



Preliminary Investigation Report

at
Worcester Close, Gravesend, Kent, DA13 9LB

for
Frankham Projects Limited

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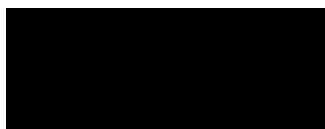
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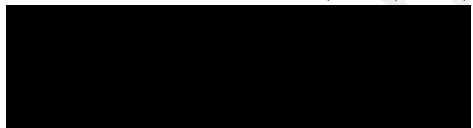
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Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.



Commission

Soils Limited was commissioned by Frankham Projects Limited to undertake a Preliminary Investigation on Worcester Close, Gravesend, Kent DA13 9LB. The scope of the investigation was outlined in the Soils Limited quotation reference Q26587 dated 18th July 2022.

Caveat

Whilst reasonable skill and care has been taken to determine the site history and the environmental setting within the time constraints applied by the project, it should be appreciated that uncertainties may occur owing to the natural variability of soil material within a defined area or as a result of unknowns that are associated with contaminated land assessment in general. The site conditions may be different from that indicated by this Preliminary Investigation, particularly on a site with a history of past development. No responsibility can be accepted should such conditions alter the recommendations made in this report.

Without a drainage survey it is not possible to establish if the surface water drainage is to the main drainage system or soakaways. If there are soakaways on-site, they could act as a potential source. The geology on-site to an extent may determine if soakaways were likely to have been adopted.

This Preliminary Investigation does not include a detailed UXO risk assessment, it does however contain a basic assessment in accordance with CIRIA C681 and C785. In preparing a Preliminary Investigation reference is made to historical maps and web-based sources to assess the risk of the site potentially having been impacted by bombing during the World Wars. The data readily available is not necessarily definitive. Certain areas were bombed heavily such as centres of industrial manufacture, airfields, shipyards, docklands, railways sidings and junctions. The assessment is based on the likely area risk, bomb patterns (i.e. lines of recorded bomb impacts with gaps where an impact would be anticipated) and the age of structures on and in close proximity to the site.

Legislation and Liability

The primary legislative mechanism for contaminated land management in the UK is Part 2A of the Environmental Protection Act, 2021 (EPA). Part 2A was introduced into the EPA under Section 57 of the Environment Act 1995 to help deal with the substantial legacy of land contamination. The legislation provides powers in relation to the identification, remediation and apportionment of liability for contaminated land. Part 2A applies where there is unacceptable risk, assessed on the basis of the current use and the relevant circumstances of the land. It is not directed to assessing risks in relation to a future use of the land that would require a specific grant of planning permission.

Under Part IIA of the Environment Act 2021, Local Authorities are required to identify contaminated land and serve on every person who is an appropriate person a

remediation notice setting out what is to be done by way of remediation and the period within which it must be done.

If the person who caused, or knowingly permitted, the contaminating substance cannot be found, the owner and/or, occupier for the time being, of the property can be the appropriate person.

Under the legislation, Contaminated Land is defined as: -

“Land which is in such a condition by reason of substances in, on or under the land that significant harm is being caused or that there is a significant possibility of such harm being caused or that pollution of controlled waters is being, or is likely to be caused.”

Where the Act defines harm as:

“harm to the health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property.”

and pollution of controlled waters is defined as: -

“the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter.”

In addition, The Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 introduced the supplementary definition of harm to include: lasting exposure to any person resulting from the after-effects of a radiological emergency, past practice or past work activity.

With regard to contaminated waters, the Environment Act 1995 amends the Water Resources Act 1991 and provides the Environment Agency with the power to force clean-up of historical contamination by issuing a Works Notice, with remediation paid for by the responsible parties.

The Groundwater Regulations (1998) stated that entry of List 1 substances into groundwater must be prevented, and List II substances must be controlled.

Limitations and Disclaimers

This Preliminary Investigation Report relates to the site located at Worcester Close, Gravesend, Kent DA13 9LB and was prepared for the sole benefit of Frankham Projects Limited (The “Client”) for the brief described in the Commission of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in Quotation Q26587 dated 18/07/2022 accepted by the client in their Purchase Order 30521, dated 03/08/2022.

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report has been prepared by Soils Limited, with all reasonable skill, care and diligence within the terms of the contract with the Client, incorporation of our General Conditions of Contract of Business and taking into account the resources devoted to us by agreement with the Client.

The report is personal and confidential to the Client and Soils Limited accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report wholly at its own risk.

The Client may not assign the benefit of the report or any part to any third party without the written consent of Soils Limited.

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief. As such these do not necessarily address all aspects of ground behaviour at the site.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

There may be other sources of information not included in those listed that hold data relevant to the Preliminary Investigation Report undertaken at the site that could materially affect the conclusions made in this report.

It should be noted that a detailed survey of the possible presence or absence of invasive species, such as Japanese Knotweed, is outside of the scope of investigation.

Ownership of land brings with it onerous legal liabilities in respect of harm to the environment. "Contaminated Land" is defined in Section 57 of the Environment Act 2021.

Where a contaminative use is identified in the Preliminary Investigation Report this does not determine whether contamination has actually occurred, or if it has the degree to which it may have taken place. An intrusive investigation(s) and analysis is required to establish the nature and degree of any contamination present.

All works are undertaken in the context of, and in compliance with, BS10175+A2 2017 and LCRM (EA 2021) and all other pertinent planning, standards, documentation and guidance appropriate to the site at the time of production which may include, but are not necessarily limited to, documents provided by BS/CEN/ISO, NHBC, AGS, CIEH, CIRIA, SoBRA and CLAIRE.

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Section I Introduction

I.1 Objective

The Preliminary Investigation Report was undertaken to advise the client on the risk pertaining to the site, with special reference to historic and current potential contaminative activities and processes. This also included the assessment of their impact on current and future sensitive receptors such as human health, controlled waters, ecological features, building structures and services.

I.2 Site Location

The site was located at Worcester Close, Gravesend, Kent, DA13 9LB and had an O.S Land Ranger Grid Reference of TQ 636 702.

The site location map is presented in Figure 1 and the full Site Walkover is discussed in Section 2.1 of this report.

I.3 Proposed Development

The proposal comprised the erection of 2-storey residential apartments with eight homes consisting of a mixture of 1-bed and 2-bed homes. The homes will be situated in generous soft-landscaped public open space areas, with areas of hard-landscaping to include permeable paving and block paving. Car park and access will be located south of the site.

In compiling this report reliance was placed on drawings within the document of 20-102 – Worcester Close Pre-application Meeting 02 dated June 2022 prepared by BPTW. The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined.

The proposed development plans have been provided in Appendix A.

Section 2 Site Conditions

2.1 Site Walkover

A site walkover was undertaken in August 2022, by Soils Limited. During the site walkover observations were made in relation to current activities, evidence of historical activities, sources of potential contamination such as fuel storage tanks, oil drums and chemical storage and evidence of contamination. The walkover also looked for evidence of soil contamination in the form of staining odours and stressed or discoloured vegetation. The notes of the site walkover are presented in Table 2.1 and Table 2.2.

Table 2.1 Site Walkover Record (On-site)

Use of Site	At the time of the site walkover, the site area was an open green space. (Photo 1)
Structures	A manhole, possibly for drainage, seen near the centre of the site. (Photo 3)
Site Topography	Undulating, gently sloping easterly $\sim <3^\circ$.
Site Covering	Predominantly grass vegetated, with a hardstanding footpath seen from the south of the site extending along the western boundary. (Photo 2)
Vegetation	Grass covered and numerous large mature trees. (Photo 1)
Potential Contamination Sources	None noted.
Odour	None noted.
Drainage	None noted.

Table 2.2 Site Walkover Record (Off-site)

Use of Land	N: Instead Rise Surgery. E: Worcester Close, residential 1 and 2-storey detached houses. S: Footpath, residential 2-storey semi-detached houses. W: Residential 2-storey semi-detached and detached houses.
Area Topography	Undulating, sloping easterly $\sim 3^\circ$.
Vegetation	Mature trees within residential gardens, with a woodland seen $\sim 50\text{m}$ northwest.
Potential Contamination Sources	None noted.

2.2 Site Drainage

No drainage seen onsite – anticipated to be free-draining. A manhole was noted during the site walkover that may possibly be associated with drainage from neighbouring areas or may represent a local soakaway.

2.3 Site Photographs

The site photographs have been included within Appendix E.

Section 3 Geology, Hydrogeology, Hydrology and Radon

3.1 Anticipated Geology

The 1:50,000 BGS Geology map showed the site to be situated on the Lewes Nodular Chalk Formation, Seaford Chalk Formation, and Newhaven Chalk Formation (Undifferentiated) bedrock, with no overlying superficial deposits.

3.1.1 Lewes Nodular, Seaford, and Newhaven Chalk Formations (Undifferentiated)

Lewes Nodular Chalk Formation comprises hard to very hard nodular chalks and hardgrounds (which resist scratching by finger-nail) with interbedded soft to medium hard chalks (some grainy) and marls; some griotte chalks. The softer chalks become more abundant towards the top. Nodular chalks are typically lumpy and iron-stained (usually marking sponges). Brash is rough and flaggy or rubbly and tends to be dirty. First regular seams of nodular flint, some large, commence near the base and continue throughout.

Seaford Chalk Formation can be described as firm white chalk with conspicuous semi-continuous nodular and tabular flint seams. Hardgrounds and thin marls are known from the lowest beds. Some flint nodules are large to very large.

The Newhaven Chalk Formation is a soft white friable microporous limestone composed of coccolith biomicrites with a varying proportion of larger shell fragments. At various levels clay sized material occurs as marl seams and partings. Close to the surface the upper few metres are invariably discoloured brown, due to leaching from the overlying strata. The interface with any overlying stratum is invariably extremely irregular as a result of localised weathering and general solution. Weathering by frost action may extend to a depth of several metres.

Chalk is a weak rock and as such it should be noted that the drilling, excavating, and sampling process is detrimental to its fabric and structure. Chalk samples that have been machine sampled will therefore appear to be of a lower descriptive grade, as given in CIRIA C574, than the in-situ chalk. Soil sampling and visual observations from open excavations i.e. trial pits would allow chalk description and classification in accordance with CIRIA 574 including commenting for any aperture and discontinuities in the chalk structure.

Erosional features, such as pipes, swallow holes and solution cavities, usually in-filled with drift deposits, are occasionally found in the chalk, sometimes manifesting themselves at the surface as shallow circular depressions. Solution features may be reactivated by the concentrated ingress of water from leaking drains or soakaways. Reactivation may lead to surface collapse.

3.2 Hydrogeology

To assess the vulnerability of groundwater to contamination, consideration must be given to the leaching characteristics of the overlying soils and the characteristics of the strata in the unsaturated zone. Information on the geological strata such as lithological type and permeability characteristics has been combined with the physical properties of the soil to produce varying degrees of vulnerability.

Table 3.1 presents the hydrological data that is relevant to the site.

Table 3.1 Hydrogeological Assessment

Hydrogeological Data		Comment
On-site Aquifers	Superficial	No superficial deposits onsite
	Bedrock	Principle Aquifer - Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated)
Groundwater Vulnerability		High Vulnerability ¹ – Principal Bedrock Aquifer
Source Protection Zones (SPZ)		Zone II and Zone III onsite
Abstraction	Potable	None within 500m
	Non-potable	None within 500m
Sensitive Land Uses		Within Area of Adopted Green Belt and Groundwater Nitrate Vulnerable Zone
Surface Water Features		821m NE
Flood Risk from Rivers or Seas		No potential onsite
Flood Risk from Surface Water		No potential onsite
Flood Risk from Groundwater		Limited potential for groundwater flooding to occur onsite
Note(s): ¹ Soils of high leaching potential.		

Any works or development which has the potential to have an impact on surface water, aquifer or groundwater quality must be approved by the Environment Agency prior to implementation.

3.3 Hydrology

The approximate elevation of the site shown on OS Water Network Map was ~60m Above Ordnance Datum (AOD). The anticipated groundwater flow direction is given in Table 3.2.

Table 3.2 Hydrological Assessment

Type	Direction	Notes
Surface water	Vertically down	Anticipated to flow downwards into the underlying principal aquifer.
Groundwater	NW	As the site is situated on SPZ Zone II and III, groundwater will flow northwest towards the abstraction well within Zone I ~715m NW. The chalk bedrock was classed as a Principal Aquifer and could support the deep groundwater regime.

3.4 Radon Gas

The Landmark Report indicates that the site **was not situated** within an area where protection or risk assessment against the ingress of radon was required. Radon protection measures **will not be required** within the proposed new development. It is not possible in the course of a survey or inspection to determine whether radon gas is present as the gas is colourless and odourless. Tests can be undertaken to assess the concentration of radon in existing structures.

Section 4 Site History

4.1 Historic Map Study

The object of this study was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps dating from the mid to late 19th Century to the present day as downloaded from Landmark Environmental.

The published maps only represent a “snapshot” of the site and its environs at the date of the survey. The detail of the information recorded can vary between epochs, map scale and county areas. It should be noted that changes in land uses, processes or activities may have occurred outside of published epochs and these may not have been recorded on subsequent epochs. Also note that as methods of projection, production and recording have changed over time, this can result in geo-reference errors that may indicate the established site boundary is off-centre from its true location on older historical maps. Where this is potentially significant it will be noted.

Any distances quoted for features remote from the site have been scaled from the maps and are only approximate. Where dates have been noted in brackets, these are the actual dates applicable to the map editions and may not reflect the date of the original survey it is based on. The information reported might not represent all pertinent information that could be obtained. The interpretation of the maps and/or other data commented on in this report is subjective.

As part of the review of the historical plans, only features considered to have or to have had a potential contaminative impact on the site and usually within a notional 250m radius are discussed. The north point and approximate extent of the site are indicated on each figure. The historic maps referred to are appended to this report (Appendix B).

Table 4.1 Historic Development of the Site

Site History	Date Range	
	From	To
The site area was situated on undeveloped open land/farmland.	1869	1938
The site area appeared to be part of an orchard.	1938	1968
The immediate surrounding area of the site on the western and eastern boundary have been developed with residential properties. Worcester Close seen along the eastern boundary and has remained largely open space with trees and unchanged until present day.	1968	2022

Table 4.2 Historic Off-site Development

Off-site Development	Date Range	
	From	To
The surrounding area of the site appeared to be on undeveloped open land/farmland.	1869	1896
Frog's Island (Farm?) shown 123m S, with a well seen 162m S/SW.	1896	1908

Off-site Development	Date Range	
	From	To
More structures shown in the surround area, with two large structures 73m W and 215m SW assumed to be of agricultural use.	1908	1938
Agricultural building 73m W demolished, and part of an orchard seen surrounding the immediate site area. Flowerhill Nurseries seen with the other agriculture building 215m SW.	1938	1961
Development of residential properties seen south-southwest, replacing the Flowerhill Nurseries.	1961	1966
Further development of residential properties from the southwest to east of the site, with the north-northwest remaining as part of an orchard.	1966	1991
Further development of residential properties, extended to the immediate site area, with the north predominantly on undeveloped grounds. Community Centre marked 78m N with an adjacent recreation ground.	1991	2007
From aerial photography shown on Google Earth™ a general practitioner surgery, named Istead Rise Surgery, was seen immediate north of the site. The surrounding site area remains largely unchanged till present day.	2007	2022

Table 4.3 Potential Sources of Pollution Indicated from Historic Maps

Source	Direction	Distance (m)	Date Range	
			From	To
None noted				

4.2 Bomb damage and the potential for Unexploded Ordnance

In accordance with CIRIA C681 and C785 a review has been undertaken of the historic maps which has indicated that the site has been/or in an area that is unlikely to have been subject to bombing, shelling or has had a military use.

Zetica UXO online maps initially accessed in August 2022 indicated that the area is of high risk and recommended that more detailed assessment was indicated. More detailed and site-specific assessment (1st Defence Ref: DA16287-00 dated 26/09/2022 Appendix G) was commissioned and indicates this site is likely to be of low to negligible risk but that a risk remains that may require mitigation.

Based on the assessment of detailed UXO Risk Assessment, it is recommended that a UXO risk management plan and site specific UXO awareness briefings are conducted to all personnel for all intrusive works for the proposed development including both site investigation and subsequent development activities.

