bedrock geology (50k)</u>	1	0	1	0	-
69	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
69	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
70	16.1	<u>BGS Boreholes</u>	0	0	2	-	-
Page	Section	Natural ground subsidence					
71	17.1	<u>Shrink swell clays</u>	Low (within 50m)				
72	17.2	<u>Running sands</u>	Very low (within 50m)				
73	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
74	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
75	17.5	<u>Landslides</u>	Very low (within 50m)				
76	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
77	18.1	Natural cavities	0	0	0	0	-
78	18.2	<u>BritPits</u>	0	0	0	2	-
78	18.3	<u>Surface ground workings</u>	0	1	12	-	-
79	18.4	Underground workings	0	0	0	0	0
79	18.5	Historical Mineral Planning Areas	0	0	0	0	-

79	18.6	Non-coal mining	0	0	0	0	0
80	18.7	Mining cavities	0	0	0	0	0
80	18.8	JPB mining areas	None (within 0m)				
80	18.9	Coal mining	None (within 0m)				
80	18.10	Brine areas	None (within 0m)				
80	18.11	Gypsum areas	None (within 0m)				
81	18.12	Tin mining	None (within 0m)				
81	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
82	19.1	Radon	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
83	20.1	BGS Estimated Background Soil Chemistry	1	0	-	-	-
83	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
83	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
84	21.1	Underground railways (London)	0	0	0	-	-
84	21.2	Underground railways (Non-London)	0	0	0	-	-
84	21.3	Railway tunnels	0	0	0	-	-
84	21.4	Historical railway and tunnel features	0	0	0	-	-
84	21.5	Royal Mail tunnels	0	0	0	-	-
85	21.6	Historical railways	0	0	0	-	-
85	21.7	Railways	0	0	0	-	-
85	21.8	Crossrail 1	0	0	0	0	-
85	21.9	Crossrail 2	0	0	0	0	-
85	21.10	HS2	0	0	0	0	-



Recent aerial photograph



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Capture Date: 11/04/2020

Site Area: 0.86ha



Contact us with any questions at:

info@groundsure.com

08444 159 000

Date: 29 June 2021

Recent site history - 2018 aerial photograph



Capture Date: 04/05/2018

Site Area: 0.86ha



Contact us with any questions at:

info@groundsure.com

08444 159 000

Date: 29 June 2021

Recent site history - 2014 aerial photograph



Capture Date: 18/05/2014

Site Area: 0.86ha

Recent site history - 2005 aerial photograph



Capture Date: 04/09/2005

Site Area: 0.86ha



Contact us with any questions at:

info@groundsure.com

08444 159 000

Date: 29 June 2021

Recent site history - 1999 aerial photograph



Capture Date: 25/06/1999

Site Area: 0.86ha



Contact us with any questions at:

info@groundsure.com

08444 159 000

Date: 29 June 2021

OS MasterMap site plan



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Site Area: 0.86ha



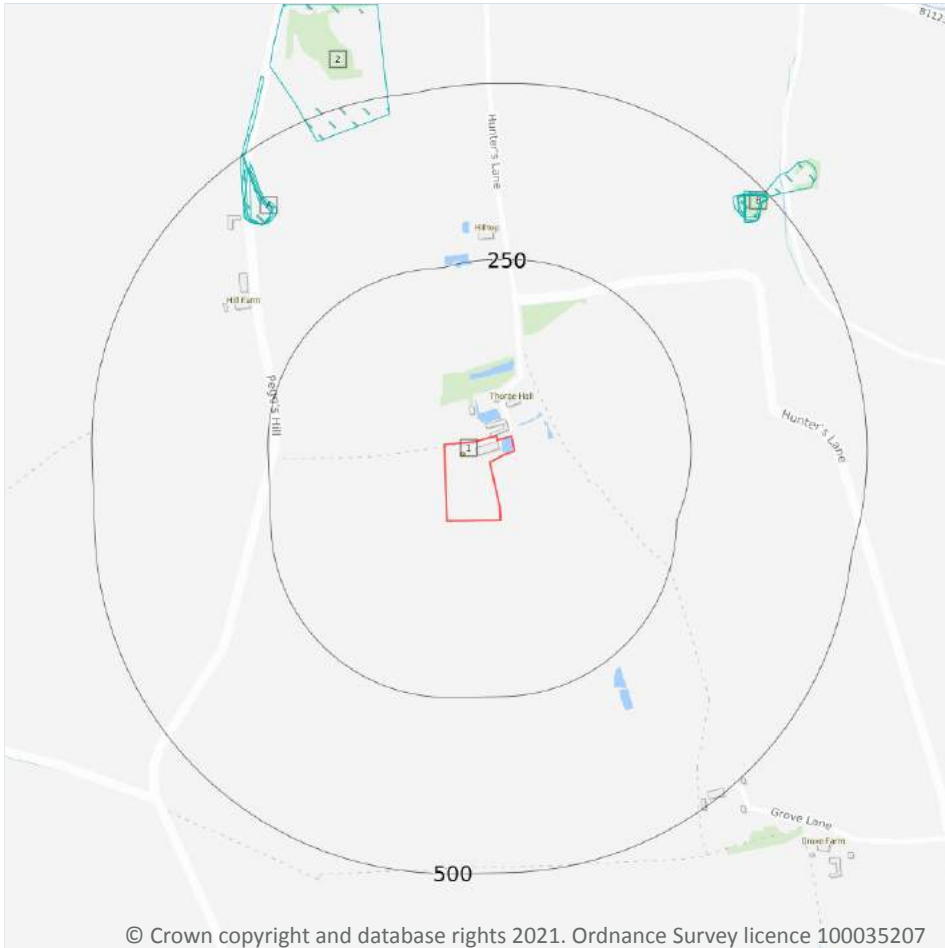
Contact us with any questions at:

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08444 159 000

Date: 29 June 2021

1 Past land use



Site Outline

Search buffers in metres (m)

-  Historical industrial land uses
-  Historical tanks

1.1 Historical industrial land uses

Records within 500m

14

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	401m NW	Unspecified Disused Pit	1978 - 1992	2338703

ID	Location	Land use	Dates present	Group ID
A	401m NW	Unspecified Pit	1946	2331347
A	403m NW	Unspecified Pit	1905	2333053
A	404m NW	Unspecified Pit	1953	2330151
A	405m NW	Old Clay Pit	1884	2320568
B	449m NE	Unspecified Pit	1928	2325888
B	449m NE	Unspecified Pit	1947	2328056
B	451m NE	Unspecified Pit	1903	2342123
B	452m NE	Unspecified Pit	1953	2344562
B	453m NE	Old Sand Pits	1882	2322806
B	453m NE	Unspecified Pit	1905	2339613
B	456m NE	Unspecified Ground Workings	1946	2330503
B	456m NE	Unspecified Ground Workings	1884	2343180
2	465m N	Unspecified Works	1953	2319792

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

1

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

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Tank	1974	416072

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

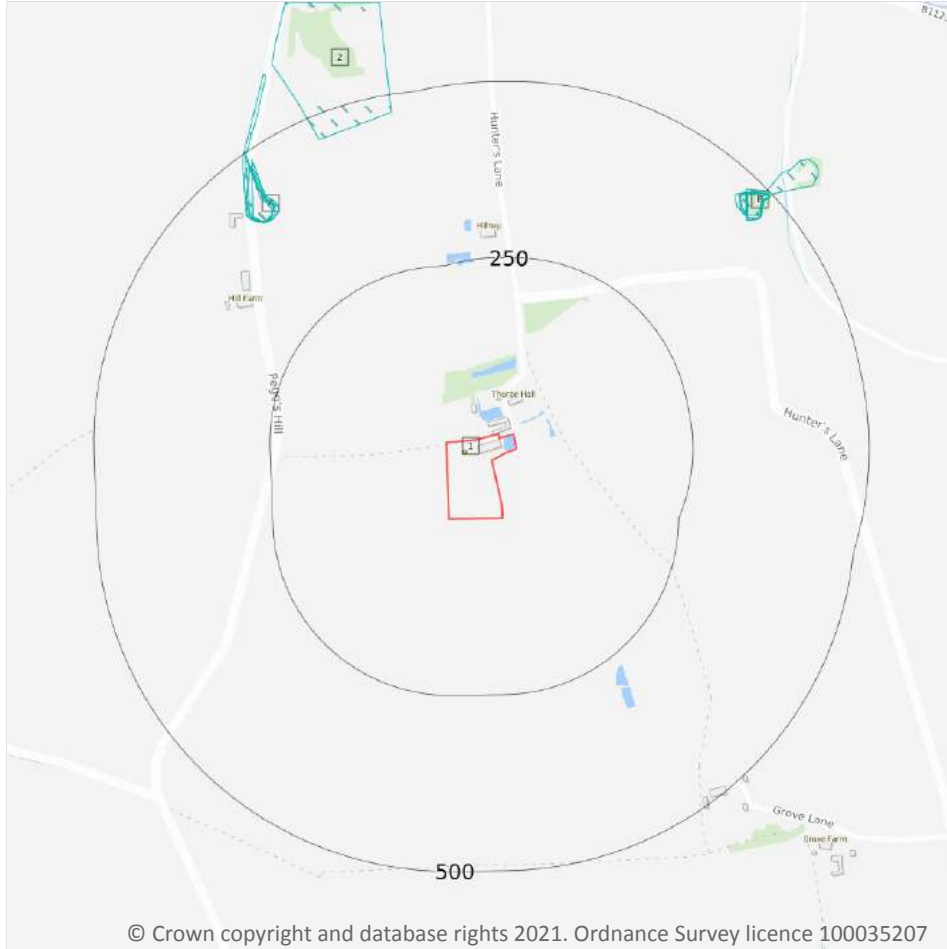
0

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

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




2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

-  Historical industrial land uses
-  Historical tanks

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2.1 Historical industrial land uses

Records within 500m

18

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

Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
A	401m NW	Unspecified Disused Pit	1992	2338703
A	401m NW	Unspecified Disused Pit	1978	2338703
A	401m NW	Unspecified Pit	1946	2331347

ID	Location	Land Use	Date	Group ID
A	403m NW	Unspecified Pit	1905	2333053
A	403m NW	Unspecified Pit	1905	2333053
A	404m NW	Unspecified Pit	1953	2330151
A	405m NW	Old Clay Pit	1884	2320568
B	449m NE	Unspecified Pit	1928	2325888
B	449m NE	Unspecified Pit	1928	2325888
B	451m NE	Unspecified Pit	1947	2328056
B	451m NE	Unspecified Pit	1903	2342123
B	452m NE	Unspecified Pit	1953	2344562
B	453m NE	Old Sand Pits	1882	2322806
B	453m NE	Unspecified Pit	1905	2339613
B	453m NE	Unspecified Pit	1905	2339613
B	456m NE	Unspecified Ground Workings	1946	2330503
B	456m NE	Unspecified Ground Workings	1884	2343180
2	465m N	Unspecified Works	1953	2319792

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

1

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

Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
1	On site	Unspecified Tank	1974	416072

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

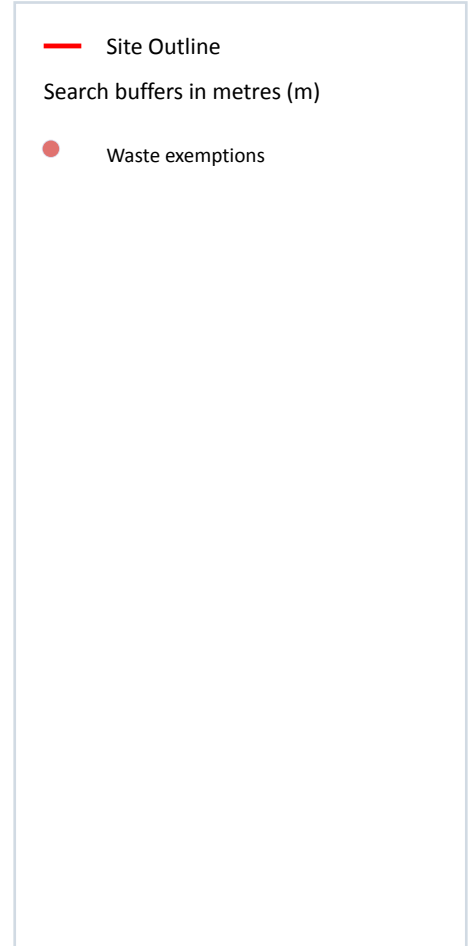
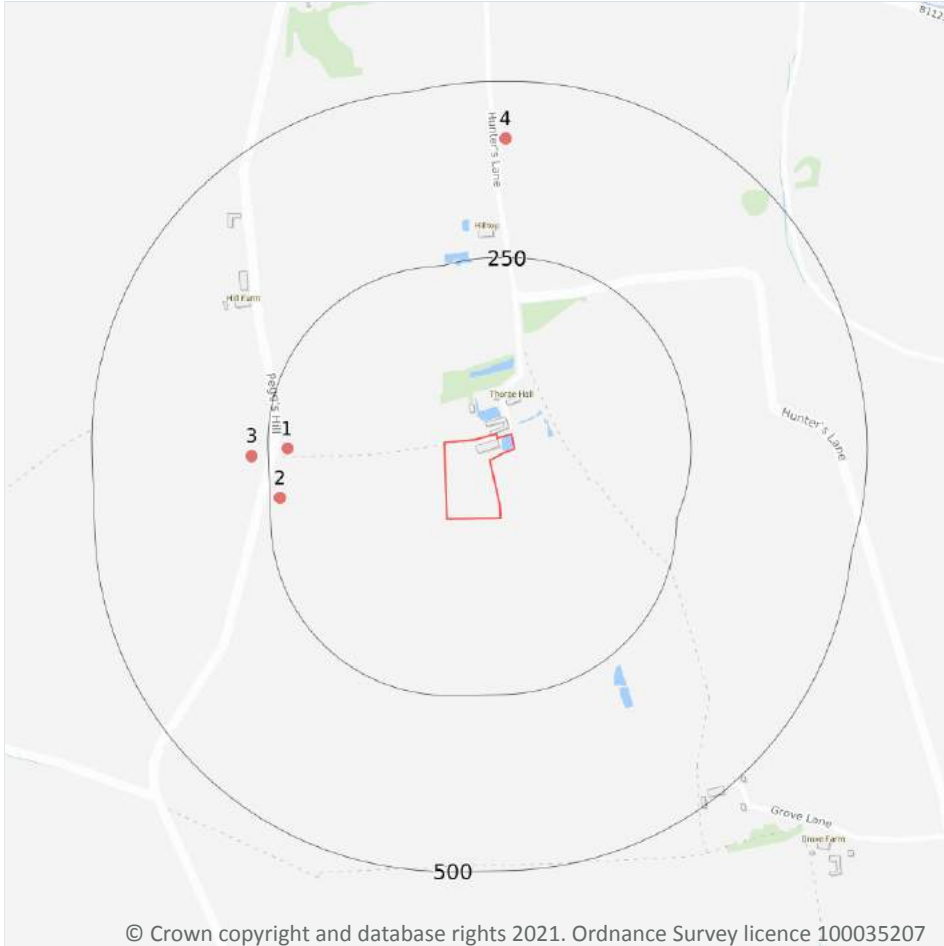
0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

