Desk Based Geoenvironmental and Geotechnical Site Assessment

The White Hart,
St. Albans Road,
South Mimms,
Potters Bar,
EN6 3PJ

April 2024

543517.0000.0000

Prepared For:
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Quality Control

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Executive Summary

TRC Companies Limited (TRC) was commissioned by Griggs (South Mimms) Limited (the 'Client') to undertake a Tier I (previously known as phase 1) Desk Based Geoenvironmental Site Assessment at The White Hart, St. Albans Street, South Mimms, Potters Bar, EN6 3PJ (hereafter referred to as the 'Site').

This Executive Summary is part of the complete report; and findings, opinions or conclusions in this Executive Summary are made in context with the complete report. TRC recommends that the user reads the entire report for all supporting information related to findings opinions and conclusions.

Executive Summary	
Site Details	
Client	Griggs (South Mimms) Limited
Site Address & Grid Reference	The White Hart, St. Albans Street, South Mimms, Potters Bar, EN6 3PJ Easting 522210, Northing 201250
Site Area	0.27 Ha
Proposed Development	The proposed development comprises the conversion and extension of the former public house into six apartments, conversion of outbuilding into a two-bedroom apartment and construction of a detached infill dwelling, along with associated landscaping, bin store, cycle storage and vehicle parking.
Site Setting	
Current Site Use	The Site was formerly a Public House; The White Hart, which comprises two main structures with associated parking and gardens in the south and north of the Site respectively. The property is now vacant.
Site History	Earliest available mapping (1868) shows that the Site comprised of largely residential and agricultural land use in the immediate surrounding area. In 1897-1898 mapping the White Hart public house is first shown.
Expected Geology	Made Ground – Heterogeneous mix of sandy, gravelly clay with brick fragments. Superficial deposits – No superficial deposits expected. Bedrock geology – Lambeth Group Clay, Silt and Sand underlain by Lewes Nodular Chalk Formation and Seaford Chalk Formation.
Expected Hydrogeology	Bedrock geology – Principal Aquifer Lewes Nodular/Seaford Chalk and Secondary (A) Aquifer Lambeth Group strata. The Site lies within a groundwater source protection zone 1. Groundwater is therefore considered to be sensitive to contamination.
Expected Hydrology	The nearest surface water feature is located approximately 84m to the north west of the Site and is unlikely in connection with groundwater, owing to the size of the body of water. Surface water is therefore considered to be not sensitive to contamination.
Environmental Assessment	
Initial Conceptual Site Model	On Site: The Made Ground at the Site could be a source of heavy metals, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons and polychlorinated biphenyls. Off Site: The Pitstop 21 petrol station is a potential source of polycyclic aromatic hydrocarbons (PAH), and total petroleum hydrocarbons.

Executive Summary	
	Potentially complete contaminant linkages have been identified.
Ground Gas/Organic Vapour/Radon	Made Ground as a potential source of ground gas has been identified as part of this assessment. BGS records indicate that the Site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the Action Level. On this basis, the BGS states that no radon protective measures are necessary in the construction of new dwellings or extensions.
Geotechnical Assessment	
Geotechnical Hazards	Geotechnical analysis of the Site identified the following potential geotechnical hazards; made ground, volume change potential soils, Lambeth Group strata, potential chalk dissolution features, ground aggressive to buried concrete, soil desiccation, shallow groundwater, running sands, Environment Agency consultation should a deep foundation solution disturb the Principal Aquifer beneath the Site and buried obstructions.
Other Property Related Issues	
Mining	The Site is not in an area affected by coal mining. The Site is not in an area affected by other mining activity.
Flood Risk	The Site is not located within a flood zone.
Unexploded Ordnance Risk Assessment	The Site is not in an area affected by historical UXO risk.
Recommendations	
A ground investigation should be designed, implemented, and reported by a competent person, in accordance with LCRM (2020), BS10175:2011 (+A2:2017), BS5930:2015 (+A1:2020), and Eurocode 7 Part 2 (and the associated national annex), and in accordance with current relevant technical guidance. The ground investigation should confirm the geology, groundwater regime and engineering properties of the underlying ground. Further, it should target the identified potential contaminant linkages are addressed with focus on the proposed development. Following the ground investigation, an intrusive Geoenvironmental and Geotechnical Site Assessment Report should be prepared in order to update the conceptual site model and to determine the environmental characterisation of the Site. The Tier 2 report will include a geotechnical evaluation and provide geotechnical design recommendations for the proposed development. Given the age of the building, it is recommended that an asbestos survey is undertaken prior to any refurbishment or development.	

1.0 Introduction

1.1 Appointment and Purpose

TRC Companies Limited (TRC) was commissioned by Griggs (South Mimms) Limited (the 'Client') to undertake a Tier 1 (formerly known as phase 1) Desk Based Geoenvironmental and Geotechnical Site Assessment for The White Hart, St. Albans Street, South Mimms, Potters Bar, EN6 3PJ (hereafter referred to as the 'Site').

A Site Location Plan is presented as Figure 1 in Annex A.

This Tier I report has been commissioned to assess environmental considerations, predominantly with respect to ground conditions at the Site, which will be used to support planning applications for the conversion and extension of the existing structures into nine residential dwellings. The Site falls within the Local Planning Authority (LPA) of Hertsmere Borough Council.

1.2 Proposed Development

The proposed development comprises the conversion and extension of the former public house into six one-bedroom apartments, conversion of outbuilding into a two-bedroom apartment and construction of a detached infill dwelling, along with associated landscaping, bin store, cycle storage and vehicle parking.

The end user sensitivity is considered high for the proposed residential end use.

A Proposed Development Plan is presented as Figure 2 in Annex A.

1.3 Available Information and Standards

This Tier I report presents the findings of a desk study based on the following information:

- Historical uses of the Site and surroundings;
- Current use and condition of the Site;
- Environmental setting in terms of geology, hydrogeology, hydrology and surrounding land uses, based on publicly available environmental records;
- A Landmark Envirocheck Report (Annex B); and,
- No Site walkover was carried out.

This Tier I report has been conducted with due regard to the following guidance:

- The National Planning Policy Framework;
- BS5930:2015 (+A1:2020) Code of Practice for Ground Investigations;
- BS EN 1997 Eurocode 7;
- BS10175:2011 (+A2:2017) Investigation of Potentially Contaminated Sites – Code of Practice; and,
- Land Contamination Risk Management (LCRM) 2020.
- NHBC Standards
- Any relevant local planning guidance

1.4 Significant Assumptions

This report presents TRC's observations, findings, and conclusions as they existed on the date that this report was issued. This report is subject to modification if TRC becomes aware of additional information after the date of issue of this report that is material to its findings and conclusions.

The reliability of information provided by others to TRC cannot be guaranteed to be accurate or complete. Performance of this Tier I report is intended to reduce, but not eliminate, uncertainty of geo-environmental and geotechnical conditions associated with the subject Site; therefore, the findings and conclusions made in this report should not be construed to warrant or guarantee the subject Site, or express or imply, including

without limitation, warranties as to its marketability for a particular use. TRC found no reason to question the validity of information received unless explicitly noted elsewhere in this report.

1.5 User Reliance

This report was prepared for Griggs (South Mimms) Limited. Reliance on the Report by any other third party is subject to requesting and fully executing a reliance letter between TRC and the third party that acknowledges the TRC Standard Terms and Conditions with the client, to the same extent as if they were the client thereunder.

TRC has been provided with information from third parties for information purposes only and without representation or warranty, express or implied as to its accuracy or completeness and without any liability on such third parties part to revise or update the information. Where reliance has been provided by third parties to potential purchasers this is noted in our report.

2.0 Site Location and Description

2.1 Site Location

The Site is located on the western side of St. Albans Street approximately 320m north of St Giles Church of England Primary School. It is centred on National Grid Reference 522217, 201254, approximately 2.7km west of central Potters Bar.

The Site location is presented as Figure 1 in Annex A.

2.2 Site Description

2.2.1 General

No site walkover was conducted and the following site description is based on the most up to date arial photographs and client provided descriptions of the Site.

The southern section of the Site comprises of a car park with space for approximately 25 spaces, which is bound to its south by a small grass field of approximately 1,000m^2. The northern point of the Site is a small garden while the central area of the Site comprises the current existing public house structures.

An annotated Site layout plan is presented in Figure 2 in Annex A.

2.2.2 Site Walkover

No site walkover was conducted.

2.3 Surrounding Area

The Site is located within an area of predominantly residential and agricultural land use, with some commercial use nearby including Pitstop 21 car wash and garage and Arlingham House Business Centre. Land uses in the immediate vicinity include the following principal features:

Table 2.1: Summary of Surrounding Land Use

Direction	Land Use
North	Residential properties located 20m to the north of the Site, while the B556 is located directly adjacent to the north of the Site.
East	Approximately 25m east of the Site is the Pitstop 21 car wash and beyond this is agricultural land.
South	St. Giles Church is located directly adjacent to the south of the Site with a wooded area and further residential properties located further in distance to the south of the Site.
West	Blanche Lane is located directly adjacent to the west of the Site, and beyond this is agricultural land.

2.4 Summary

TRC has noted the following potential sources of contamination during the desk based research:

- Potential hydrocarbon contamination from Pitstop 21 car wash which appears to be a former petrol station.

3.0 Review of Site Data

3.1 Environmental Setting

The environmental setting of the Site can influence the susceptibility to, and relative magnitude of, environmental and geotechnical impacts and liabilities associated with on and off-Site sources of contamination and geotechnical hazards.

The following sections present a summary of environmental and geotechnical reviews conducted on publicly available records.

3.1.1 Geology

The following information has been reviewed:

- The British Geological Survey (BGS) geological map viewer, scale 1:50,000;
- BGS map sheet 239, Hertford, 1:50,000, 1978;
- The BGS website;
- The BGS historic boreholes with reference no. TL20SW87, TL20SW88, TL20SW48 and TL20SW89; and,
- The Landmark Envirocheck Report (Annex B)

Based on the above information, the Site is underlain by: variable thickness of Made Ground, over Lambeth Group over Lewes Nodular Chalk Formation and Seaford Chalk Formation.

The anticipated Site geology is summarised in Table 3.1.

Table 3.1: Summary of Anticipated Geology

Strata	Depth to Base (m bgl)	Depth to Base (m aOD)*	Thickness (m)[x]	Typical Description
Made Ground	1.90	90.48	Variable	Heterogeneous mix of sandy, gravelly clay with brick fragments.
Lambeth Group	16.00	76.30	Variable	Clay, silt, sand and gravels that can display rapid changes in lithology
Lewes Nodular Chalk Formation and Seaford Chalk Formation	>20.00	<72.30	-	Structureless white chalk with flints

** Assuming a ground level of 92.30 m aOD across the Site*

3.1.2 Coal Mining

The Landmark Envirocheck indicates that the Site is not within an area that may be affected by coal mining.

Further, according to the Coal Authority website the Site is not located within the Coal Mining Reporting Area and the 'Development High Risk Area'. Therefore, a Coal Mining Risk Assessment is not required.

3.1.3 Radon

BGS records indicate that the Site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the Action Level. On this basis, the BGS states that no radon protective measures are necessary in the construction of new dwellings or extensions.

3.1.4 Seismicity

The national foreword to BS EN 1998-1:2004+A1:2013 'Eurocode 8: Design of Structures for Earthquake Resistance – Part 1' states that there are no requirements in the UK to consider seismic loading, and the whole of the UK may be considered an area of very low seismicity in which the provisions of EN 1998 need not apply.

3.1.5 Hydrogeology

British Geological Survey (BGS) geological mapping and hydrogeological mapping presented by DEFRA (MAGIC website) indicate the following hydrogeological information for the Site:

Table 3.2: Summary of Hydrogeology

Geology	Geological Description	Aquifer Status	Aquifer Description
Bedrock: Lambeth Group	Clay, Sand and Silt	Secondary (A) Aquifer	Permeable strata 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, lakes or wetlands.
Bedrock: Lewes Nodular Chalk Formation and Seaford Chalk Formation	Chalk and Flint	Principal Aquifer	Regionally extensive aquifer or aquifer system with the potential to be used as a source of potable water.

The Site lies within a groundwater source protection zone (SPZ) 1 (inner zone) owing to the presence of a Principal Aquifer beneath the Site.

There are no active groundwater abstractions within 500m of the Site.

The Landmark Envirocheck report indicates no potential for groundwater flooding to occur.

3.1.6 Hydrology

The nearest surface water feature is located 84m to the north west of the Site, which looks to be a drainage run associated with the agricultural field.

3.1.7 Sensitive Land Uses

There are no identified sensitive land uses on-Site.

3.1.8 Summary of Site Sensitivity

The Site is considered to be of moderate environmental sensitivity, based on the following key factors:

- The published geology indicates that the Site is underlain by Lambeth Group over Lewes Nodular Chalk Formation and Seaford Chalk Formation;
- The Site is within a SPZ1 (inner zone);
- The Site bedrock is designated as an unconfined Secondary (A) Aquifer; and
- The closest surface water feature is located 84m to the north west of the Site.

3.2 Environmental Regulatory Database Review

The following environmental data has been obtained from a Landmark Envirocheck Report

(Annex B), which includes a search of databases held by regulatory bodies including the EA, BGS, the Department for the Environment, Food and Rural Affairs (DEFRA), City, District and Borough Councils and County Councils.

The table below summarises key features identified on-Site and within the 500m search radius.

Table 3.3: Summary of Environmental Regulatory Database Review

Database	On-Site	0-500m	Description
Agency and Hydrological			
Local Authority Pollution Prevention and Controls	0	1	Murco Petroleum Ltd. petrol filling station located 35m from the Site.
Pollution Incidents to Controlled Waters	0	2	Both unknown oils located at 306m and 379m, designated as Category 2 and Category 3 respectively and occurred in 1996 and 1993, respectively.
Substantiated Pollution Incident Register	0	1	Atmospheric pollutants resulting in Category 2 Air Impact incident reported in August 2011, 446m from the Site.
Hazardous Substances			
Industrial Land Use			
Fuel Station Entries	0	1	Murco Petroleum Ltd. petrol filling station located 35m from the Site .
Sensitive Land Use			
Areas of Adopted Green Belt	1	0	Adopted green belt located on-Site from November 2016.
Nitrate Vulnerable Zones	2	0	Groundwater and surface water zones on-Site.