Section 5 Environmental Records and Consultation

5.1 Dataset Information

The Landmark Envirocheck Report was obtained by Soils Limited and includes site specific information. The extent of the search has initially been limited to a radius of 250m as it is considered that sources of contamination beyond 250m are unlikely to impact on the site. This search radius may however, be increased if a significant source of contamination or sensitive receptor is identified within 1000m of the site. A copy of the report is appended to this report in Appendix C and summarised in Table 5.1, Table 5.2 and Table 5.3.

Table 5.1 Environmental Significance of Data

Source	Direction	Distance (m)
Contaminated Land Register Entries and Notices	None	None
Discharge Consents	“	“
Integrated Pollution Prevention and Control	“	“
Local Authority Pollution Prevention and Controls	S	121 ¹
Local Authority Pollution Prevention and Control Enforcements	None	None
Nearest Surface Water Feature	“	“
Pollution Incidents to Controlled Waters (Significant Incidents only)	“	“
Prosecutions Relating to Authorized Processes	“	“
Registered Radioactive Substances	“	“
Substantiated Pollution Incident Register	“	“
Nearest Potable Abstraction Point	“	“
Nearest Non-Potable Abstraction Point	“	“
Water Industry Act Referrals	“	“
Source Protection Zones	Onsite	Onsite ²
Extreme Flooding from Rivers or Sea Without Defences	None	None
Flooding from Rivers or Sea Without Defences	“	“
Areas Benefiting from Flood Defences	“	“
Flood Water Storage Areas	“	“
Flood Defences	“	“
BGS Recorded Landfill Sites	“	“
Historical Landfill Sites	“	“
Licensed Waste Management Facilities	“	“
Local Authority Recorded Landfill Sites	“	“
Potentially Infilled Land (Non-Water)	“	“
Potentially Infilled Lane (Water)	“	“
Registered Landfill Sites	“	“
Registered Waste Transfer Sites	“	“
Registered Waste Treatment or Disposal Sites	“	“
Control of Major Accident Hazards Sites (COMAH)	“	“
Notification of Installations Handling Hazardous Substances	“	“
Planning Hazardous Substance Consents	“	“
Note(s): ¹ PG6/46 Dry cleaning ² Zone II and Zone III		

The contemporary trades listed in Table 5.2 are only those considered to be viable potential sources of contamination that could impact the site.

Table 5.2 Contemporary Trade Directory

Contemporary Trade Directory within 250m	Direction	Distance (m)	Status
Dry Cleaners – Licensed	S	119	Active
Musical Instrument – Manufacturers	E	216	Active
Car Body Repairs	SW	235	Inactive

Table 5.3 Geological Hazards

Source	Nearest Distance from Site/Type
Coal Mining Affected Areas	No risk onsite
Mining Instability	Conclusive rock mining onsite
Natural and Mining Cavities	No risk within 250m
Potential for Collapsible Ground Stability Hazards	Very low risk onsite
Potential for Compressible Ground Stability Hazards	No hazard onsite
Potential for Ground Dissolution Stability Hazards	Very low risk onsite
Potential for Landslide Ground Stability Hazards	No hazard onsite
Potential for Running Sand Ground Stability Hazards	No hazard onsite
Potential for Shrinking or Swelling Ground Stability Hazards	No hazard onsite

5.2 Site Sensitivity Maps

No other significant potential sources of contamination were shown on the Landmark Envirocheck Site Sensitivity Maps, which have not been listed in Table 5.1, Table 5.2 and Table 5.3, and copies of which are appended to this report (Appendix C).

5.3 Regulatory Enquires

As part of the Preliminary Investigation Report the local authority was contacted and asked to provide any information on potential risks pertaining the site. The information to be provided by the local authority is still being awaited.

5.4 Soil Geochemistry

The BGS soil chemistry for environmental assessments dataset coverage, has been developed from BGS G-BASE and Imperial College Wolfson Atlas data. It contains estimated ambient As, Cd, Cr, Ni and Pb background concentrations for rural topsoils across Great Britain. It also contains the locations and measured concentrations (mg kg⁻¹) of As, Cd, Cr, Cu, Ni, Pb, Sn and Zn in urban topsoil samples, collected from geochemical surveys in 23 major urban centres.

The results of this survey are contoured on the Landmark Environmental check report (Appendix D). The results of the local soil chemistry are presented in Table 5.4.

Table 5.4 Soil Geochemistry

Determinant	Estimated Soil Geochemistry (mg kg⁻¹)
Arsenic	25 – 35
Cadmium	<1.8
Chromium	60 - 90
Lead	<100
Nickel	15-30

Section 6 Data Collection Summary

6.1 General

The findings of the data collection are summarised in Table 6.1, which include geology, hydrogeology, the risk from radon and potential risk from flooding.

Table 6.1 Site Environs

Environs	Summary
Geology	Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated) bedrock, with no overlying superficial deposits.
Hydrogeology	Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated) acts as a Principal Aquifer.
Source Protection Zone (SPZ)	Zone II and Zone III onsite.
Surface Water Flow	Anticipated to be vertically down into the underlying principal aquifer.
Groundwater Flow	As the site is situated on SPZ Zone II, groundwater will flow northwest towards the abstraction well within Zone I ~715m NW. The chalk bedrock was classed as a Principal Aquifer and could support the deep groundwater regime.
Radon	No radon risk.
Flooding	No potential of flooding from rivers or sea, and surface water onsite. Limited potential of groundwater flooding onsite.
Geological Hazard	Conclusive rock mining onsite Potential for Collapsible Ground Stability Hazards - Very low risk onsite Potential for Compressible Ground Stability Hazards – No hazard onsite Potential for Ground Dissolution Stability Hazards – Very low risk onsite Potential for Landslide Ground Stability Hazards – No hazard onsite Potential for Running Sand Ground Stability Hazards – No hazard onsite Potential for Shrinking or Swelling Ground Stability Hazards – No hazard onsite
Local Authority Response	The information to be provided by the local authority is still being awaited.
Soil Chemistry	No potential hazards identified above the 'Public Open Space - Residential' land-use threshold.

Table 6.2 provides a summary of potential on-site and off-site contamination sources identified during the study of the historic maps, the Landmark Envirocheck Dataset Report and the Site Walkover

Table 6.2 Summary of Potential Contamination Sources

Contaminative Source	Direction	Distance (m)	Date Range	Data Source
			From	To
On-Site				
None noted				
Off-Site				
Dry Cleaners – Licensed	S	119	Active	DS
Musical Instrument – Manufacturers	E	216	Active	DS
Car Body Repairs	SW	235	Inactive	DS
Note(s): DS – Datasheet				

Section 7 Preliminary Conceptual Site Model

7.1 General

Environment Agency guidance provided in CLR11 indicates that the Conceptual Site Model should identify those contaminants, pathways and receptors which are 'likely' to represent an 'unacceptable' risk either to human health or the surrounding environment. The following sections present potential contaminants, pathways and receptors based on the information collected during the desktop study. Pathways have been established based on scientific knowledge of the behaviour of the contaminants in the ground.

7.2 Sources and Pathways of Contamination

The Landmark Site Specific Envirocheck Report and Site Walkover have been used to identify potential contaminative sources. These sources have been presented in Table 6.2. An assessment of the likely pathways and the likelihood of each contaminative source that was considered a risk has been presented in Sections 7.2.1 to 7.2.3.

7.2.1 Potential Pathways

A review of the potential pathways on and off the site has been undertaken based on the site, ground conditions, hydrology and scientific knowledge of the behaviour of the contaminants in the ground. The pathways applicable to the site and the proposed development have been marked in Table 7.1.

Table 7.1 Applicable Pathways

Pathway	Present	Comment
Inhalation of dust	✓	
Inhalation of vapour/gases	✓	
Ingestion and absorption via direct contact	✓	
Migration via surface runoff	✓	
Migration in solution via groundwater	✓	
Migration of gases via permeable soils	✓	
Direct contact with construction material	✓	
Services and utilities	✓	

7.2.2 Potential Sources of On-site Contamination.

A study of Landmark Envirocheck Report and Site Walkover has identified the following potential on-site sources of contamination which may present a risk to future uses of the proposed development. The sources are presented in Table 7.2.

Table 7.2 On-site Potential Contamination Sources

Source	Likely Reasoning
None noted	

7.2.3 Potential Off-site Sources of Contamination

A study of Landmark Envirocheck Report and Site Walkover has identified the following potential off-site sources of contamination which may present a risk to future uses of the proposed development.

These sources have been presented in given in Table 7.3.

Table 7.3 Off-site Potential Contamination Sources

Source	Direction	Distance (m)	Likely	Reasoning
Dry Cleaners – Licensed	S	119		Due to distance and/or where the source is situated with regards to the Source Protection Zone and local topography.
Musical Instrument – Manufacturers	E	216		
Car Body Repairs	SW	235		

7.3 Potential Contaminants

To ascertain the chemicals associated with identified potential onsite and offsite sources, the Department of the Environment Industry Profiles have been reviewed. In cases where the DOE profiles have no, or limited information other sources have been reviewed detailing the processes involved in the activity carried out on-site.

Table 7.4 presents the range of possible contaminants associated with the onsite and off-site activities and sources identified following a review of historical maps and datasets.

Table 7.4 Potential Contaminants

Potential Contaminative Sources	Contaminants / Chemical Properties
None noted	

7.4 Potential Exposure Receptors

The receptors to any potential contamination have been evaluated from our understanding of the current and planned land use of the site, an assessment of surrounding land uses and currently available information pertaining to the site.

The assessment for potential receptors is presented in Table 7.5.

Table 7.5 Potential Receptors

Potential Receptor	Present
Human Health	
Future users of the site (End Users)	✓
Construction workers on-site (Site Workers)	✓
Service and maintenance workers (Site Maintenance)	✓
Site neighbours and wider public (Off-site Users)	✓
Surface Water	✓

Potential Receptor		Present
Groundwater / Controlled Waters	Shallow Aquifer	✓
	Deep Aquifer	✓
Buildings & Materials	Buildings and Confined Spaces	✓
	Buried Structures	✓
	Buried Services	✓
Ecosystems	Flora and fauna	None identified

7.5 Preliminary Conceptual Site Model and Risk Assessment

A preliminary risk assessment has been undertaken based on the proposed development. The assessment has been based on the likelihood of the presence of a pollutant linkage.

A pollutant linkage is the relationship between a contaminant source, a pathway and a receptor. Unless all three elements of a pollutant linkage are present, a risk is not considered to exist. Each of the three elements has been considered within Table 7.1 to Table 7.5. The preliminary conceptual site model and risk assessment is presented in Table 7.6. The classification tables on which the level of risk has been determined have been modified from 'Contaminated land risk assessment: A guide to good practice, 2001, CIRIA C552' and are presented in Appendix F.

Table 7.6 Preliminary Conceptual Site Model and Risk Assessment Methodology

Source (Table 7.2 & Table 7.3)	Potential Contaminant (Table 7.4)	Exposure Pathway (Table 7.1)	Receptor (Table 7.5)	Initial Assessment from Preliminary Investigation Report Information			Comments	Proposed Investigation
				Severity	Probability	Risk		
None Noted		Inhalation of dust	Site Workers/Site Maintenance					None indicated – no identified source
			End Users					
			Off-site Users					
		Inhalation of vapour/gases	Site Workers/Site Maintenance					
			End Users					
			Off-site Users					
		Ingestion and absorption via direct contact	Site Workers/Site Maintenance					
			End Users					
		Migration via surface runoff	Surface Water					
		Migration in solution via groundwater	Surface Water					
			Shallow Aquifer					
			Deep Aquifer					
		Direct contact with construction material	Buried Structures					
			Buried Services					
		Migration of gases via permeable soils	Site Workers/Site Maintenance					
			End Users					
			Off-site Users					
			Building and Confined Spaces					

Section 8 Recommendations

8.1 General

Based on the information obtained during the compilation of this Preliminary Investigation and the preliminary conceptual site model, no potential for significant risk of contamination has been identified. Further intrusive investigation is therefore NOT considered to be necessary to further quantify the risks identified.

Subsequent intrusive investigation may reveal additional on-site sources of contamination that were not identified in the Preliminary Investigation and Site Walkover. Any additional sources of contamination or unexpected ground conditions that may promote the migration of contamination will be included and assessed in terms of significance within an updated Conceptual Site Model.

8.2 UXO

Zetica UXO online maps initially accessed in August 2022 indicated that the area is of high risk and recommended that more detailed assessment was indicated. More detailed and site-specific assessment (1st Defence Ref: DA16287-00 dated 26/09/2022 Appendix H) was commissioned and indicates this site is likely to be of low to negligible risk but that a risk remains that may require mitigation.

Based on the assessment of detailed UXO Risk Assessment, it is recommended that a UXO risk management plan and site specific UXO awareness briefings are conducted to all personnel for all intrusive works for the proposed development including both site investigation and subsequent development activities.

8.3 Proposed Further Site Works

As noted, further intrusive environmental investigation is not indicated by the results to date. If further intrusive or similar redevelopment works are proposed, it would be prudent to analyse samples to confirm the status of any underlying materials and ensure they are suitable and fit for purpose and to confirm or validate the findings of the CSM.

8.4 Discovery Strategy

There may be areas of contamination not identified during the course of the investigation. Such occurrences may also be discovered during the demolition and construction phases for the redevelopment of the site.

Care should be taken during excavation works especially to investigate any soils which appear by eye (e.g. such as fibrous materials, large amounts of ash and unusual discolouration), odour (e.g. fuel, oil and chemical type odours or unusual odours such as sweet odours or fishy odours) or wellbeing (e.g. light headedness and/or nausea, burning of nasal passages and blistering or reddening of skin due to contact with soil) to

be contaminated or of unusual and/or different character to standard soils or those analysed.

In the event of any discovery of potentially contaminated soils or materials, this discovery should be quarantined and reported to the most senior member of site staff or the designated responsible person at the site for action. The location, type and quantity must be recorded, and the Local Authority and a competent and appropriate third-party Engineer/Environmental consultant notified immediately. An approval from the Local Authority must be sought prior to implementing any proposed mitigation action.

The discovery strategy must remain on-site at all times and must demonstrate a clear allocation of responsibility for reporting and dealing with contamination. A copy of the strategy must be placed on the health and safety notice board and /or displayed in a prominent area where all site staff are able to take note of and consult the document at any time. Any member of the workforce entering the site to undertake any excavation must be made aware of the potential to discover contamination and the discovery strategy.

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Appendix B	Country Series and Ordnance Survey Maps
Appendix C	Landmark Envirocheck Report
Appendix D	Site Sensitivity Maps
Appendix E	Site Photographs
Appendix F	Risk Assessment Criteria
Appendix G	Detailed UXO Risk Assessment



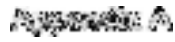
Figure 1 – Site Location Map

Job Number
20374

Project
Worcester Close, Gravesend, DA13 9LB

Client
Frankham Projects Limited

Date
September 2022



Proposed Development Plans

Gravesham Borough Council



20-102 - Worcester Close

Pre-application Meeting 02

June 2022



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Associate: Asri Asra - AAsra@bptw.co.uk

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1.0 Introduction

Gravesham Borough Council

1.1 Site Location - Macro

This document has been prepared on behalf of Gravesham Borough Council to present the proposals for the site on Worcester Close for the purposes of a follow-up pre-application meeting.

The site is located within the Istead Rise village, Borough of Gravesham, county of Kent.



Wider Site Location



Site Location

- Key
- Site

Major Roads

1

Downs Way Medical Practice

3

The Forest Memories of Kent

5

Istead Rise Primary School
- Bus Stop

Minor Roads

2

Istead Rise Community Centre

4

Supermarket / Shops



1.2 Site Location - Micro

The site is located on Worcester Close within the Istead Rise village. The existing site forms an irregular triangular shape and consists of a number of trees.

North of the site is Downs Way Medical Practice and a community centre. To the south, the site narrows and adjoins the properties facing onto the corner of Worcester Close. The eastern boundary runs along Worcester Close and the western boundary terminates Bramley Close.

A pedestrian path runs along the west boundary of the site from The Drove Way to the Downs Way Medical Practice.