3.5 Historical waste sites

Records within 500m

0

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

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

3.6 Licensed waste sites

Records within 500m

0

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

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

3.7 Waste exemptions

Records within 500m

4

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

Features are displayed on the Waste and landfill map on **page 20**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	224m W	-	WEX087562	Storing waste exemption	On a farm	Storage of sludge

ID	Location	Site	Reference	Category	Sub-Category	Description
2	236m W	-	WEX159003	Storing waste exemption	On a Farm	Storage of sludge
3	274m W	-	WEX159012	Storing waste exemption	On a Farm	Storage of sludge
4	418m N	-	WEX087616	Storing waste exemption	On a farm	Storage of sludge

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



4 Current industrial land use

4.1 Recent industrial land uses

Records within 250m

0

Current potentially contaminative industrial sites.

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

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

This data is sourced from Local Authority records.



4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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



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

Records within 500m

0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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



4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

0

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

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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



4.21 Pollution inventory radioactive waste

Records within 500m

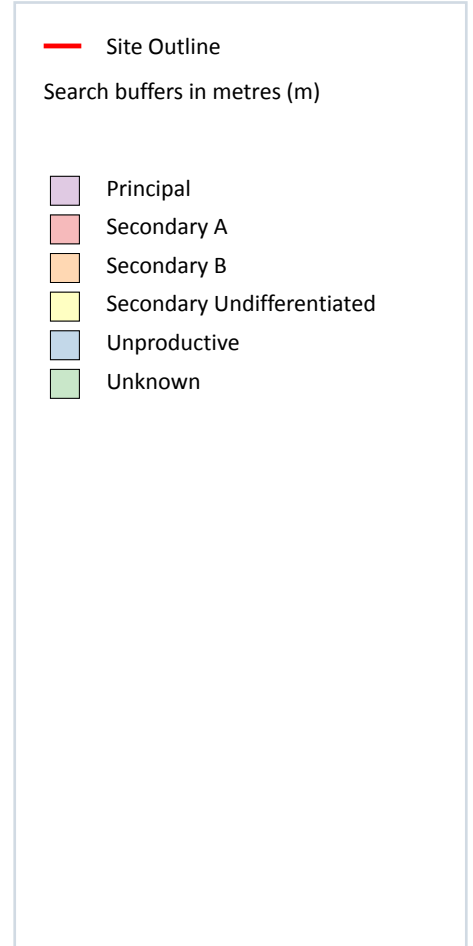
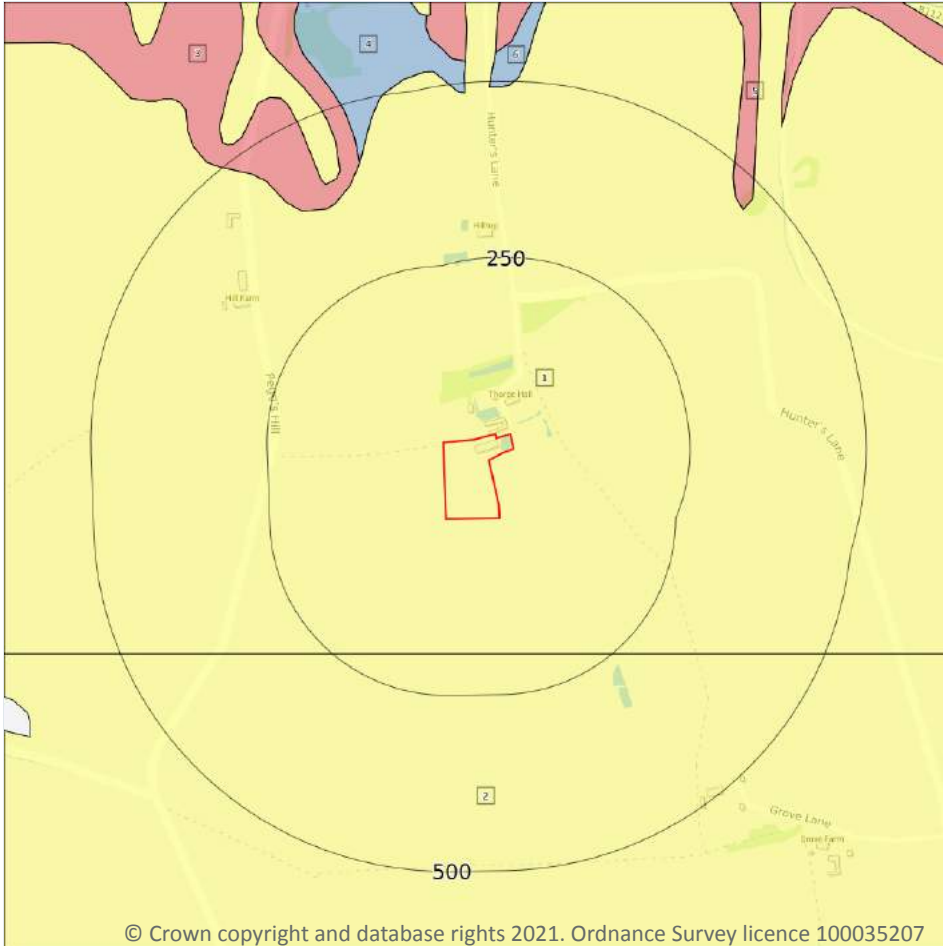
0

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

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



5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m

6

Aquifer status of groundwater held within superficial geology.

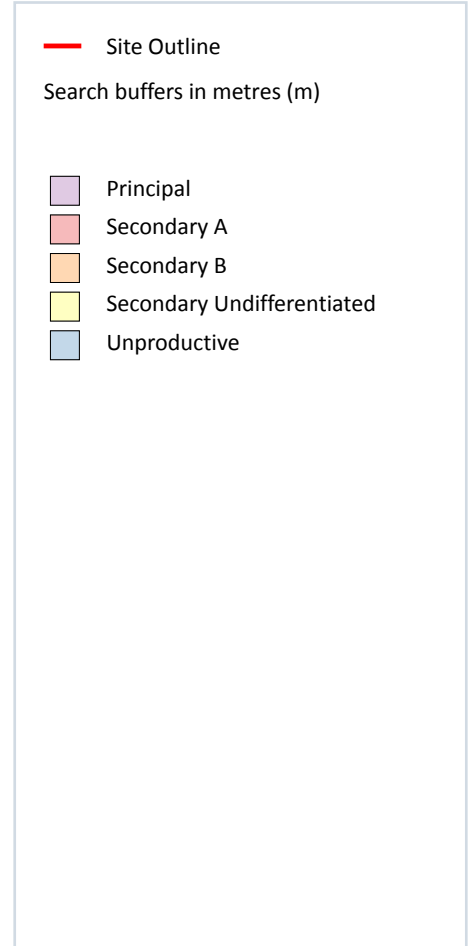
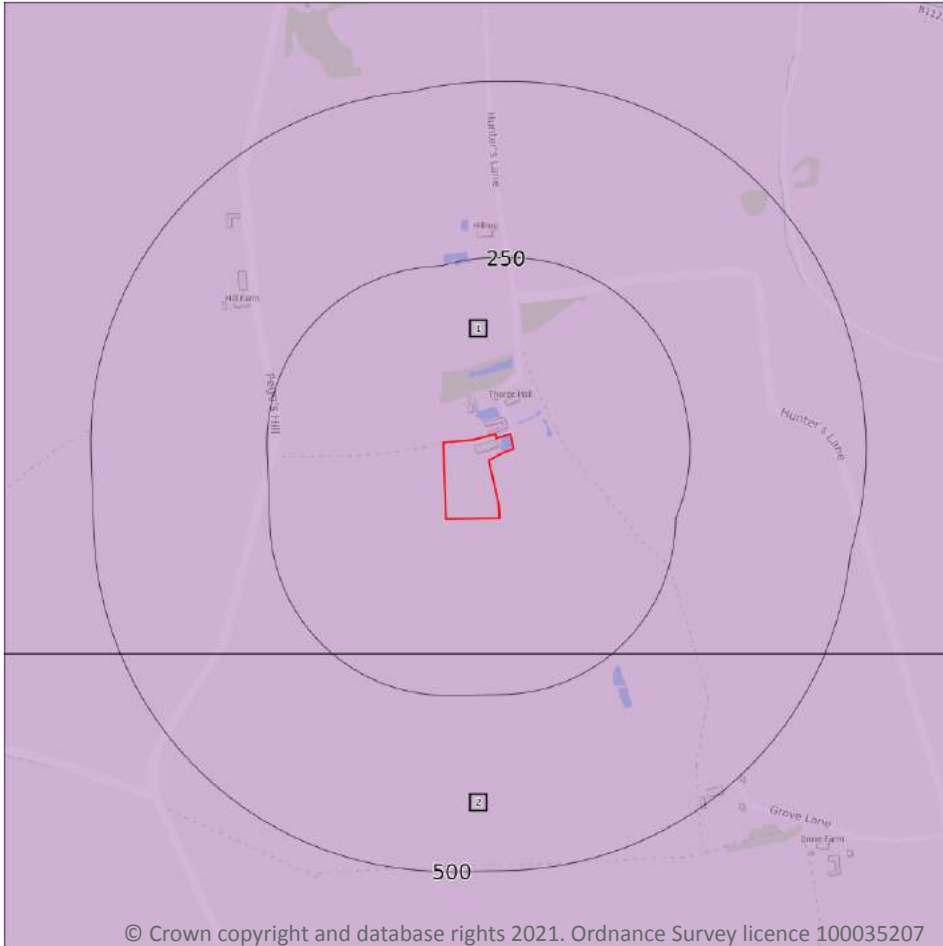
Features are displayed on the Hydrogeology map on **page 28**

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	191m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	370m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	414m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
5	458m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
6	492m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

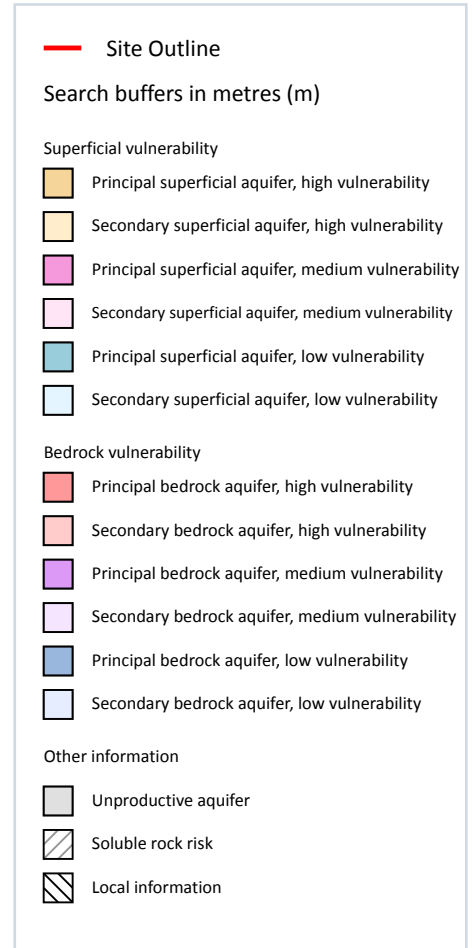
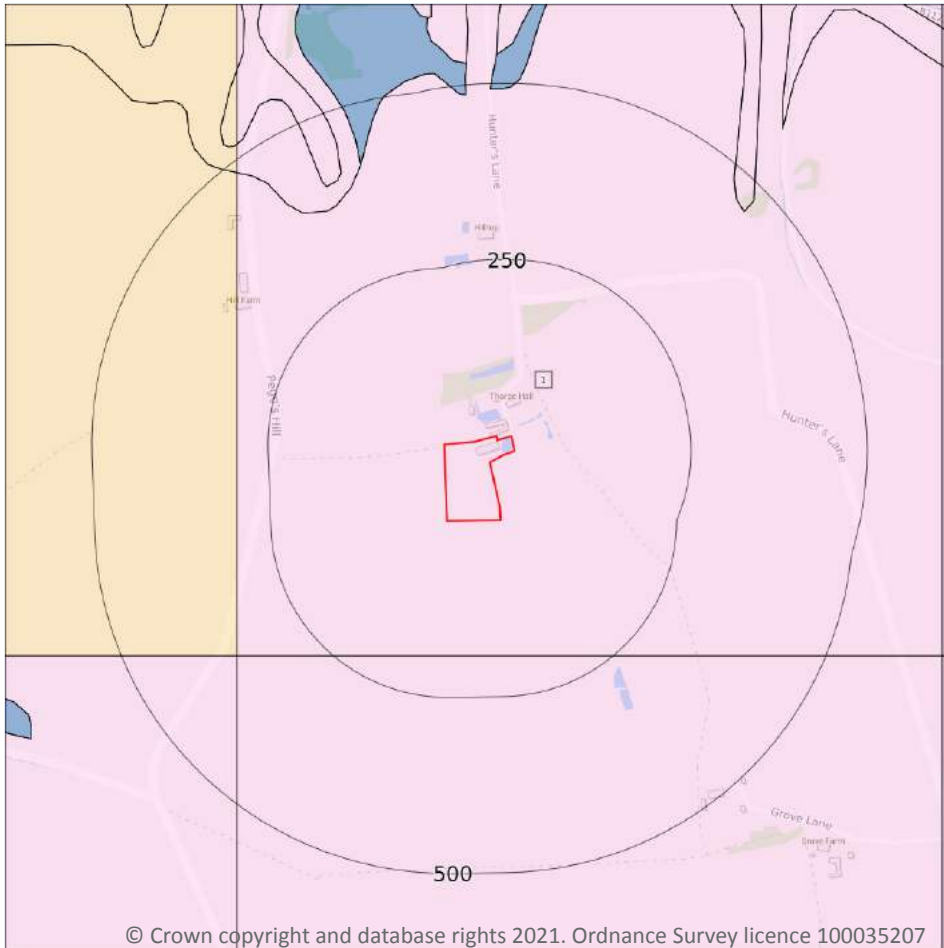
Features are displayed on the Bedrock aquifer map on **page 30**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	191m S	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on **page 32**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular

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

5.4 Groundwater vulnerability- soluble rock risk

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

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

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

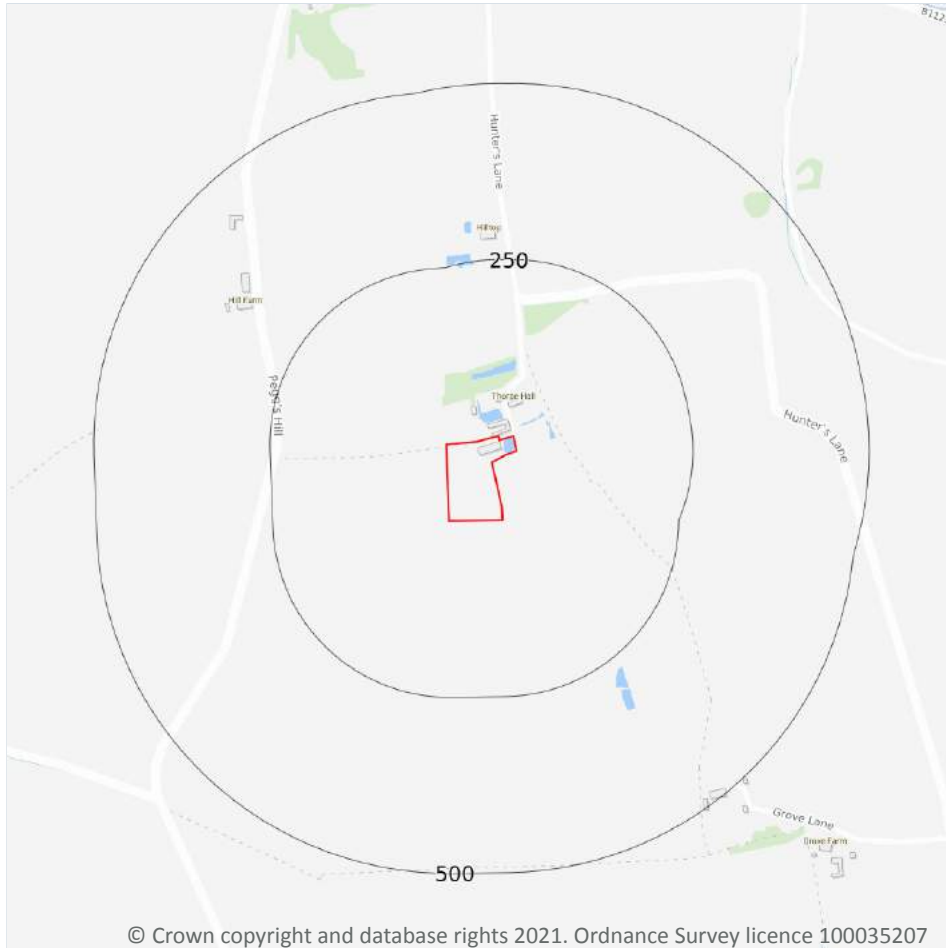
5.5 Groundwater vulnerability- local information

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

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

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

Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m

2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 34**

ID	Location	Details	
-	832m N	Status: Historical Licence No: 7/34/18/*G/0047 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT RED HOUSE FM,MENDHAM Data Type: Point Name: ELLIOTT Easting: 627150 Northing: 281120	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/04/1967 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1967 Version End Date: -
-	1045m S	Status: Historical Licence No: 7/34/18/*G/0069 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT FRESSINGFIELD LODGE Data Type: Point Name: PICKSTOCK Easting: 627450 Northing: 279150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/11/1979 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1979 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

0

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

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

5.8 Potable abstractions

Records within 2000m

0

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

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



5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

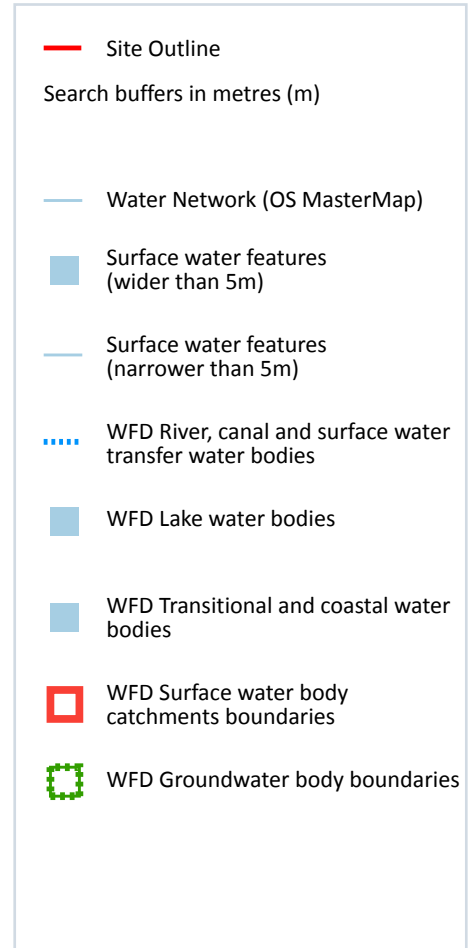
Records within 500m

0

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

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

6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

6

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

Features are displayed on the Hydrology map on **page 37**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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

Features are displayed on the Hydrology map on **page 37**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
3	On site	River WB catchment	Waveney (R Dove - Starston Brook)	GB105034045901	Waveney	Broadland Rivers

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

6.4 WFD Surface water bodies

Records identified

1

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

Features are displayed on the Hydrology map on **page 37**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	2007m NW	River	Waveney (R Dove - Starston Brook)	GB105034045901	Moderate	Good	Moderate	2016

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



6.5 WFD Groundwater bodies

Records on site	1
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Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 37**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Broadland Rivers Chalk & Crag	<u>GB40501G400300</u>	Poor	Poor	Poor	2015

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

7 River and coastal flooding

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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



7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

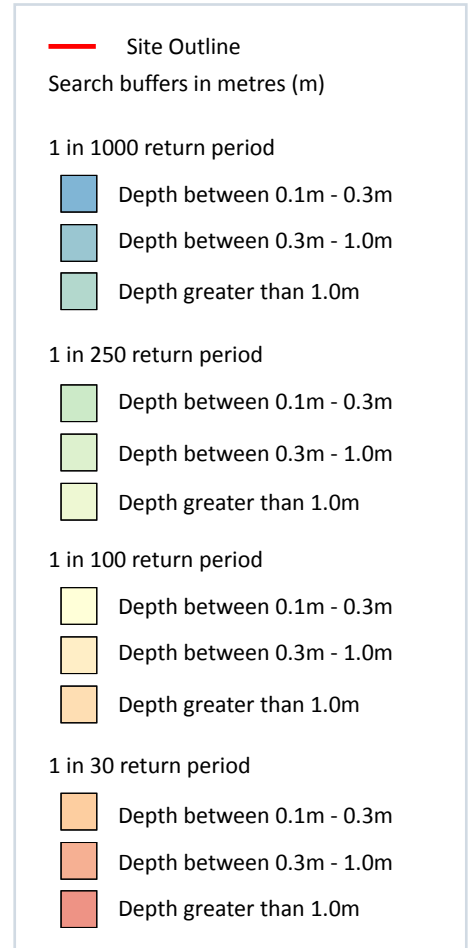
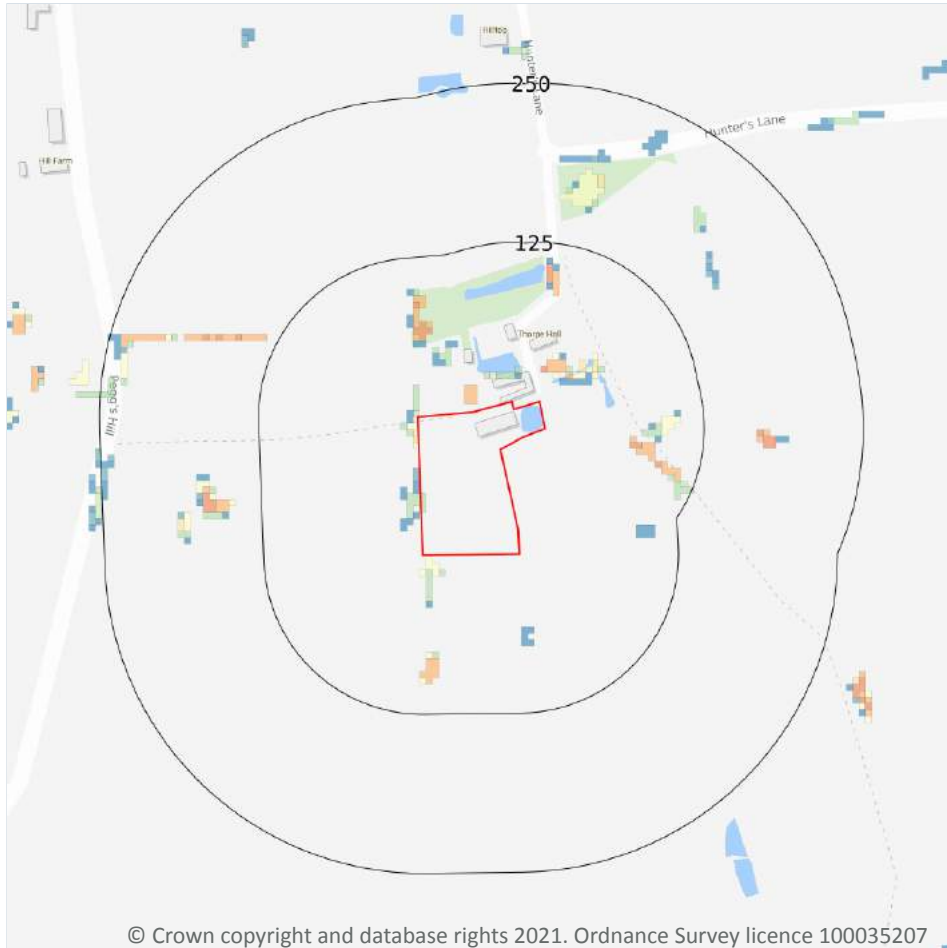
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

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

Features are displayed on the Surface water flooding map on **page 43**

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

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

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

Features are displayed on the Groundwater flooding map on **page 45**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m