The Landmark Envirocheck Report indicates no hazard for collapsible ground, compressible ground, ground dissolution, landslides, running sands, shrinking and swelling of clay for the Site. Coal mining areas were not identified on or near the Site.

3.3 History of the Site and the Surrounding Area

The history of development on the Site and immediate surrounding area was investigated with reference to historical Ordnance Survey (OS) mapping and aerial photographs. The findings are presented in subsequent sections below.

3.3.1 Historical Mapping

A summary of the development history of the Site and immediate surrounding area obtained from historic OS mapping and aerial photographs (Annex B) is detailed in the table below.

Table 3.4: Summary of Historical Mapping

Edition and Scale	On-Site Activities	Off-Site Activities (within ~ 250m)
1868 (1:10,560)	Two existing structures one of which is The White Hart public house.	A road runs adjacent to the northern and western boundaries. The surrounding area comprises of St. Giles Church, agricultural land and residential properties. Beyond this are a police station and parish rooms.
1897-1898 (1:10,560)	No change.	No change

Edition and Scale	On-Site Activities	Off-Site Activities (within ~ 250m)
1916-1920 (1:10,560)	No change	A sewage farm (South Mimms RDC) is on the map approximately 200 m north of the Site.
1935 (1:10,560)	No change	Surrounding area has been developed into primarily residential in nature with a row of houses approximately 20m north of the Site. Tanks are present at the sewage works, approximately 250m north of the Site. There is a mausoleum approximately 100m to the south of the Site.
1973 (1:10,560)	No change	Further residential development to the north and south of the Site. Sewage works and tanks are no longer present on the map.
1984 (1:10,000)	No change	Further residential surrounding the Site.
1999 -2023 (Various 1:2,500 and 1:10,000)	No change	No change

3.3.2 Summary of the History of the Site and Surrounding Area

Based on the information obtained by TRC, the history of the Site and surrounding area can be summarised as follows:

- Earliest records (1868) show the current Site configuration with listed Site use;
- Current Site use confirmed as The White Hart public house in 1897-1898 map with development in the surrounding area consists of largely agricultural in nature with some residential properties identifiable;
- By 1935, the surrounding area had shifted to primarily residential in nature;
- 1984 mapping shows the Site and surrounding area in their current configuration with development of residential properties to the north and south of the Site with the current Site use; and,
- Anecdotal information indicates that the pub was closed in 2021.

3.4 Planning Department Records

The Hertsmere Borough Council planning portal was searched to appraise the history of planning applications for the Site. The following details were found:

- The construction of a pergola pavilion outside the White Hart in 2007; and,
- Tree work consent in July 2017.

3.5 Unexploded Ordnance (UXO) Records

Based on online UXO mapping available on the Zetica website the Site lies in an area of low risk of potential UXO.

Given the low risk potential for UXOs to be present below Site and in accordance with the guidance given in CIRIA C681, no further control measures relating to UXOs will be required prior to undertaking intrusive investigations.

4.0 Preliminary Environmental Risk Assessment

4.1 General

The methodology of this risk assessment uses the source-pathway-receptor contaminant linkage to provide a qualitative appraisal of environmental risks and potential liabilities associated with soil and groundwater contamination at the Site.

The initial conceptual site model (CSM) is prepared based on the current proposed development, which will comprise one bedroom residential dwellings. Should proposals change then the CSM will need to be revisited.

4.2 Contamination Sources

Based on the information presented in this report the following sources of contamination have been identified.

Table 4.1: Summary of Potential Contamination Sources

Potential Sources	Potential Contaminants
Made ground from previous development	Metals, PAH compounds, TPH, asbestos
Former petrol station	TPH, BTEX, MTBE, lead

4.3 Pathways

Based on the information presented in this report the following potentially active pathways have been identified.

- Dermal contact or ingestion with soil and groundwater
- Inhalation of soil dust or respirable fibres of asbestos
- Plant uptake and consumption of home grown produce
- Surface runoff
- Leaching of contaminants and vertical migration into groundwater
- Lateral migration of contaminants in groundwater
- Contact with buried services
- Migration of ground gas/ organic vapour and ingress into buildings

4.4 Receptors

Based on the information presented in this report the following receptors have been identified.

- Future Site users
- Neighbouring Site users
- Construction and maintenance workers
- Groundwater – Chalk Aquifer (SPZ1)
- Surface water

4.5 Initial Conceptual Site Model

Based on the information presented in this report the following potential contaminants linkages have been identified.

Table 4.2: Potential Contaminant Linkages

Source	Pathway	Receptor	Potential Contaminant Linkage
On-Site Sources			
Asbestos, hydrocarbons, metals associated with Made Ground soils.	Dermal contact, ingestion and inhalation pathways	Future Site users	**Yes:** There is communal soft landscaping at the Site so there is potential for future residents to have contact with potential contamination
		Neighboring residents/ Site users	**Yes:** Neighbouring residents may be exposed to soil dust, particularly during the construction phase.
		Construction and maintenance workers	**Yes:** Construction works will involve work in the ground.
	Plant uptake and consumption of homegrown produce	Future Site users	**No:** No private gardens in the proposed development.
	Surface Runoff	Nearby surface water (84m north)	**No:** It is unlikely that surface water runoff will come into contact with the nearby agricultural drain, give the distance from the Site.
	Migration of contaminants via waterways	Groundwater – Chalk Aquifer (SPZ 1)	**Yes:** Vertical and lateral migration of contaminated groundwater from Made Ground to surrounding groundwater is possible.
		Nearby surface water (84m north)	**No:** It is unlikely that the nearest surface water feature, an agricultural drain, is in hydraulic conductivity with the groundwater at Site.
	Migration of ground gas	Future Site users	**Yes:** There is potential for ground gas associated with Made Ground to migrate into the proposed buildings.
		Construction and maintenance workers	**Yes:** Future construction on Site may expose construction and maintenance workers to ground gas.

Source	Pathway	Receptor	Potential Contaminant Linkage
Active Off-Site Sources			
Former petrol station, 35m east of the Site. Former sewage farm, 20m north of the Site	Dermal contact, ingestion and inhalation pathways	Future Site users	**Yes:** There is communal soft landscaping at the Site so there is potential for future residents to have contact with potential contamination.
		Construction workers	**Yes:** Construction workers will work in the ground and have the potential to be in contact with contamination if lateral migration of hydrocarbon contaminants in Made Ground is present.
	Migration of contaminants via waterways	Groundwater – Chalk Aquifer (SPZ 1)	**Yes:** Lateral migration of contaminated groundwater from associated contaminated land uses to surrounding groundwater is possible.

4.6 Other Property Related Environmental Issues

Table 4.3: Summary of Other Potential Environmental Issues

Issue	Detail
Coal Mining	Coal Authority records indicate that the Site is not located in an area that is affected by coal mining.
Radon	BGS records indicate that the Site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the Action Level. On this basis, the BGS states that "no radon protective measures are necessary in the construction of new dwellings or extensions".
Flood Risk	Very low flood risk on-Site.
Asbestos Containing Materials	Potential for asbestos containing material on Site owing to the age of the current development. An asbestos survey should be undertaken prior to any refurbishment and development.
UXO Risk	The Site lies in an area of low risk of potential UXO.

5.0 Preliminary Geotechnical Hazards Assessment

Based on the available information presented in the preceding sections, the anticipated geotechnical hazards associated with the Site are summarised in the table below.

Table 5.1: Summary of Geotechnical Hazards

Hazard	Distance	Description
Made Ground	On-Site	The available information indicates that the Site has generally been developed land since the mid to late 1800s with only structures being present on Site. Therefore, Made Ground is anticipated based on the development and BGS borehole records. The Made Ground has high variability – consequently, unless adequately treated, the Made Ground may not be a suitable founding stratum.
Volume Change Potential	On-Site	The cohesive strata of Lambeth Group, will likely exhibit volume change potential when subject to moisture content changes. The volume change potential characteristics should be investigated and assessed to inform the design of foundations.
Environment Agency Consultation	On-Site	Should a deep foundation solution such as piling or deep ground improvement be required, the Environment Agency should be consulted with regards to construction operations within the chalk which is a Principal Aquifer. A risk assessment will likely be required.
Lambeth Group Strata	On-Site	Lambeth Group comprises highly variable strata in terms of engineering properties and lithology, and may contain hard bands, pebble beds, sand filled channels and subartesian groundwater pressures, to mention a few of the anticipated challenges for construction sites. The lithological profile and engineering properties of the Lambeth Group strata should be investigated and assessed to inform foundation design and construction techniques.
Soil Desiccation	On-Site	Moisture content deficits within cohesive strata could be present on site in proximity to existing vegetation and mature trees. Heave associated with any such desiccation would need consideration during the design of foundations and floor slabs.
Shallow Ground Water	On-Site	The presence of shallow groundwater cannot be ruled out. Shallow groundwater, should it be present will have implications during the construction phase.
Aggressive Ground Conditions	On-Site	Lambeth Group and materials derived from it can contain elevated concentrations of minerals capable of producing ground conditions aggressive to buried concrete. Made Ground should be assessed in that regard.

Hazard	Distance	Description
Potential Dissolution Features in Chalk	On-Site	Review of BGS boreholes in proximity to the site indicate chalk may be present underlying Lambeth Group at relatively shallow depths. Chalk is prone to dissolution and the presence of any dissolution features should be assessed during a site investigation.
Running Sand Phenomena	On-Site	Running sand phenomena during excavations within granular fractions of Lambeth Group cannot be ruled out especially if these deposits exist on-Site in a loose state and are affected by the presence of shallow groundwater
Buried Obstructions	On-Site	There is some potential of buried obstructions within the Made Ground associated with past developments such as relict foundations. Also, the potential presence of large gravels and cobbles within the Made Ground and cobbles of flint with the White Chalk Subgroup cannot be ruled out at this stage. Buried obstructions may delay construction operations and will require consideration for the selection of appropriate equipment.

6.0 Summary and Conclusions

6.1 Findings

The White Hart Site, located on St. Albans Street, South Mimms, Potters Bar was formerly a public house which is now vacant. The proposed development comprises the conversion and extension of the former public house into six one-bedroom apartments, conversion of outbuilding into a two-bedroom apartment and construction of a detached infill dwelling, along with associated landscaping, bin store, cycle storage and vehicle parking.

The earliest record of the Site, based on historical maps, shows the Site in its current configuration as early as 1868.

The Site is underlain by Lambeth Group clay, silt and sand, within a Secondary (A) unconfined aquifer and a Principal Aquifer in the form of Seaford and Lewes Nodular Chalk formations. The Site also falls within a SPZ 1 (inner zone) owing to the bedrock Principal Aquifer designation. No sensitive site land uses were identified on-Site.

The closest surface water feature is an agricultural drain located 84m to the north west of the Site.

6.2 Summary of Environmental Risk

Based on this assessment it is considered that the former land uses are unlikely to have impacted the underlying soil and groundwater conditions. There is potential for asbestos containing material owing to the age of the existing structures owing to any redevelopments that may have occurred.

It is understood that the proposed development will be for residential end use and will comprise housing with private gardens and areas of communal soft landscaping.

Future occupants could come into contact with potential contamination in areas of soft landscaping. Furthermore, ground gases and organic vapours could enter and accumulate in new buildings.

Construction and maintenance works and neighbouring Site users could come into contact with contaminated soils and soil dust during the construction and redevelopment phase.

The published geology is of Lambeth Group deposits (Secondary [A] Aquifer) over Lewes Nodular Chalk Formation and Seaford Chalk Formation (Principal Aquifer) and the Site falls within a groundwater source protection zone 1. There are no major surface water bodies near the Site with the nearest being an agricultural drain unlikely to be in hydraulic conductivity with the Site.

The Pitstop 21, a former petrol station has the potential to be a source of hydrocarbon contamination, it is located 23 m to the north east of the Site.

7.0 Recommendations for Further Work

In light of the desk study findings, TRC recommends a Tier 2 (formerly known as a phase 2) intrusive ground investigation to further appraise underlying soil and groundwater quality and assess ground gas conditions. This is likely to be a requirement of planning consent. The investigation should focus on the potential sources identified as part of this assessment in particular the areas at the north east of the Site within the proximity of the petrol station. This will aim to address any risks to the identified receptors.