Site Location

Key

 Site Boundary



1.3 Existing Site Layout

The site has an area of circa 0.139 ha. and is currently an undeveloped area with a number of mature trees. Vehicular access to the site is from Worcester Close with additional pedestrian access from Bramley Close.



Key

- Site Boundary
- Existing Buildings



Existing Site Layout

1.4 Site Photographs

The following images show the site from the north, east, west and south.

The first image shows the irregular topography within the red line boundary, raised in some areas more than others (particularly to the north).



View from Worcester Close



View from Worcester Close



View from Bramley Close



View from Worcester Close



Key Plan

1.5 Pre-application Meeting 01 Summary

The proposals presented at the initial pre-application meeting included 9 homes contained within a single flat block with a combination of 1 bed and 2 bed homes.

Primary access to the flat block is to the south through a communal entrance fronting onto a landscaping with car parking. Ancillary spaces are incorporated adjacent to the communal entrance and within the landscape. Homes are designed to be dual aspect with private amenity to the south and north.

Summary

- > 4 x 2B4P Flats.
- > 5 x 1B2P Flats.
- > 9 new homes in total, designed to be M4(2) compliant.
- > All dwellings have their own parking space plus other 3 for visitors. 12 spaces in total.
- > 7 tree to be removed & replaced on 1:2 basis.

Feedback

Feedback from the meeting included the following key points:

- > Maximise frontage onto Worcester Close.
- > Review footprint to respect the established build line of the adjacent properties on Bramley Close
- > Review the massing to complement the adjacent buildings.
- > Retain the parking to preserve the existing trees to the south.



Proposed Aerial View



Proposed View from Worcester Close



Proposed View from New Access Road

2.0 Assessment

Gravesham Borough Council

2.1 Local Vernacular

Character

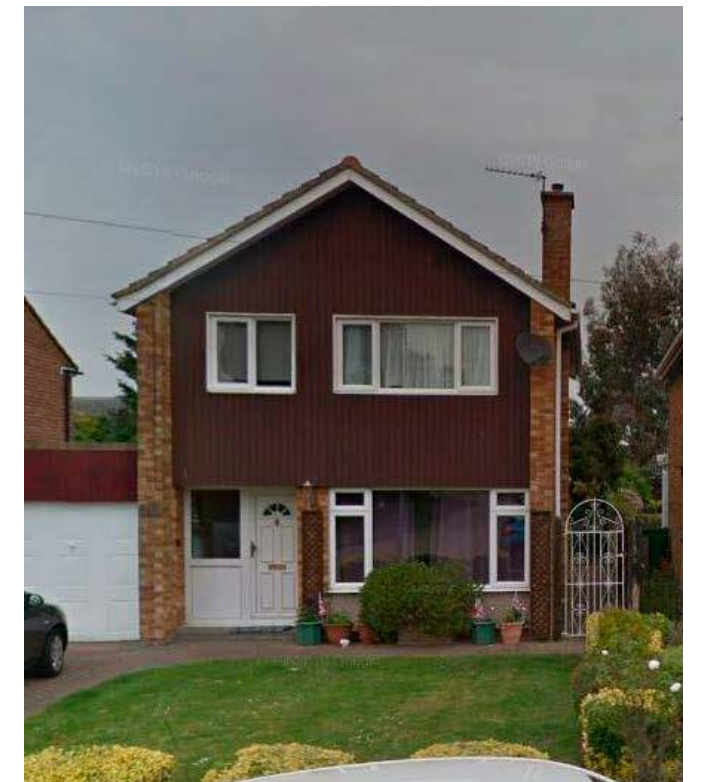
To ensure the emerging proposals respond to the character of the local area an initial review of the characteristics of the local buildings has been completed.

The local setting contains a wide range of features and details that could inform the design quality of this proposal.

The character of the area is predominantly residential.

There is a wide array of styles throughout the area, however there are a few repeating styles that could be appropriated for use within the proposed development. In summary, some of the predominant features are:

- Irregular facade treatments
- Low eaves
- Strong gable roof feature
- Predominantly brick facades
- Use of different materials on the facade
- Windows in the centre of pitched roof
- Large windows in the ground floor



Rhythm & Proportion



1 - Bramley Close



2 - Worcester Close



Key Plan



3 - Weald Close



4 - The Drove Way

2.2 Site Constraints

The site includes a number of constraints:

- > The site is an irregular shape, wider at the north, and narrows to the south.
- > Habitable room windows overlook the site from the existing adjacent houses.
- > There is no vehicular access from Bramley Close.
- > There is a significant level change across the site.
- > The site contains a number of existing trees.



2.3 Site Opportunities

Additionally, the site includes a number of opportunities:

- > Opportunity to retain the established build line to provide homes facing south onto a landscaped courtyard.
- > Provide new street frontage along Worcester Close with a focal point at the end of Bramley Close and Worcester Close.
- > Potential for car parking provision to the south in order to minimise the need to remove existing trees.
- > Potential to provide a new pedestrian access to the surgery to the north along the eastern boundary of the site as there is currently no pavement or path.



3.0 Proposals

Gravesham Borough Council

3.1 Site Layout

The layout has been developed following our site analysis to enhance active frontage onto Worcester Close and provide a focal point from Bramley Close. The footprint of the building has been further considered to respect the established build line, in keeping with adjacent buildings on Bramley Close.

The proposals include 8 homes for general needs consisting of a mixture of 1 bed and 2 bed homes.

To support these homes, the proposals are set within generous landscaped amenity. Parking has been located to the south with vehicular access from Worcester Close to preserve the existing trees where possible and retain the existing tree lined character.

The proposed landscaping has been carefully considered to maximise soft landscaping and planting to enhance the quality of the proposed development. Landscaping materials minimise the impact on the existing trees and complement the wider area incl. permeable paving, block paving.

Summary

- > 8 new homes in total
- > All dwellings have their own parking space
- > All dwellings are dual or triple aspect
- > 7 trees to be removed & replaced on 1:2 basis subject to tree survey and arboriculturist input.

Schedule of Accommodation	
1B2P	4
2B4P	4
Total Dwellings	8
New parking spaces	10

Key

- Site Boundary
- 1B2P
- 2B4P
- Private Access
- Communal Access



Site Layout

3.2 Internal Layout

Ground Floor

Homes have been laid out to reinforce the connection with the landscape with entrances from the landscaped courtyard. All homes will have their own private amenity in the form of private balconies or terraces in addition to the communal amenity areas at ground level.

Cycle parking and refuse storage is envisaged to form part of the landscaping strategy.

Target GIAs

1 Bed 2 Person - 50 sqm
2 Bed 4 Person - 70sqm

Key

- Site Boundary
- 1B2P
- 2B4P
- Private Access
- Communal Access



Ground Floor Plan

First Floor

The layouts have been considered to maximise the quality of the individual homes whereby all dwellings are dual or triple aspect, ensuring adequate daylight with outlook onto amenity and landscaping.

The envisaged architectural character and materials is in keeping with the surrounding area including pitched roofs with prominent gable ends, smaller horizontal windows, red brick and tile hanging.

Key

Site Boundary

1B2P

2B4P

Private Access

Communal Access

The First Floor Plan illustrates two residential blocks within a site boundary. Block 1B2P (yellow) consists of three units, each featuring a Living/Kitchen/Diner (25.0 m²), Bed 1 (12.0 m²), Bath, and Store (1.5 m²). Block 2B4P (blue) consists of four units, each featuring a Living/Kitchen/Diner (28.0 m²), two bedrooms (Bed 1: 11.6 m², Bed 2: 11.6 m²), Bath, and Store (2.0 m²). The plan includes a central staircase, a landscaped courtyard, and a north arrow. A red line indicates the site boundary, and yellow arrows indicate private access, while red arrows indicate communal access.

First Floor Plan

3.3 Massing

Views



Proposed Aerial View



Proposed View from New Access Road



Proposed View from Worcester Close



Proposed View from Bramley Close

3.4 Precedents

Architectural



BPTW- Beechwood Village



BPTW- Rochester Riverside



BPTW - Newhall



BPTW- Thrale Almshouses



BPTW- Rochester Riverside



BPTW- Eldon Street



Proctor & Matthews- SmartLIFE



PRP- Manchester Road

Landscape



Wildlife Friendly Planting



Smooth Concrete flags with Textured Concrete Blocks/Setts



Natural Play



Wildflower Meadow



Seating Incorporated into Landscaping



Rain Garden



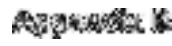
Permeable Surface Treatment



Hedges Adjacent to Parking



BPTW, 40 Norman Road,
Greenwich, London SE10 9QX
t. 020 8293 5175
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Country Series and Ordnance Survey Maps

Gravesham Borough Council

Historical Mapping Legends

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

	Gravelly		Gravelly		Gravelly
	Clay Pt		Alloys		Gravelly
	Slaking Masses		Flint Rock		
	Marsh		Heath		Oaks
	Rough Pasture		Lime		Wood
	Mixed Wood		Fruitwood		Orchard
	Rough Field		Field		Sloping Blanks
	any		Waterfall		rock
	Top Station		Elevation at Top Station		
	Rough Mark		Surface road		
	Arrow showing flow of water		Antiquities (site of)		
	Culling		Fruitwood		
	Subway crossing Road		Level Crossing		Road crossing Railway
	Subway crossing River or Canal		Road over Single railway		Road over River or Canal
-----	County Boundary (Geographical)				
-----	County & Civil Parish Boundary				
+++++	Administrative County & Civil Parish Boundary				
-----	County Borough Boundary (England)				
-----	County Borough Boundary (Wales)				
BP	Boundary Point Stone	BP	Police Call Box		
BR	Brick Road	BR	Public		
BR	Electricity Pole	BR	Signal Box		
BR	Road Bridge	BR	Street		
BR	Road Path	BR	Spring		
BR	Gate to Road or Lane	BR	Telephone Call Box		
BR	Gate to Lane	BR	Trench		
BR	Missing Post or Ring	BR	Well		

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

	Inactive Quarry		Active Quarry
	Rocks		Rocks
	Cliff		Slopes
	Roofed Building		Glazed Roof Building
	Roofed Building		Archway
	Non-Coniferous Trees (not surveyed)		Coniferous Trees (not surveyed)
	Orchard Tree		Grass
	Orchard Tree		Roads
	Rough Grassland		Heath
	Direction of water flow		Rough Mark
	Cave Entrance		Triangulation Station
	Electricity Transmission Line		Electricity Pylon
-----	County Boundary (Geographical)		
-----	County & Civil Parish Boundary		
-----	Civil Parish Boundary		
-----	Administrative County & Civil Parish Boundary		
-----	London Borough Boundary		
-----	Symbol marking point where boundary is changing		
BP	Boundary Point Stone	BR	Police Call Box
BR	Brick Road	BR	Public
BR	Electricity Pole	BR	Signal Box
BR	Road Bridge	BR	Street
BR	Road Path	BR	Spring
BR	Gate to Road or Lane	BR	Telephone Call Box
BR	Gate to Lane	BR	Trench
BR	Missing Post or Ring	BR	Well

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

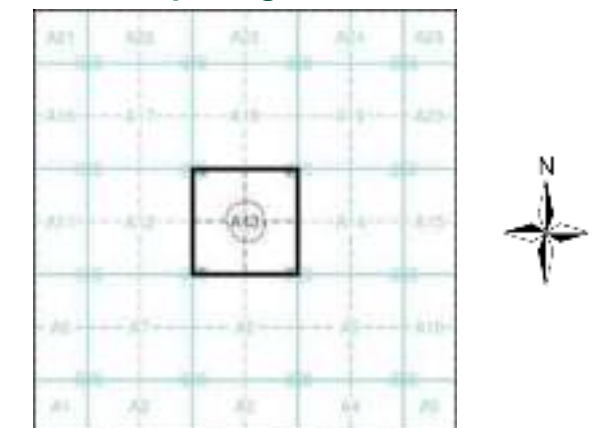
	Cliff		Slopes
	Rocks		Rocks (seamed)
	Boulders		Boulders (seamed)
	Discontinued Boundary		Scree
	Non-Coniferous Trees (not surveyed)		Coniferous Trees (not surveyed)
	Non-Coniferous Trees (not surveyed)		Coniferous Trees (not surveyed)
	Orchard Tree		Grass
	Orchard Tree		Rough Mark
	Rough Grassland		Heath
	Direction of water flow		Rough Mark
	Electricity Transmission Line		Electricity Pylon
	Roofed Building		Glazed Roof Building
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BR	Road Path	BR	Spring
BR	Gate to Road or Lane	BR	Telephone Call Box
BR	Gate to Lane	BR	Trench
BR	Missing Post or Ring	BR	Well



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Kent	1:2,500	1874	2
Kent	1:2,500	1896	3
Kent	1:2,500	1908	4
Kent	1:2,500	1938	5
Ordnance Survey Plan	1:2,500	1961	6
Ordnance Survey Plan	1:2,500	1966 - 1968	7
Additional SIMs	1:2,500	1968 - 1982	8
Supply of Unpublished Survey Information	1:2,500	1973	9
Ordnance Survey Plan	1:2,500	1976 - 1984	10
Additional SIMs	1:2,500	1978	11
Large-Scale National Grid Data	1:2,500	1992 - 1993	12
Large-Scale National Grid Data	1:2,500	1995	13
Historical Aerial Photography	1:2,500	1999	14

Historical Map - Segment A13



Order Details

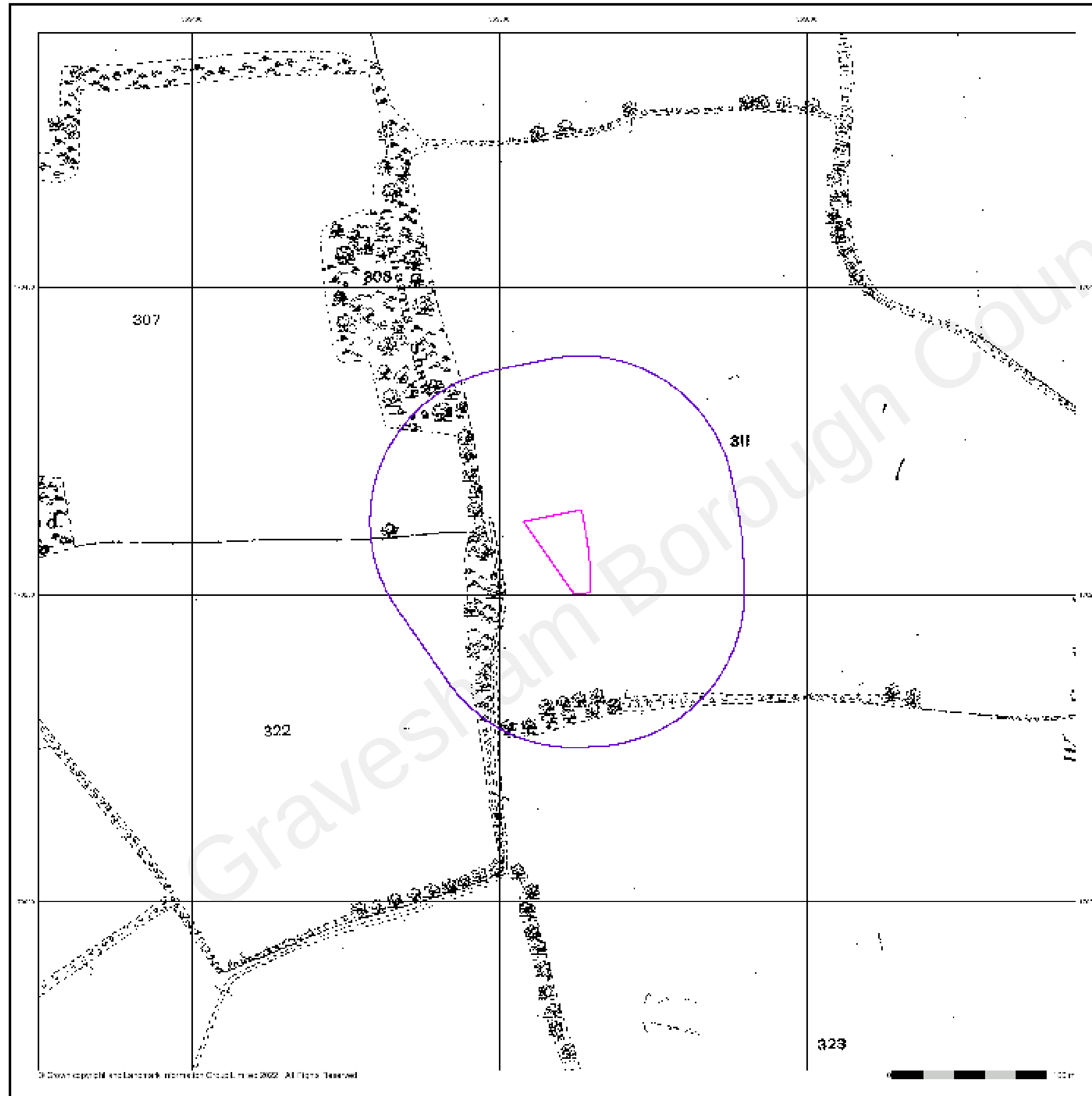
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 National Grid Reference: 563640, 170230
 Slice: A
 Site Area (Ha): 0.14
 Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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