0

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

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



10.5 National Nature Reserves (NNR)

Records within 2000m

0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

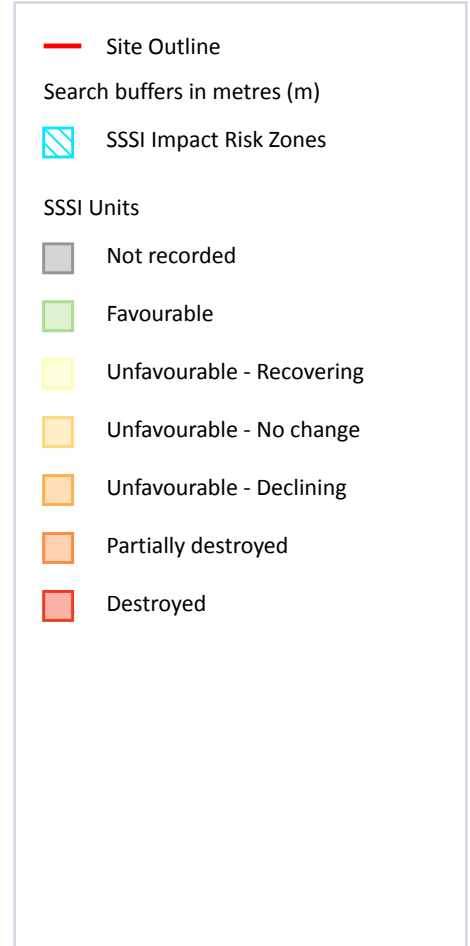
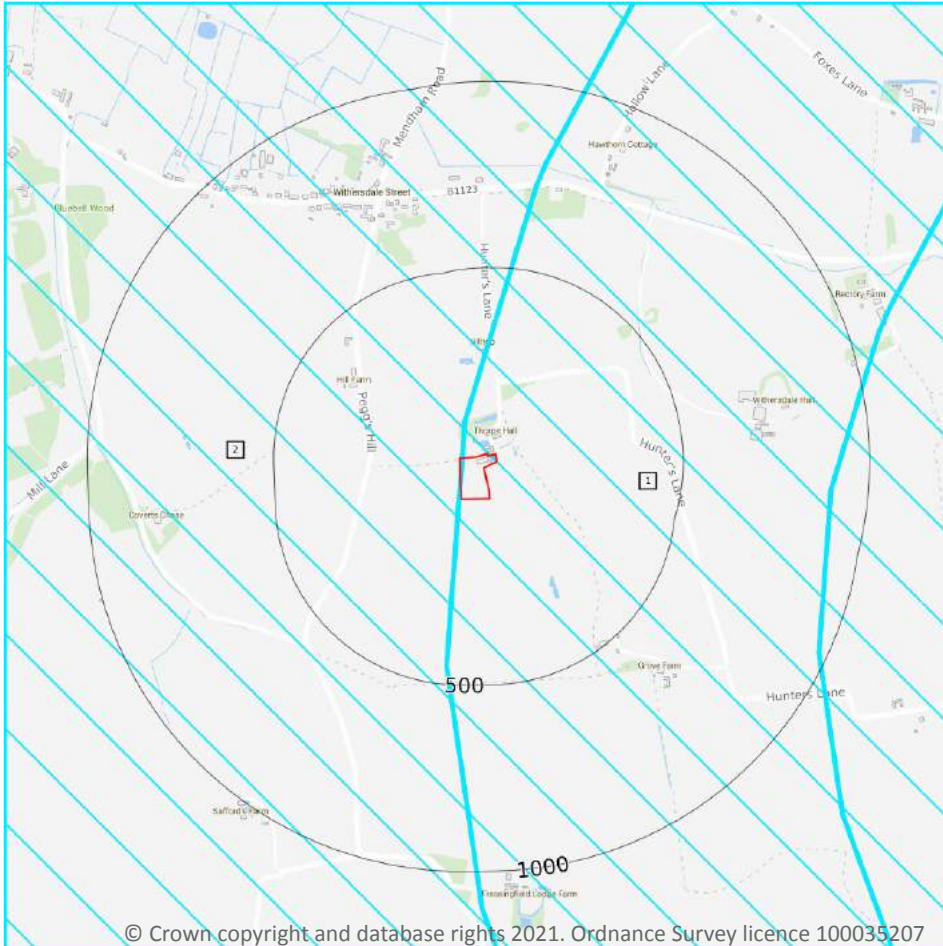
1

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

Location	Name	Type	NVZ ID	Status
On site	River Waveney NVZ	Surface Water	S396	Existing

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

SSSI Impact Zones and Units



10.17 SSSI Impact Risk Zones

Records on site

2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 50**

ID	Location	Type of developments requiring consultation
1	On site	<p>Infrastructure - Airports, helipads and other aviation proposals.</p> <p>Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.</p> <p>Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t.</p>

ID	Location	Type of developments requiring consultation
2	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m ² , slurry lagoons > 750m ² & manure stores > 3500t.

This data is sourced from Natural England.

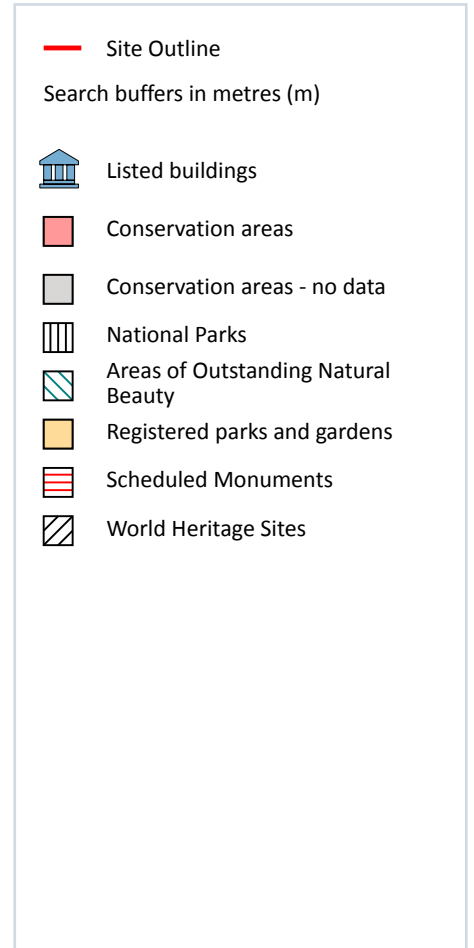
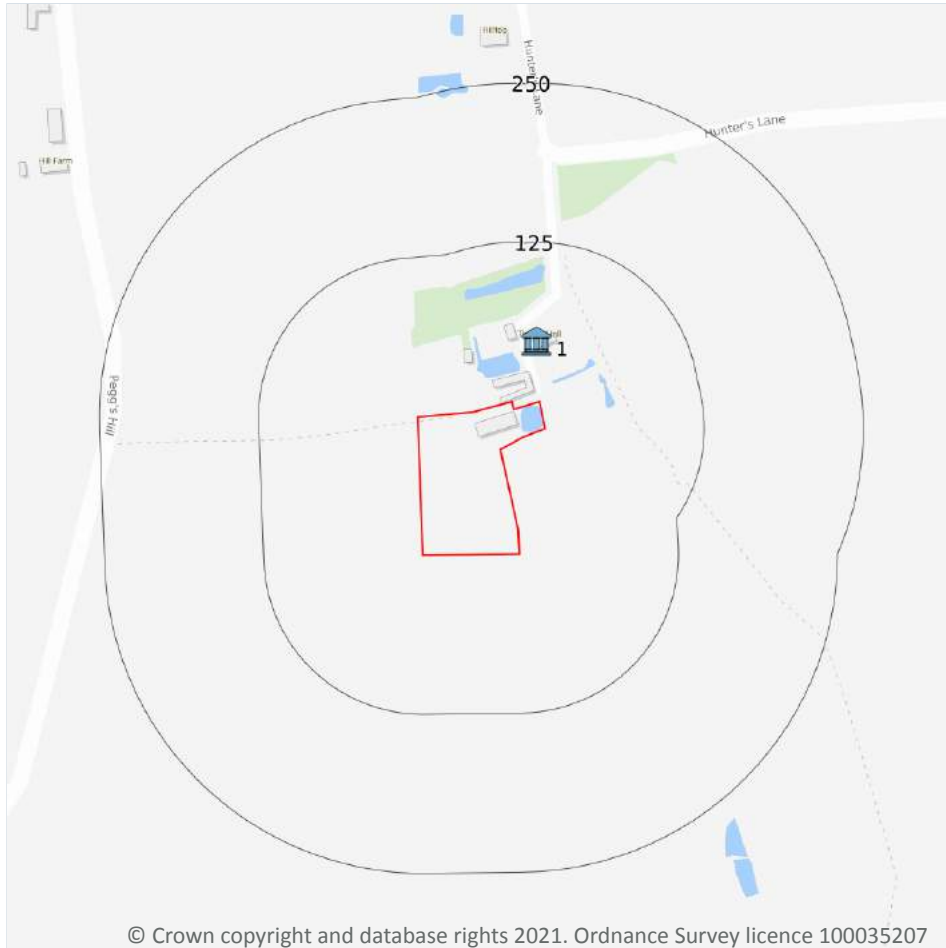
10.18 SSSI Units

Records within 2000m	0
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

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

11 Visual and cultural designations



11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

1

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

Features are displayed on the Visual and cultural designations map on **page 52**

ID	Location	Name	Grade	Reference Number	Listed date
1	48m N	Thorpe Hall, Mendham, Mid Suffolk, Suffolk, IP20	II	1352185	29/07/1955

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



11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

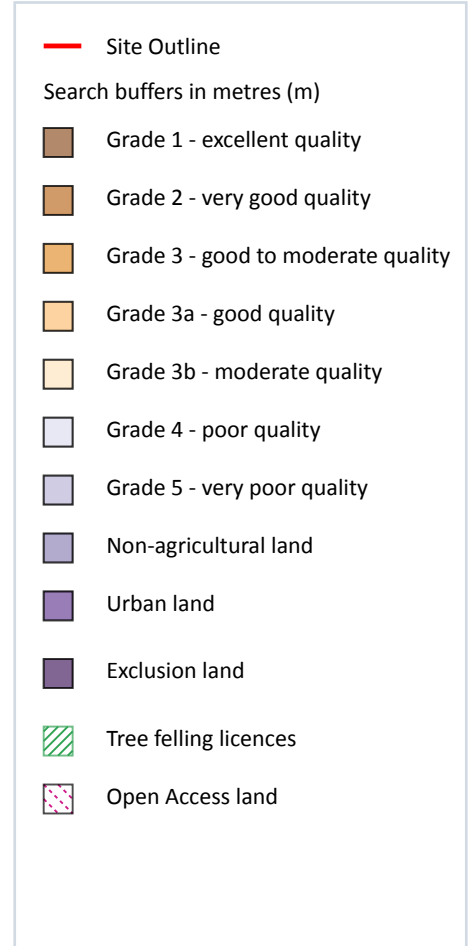
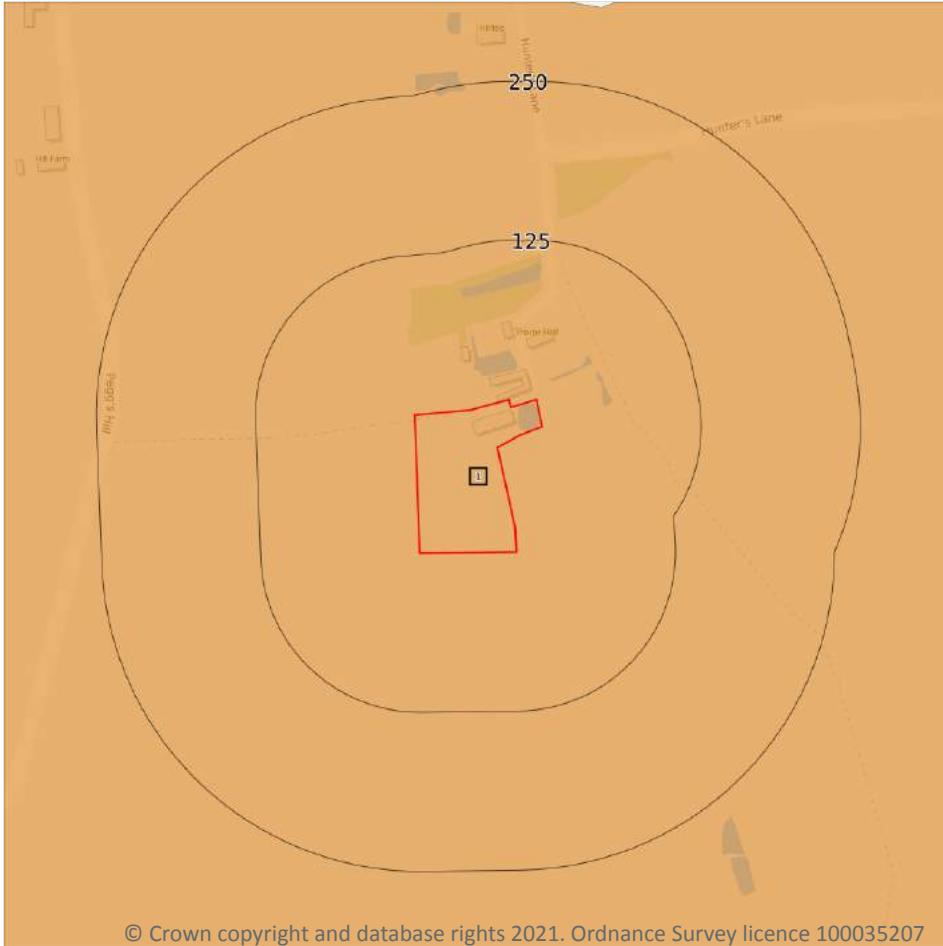
0

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

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



12 Agricultural designations



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12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on **page 55**

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

4

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

Location	Reference	Scheme	Start Date	End Date
On site	325387	Countryside Stewardship (Middle Tier)	01/01/2016	31/12/2020
1m N	325387	Countryside Stewardship (Middle Tier)	01/01/2016	31/12/2020
197m N	325387	Countryside Stewardship (Middle Tier)	01/01/2016	31/12/2020



Location	Reference	Scheme	Start Date	End Date
241m W	325387	Countryside Stewardship (Middle Tier)	01/01/2016	31/12/2020