A detailed investigation with geotechnical testing is required to confirm the underlying geology, groundwater regime and engineering properties of the underlying soils. The ground investigation should be designed and assessed based on the requirements of BS5930:2015, Eurocode 7 Part 2 (and the associated National Annex), and NHBC Standards. The investigation and assessment should be tailored to ensure that the geotechnical

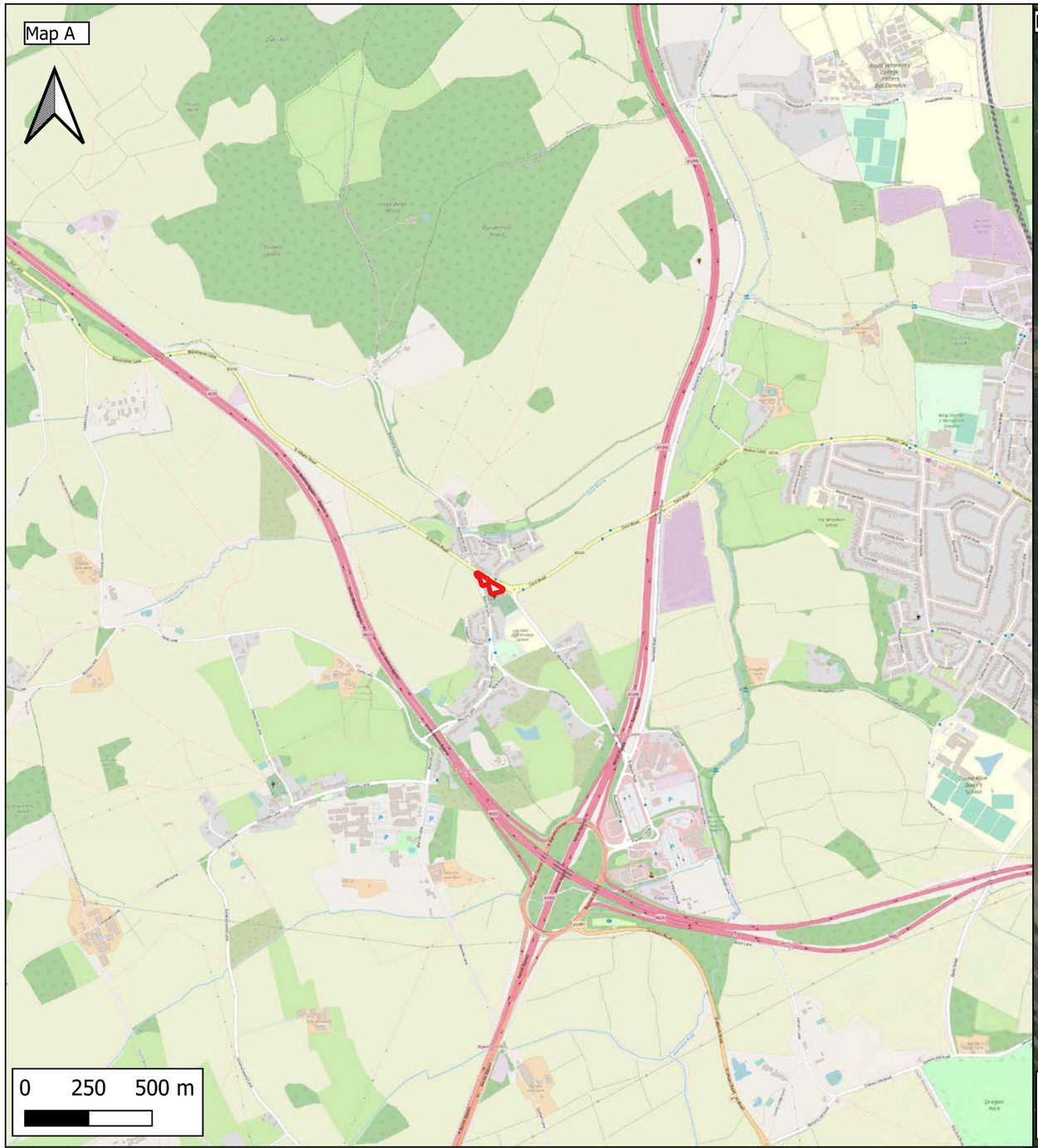
hazards, discussed in this report are addressed and appropriate mitigation measures are proposed to inform the structural and civils design.

A Geotechnical Design Report may need to be prepared at a later stage in accordance with Eurocode 7, once the ground investigation and assessment have been completed and the final scheme details are known.

Given the age of the building, it is recommended that an asbestos survey is undertaken prior to any refurbishment or development.

Annex A: Figures

Map A



Map B

NOTES

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Google imagery June 2018

REVISIONS

P01	FIRST ISSUE			
	Initials	LIR		29/09/23
REV.	REVISION NOTES/COMMENTS			
	Initials			

TRC
Work.Life
Red Lion Street
London
WC1R 4PQ

TITLE
SITE LOCATION PLAN

TRC PROJECT NO.
543517

SCALE
Map A - 1:20,000 @ A3
Map B - 1:5,000 @ A3

CLIENT
Griggs (South Mimms) Limited

PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

STATUS

PROJECT
THE WHITE HART, SOUTH MIMMS

DRAWING NO
FIGURE 01

REVISION
P01

NOTES:
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This drawing is to be read together with the specification and related drawings.

REVISIONS:

Rev	By	Check	Date	Description

PLANNING

Project:
The White Hart Pub,
St Albans Road, South Mimms,
Herts, EN6 3PJ.

Title:
Site Plan (Ground Floor Layout)

Drawn:	Checked:	Date:	Scale:	Size:
KAT		Sept 2023	1:200	A1
Project No:		Drawing No:		Revision:
1563		PL020		-

GRIGGS EST. 1968

NOTES

Drawing provided by Griggs. Drawing number 1563 SK002, Revision C. Dated September 2021.

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REVISIONS

P01	FIRST ISSUE			
	Initials	LS	LS	23/02/24
REV.	REVISION NOTES/COMMENTS			
	Initials			

Work.Life
20 Red Lion Street,
London,
WC1R 4PS

CLIENT
Griggs (South Mimms) Limited

PROJECT
THE WHITE HART, SOUTH MIMMS

TITLE
PROPOSED DEVELOPMENT PLAN

TRC PROJECT NO.	SCALE
543517	N/A

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	

DRAWING NO	REVISION
FIGURE 2	PO1

Annex B: Envirocheck

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

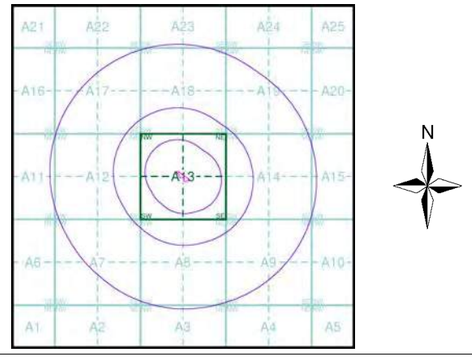
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

TRC

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1868	2
Middlesex	1:10,560	1868	3
Middlesex	1:10,560	1897 - 1898	4
Hertfordshire	1:10,560	1916 - 1920	5
Hertfordshire	1:10,560	1919	6
Hertfordshire	1:10,560	1935	7
Hertfordshire	1:10,560	1938	8
Hertfordshire	1:10,560	1938	9
Ordnance Survey Plan	1:10,000	1960	10
Ordnance Survey Plan	1:10,000	1964 - 1968	11
Ordnance Survey Plan	1:10,000	1973 - 1974	12
Ordnance Survey Plan	1:10,000	1984	13
Ordnance Survey Plan	1:10,000	1990	14
10K Raster Mapping	1:10,000	1999	15
Street View	Variable		16

Historical Map - Slice A



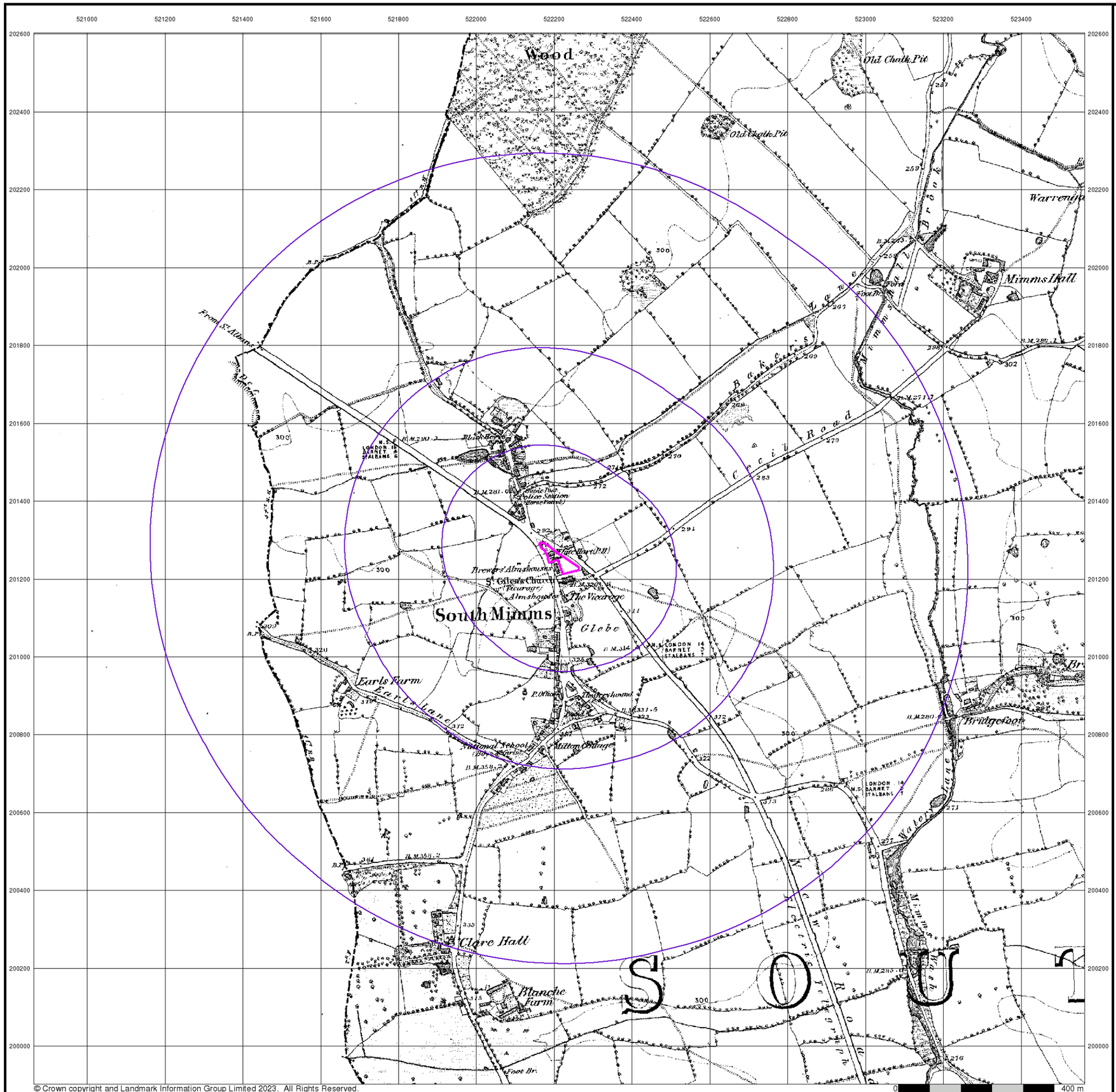
Order Details

Order Number: 309953319_1_1
Customer Ref: 543517.0000.0000
National Grid Reference: 522210, 201250
Slice: A
Site Area (Ha): 0.27
Search Buffer (m): 1000

Site Details

White Hart, St. Albans Road, South Mimms, POTTERS BAR, EN6 3PJ

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



TRC

Middlesex

Published 1868

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

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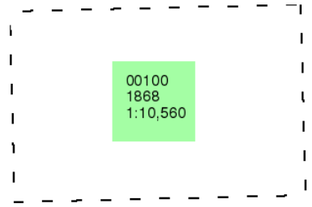
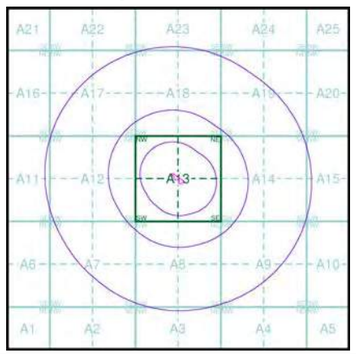


Historical Map - Slice A



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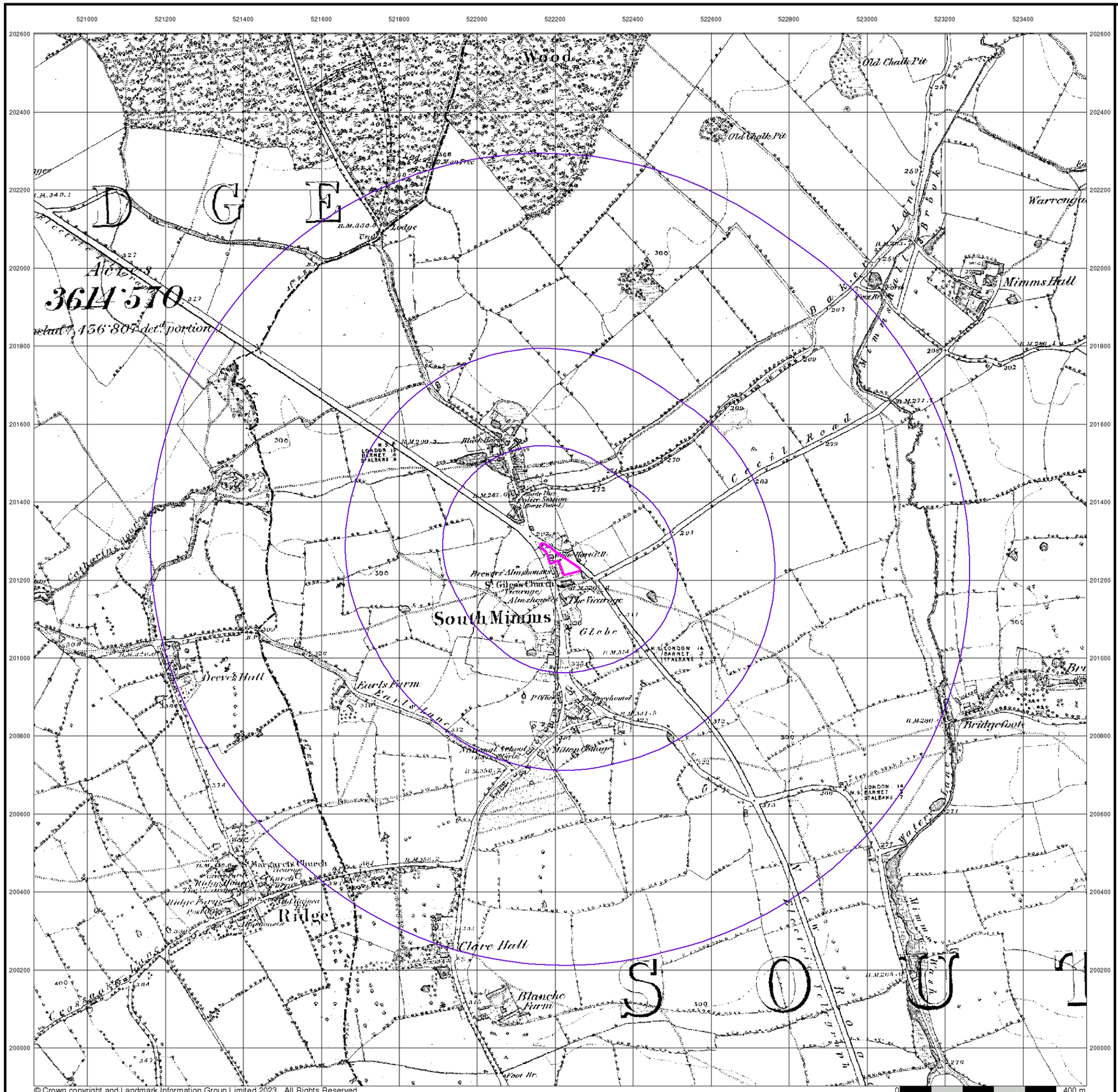