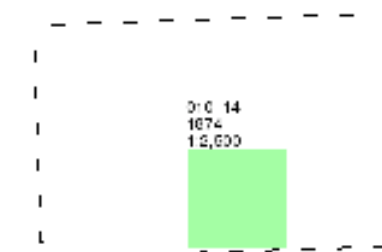
Kent

Published 1874

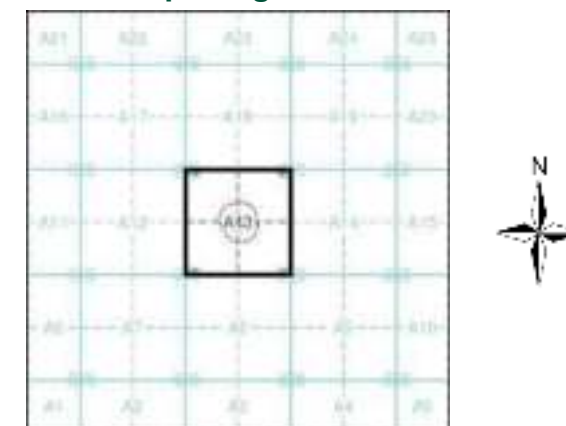
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered 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



Order Details

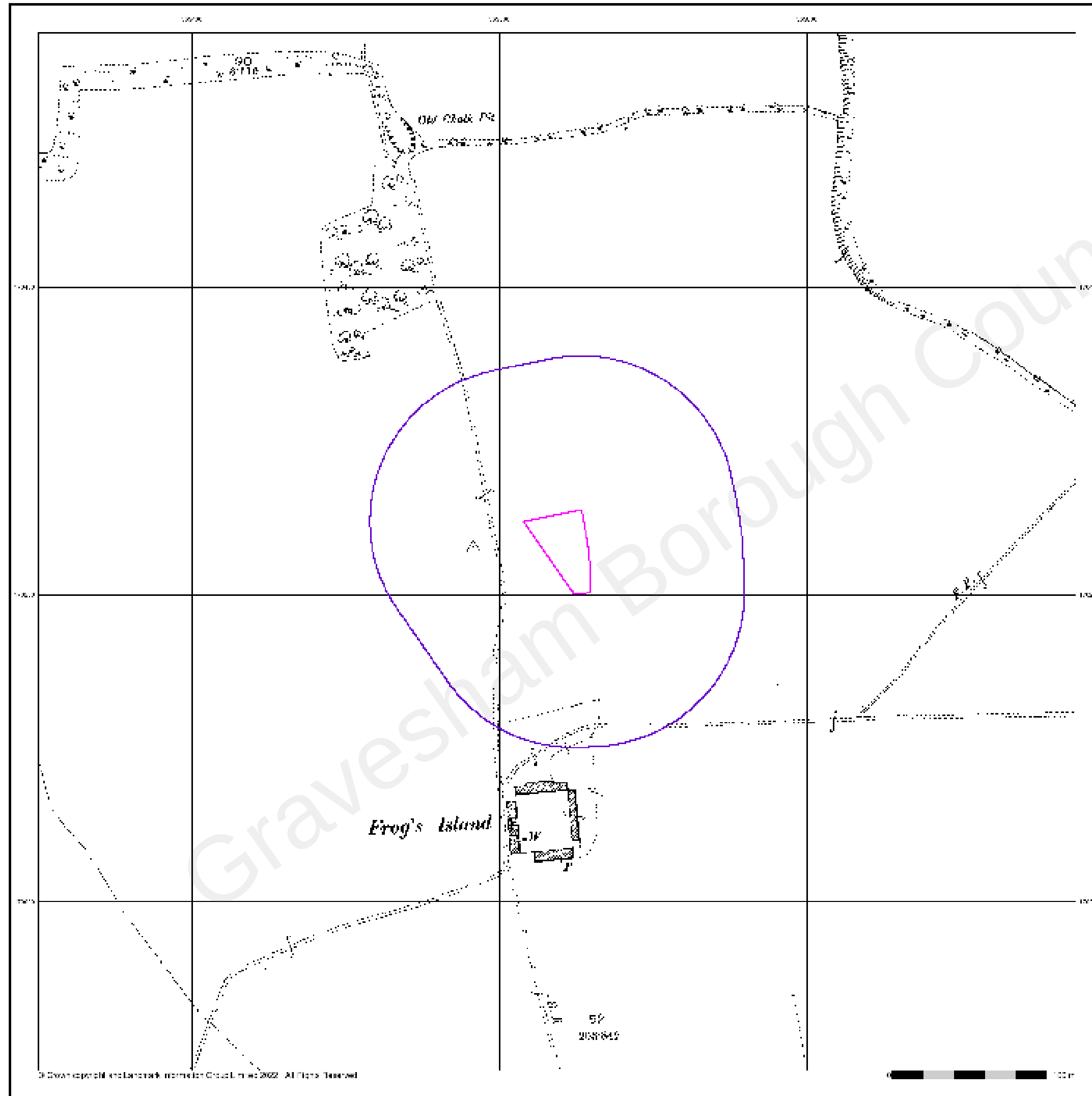
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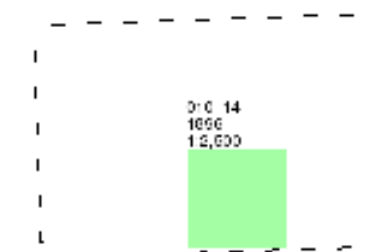
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Published 1896

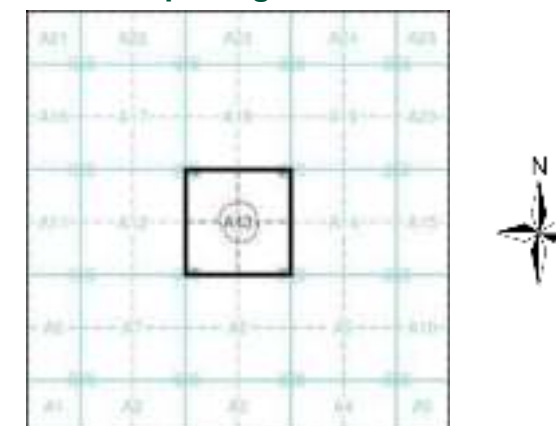
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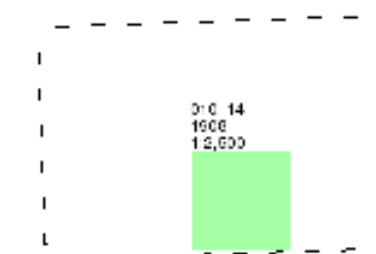
Kent

Published 1908

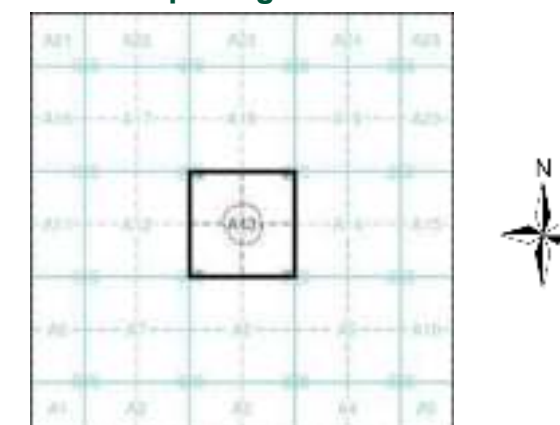
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Map Name(s) and Date(s)



Historical Map - Segment A13

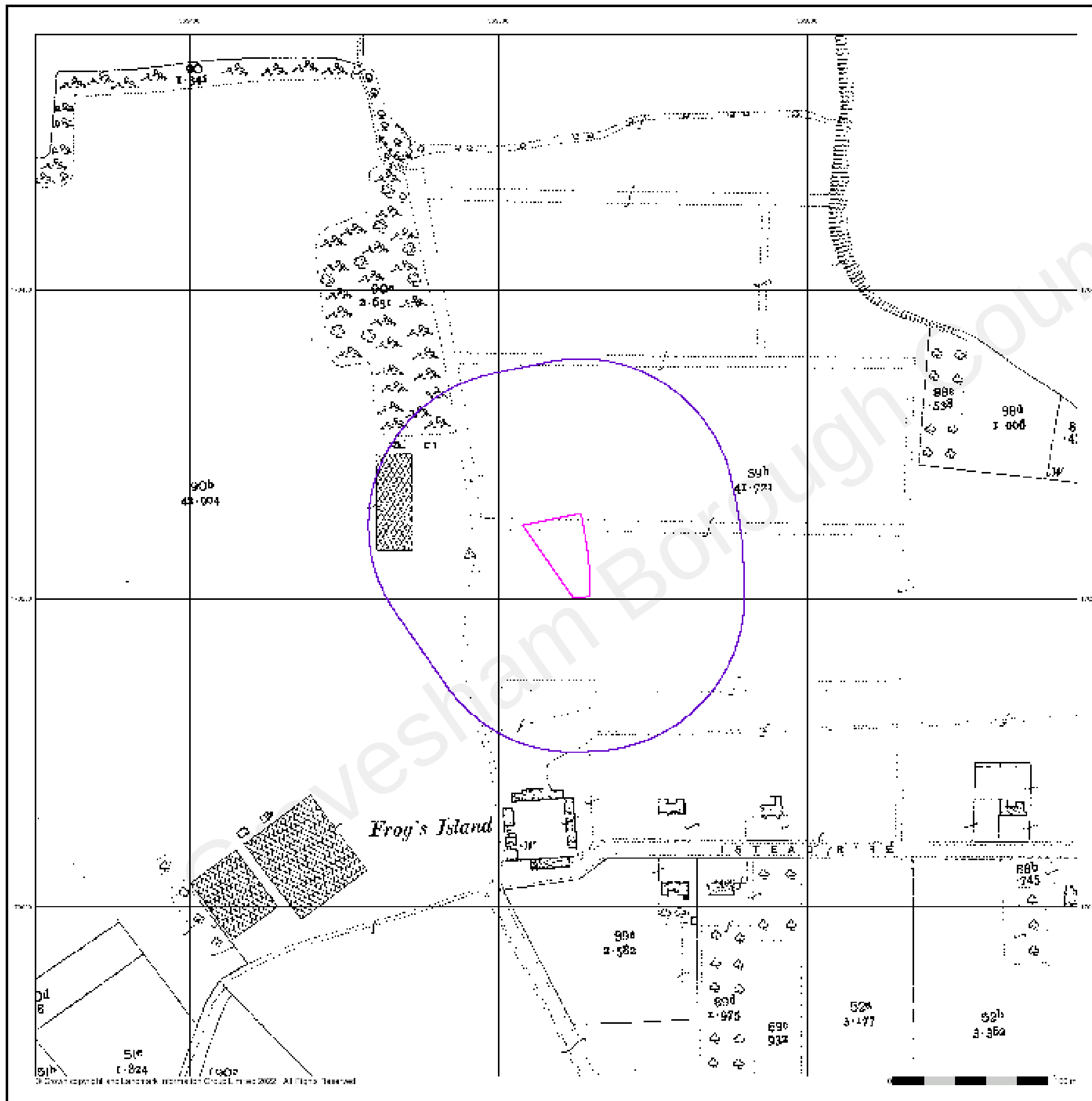


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



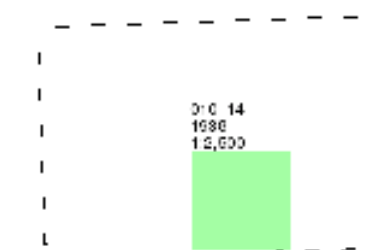
Kent

Published 1938

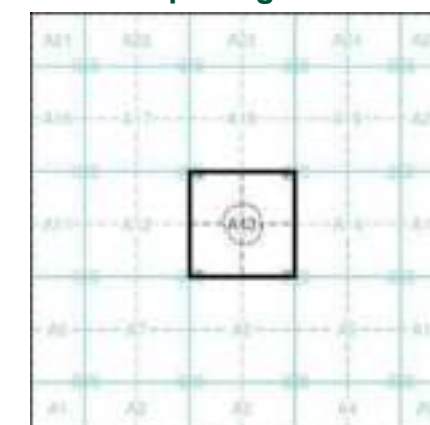
Source map scale - 1:2,500

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

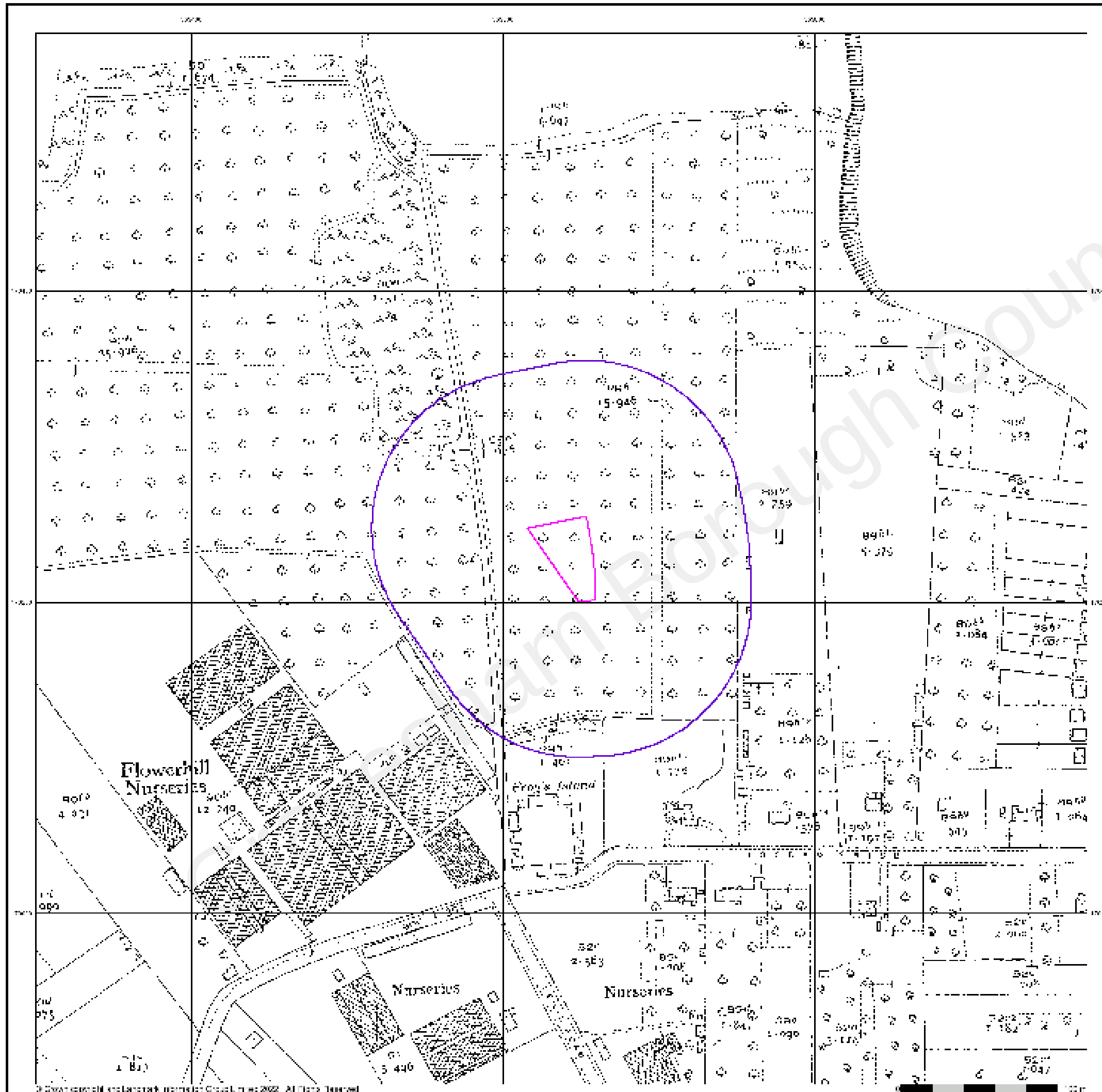


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



Ordnance Survey Plan

Published 1961

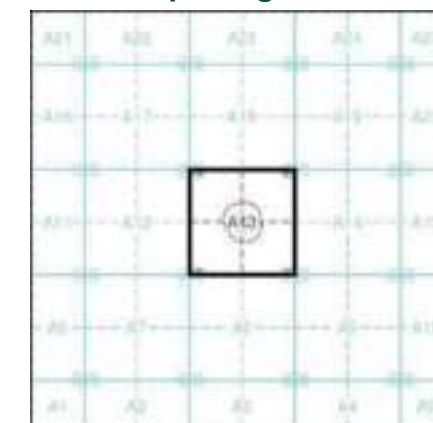
Source map scale - 1:2,500

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)