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

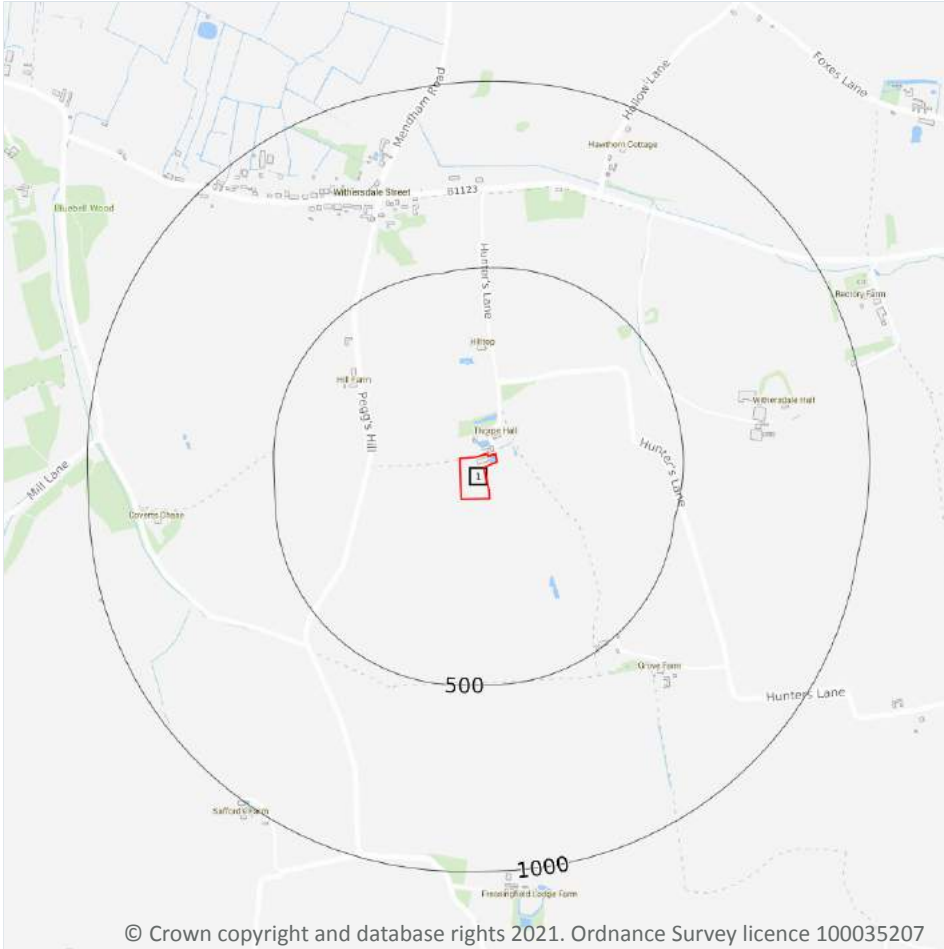
0

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 59**

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

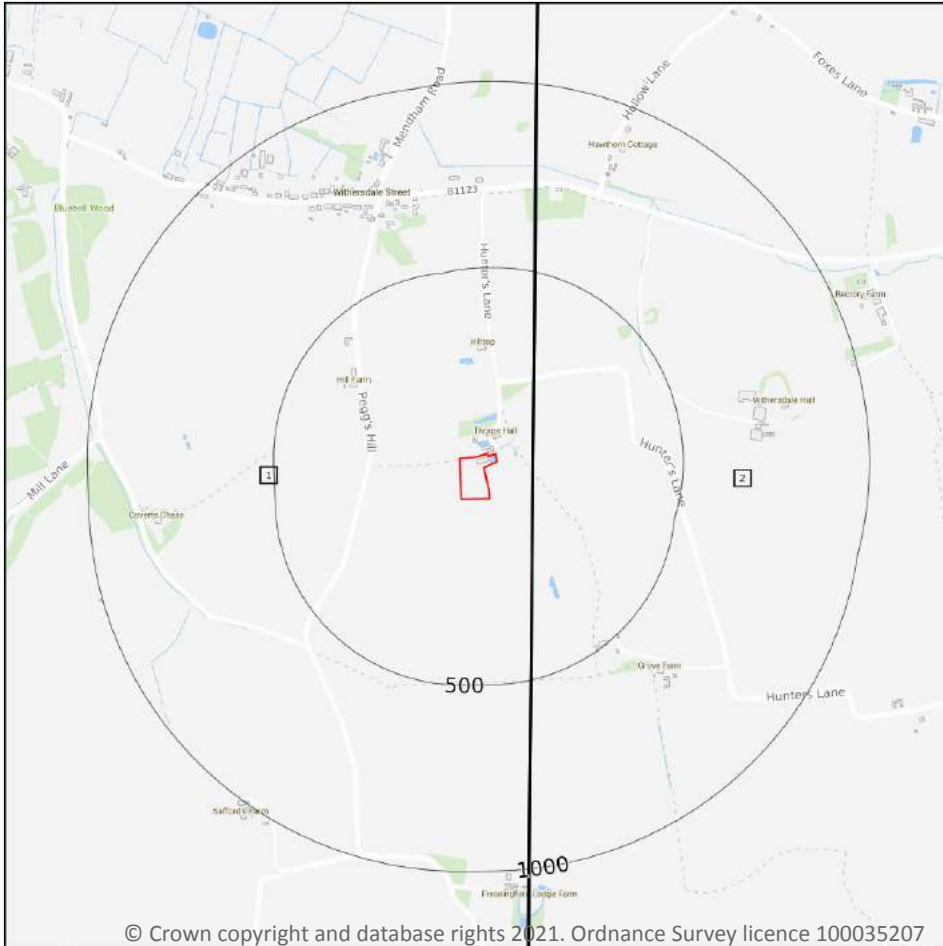
0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m

2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 63**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	EW175_diss_v4
2	96m E	Full	Full	Full	No coverage	EW176_lowestoft_v4

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

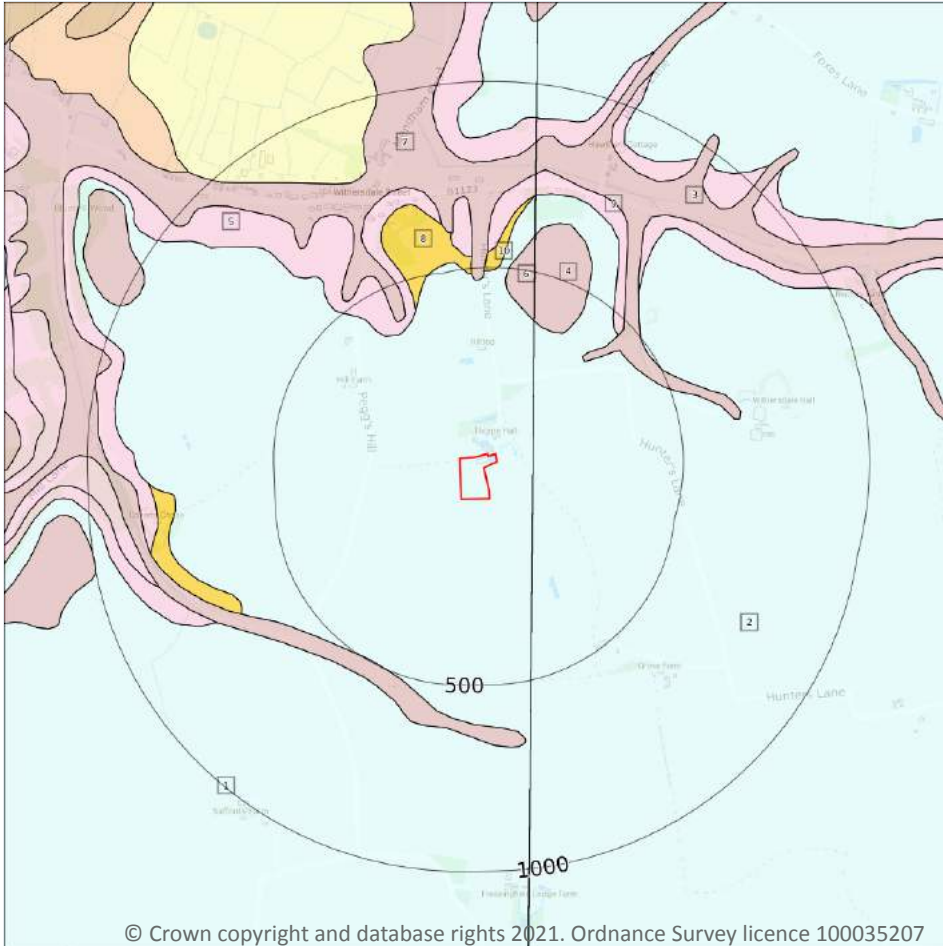
Records within 50m

0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



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

15.4 Superficial geology (50k)

Records within 500m

10

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 65**

ID	Location	LEX Code	Description	Rock description
1	On site	LOFT-DMTN	LOWESTOFT FORMATION	DIAMICTON
2	97m E	LOFT-DMTN	LOWESTOFT FORMATION	DIAMICTON
3	345m NE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
4	361m N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
5	370m NW	LEHI-XSV	LEET HILL SAND AND GRAVEL MEMBER	SAND AND GRAVEL
6	371m N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
7	402m NW	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
8	414m N	HPLO-XCZ	HAPPISBURGH GLACIGENIC FORMATION AND LOWESTOFT FORMATION (UNDIFFERENTIATED)	CLAY AND SILT
9	458m NE	LEHI-XSV	LEET HILL SAND AND GRAVEL MEMBER	SAND AND GRAVEL
10	492m N	HPLO-XCZ	HAPPISBURGH GLACIGENIC FORMATION AND LOWESTOFT FORMATION (UNDIFFERENTIATED)	CLAY AND SILT

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1
---------------------------	----------

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

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

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

This data is sourced from the British Geological Survey.



15.7 Landslip permeability (50k)

Records within 50m

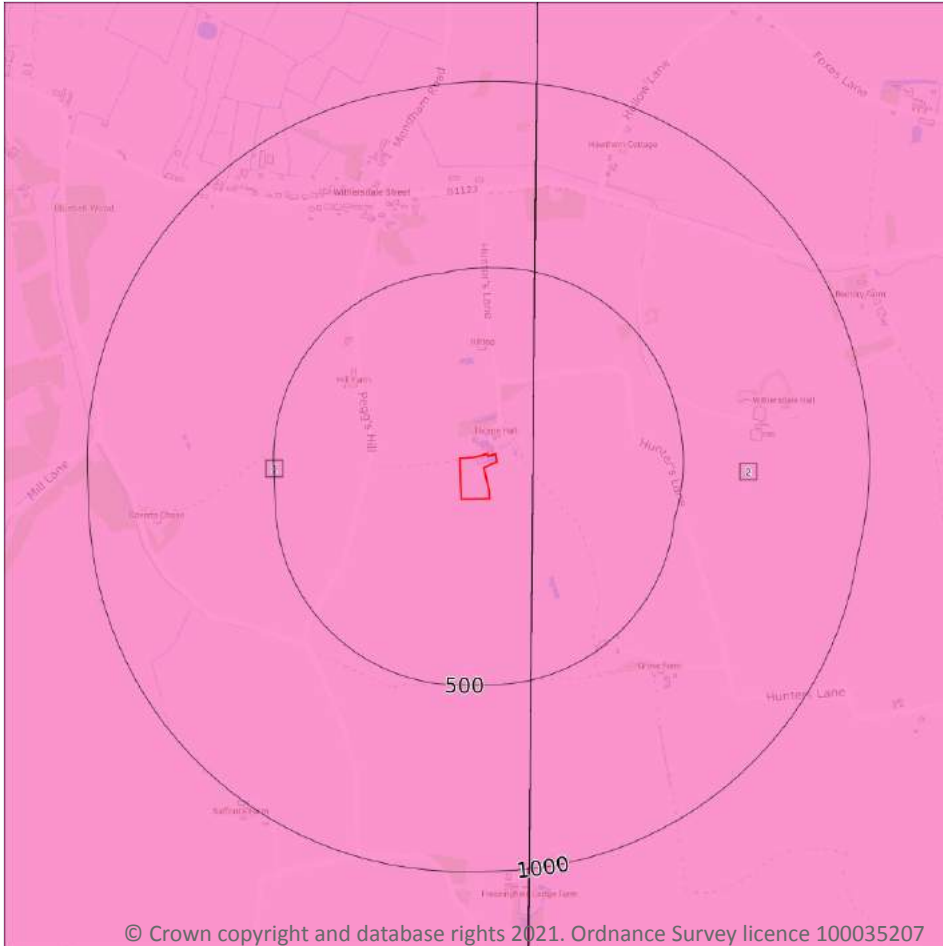
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m **2**

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 68**

ID	Location	LEX Code	Description	Rock age
1	On site	NCG-S	NORWICH CRAG FORMATION - SAND	-
2	97m E	CRAG-S	CRAG GROUP - SAND	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