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Middlesex

Published 1868

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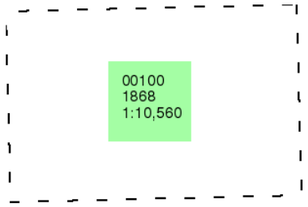

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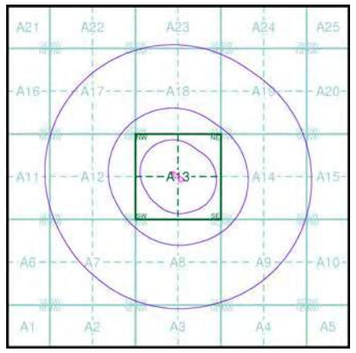

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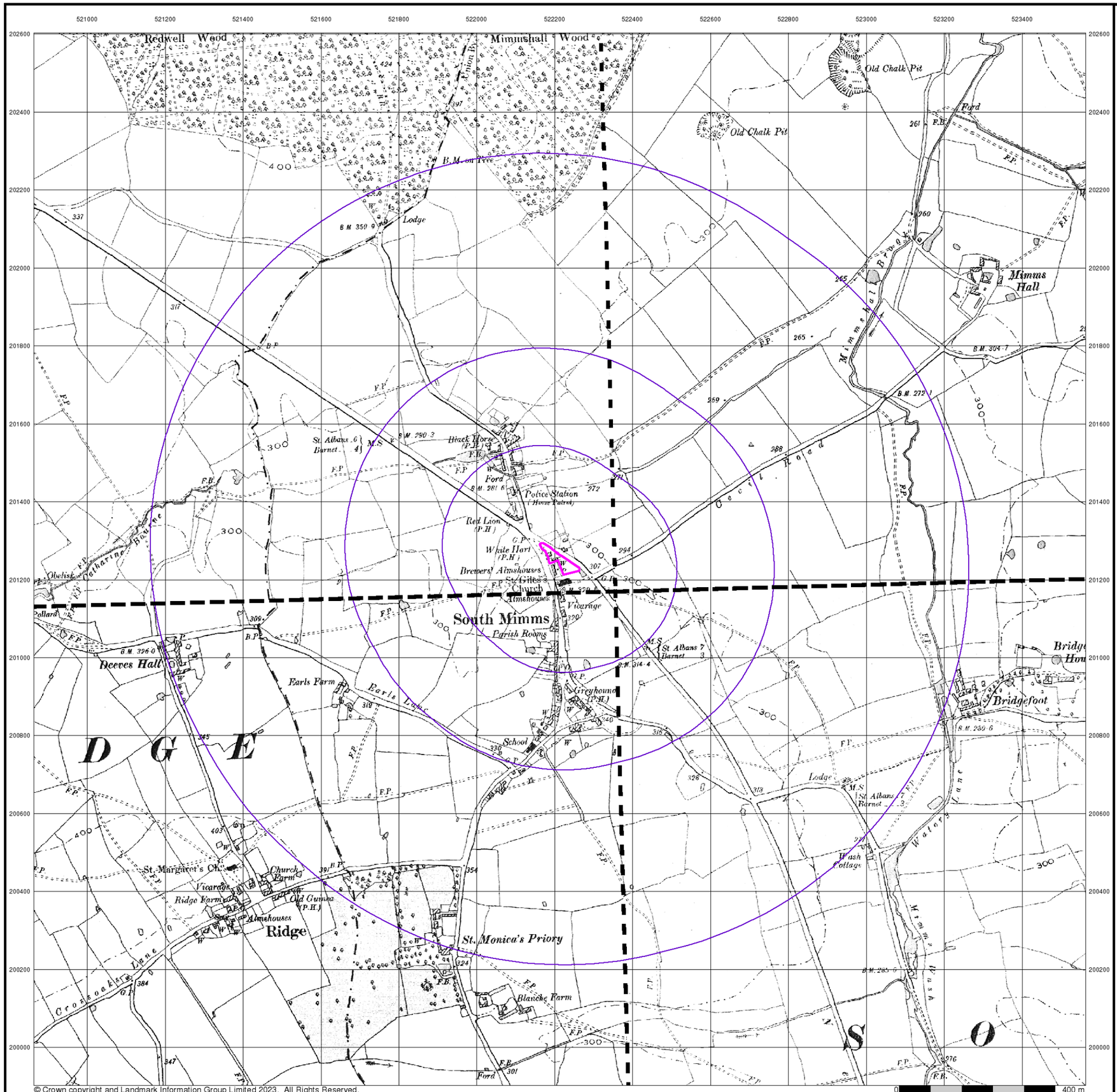

TRC

Middlesex

Published 1897 - 1898

Source map scale - 1:10,560

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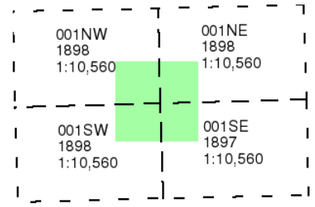
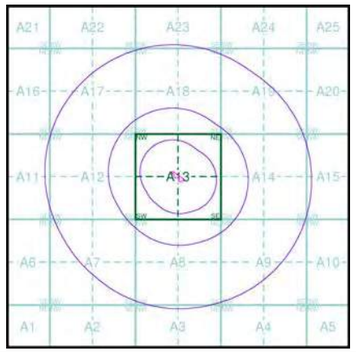


Historical Map - Slice A



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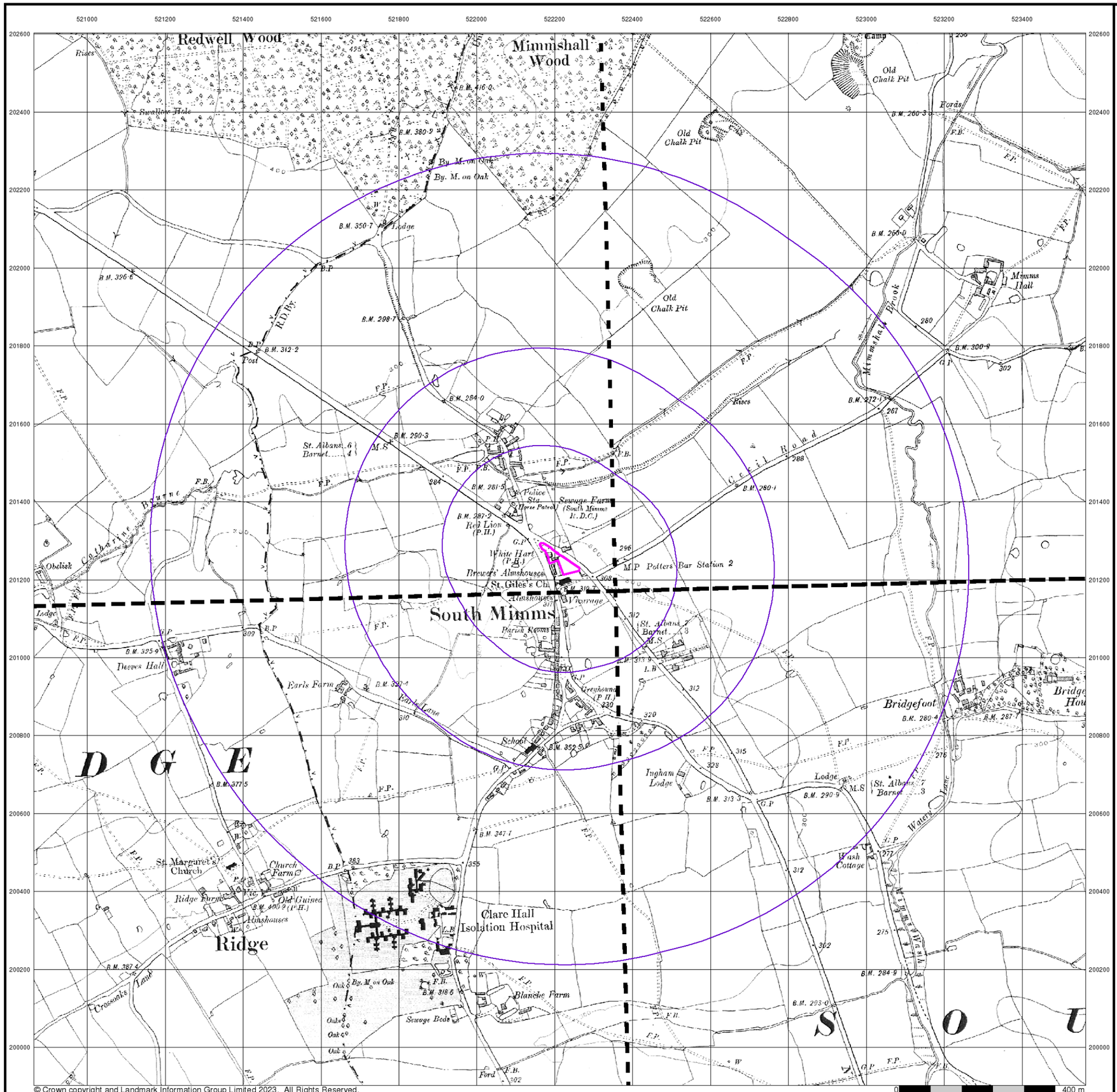

Hertfordshire

Published 1916 - 1920

Source map scale - 1:10,560

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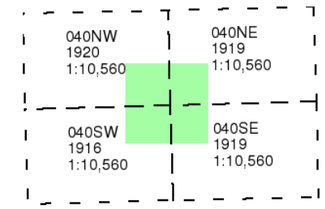
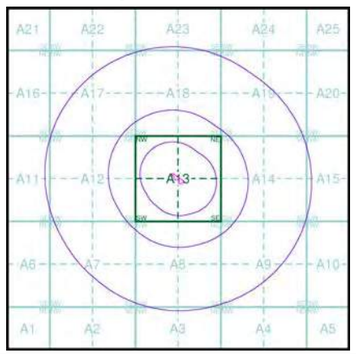


Historical Map - Slice A



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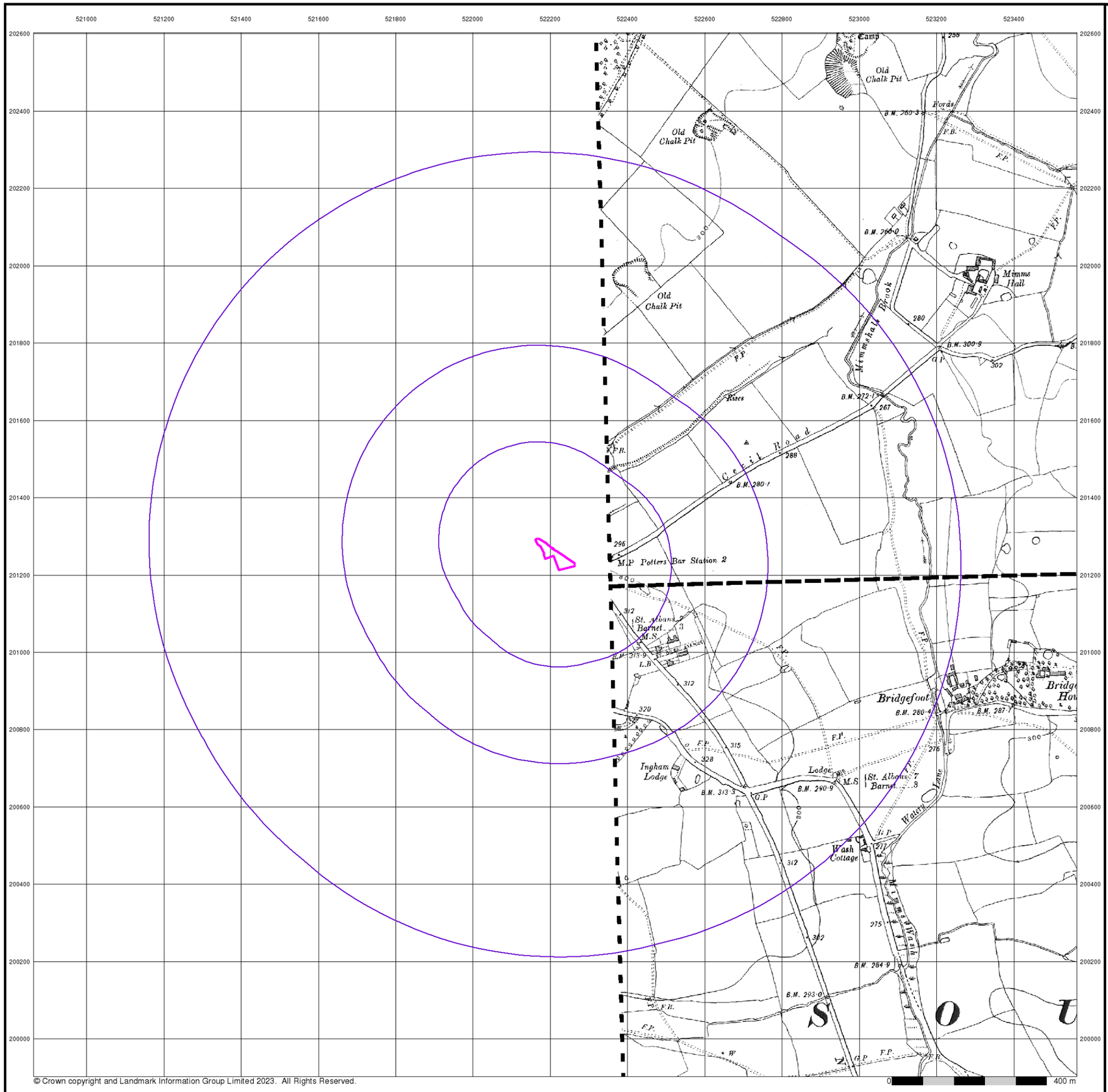

Hertfordshire

Published 1919

Source map scale - 1:10,560

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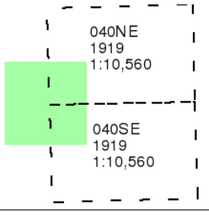
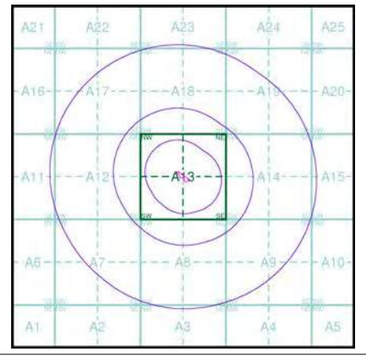