TQ6370
1961
1:2,500
TQ6369
1961
1:2,500

Historical Map - Segment A13

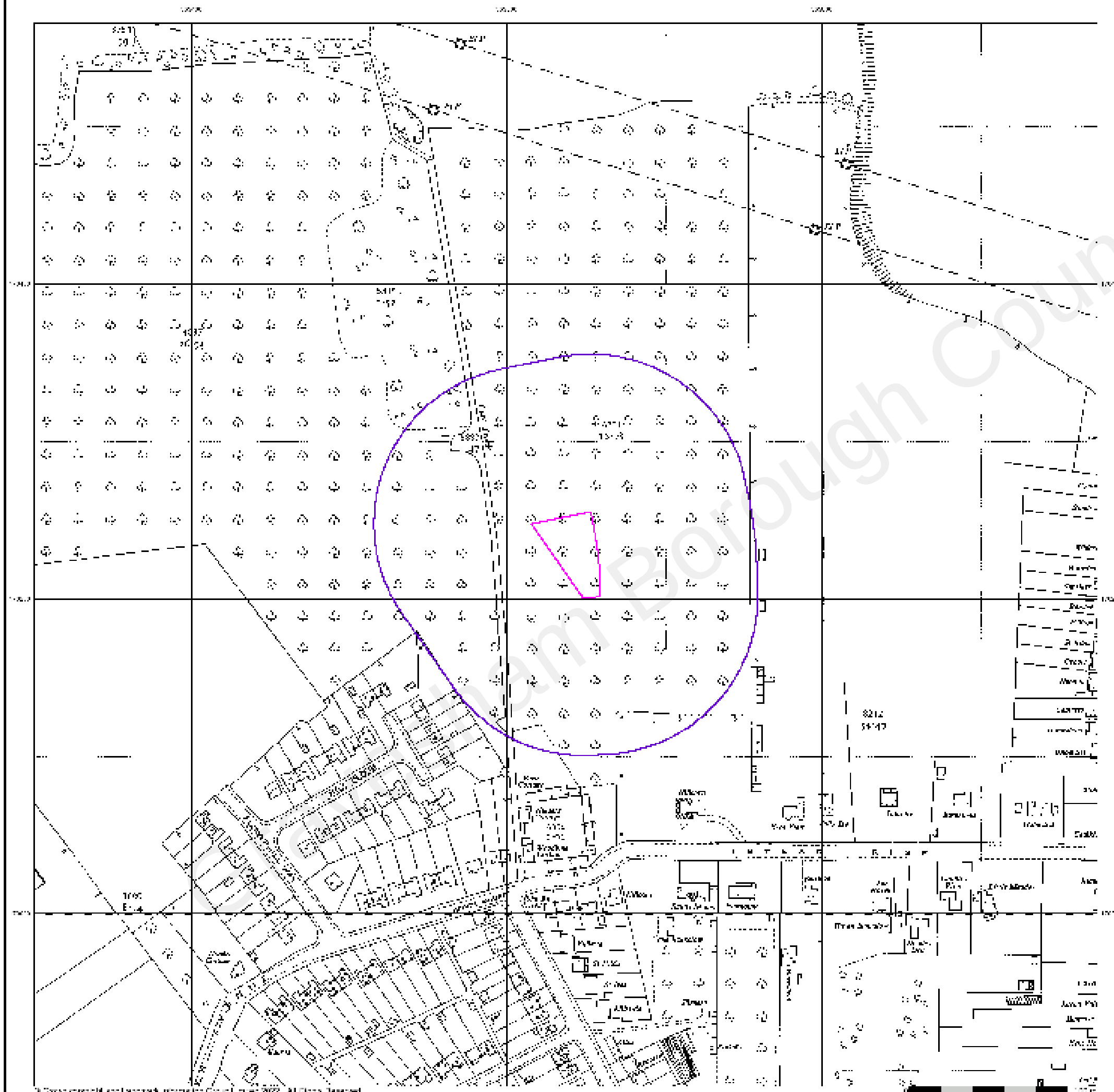


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



Ordnance Survey Plan

Published 1966 - 1968

Source map scale - 1:2,500

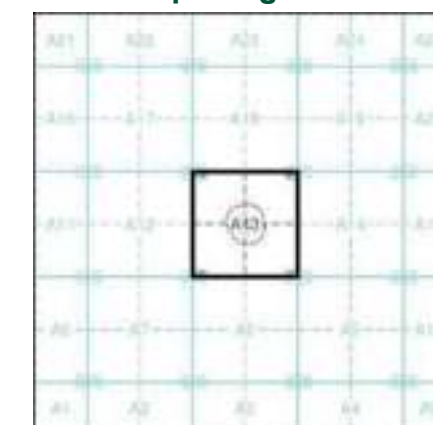
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. 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)

TD6370
1966
1:2,500

TD6369
1968
1:2,500

Historical Map - Segment A13

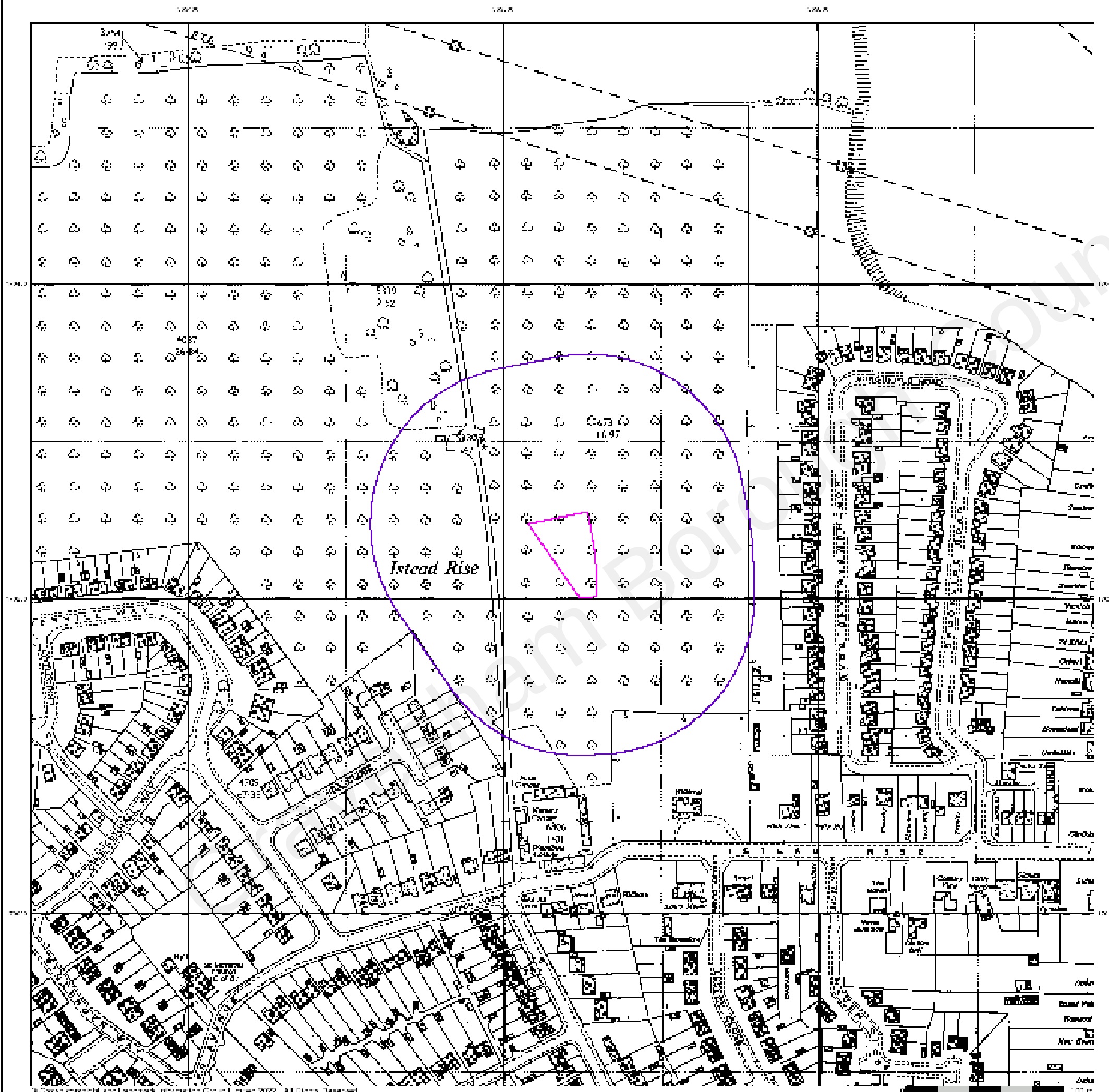


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



Additional SIMs

Published 1968 - 1982

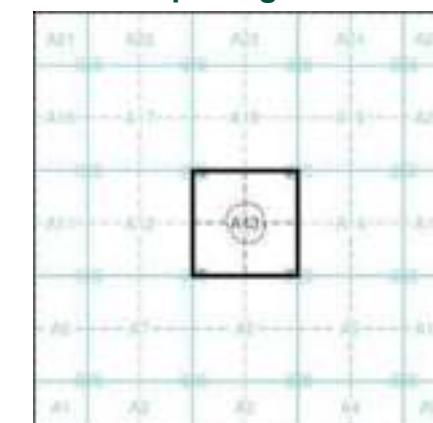
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TOE 370	1982	1:2,500
TOE 369	1968	1:2,500

Historical Map - Segment A13

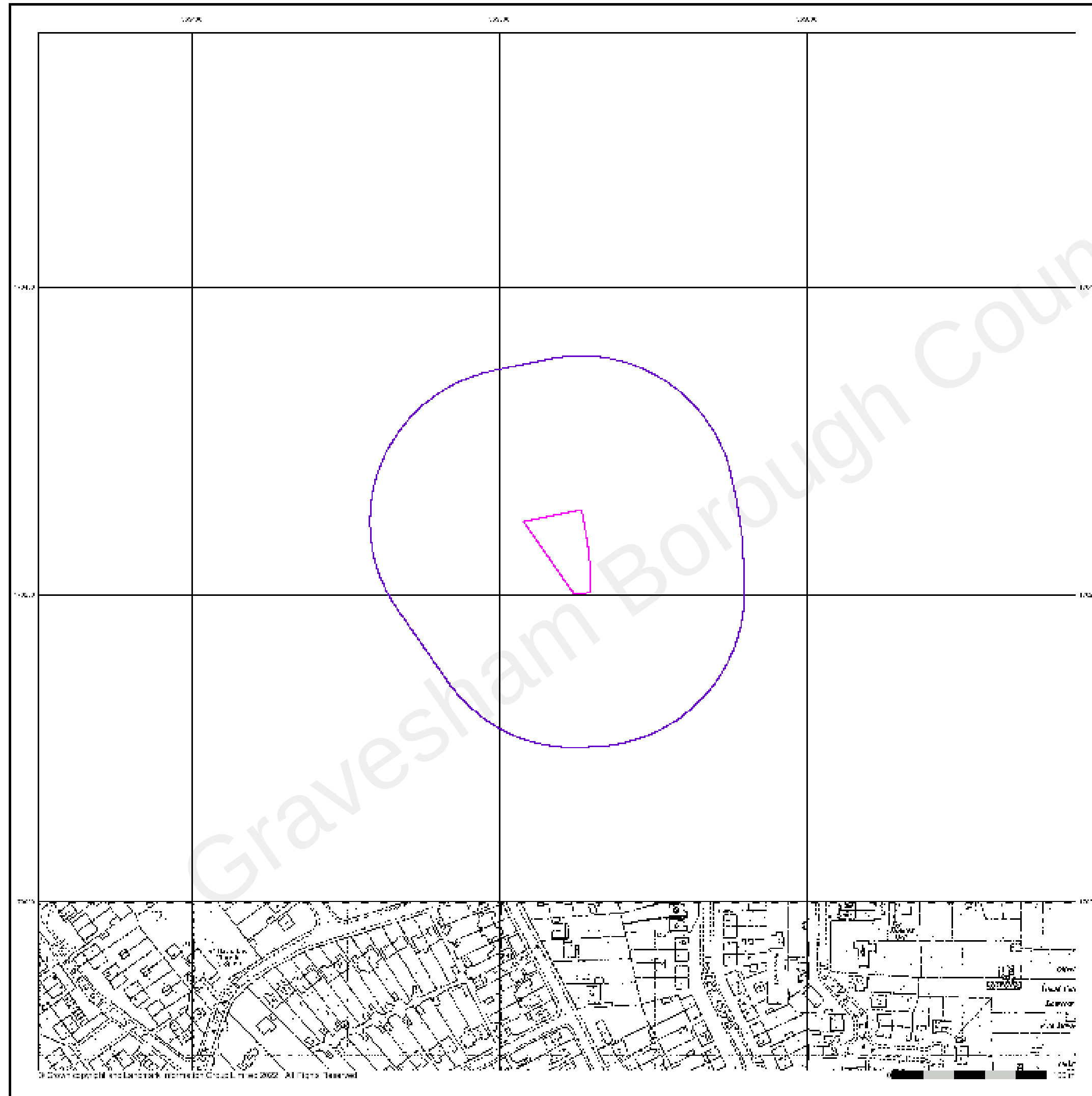


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



Supply of Unpublished Survey Information

Published 1973

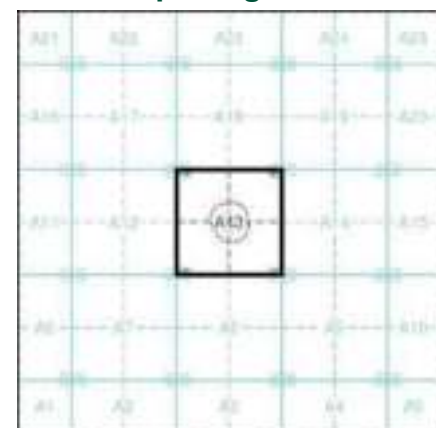
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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Fax: 0844 844 9951
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Ordnance Survey Plan

Published 1976 - 1984

Source map scale - 1:2,500

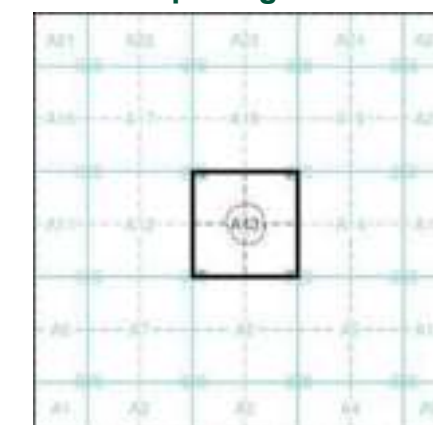
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. 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)