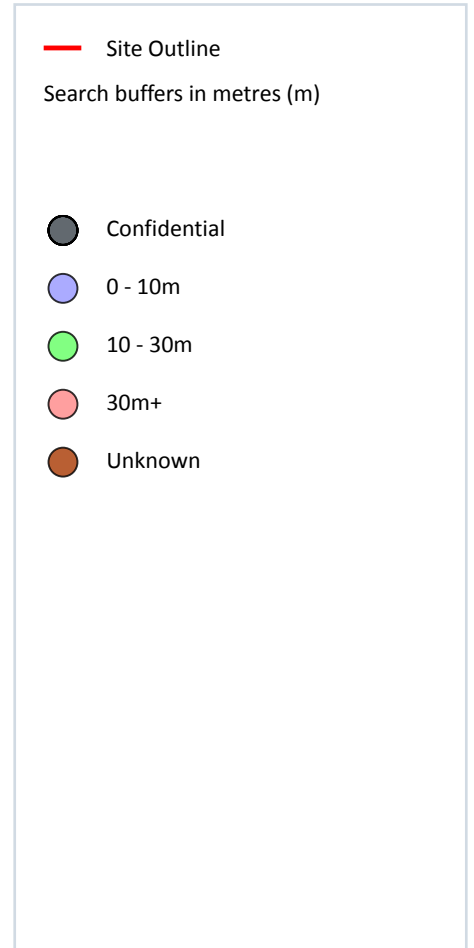
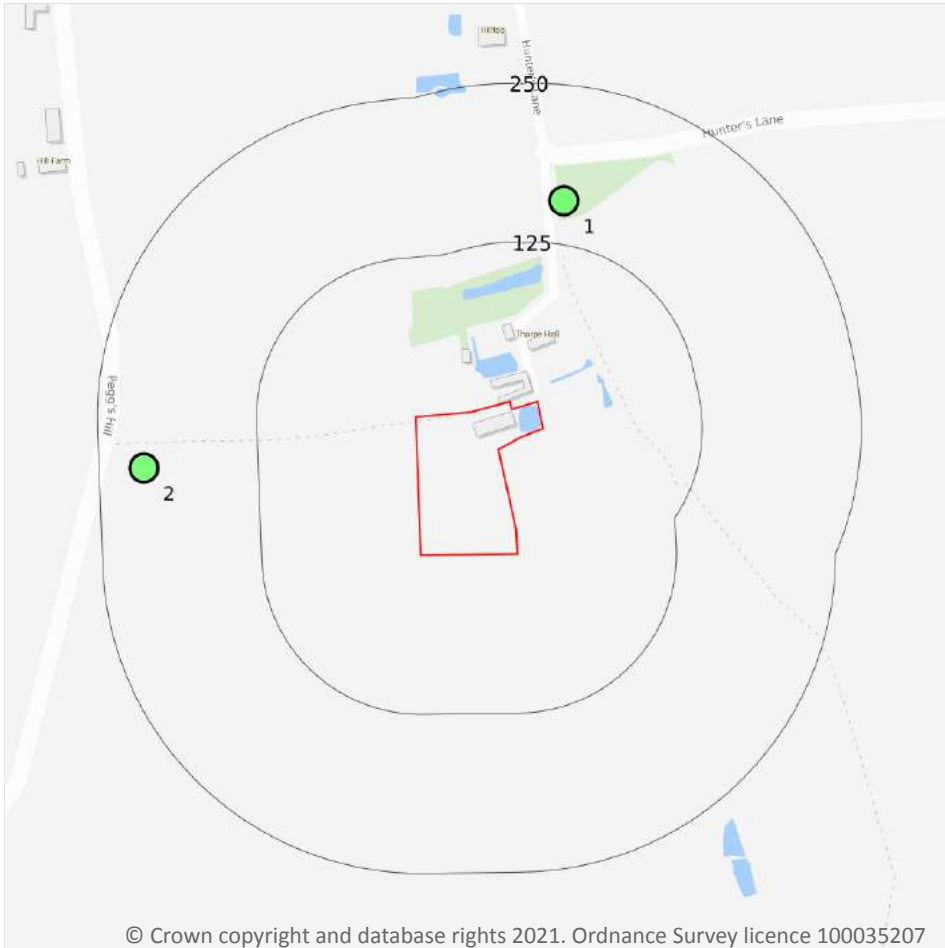
Records within 500m

0

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

This data is sourced from the British Geological Survey.

16 Boreholes



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16.1 BGS Boreholes

Records within 250m

2

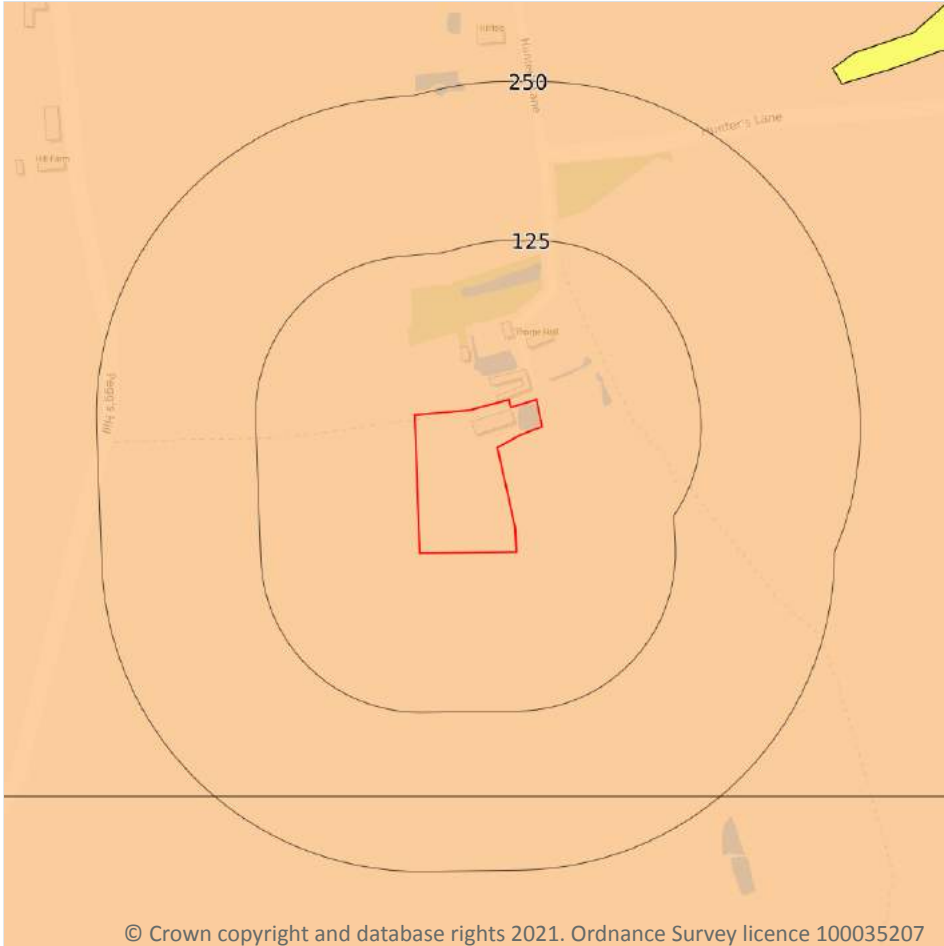
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

Features are displayed on the Boreholes map on **page 70**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	160m N	627410 280470	NORTH OF THORPE HALL MENDHAM	17.3	N	565529
2	215m W	627080 280260	WEST OF THORPE HALL MENDHAM	25.0	N	565513

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



— Site Outline

Search buffers in metres (m)

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

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17.1 Shrink swell clays

Records within 50m

1

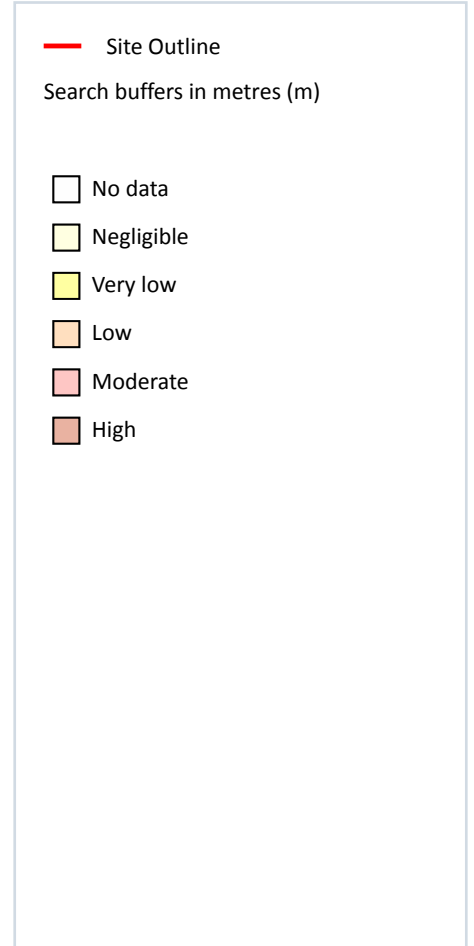
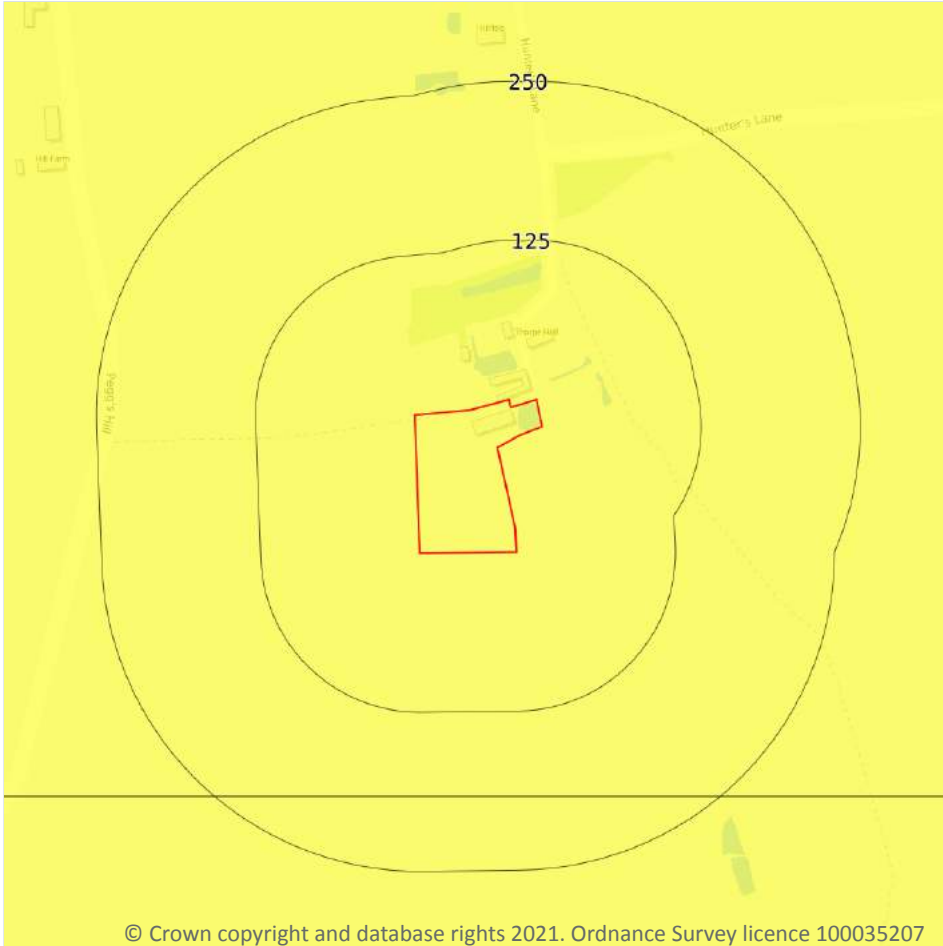
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 71**

Location	Hazard rating	Details
On site	Low	Ground conditions predominantly medium plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

1

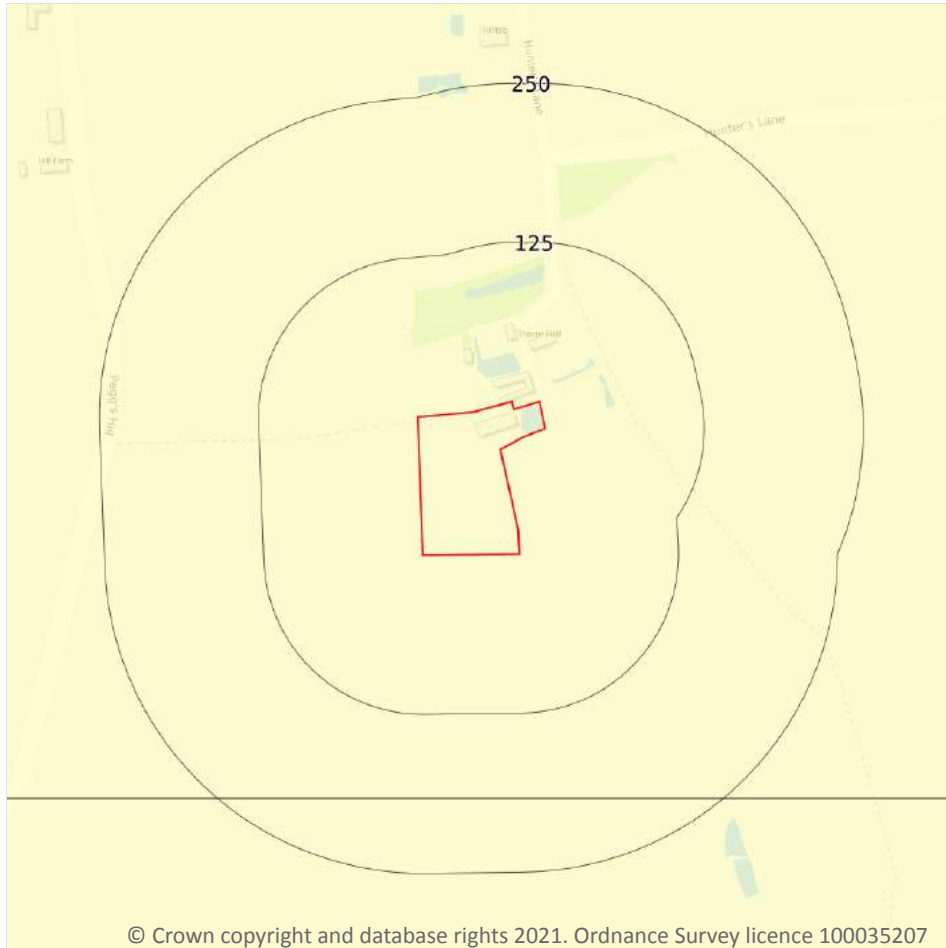
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 72**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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17.3 Compressible deposits