Historical Map - Slice A



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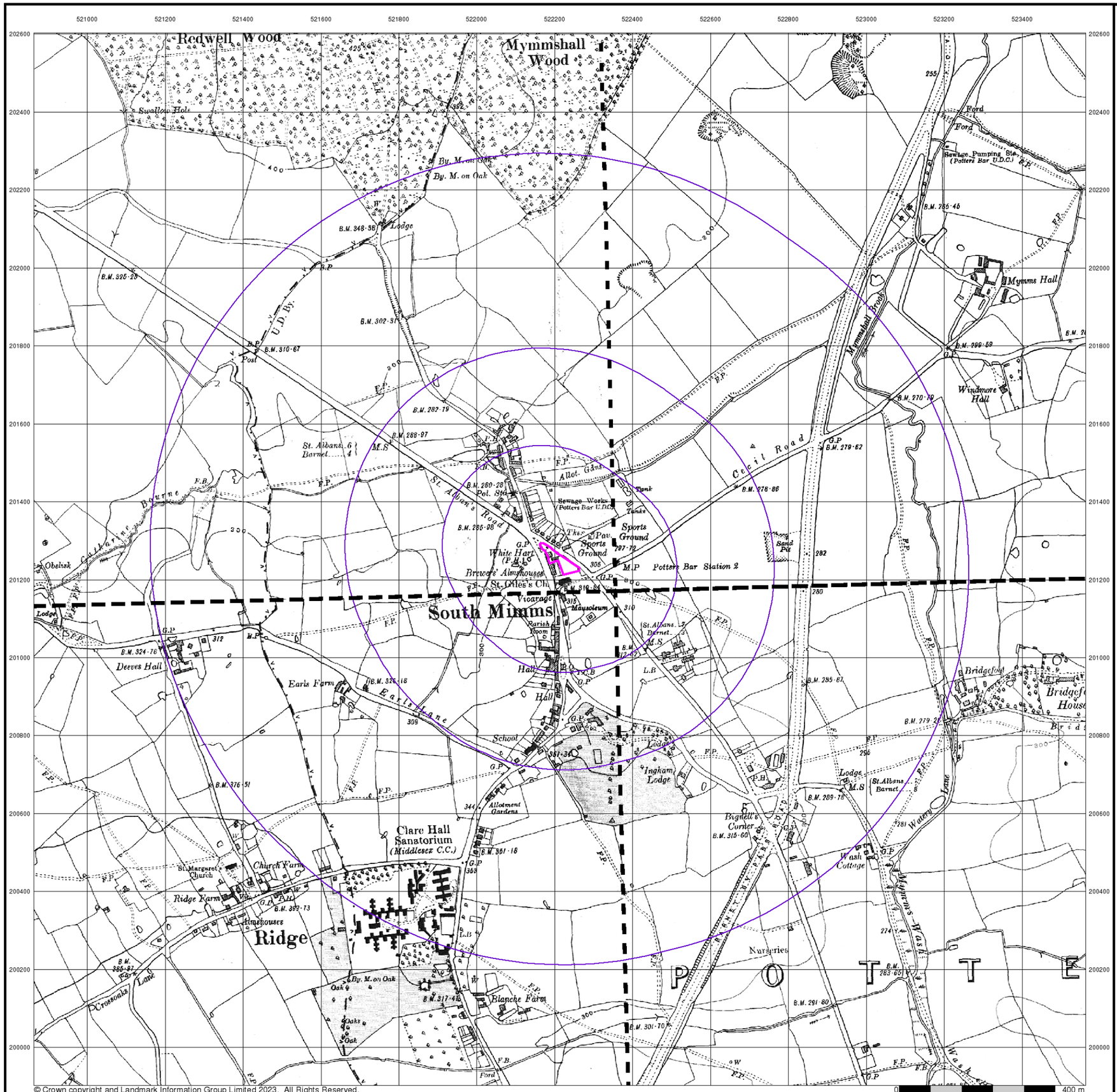

TRC

Hertfordshire

Published 1935

Source map scale - 1:10,560

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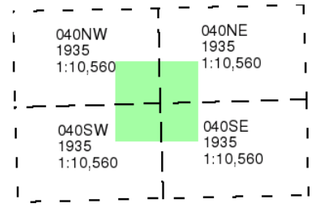
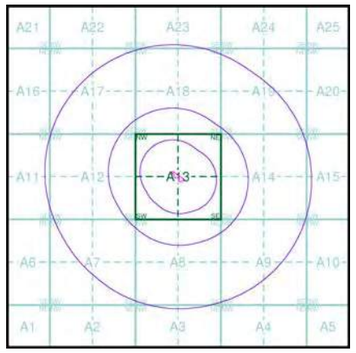


Historical Map - Slice A



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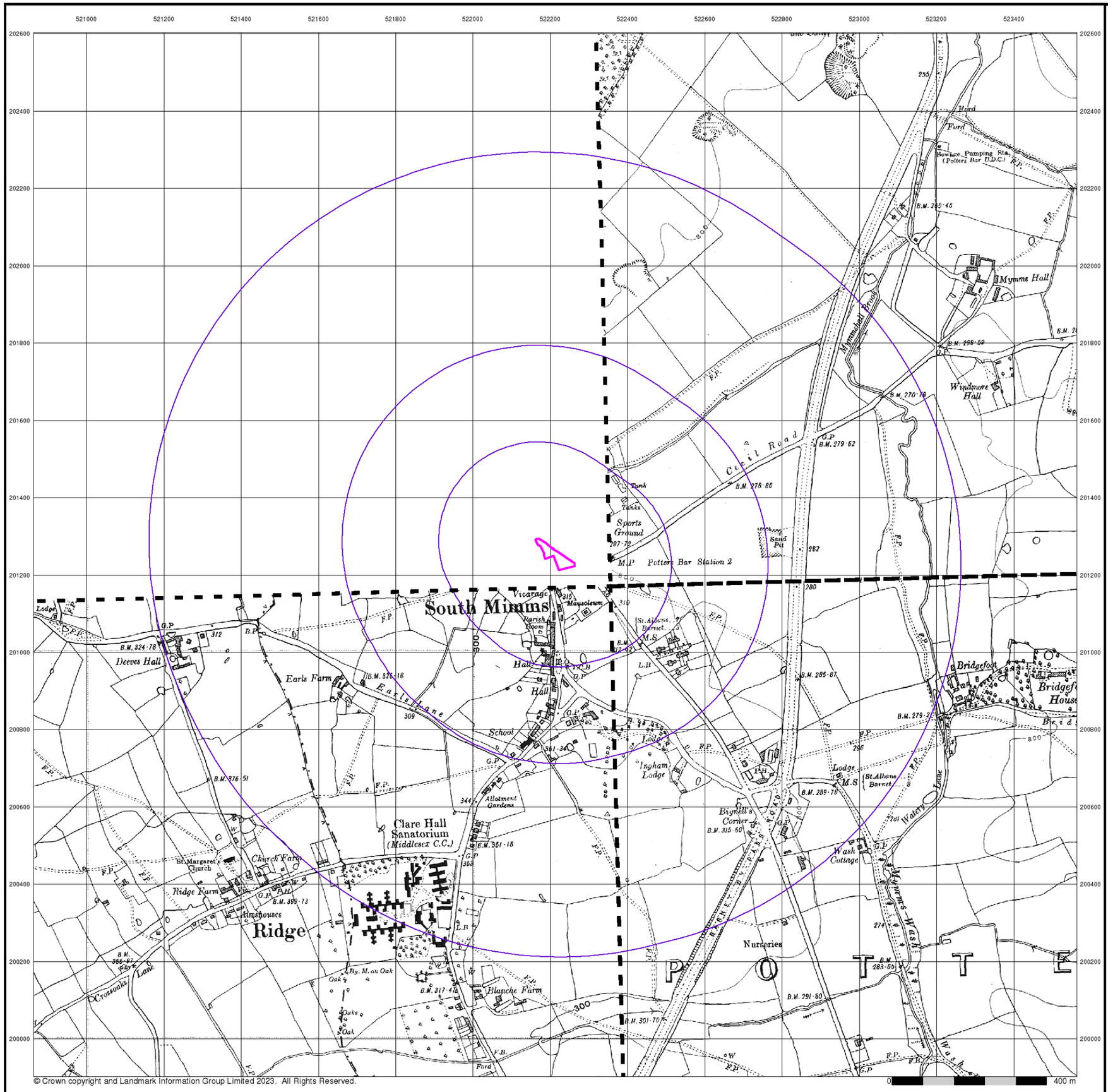

TRC

Hertfordshire

Published 1938

Source map scale - 1:10,560

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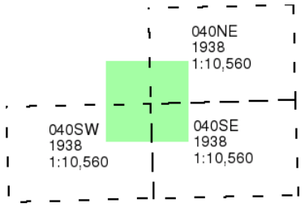
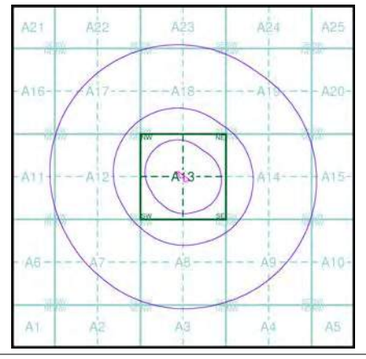


Historical Map - Slice A



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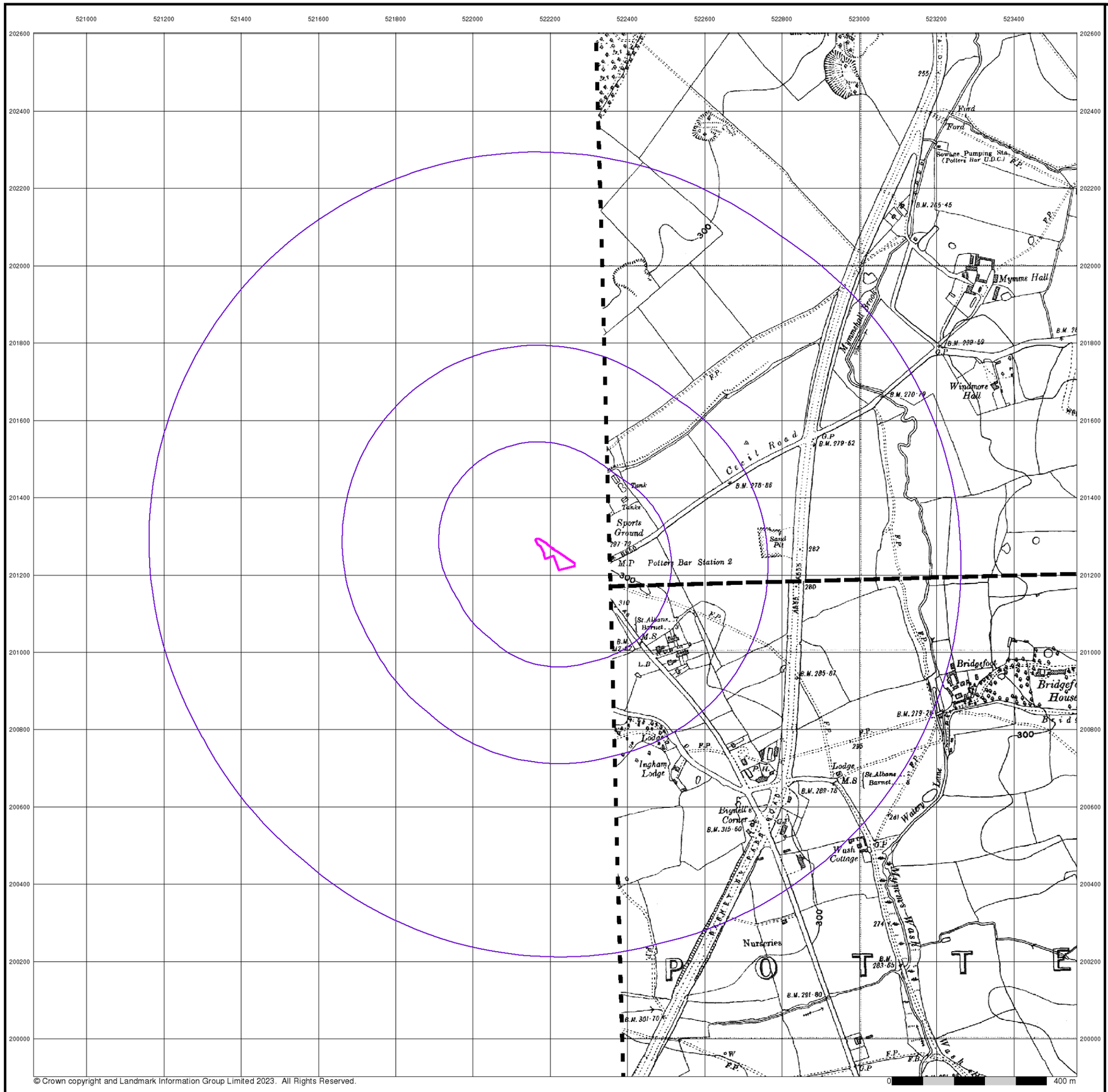

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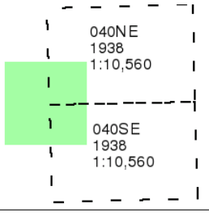
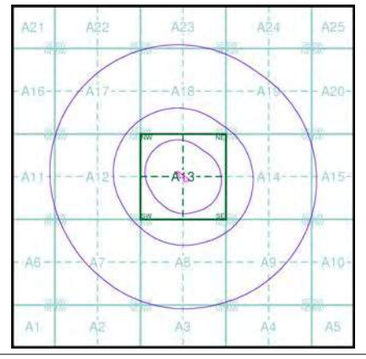