T06370
1976
1:2,500

T06369
1984
1:2,500

Historical Map - Segment A13

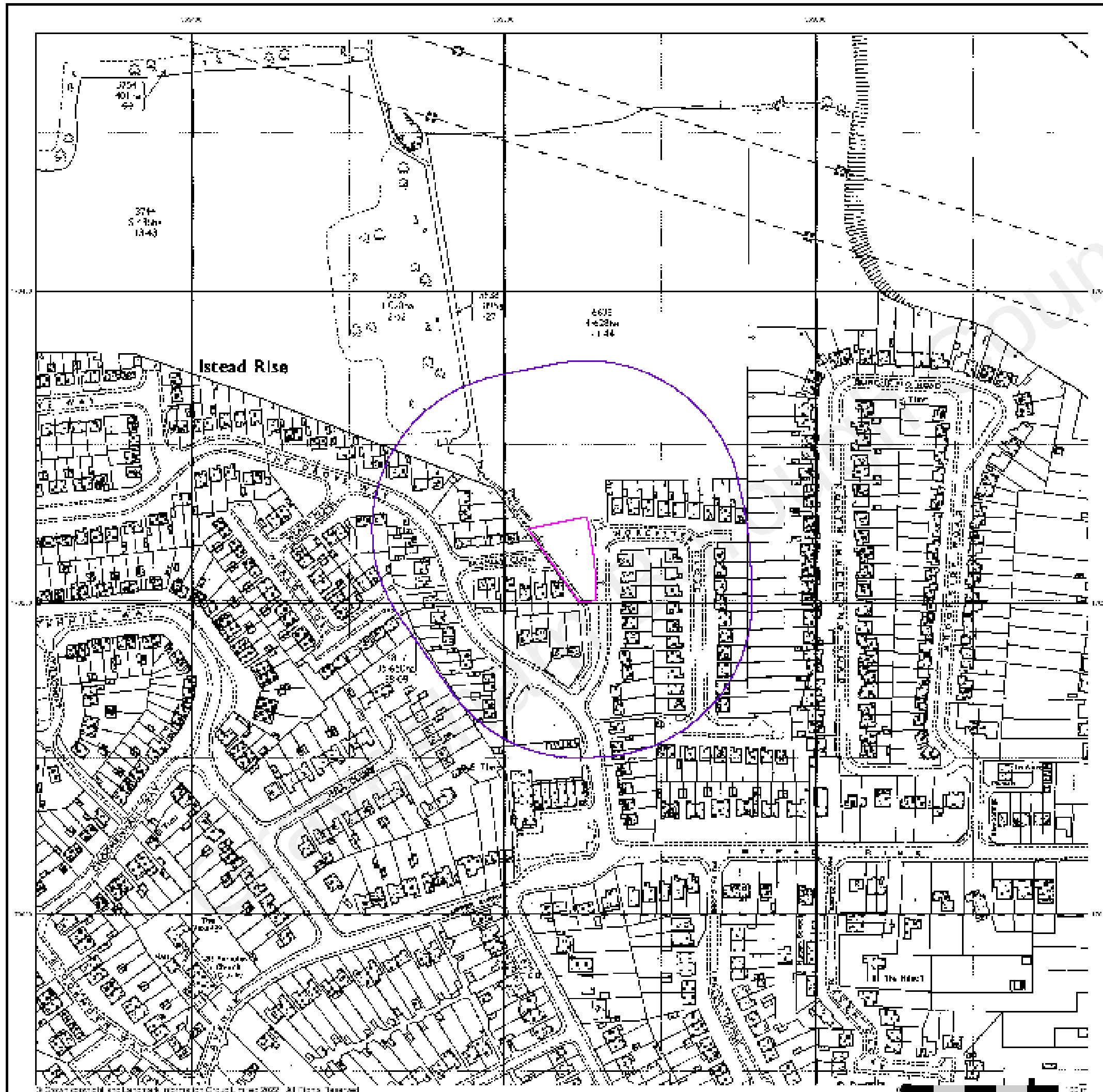


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB





Additional SIMs

Published 1978

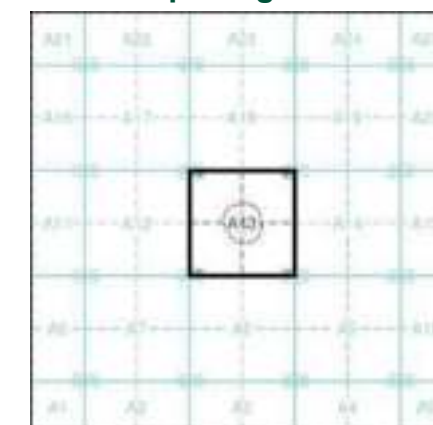
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1992 - 1993

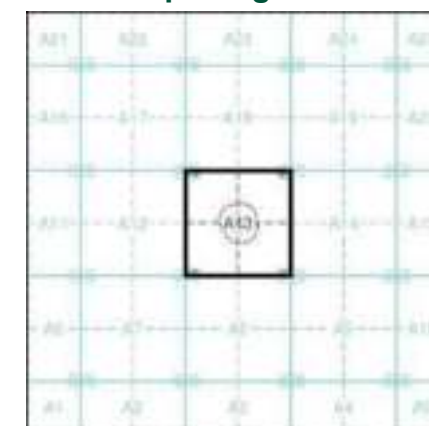
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13

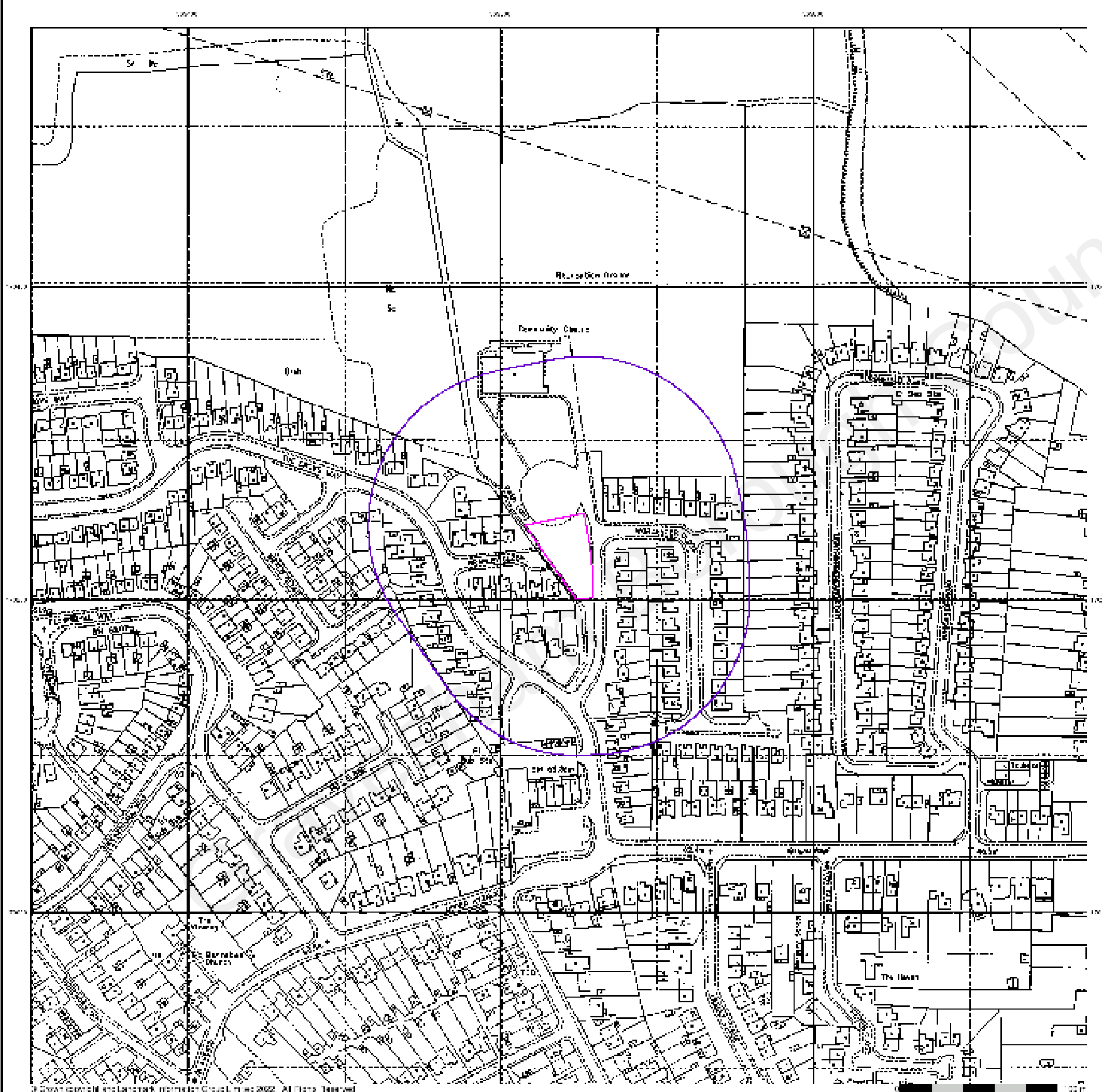


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB





Large-Scale National Grid Data

Published 1995

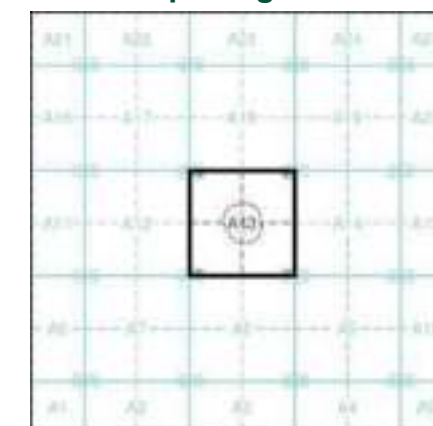
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

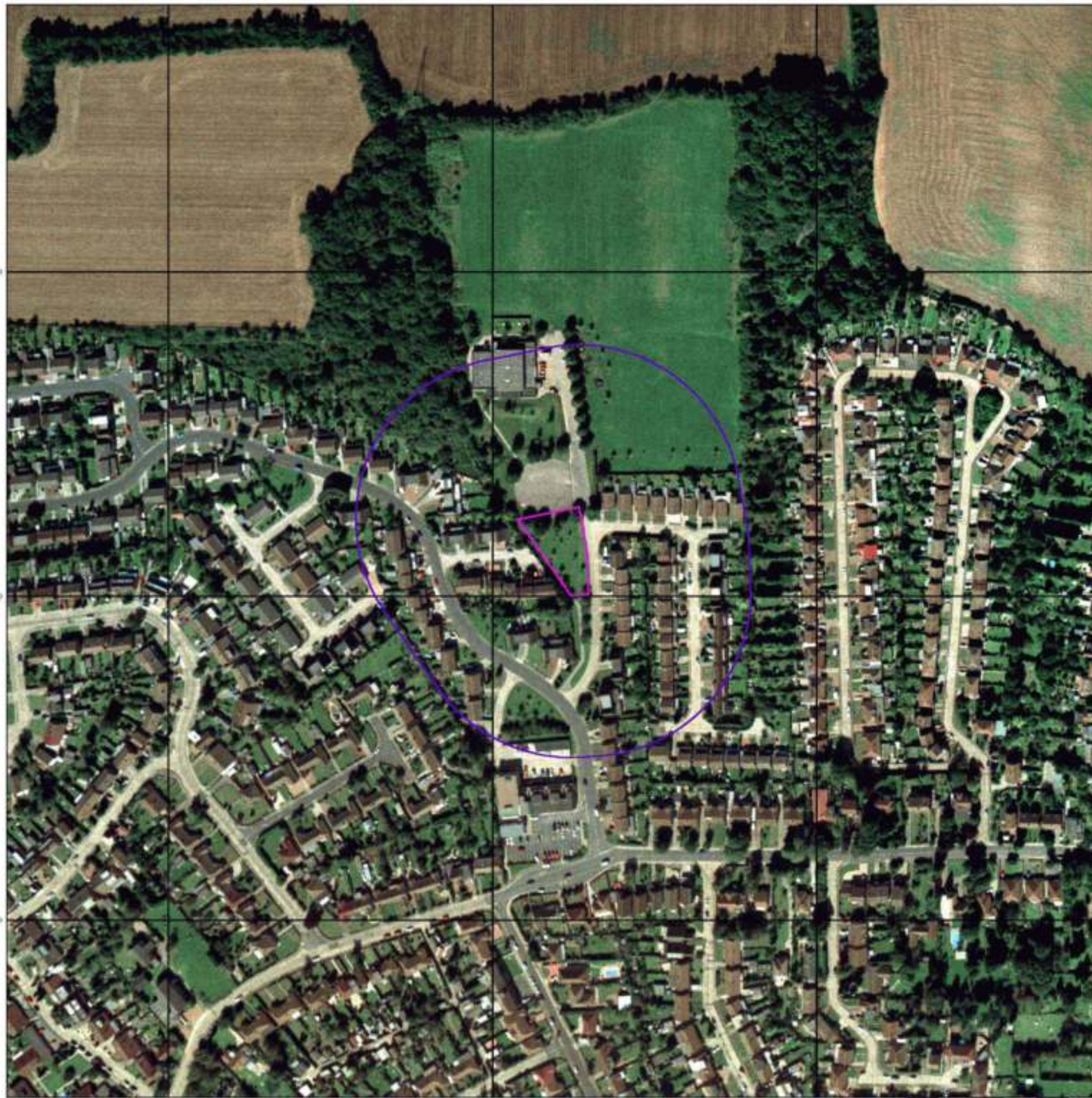
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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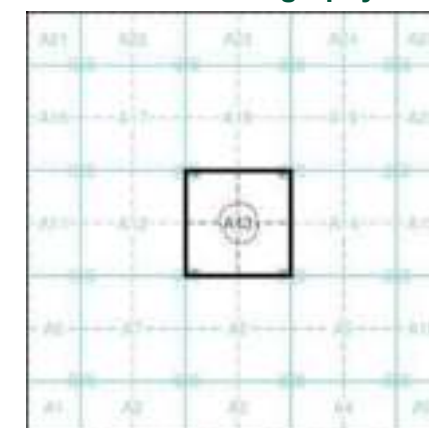


Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 100

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



Tel: 0844 844 9952
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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Culvert		Roads		Marsh
	Mixed Wood		Deciduous		Broadleaved
	Pine		Rough Pasture		
	Arrow denotes flow of water		Instrumental Station		
	Site of Antiquity		Barbed Wire		
	Pump, Quilt Tree, Signal Post		Well, Spring, Boundary Post		
	Surface Level				
	Scaleless Contour		Instrumental Contour		
	Main Road		Fence		Minor Roads
	Unfenced		Fenced		
	Banked Road		Railway Road		
	Road over Railway		Railway over River		
	Tunnel over Road		Tunnel Crossing		
	Road over River or Canal		Road over Stream		
	Wood over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Borough Boundary (Scotland)				
	Local 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		Lakes, Loch or Pond
	Dune		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Rough Grassland
	Hedge		Roads
	Sallies		
	Maunder		Electricity Transmission Line
	Glasshouse		
	Sloping Masonry		
	Cutting		Standard Gauge Multiple Track
	Standard Gauge Single Track		
	Siding, Turntable or Mineral Line		
	Narrow Gauge		
	Geographical County		
	Administrative County, County Borough or Borough of London		
	Civil Parish		
	Boundary Point or Stone		Public Well
	Public Well		Public House
	Public House		Signal Post
	Signal Post		Spring
	Spring		Telephone Call Box
	Telephone Call Box		Telephone Call Point
	Telephone Call Point		Well