Records within 50m

1

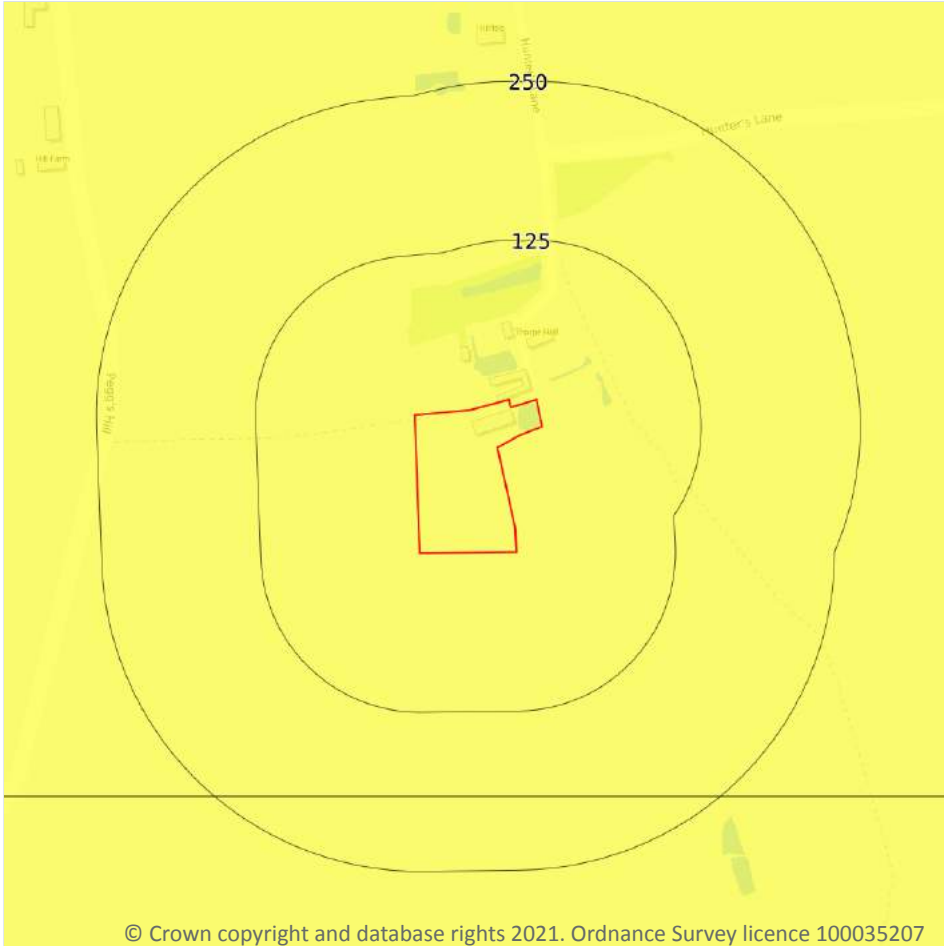
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 73**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

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17.4 Collapsible deposits

Records within 50m

1

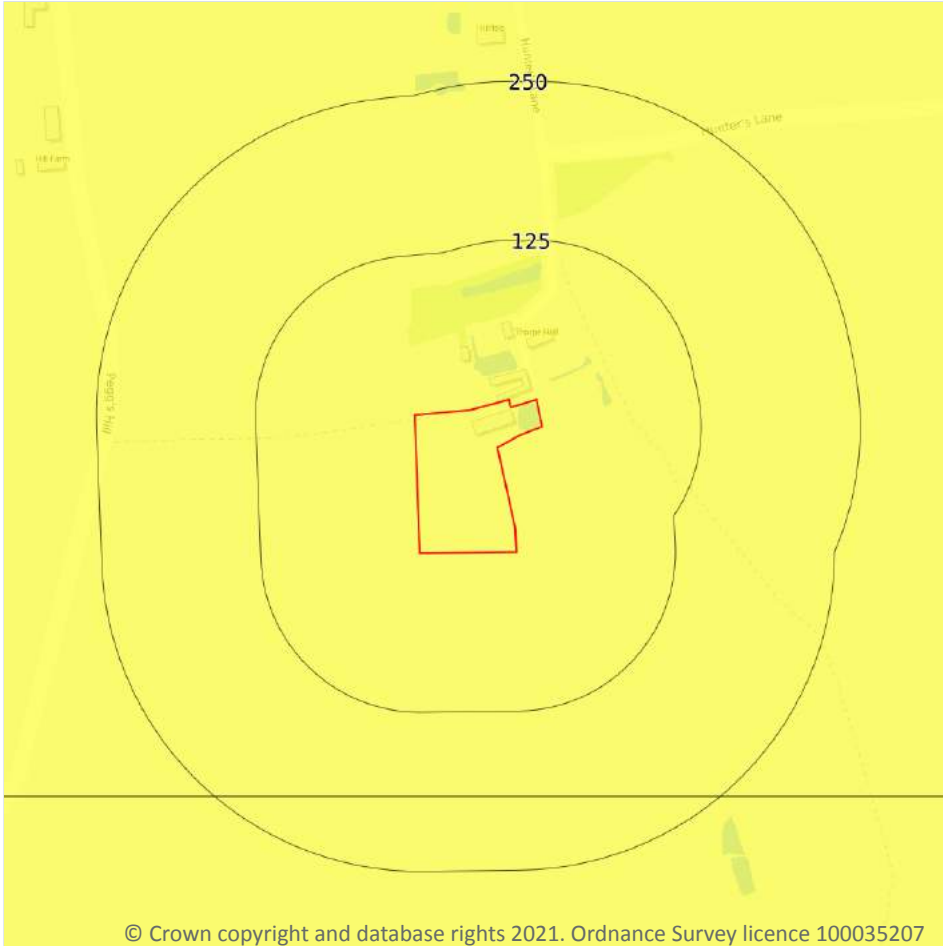
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 74**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

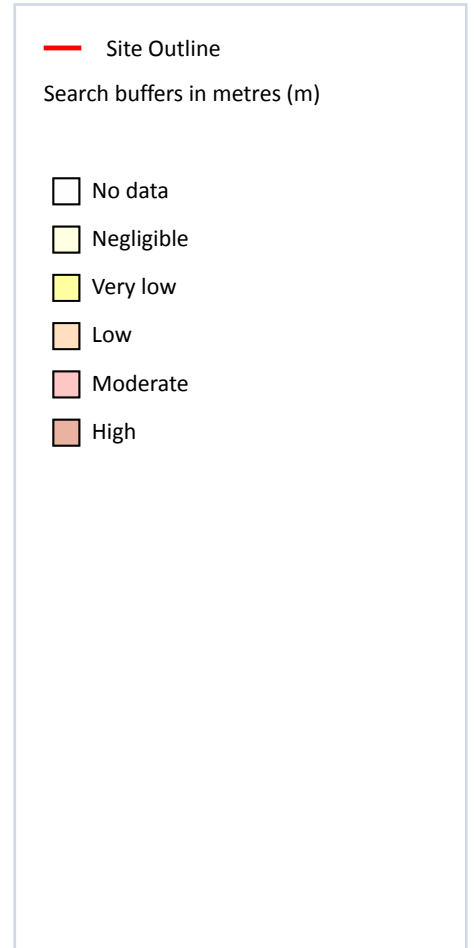
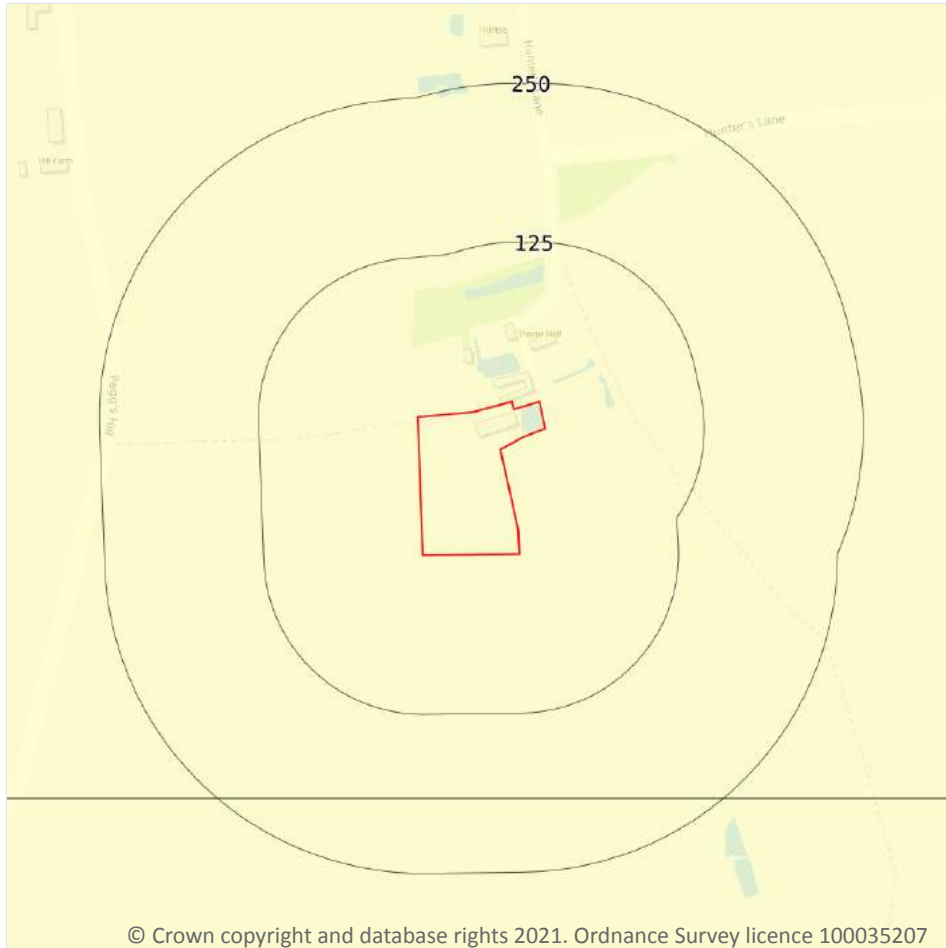
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 75**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

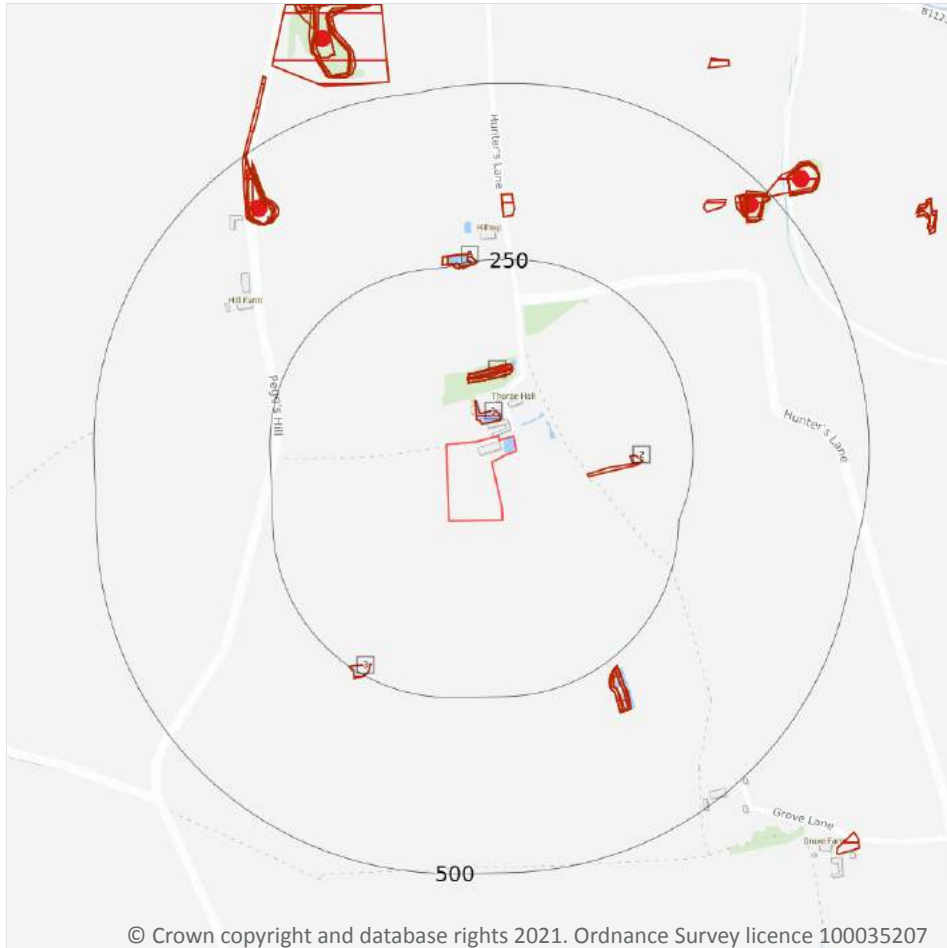
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 76**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



18.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 77**

ID	Location	Details	Description
D	428m NW	Name: Withersdale Street Clay Pit Address: Withersdale Street, HARLESTON, Suffolk Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
E	469m NE	Name: Withersdale Hall Sand Pits Address: Withersdale Street, HARLESTON, Suffolk Commodity: Sand Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

13

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 77**

ID	Location	Land Use	Year of mapping	Mapping scale
1	21m N	Pond	1905	1:10560
A	81m N	Pond	1992	1:10000
A	81m N	Pond	1978	1:10000
A	81m N	Pond	1953	1:10560
A	85m N	Pond	1905	1:10560
A	88m N	Pond	1946	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
A	88m N	Pond	1884	1:10560
2	106m E	Pond	1905	1:10560
3	231m SW	Pond	1905	1:10560
B	243m N	Pond	1992	1:10000
B	243m N	Pond	1978	1:10000
B	244m N	Ponds	1946	1:10560
B	244m N	Ponds	1884	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.