Historical Map - Slice A



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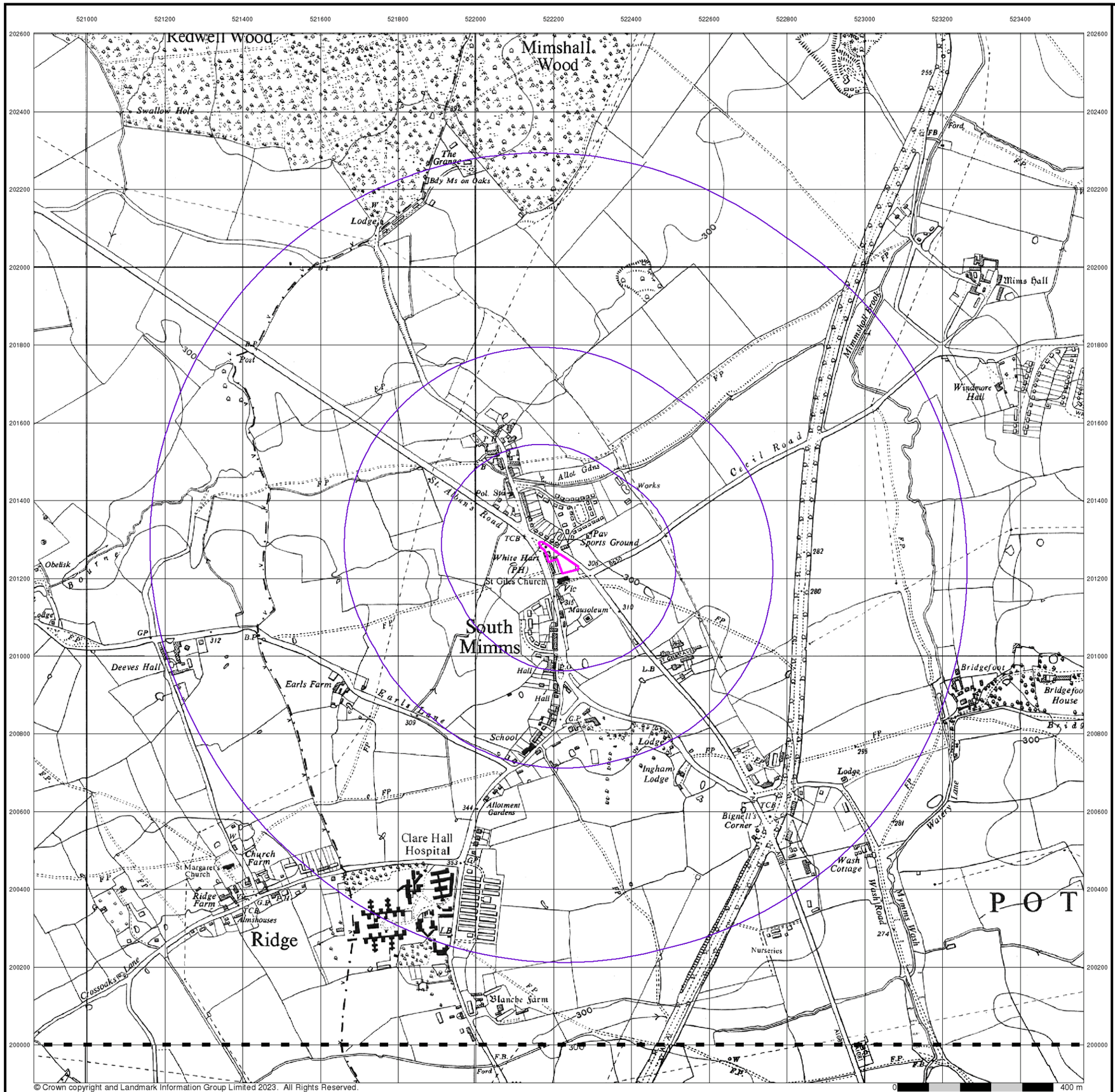
Web: www.envirocheck.co.uk



Ordnance Survey Plan

Published 1960

Source map scale - 1:10,000

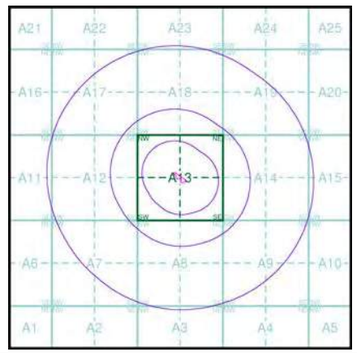
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL20SW
1960
1:10,560

TQ29NW
1960
1:10,560

Historical Map - Slice A



Order Details

Order Number:	309953319_1_1
Customer Ref:	543517.0000.0000
National Grid Reference:	522210, 201250
Slice:	A
Site Area (Ha):	0.27
Search Buffer (m):	1000

Site Details

White Hart, St. Albans Road, South Mimms, POTTERS BAR, EN6 3PJ

Landmark INFORMATION GROUP

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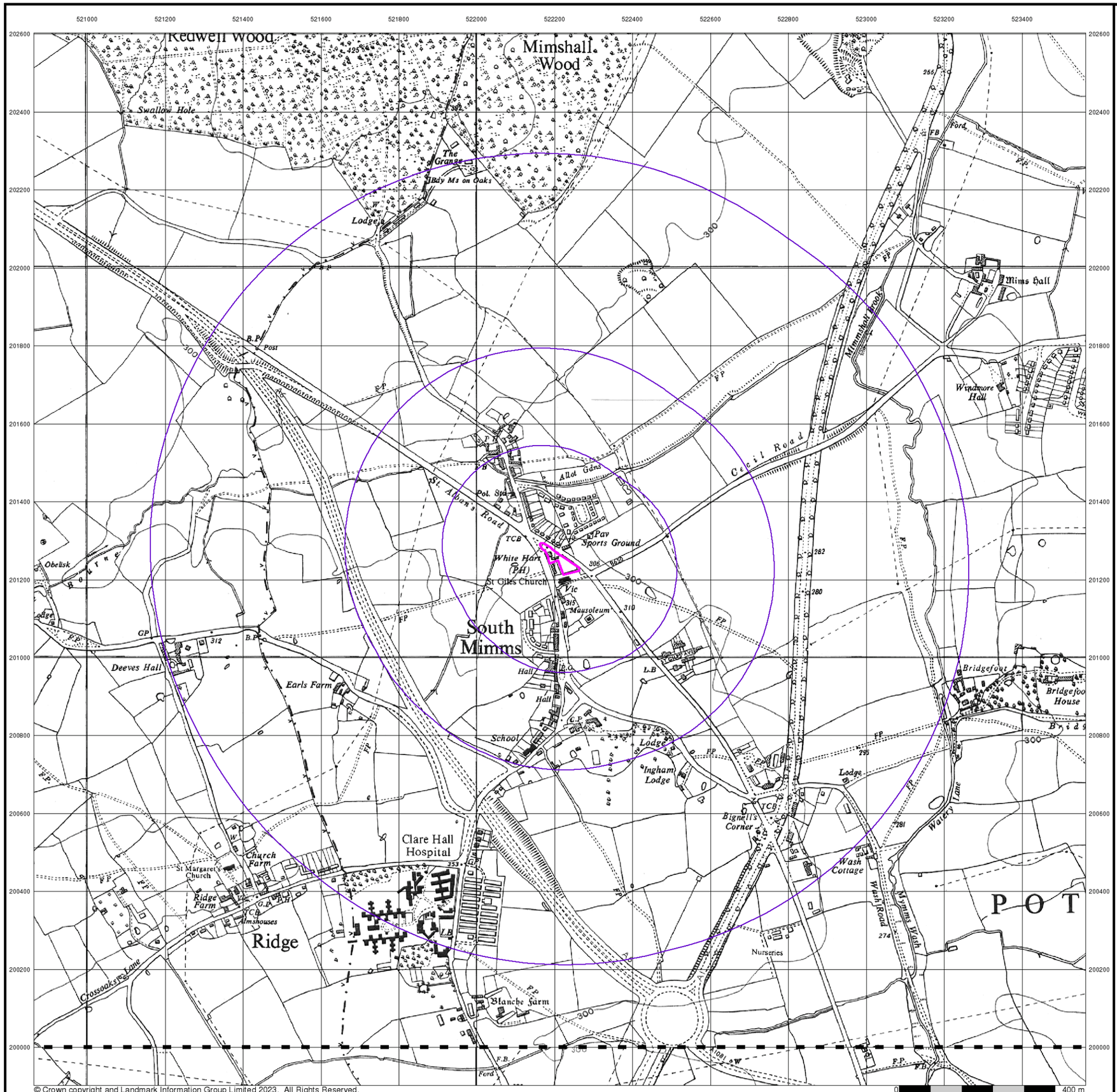


TRC

Ordnance Survey Plan

Published 1964 - 1968

Source map scale - 1:10,000

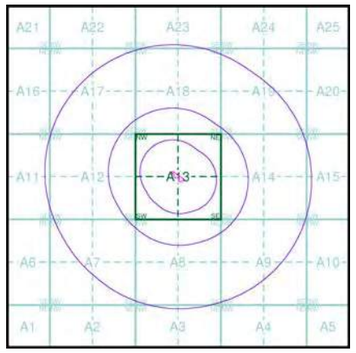
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL20SW
1964
1:10,560

TQ29NW
1968
1:10,560

Historical Map - Slice A



Order Details

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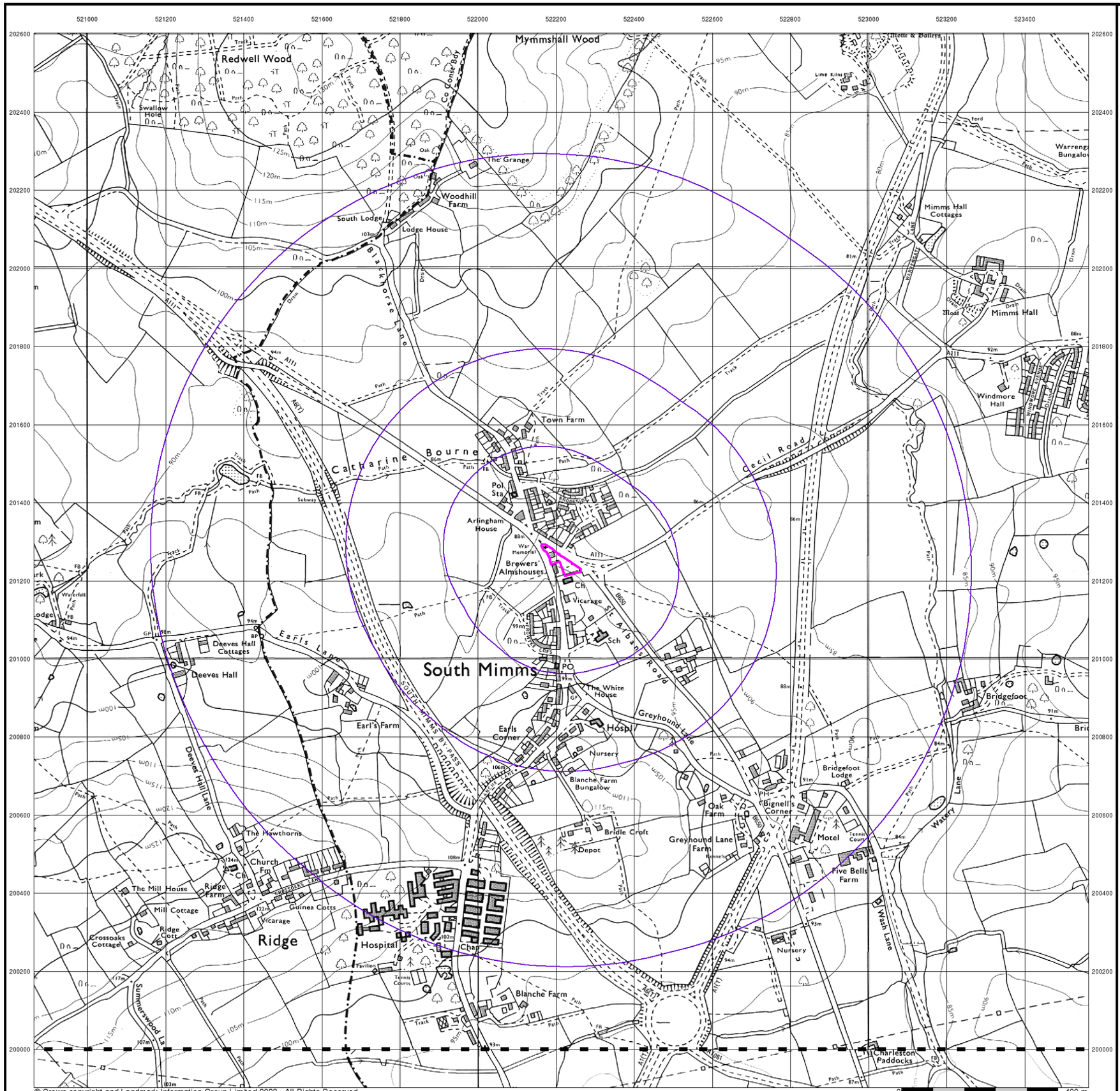


Ordnance Survey Plan

Published 1973 - 1974

Source map scale - 1:10,000

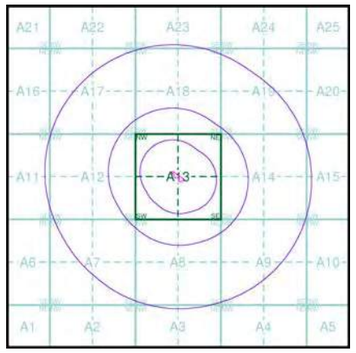
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL20SW
1973
1:10,000

TQ29NW
1974
1:10,000

Historical Map - Slice A



Order Details

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Slice:	A
Site Area (Ha):	0.27
Search Buffer (m):	1000