1:10,000 Raster Mapping

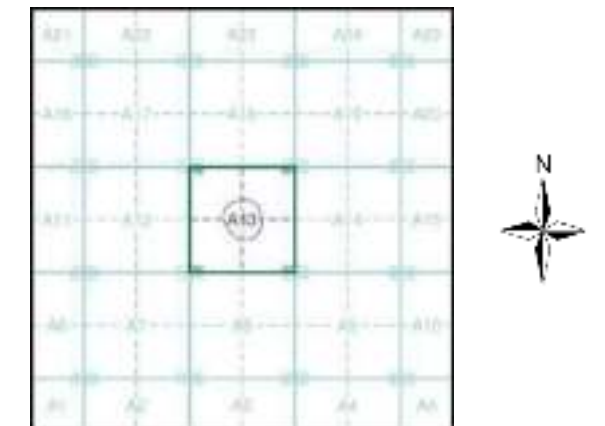
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock outcrop
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Shale		Top of cliff
	General colliery		Underground colliery
	Overhead colliery		Narrow gauge railway
	Multiple track railway		Single track railway
	County boundary (England and Wales)		Civil parish or community boundary
	District, Thirley, Metropolitan, London Borough boundary		Constituency boundary
	Area of woodland vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Pasture tree
	Orchard		Crop or Colliery
	Rough Grassland		Heath
	Grass		Marsh, Salt Marsh or Reeds
	Water Feature		Flow lines
	Mean high water (average)		Mean low water (spring)
	Telephone line (above ground)		Electricity transmission or line (over poles)
	Benchmark (where shown)		Triangulation station
	Point feature (e.g. Quilt Post or Mile Stone)		Pylon, Mast stack or lighting tower
	Site of Antiquity		Glasshouse
	General Building		Important Building



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Kent	1:10,560	1869	3
Essex	1:10,560	1872	4
Kent	1:10,560	1897 - 1898	5
Kent	1:10,560	1909	6
Kent	1:10,560	1909	7
Kent	1:10,560	1909	8
Kent	1:10,560	1931 - 1932	9
Kent	1:10,560	1938 - 1939	10
Kent	1:10,560	1938 - 1946	11
Historical Aerial Photography	1:10,560	1947	12
Ordnance Survey Plan	1:10,000	1961 - 1962	13
Ordnance Survey Plan	1:10,000	1965 - 1966	14
Ordnance Survey Plan	1:10,000	1973 - 1975	15
Gravesend	1:10,000	1977	16
Ordnance Survey Plan	1:10,000	1980 - 1981	17
Ordnance Survey Plan	1:10,000	1991	18
10K Raster Mapping	1:10,000	1999	19
10K Raster Mapping	1:10,000	2006	20
VectorMap Local	1:10,000	2021	21

Historical Map - Slice A



Order Details

Order Number: 299386280_1_1
 Customer Ref: 20374
 National Grid Reference: 563640, 170230
 Slice: A
 Site Area (Ha): 0.14
 Search Buffer (m): 1000

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Russian Military Mapping Legends

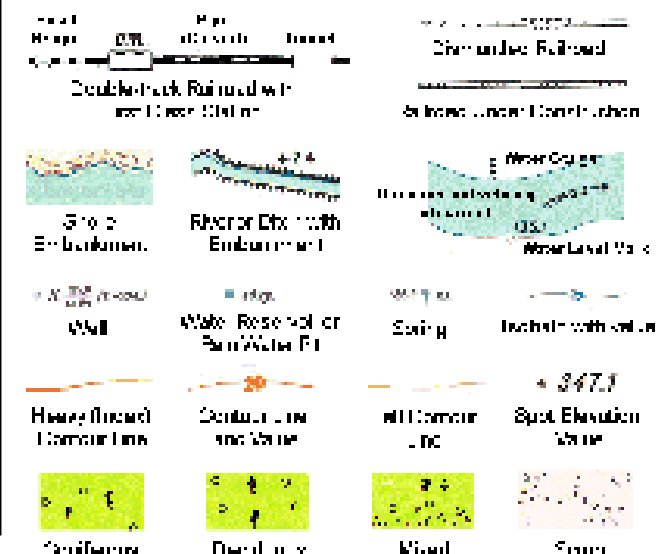
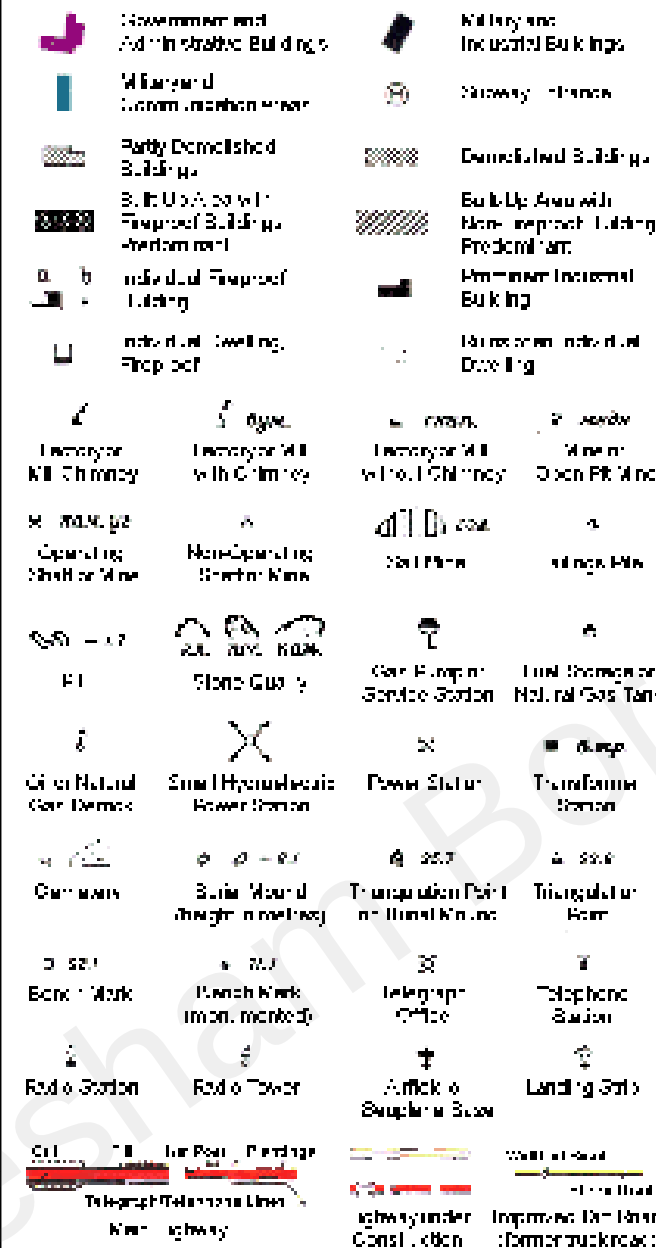
1:5,000 and 1:10,000 mapping

[illegible][illegible]

Russian Alphabet (Formal name and character set conditions)

А а (A)	Э э (Z)	И и (P)	Ч ч (CH)
Б б (B)	Н н (N)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SCHW)
Г г (G)	К к (K)	Т т (T)	Ъ ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь ь (-)
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IY)
			Я я (YA or IA)

1:25,000 mapping

a. Holdings 10/27/01 b. LAUREN WARD

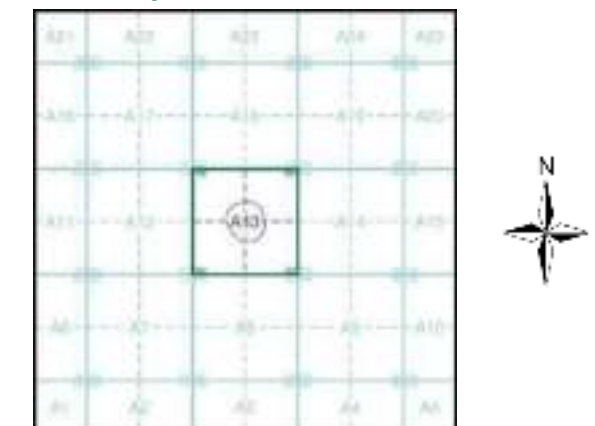
Key to Numbers on Mapping



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Kent	1:10,560	1869	3
Essex	1:10,560	1872	4
Kent	1:10,560	1897 - 1898	5
Kent	1:10,560	1909	6
Kent	1:10,560	1909	7
Kent	1:10,560	1909	8
Kent	1:10,560	1931 - 1932	9
Kent	1:10,560	1938 - 1939	10
Kent	1:10,560	1938 - 1946	11
Historical Aerial Photography	1:10,560	1947	12
Ordnance Survey Plan	1:10,000	1961 - 1962	13
Ordnance Survey Plan	1:10,000	1965 - 1966	14
Ordnance Survey Plan	1:10,000	1973 - 1975	15
Gravesend	1:10,000	1977	16
Ordnance Survey Plan	1:10,000	1980 - 1981	17
Ordnance Survey Plan	1:10,000	1991	18
10K Raster Mapping	1:10,000	1999	19
10K Raster Mapping	1:10,000	2006	20
VectorMap Local	1:10,000	2021	21

Russian Map - Slice A

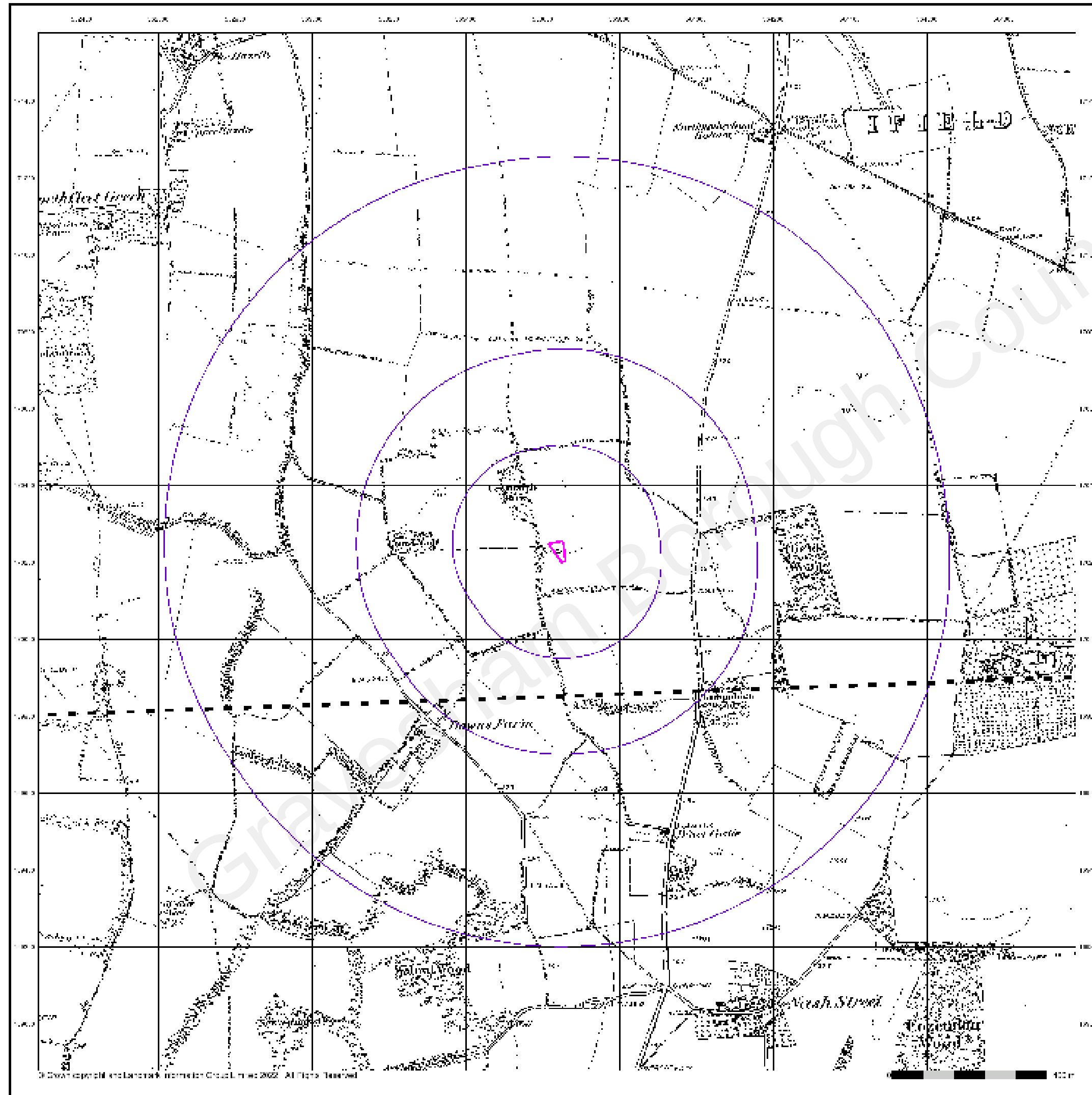


Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



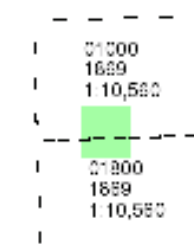
Kent

Published 1869

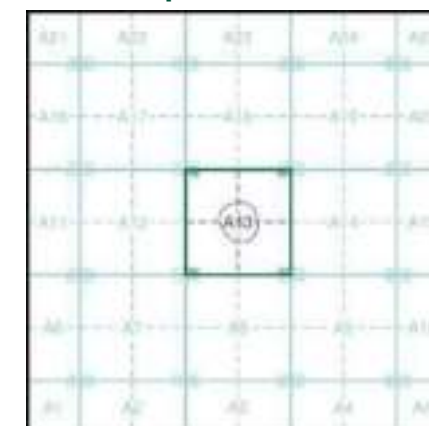
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

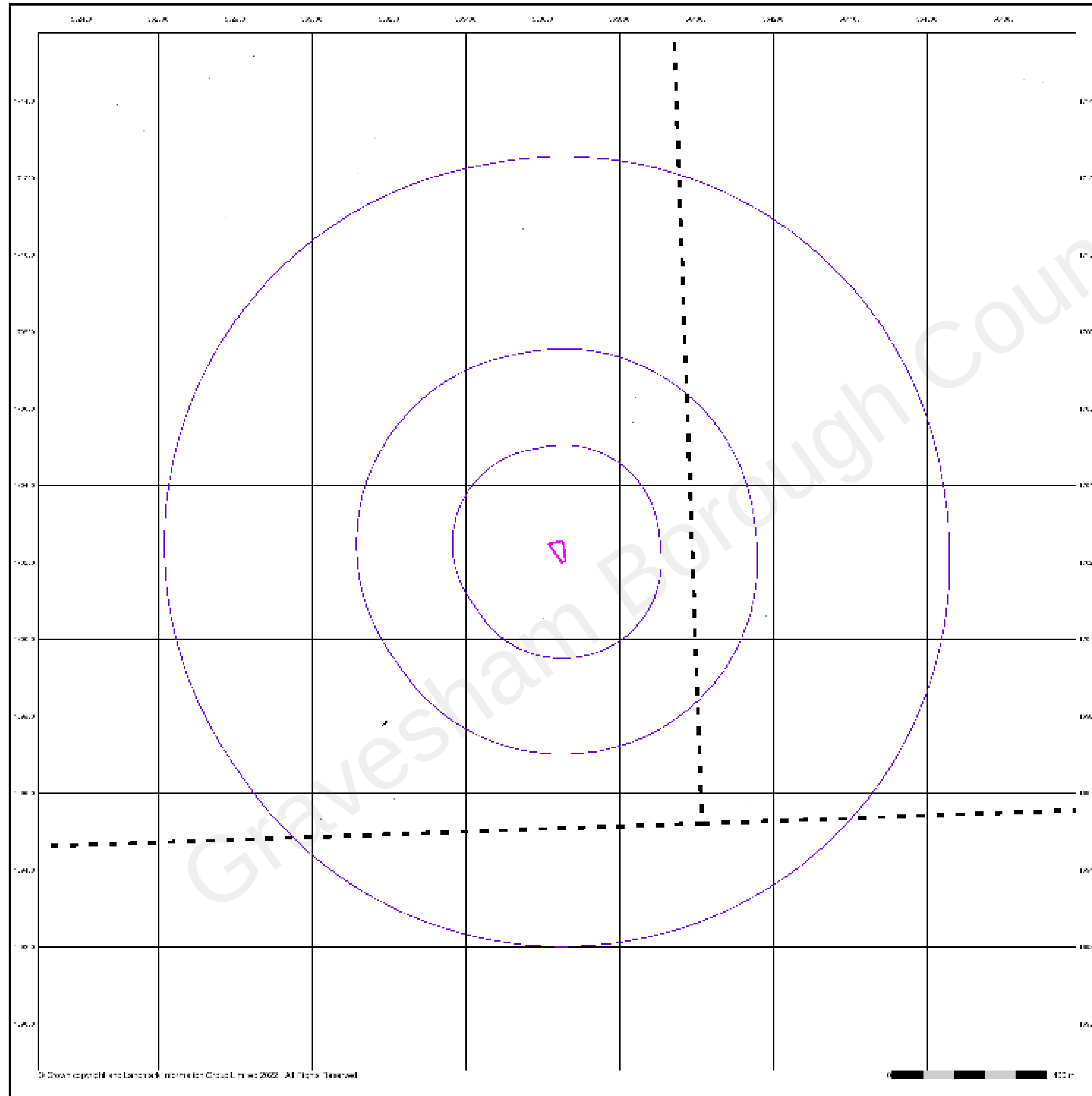
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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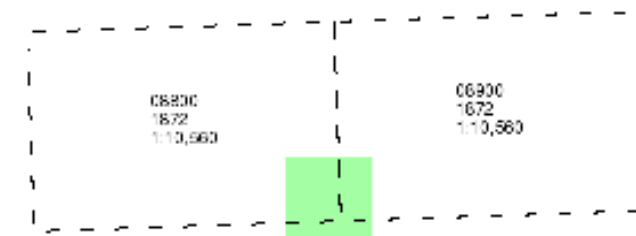
Essex