18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site

0

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

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

18.11 Gypsum areas

Records on site

0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.



18.12 Tin mining

Records on site

0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

18.13 Clay mining

Records on site

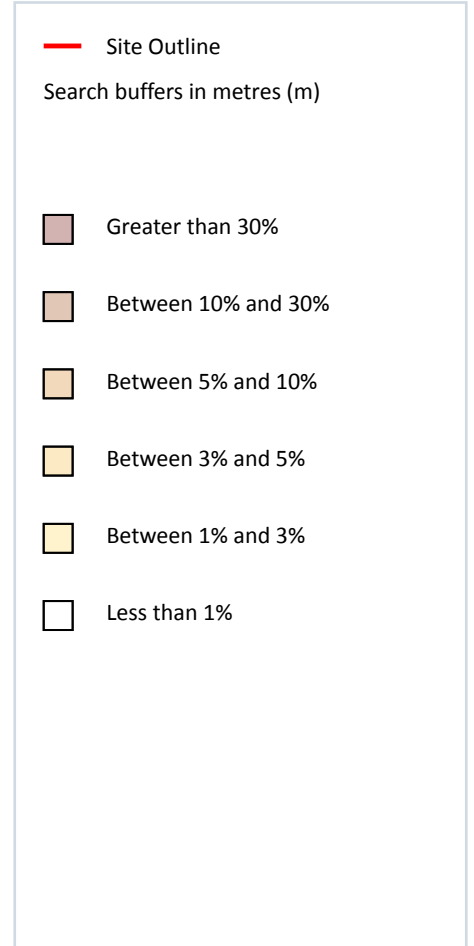
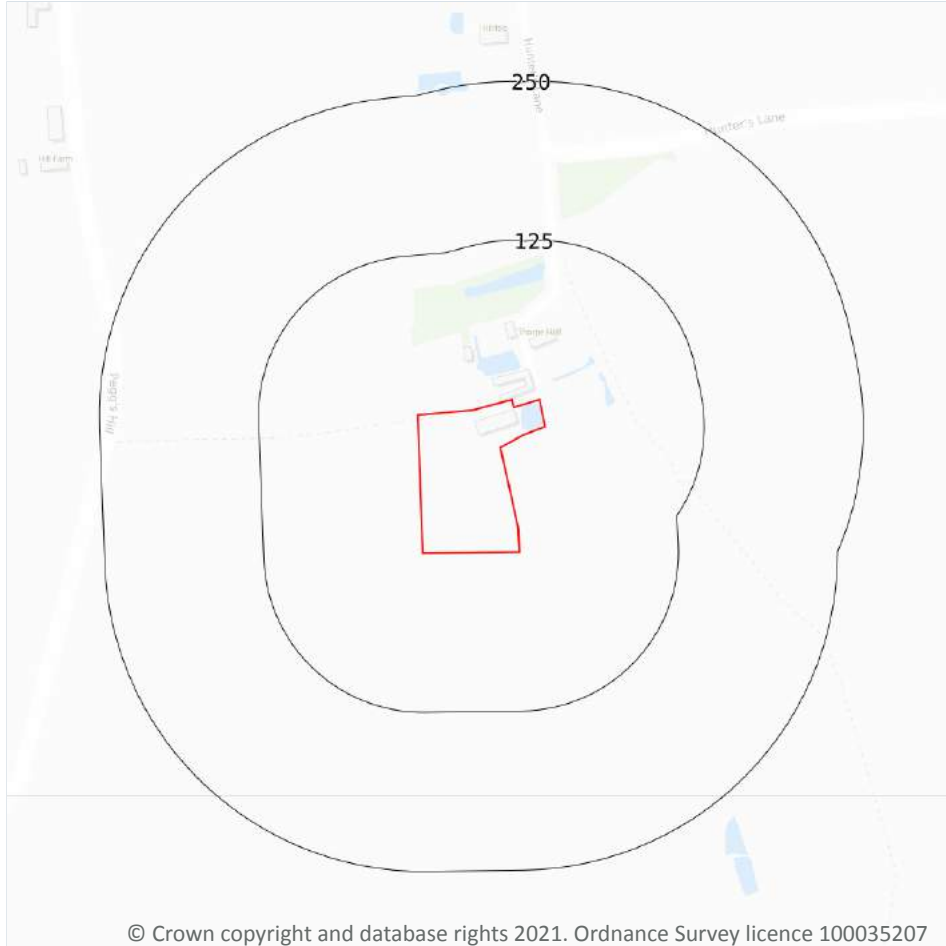
0

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

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



19 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 82**

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

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

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



This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

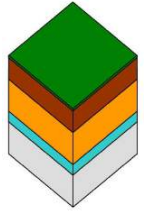
Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.

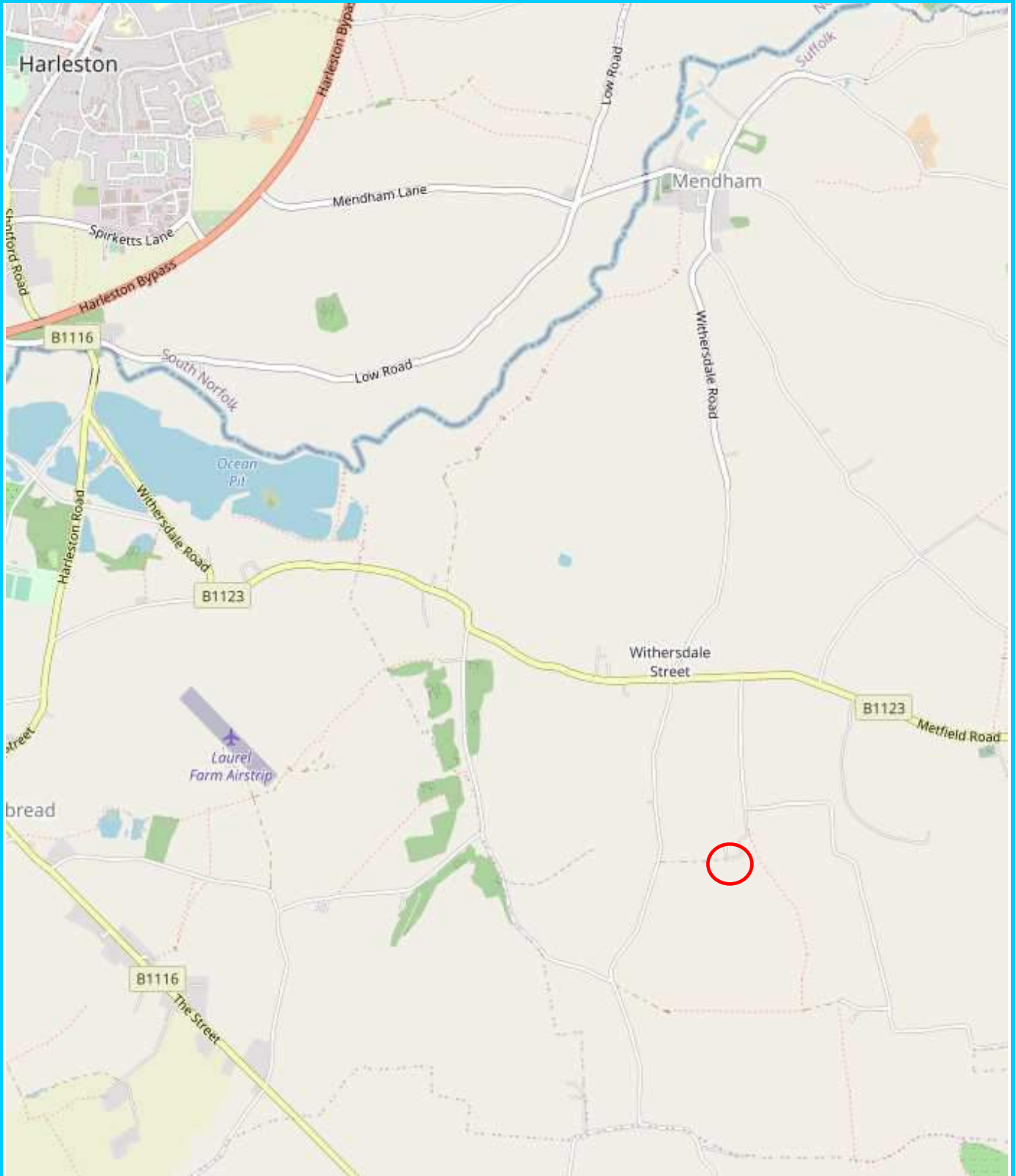


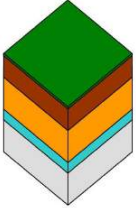
ACSSIS Ltd

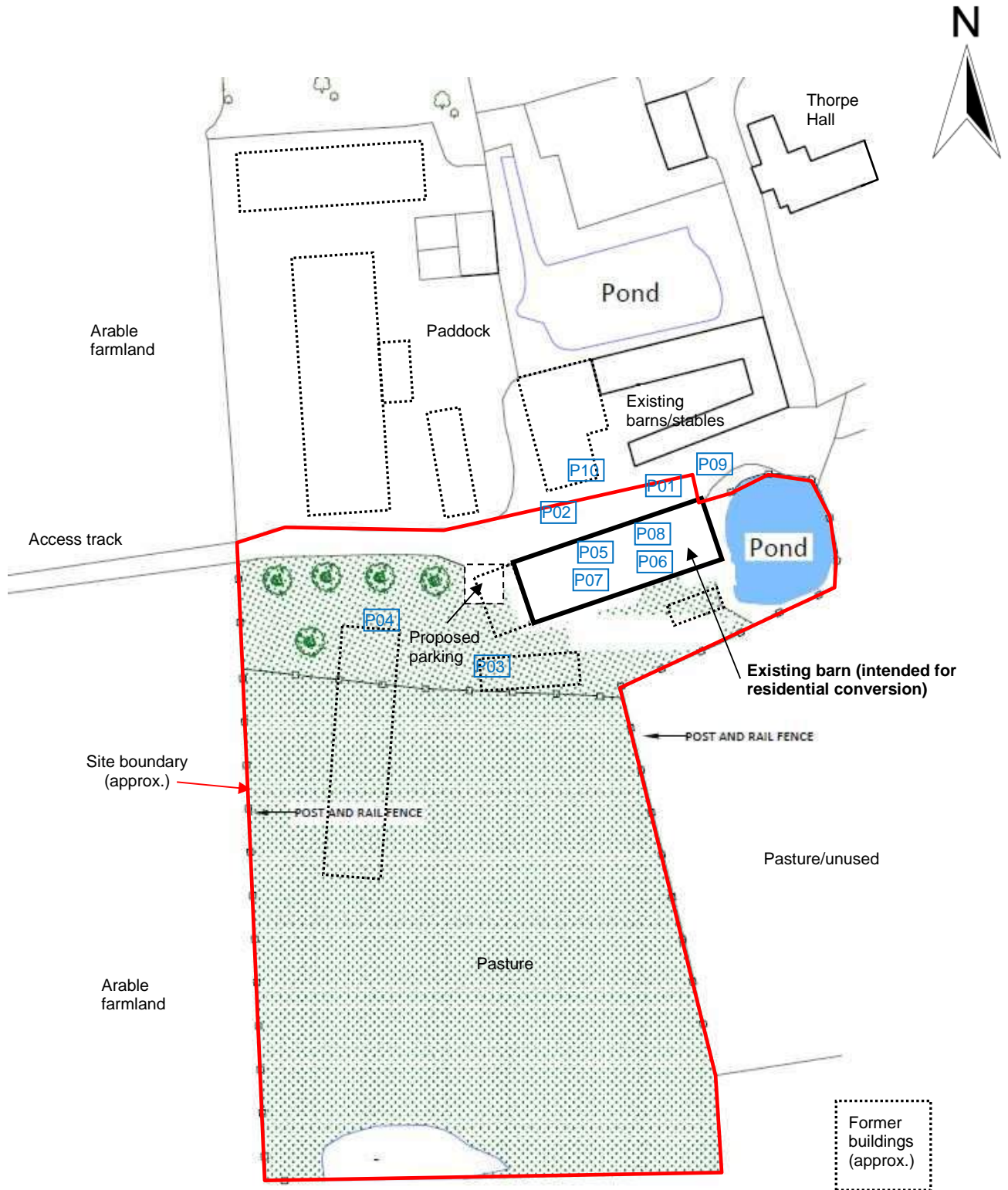
Site Location Plan



Site Name:	Thorpe Hall, Mendham	Site Co-ordinates:	627335 280255
Sheet Ref.:	20-577-DR01	Date:	July 2021
Client:	Mr David Alcock	Scale:	Not to scale



ACSSIS Ltd		Site Plan		
Site Name:	Thorpe Hall, Mendham	Site Co-ordinates:	627335 280255	
Sheet Ref.:	20-577-DR02	Date:	July 2001	
Client:	Nr David Alcock	Scale:	1:1000 appx. (A4)	



Original survey drawing provided by the Architect. Do not scale.