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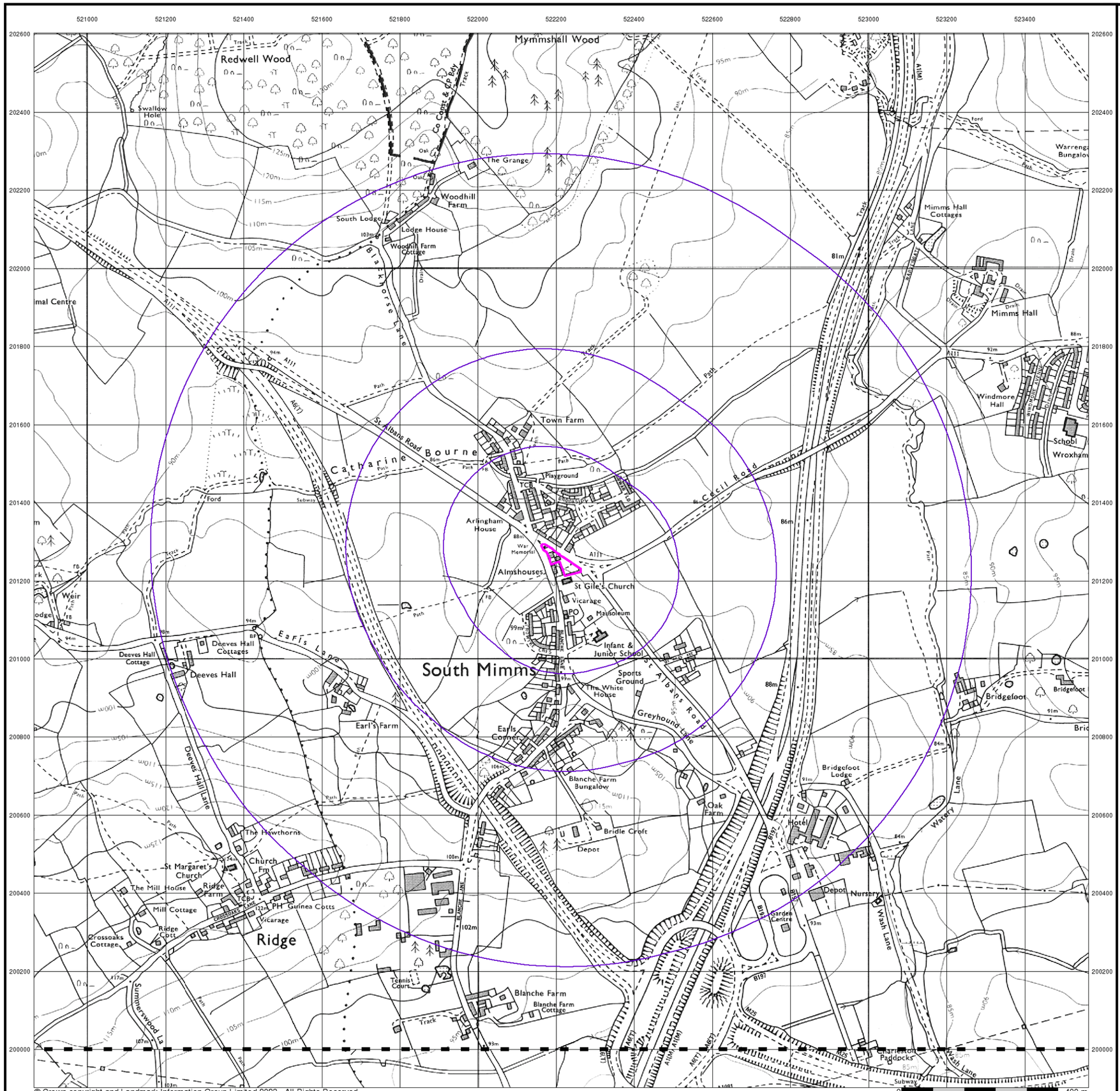


TRC

Ordnance Survey Plan

Published 1984

Source map scale - 1:10,000

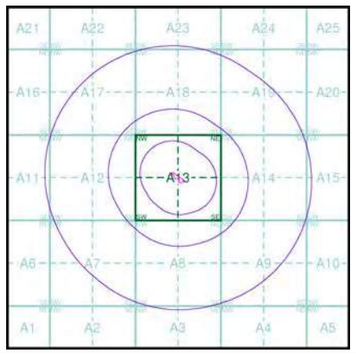
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TL20SW
1984
1:10,000

TQ29NW
1984
1:10,000

Historical Map - Slice A



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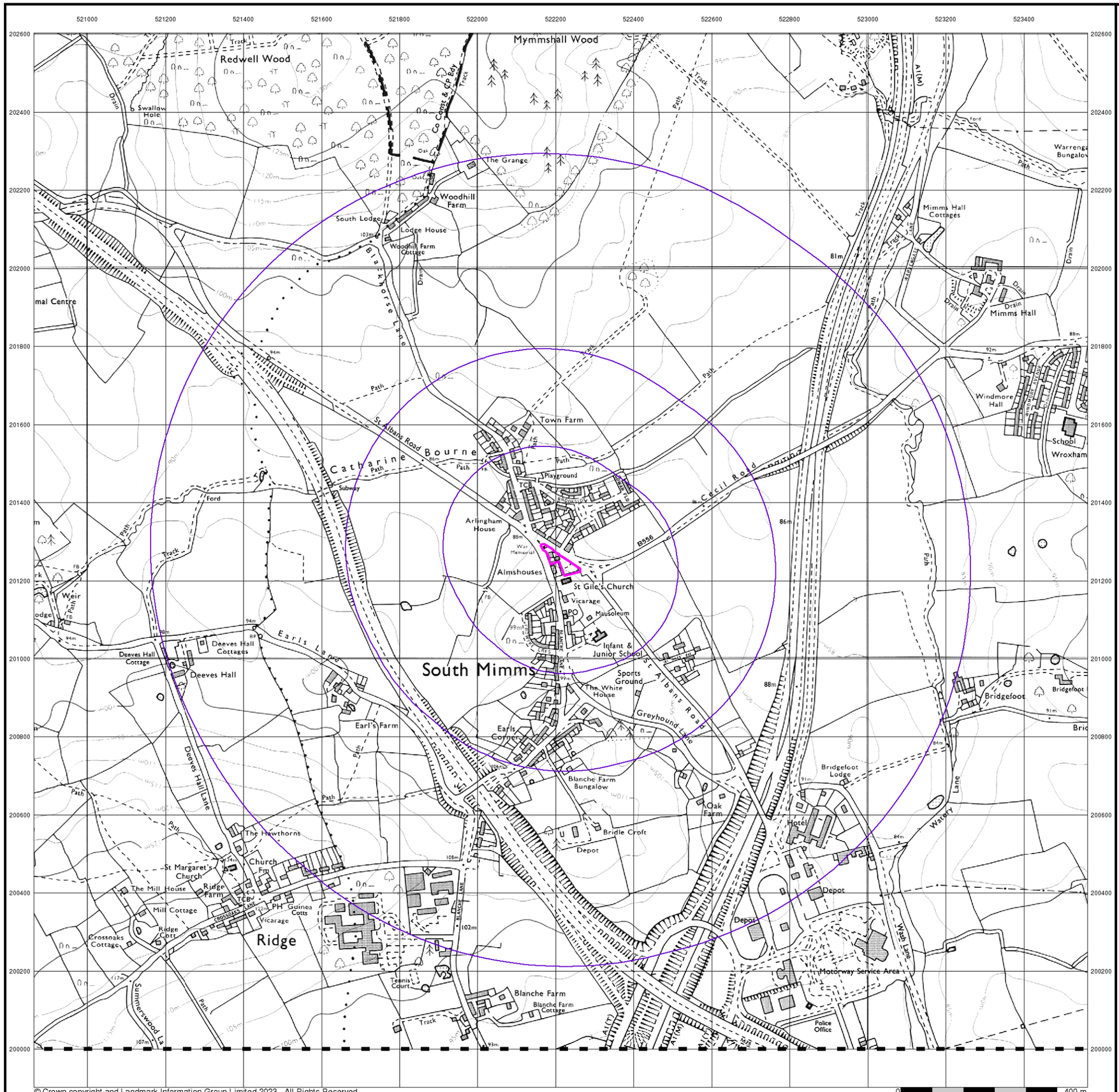


TRC

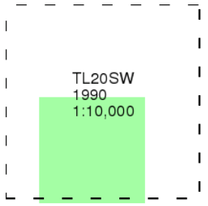
Ordnance Survey Plan

Published 1990

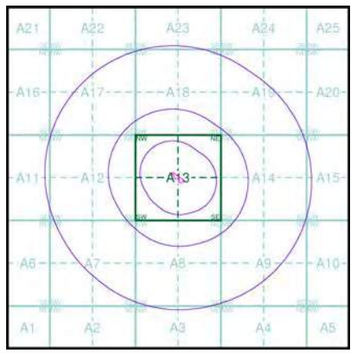
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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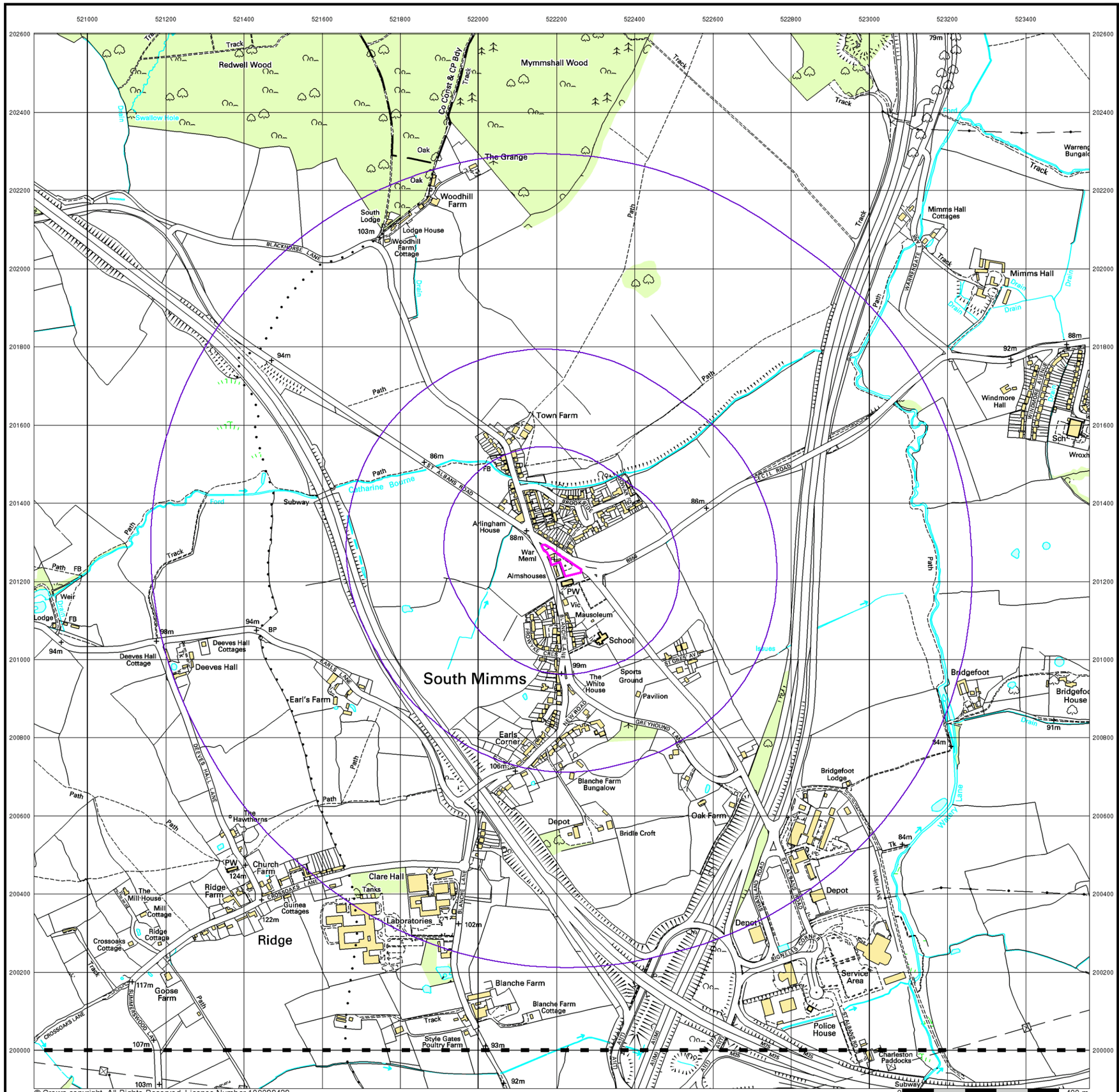

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0 400 m

10k Raster Mapping

Published 1999

Source map scale - 1:10,000

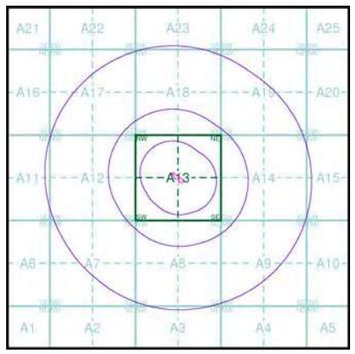
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

TL20SW
1999
1:10,000

TQ29NW
1999
1:10,000

Historical Map - Slice A



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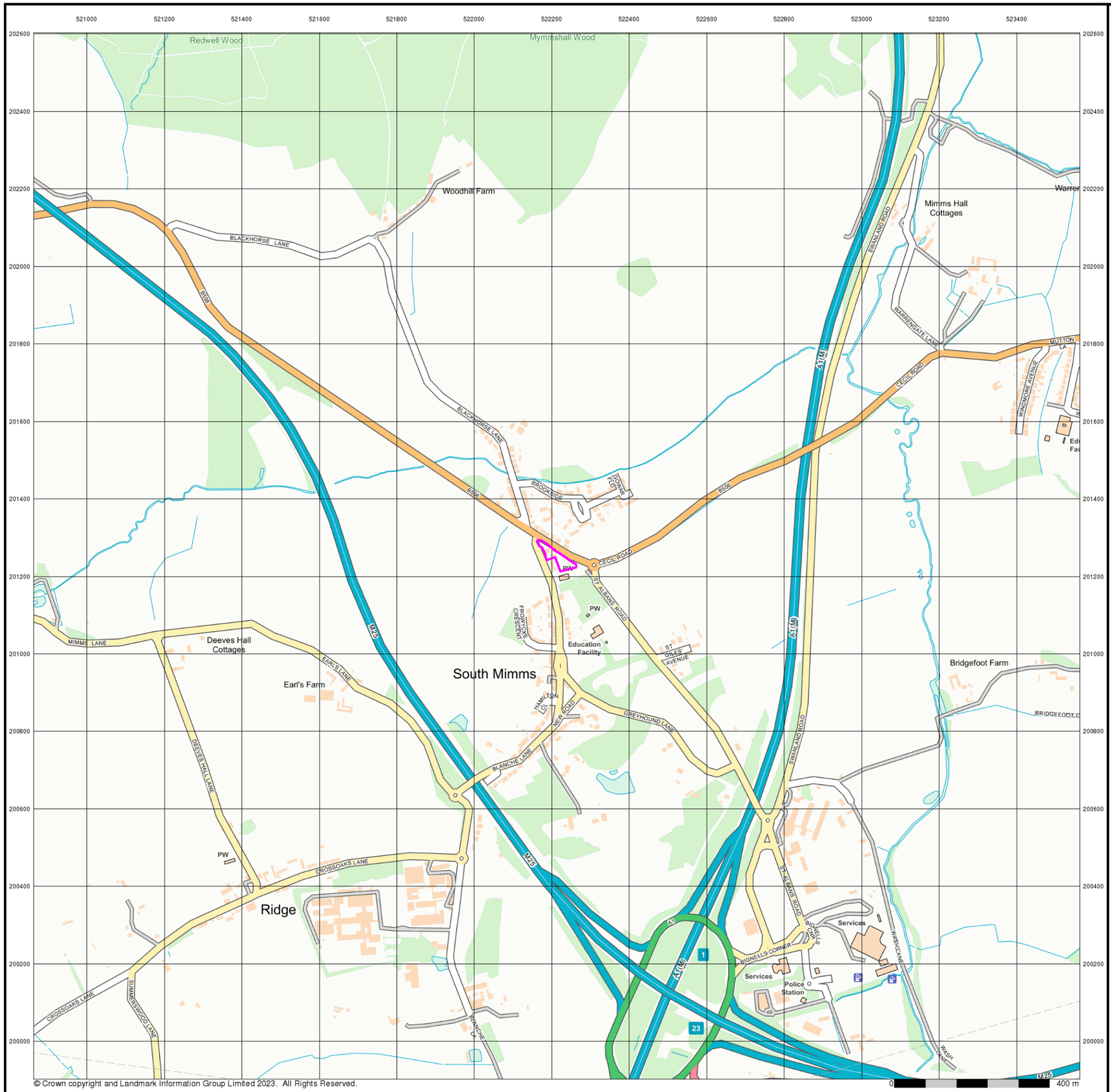


TRC

Street View

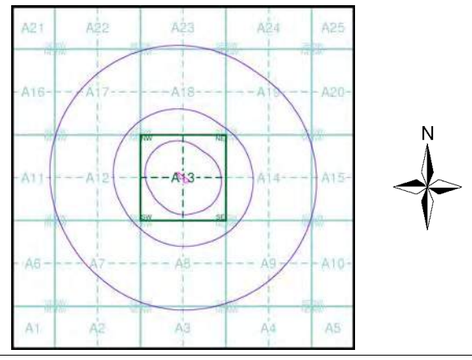
Published 2023

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

Street View Map - Slice A



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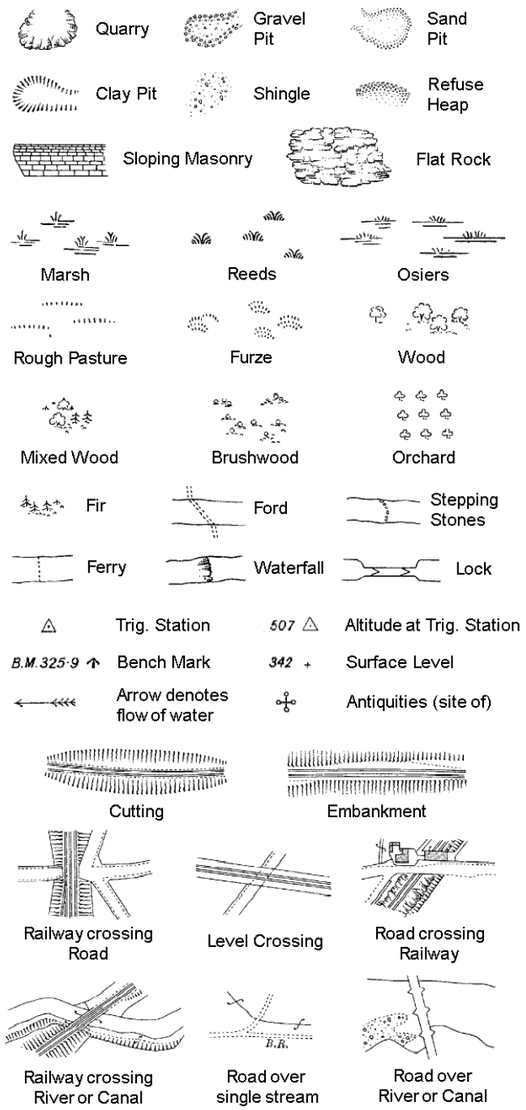
Historical Mapping Legends

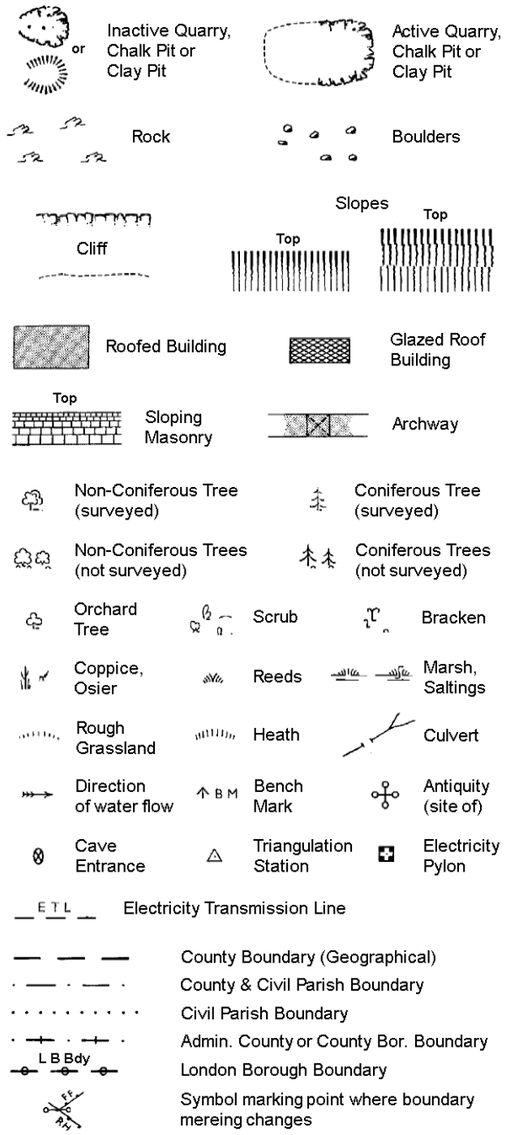
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

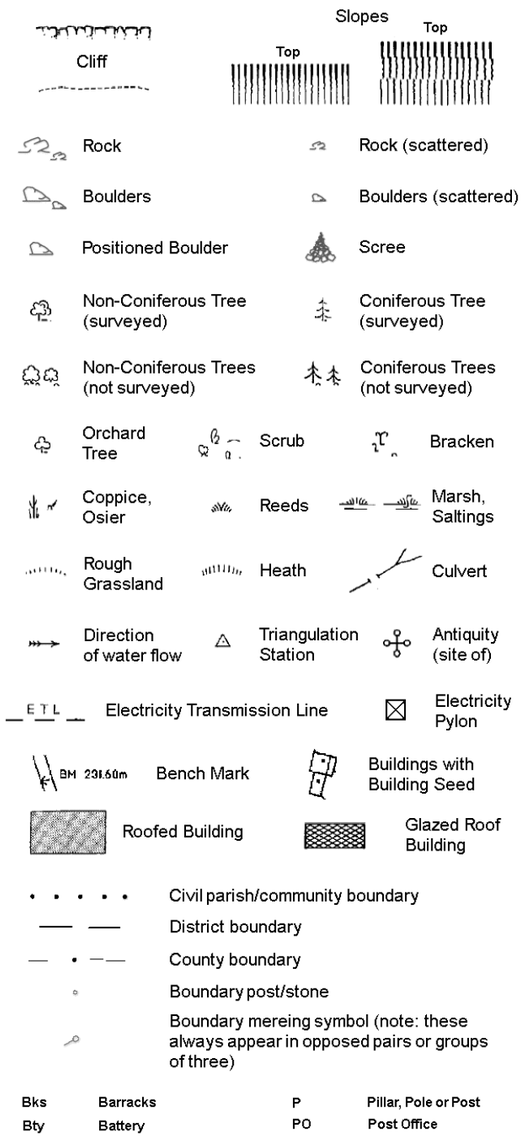
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

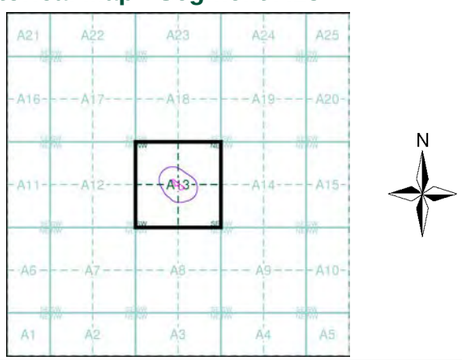
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

TRC

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:2,500	1866 - 1892	2
Hertfordshire	1:2,500	1870 - 1873	3
Hertfordshire	1:2,500	1873	4
Middlesex	1:2,500	1896	5
Hertfordshire	1:2,500	1898	6
Middlesex	1:2,500	1914	7
Hertfordshire	1:2,500	1914	8
Hertfordshire	1:2,500	1935	9
Middlesex	1:2,500	1935	10
Ordnance Survey Plan	1:2,500	1970 - 1971	11
Ordnance Survey Plan	1:2,500	1983	12
Additional SIMs	1:2,500	1983 - 1988	13
Large-Scale National Grid Data	1:2,500	1992	14
Large-Scale National Grid Data	1:2,500	1993	15
Large-Scale National Grid Data	1:2,500	1996	16

Historical Map - Segment A13



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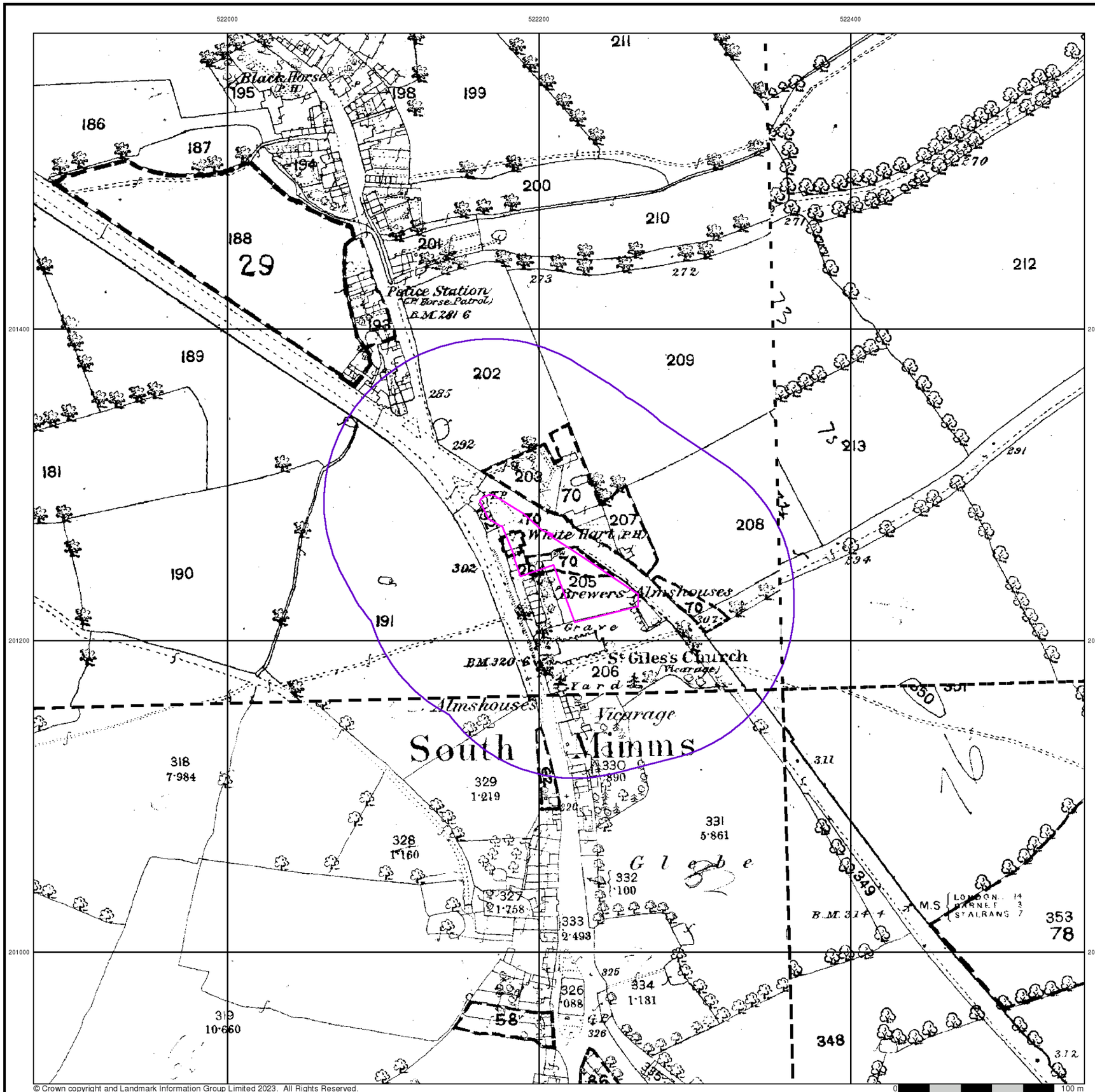


TRC

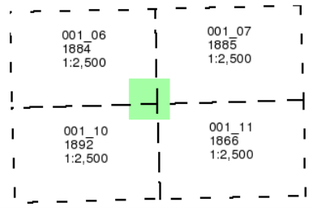
Middlesex

Published 1866 - 1892

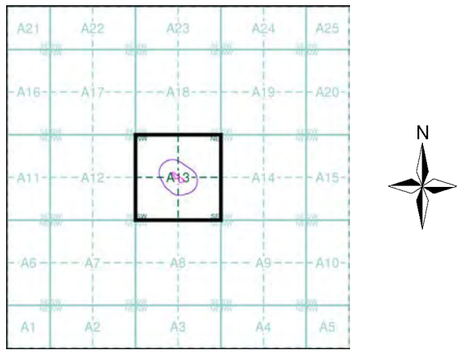
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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