Published 1872

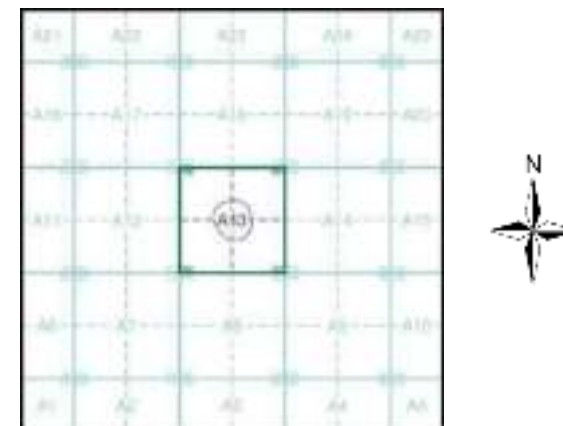
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

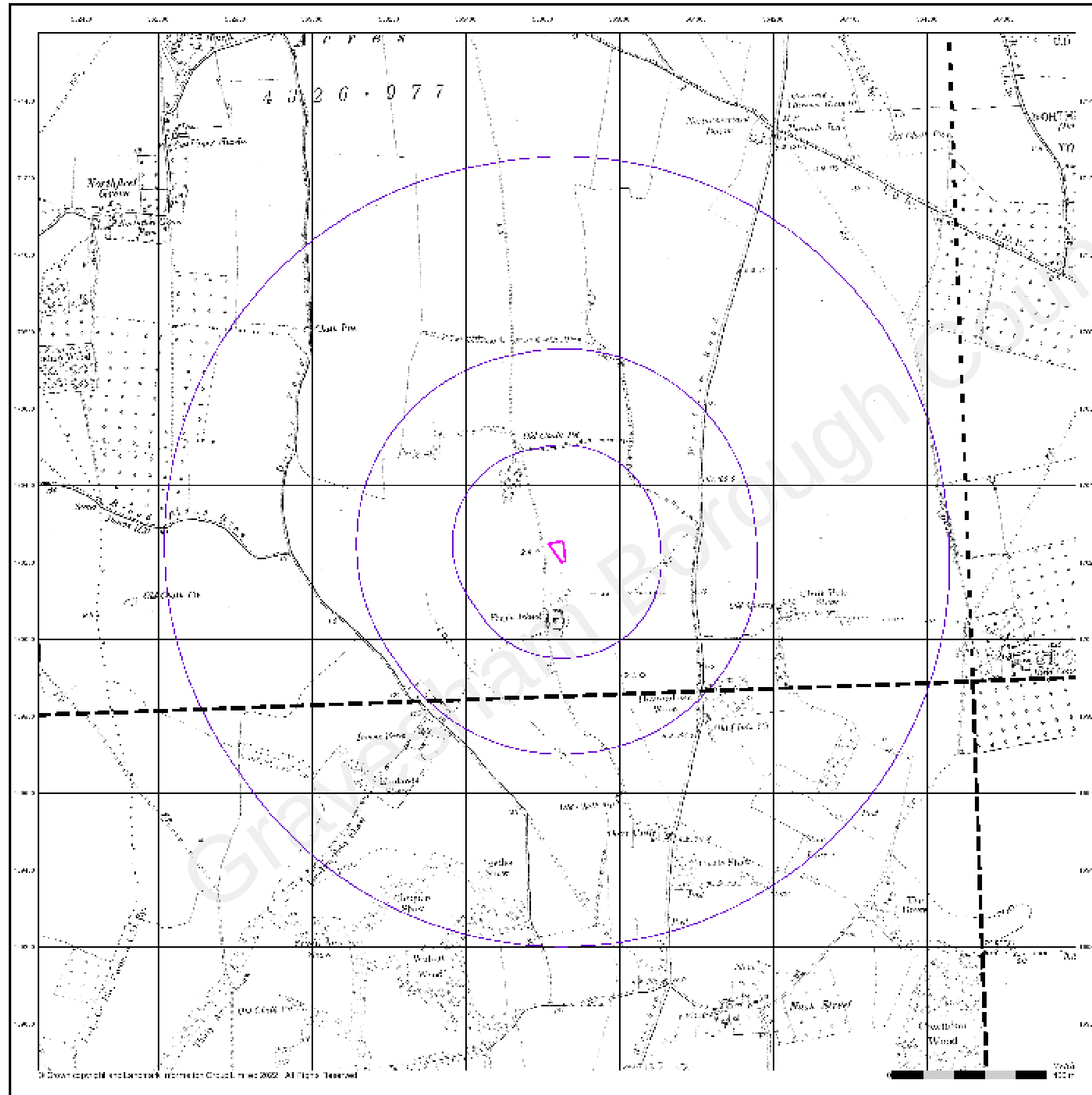
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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



Kent

Published 1897 - 1898

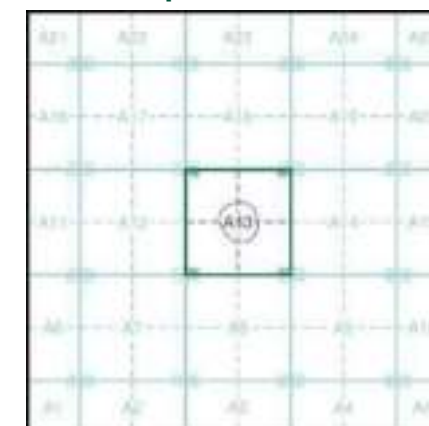
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)

0105W 1898 1:10,560	0105E 1898 1:10,560
0106W 1897 1:10,560	0106E 1898 1:10,560

Historical Map - Slice A



Order Details

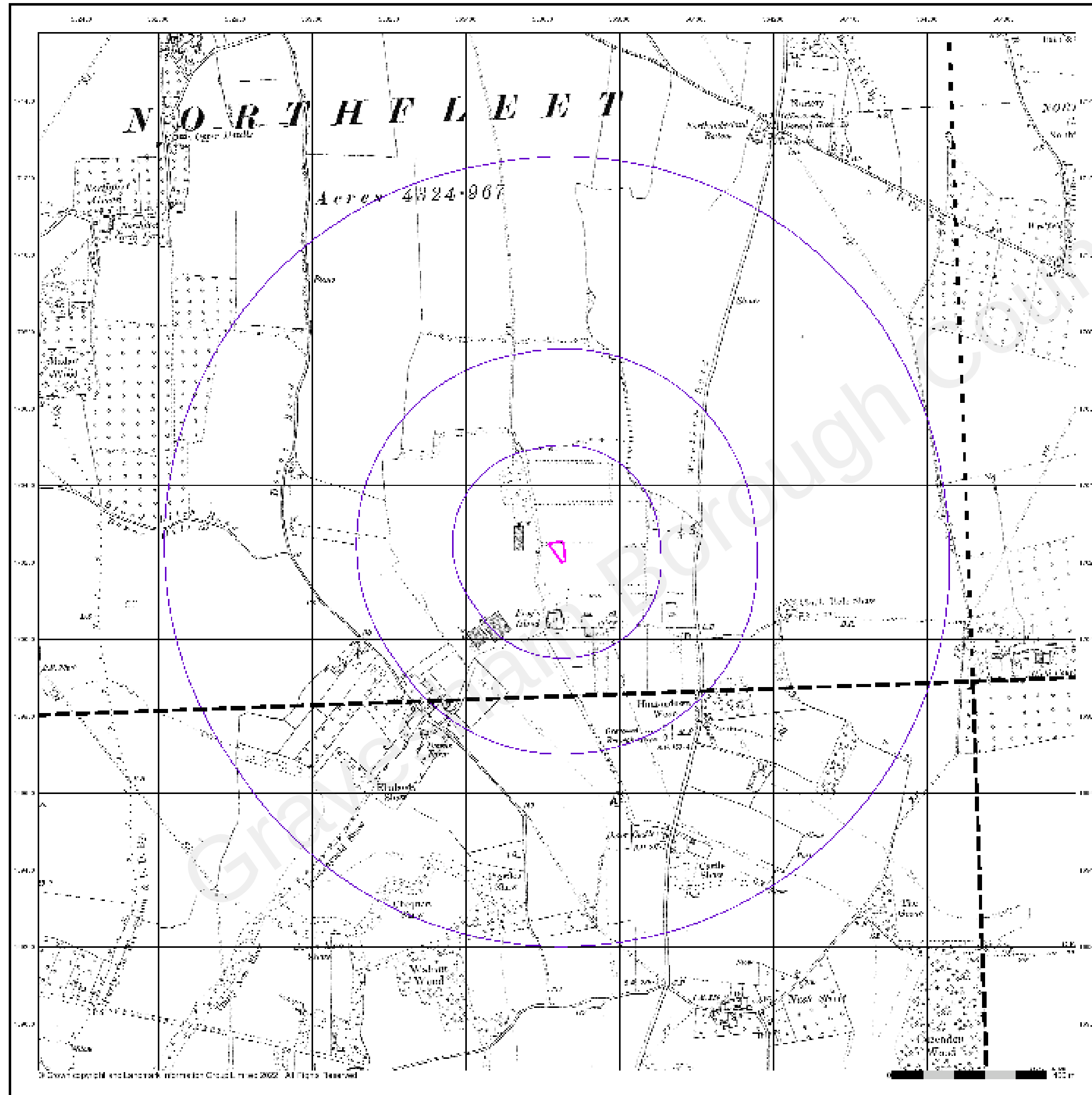
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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Kent

Published 1909

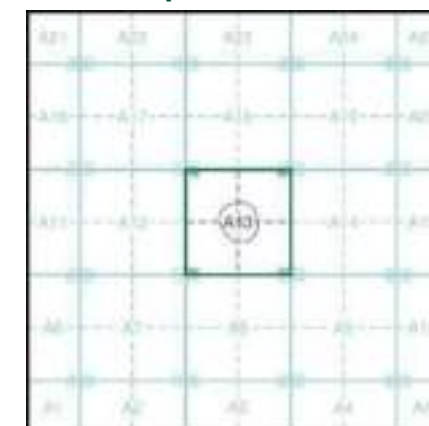
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)

0105W 1909 1:10,560	0105E 1909 1:10,560
0106W 1909 1:10,560	0106E 1909 1:10,560

Historical Map - Slice A



Order Details

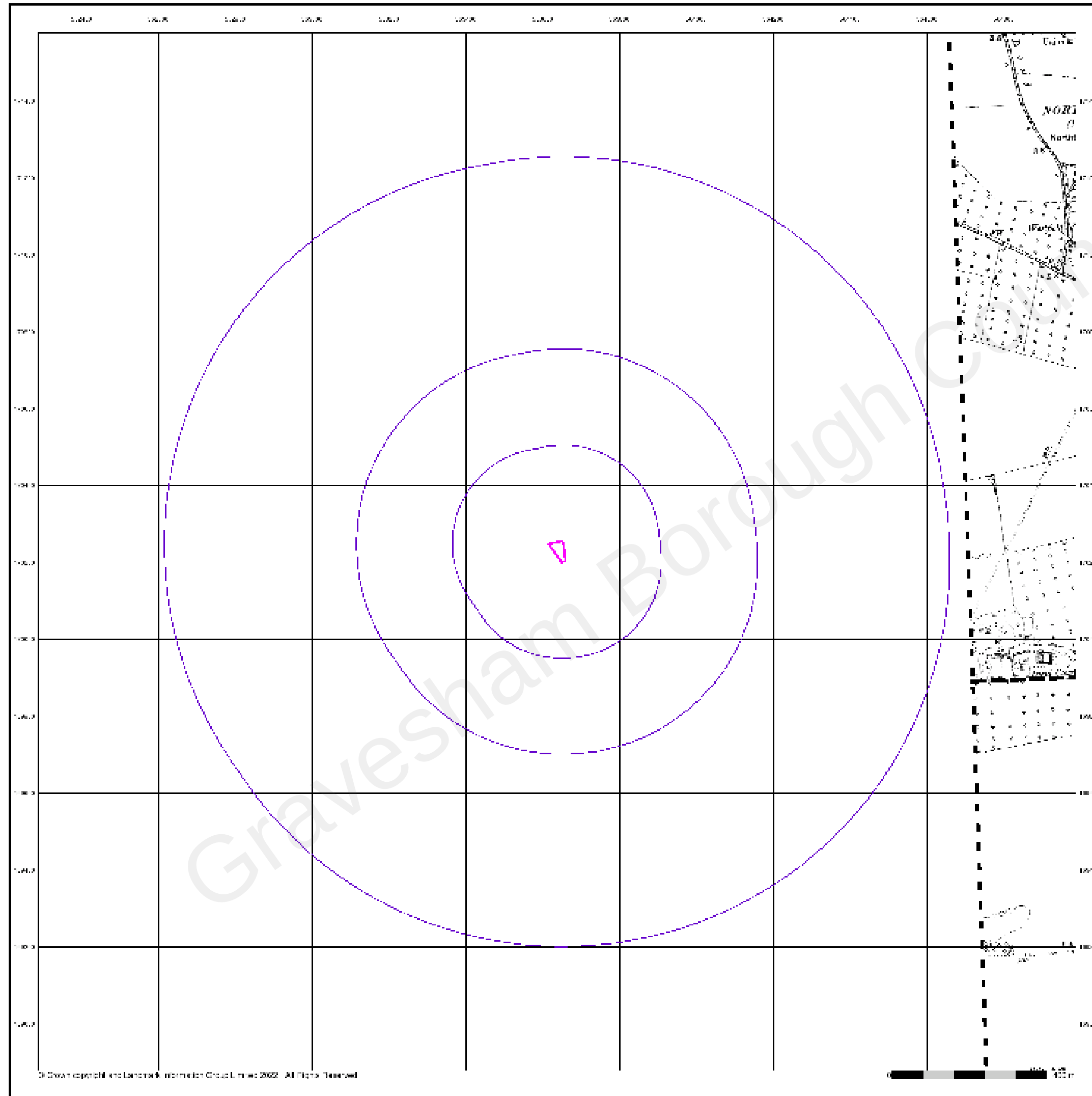
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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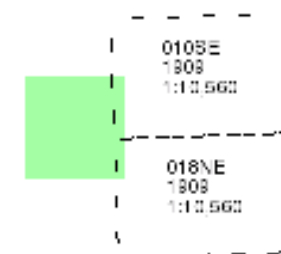
Kent

Published 1909

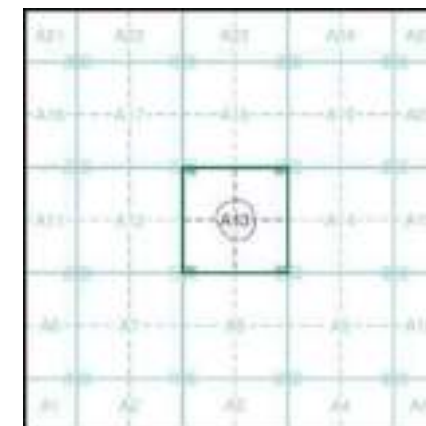
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

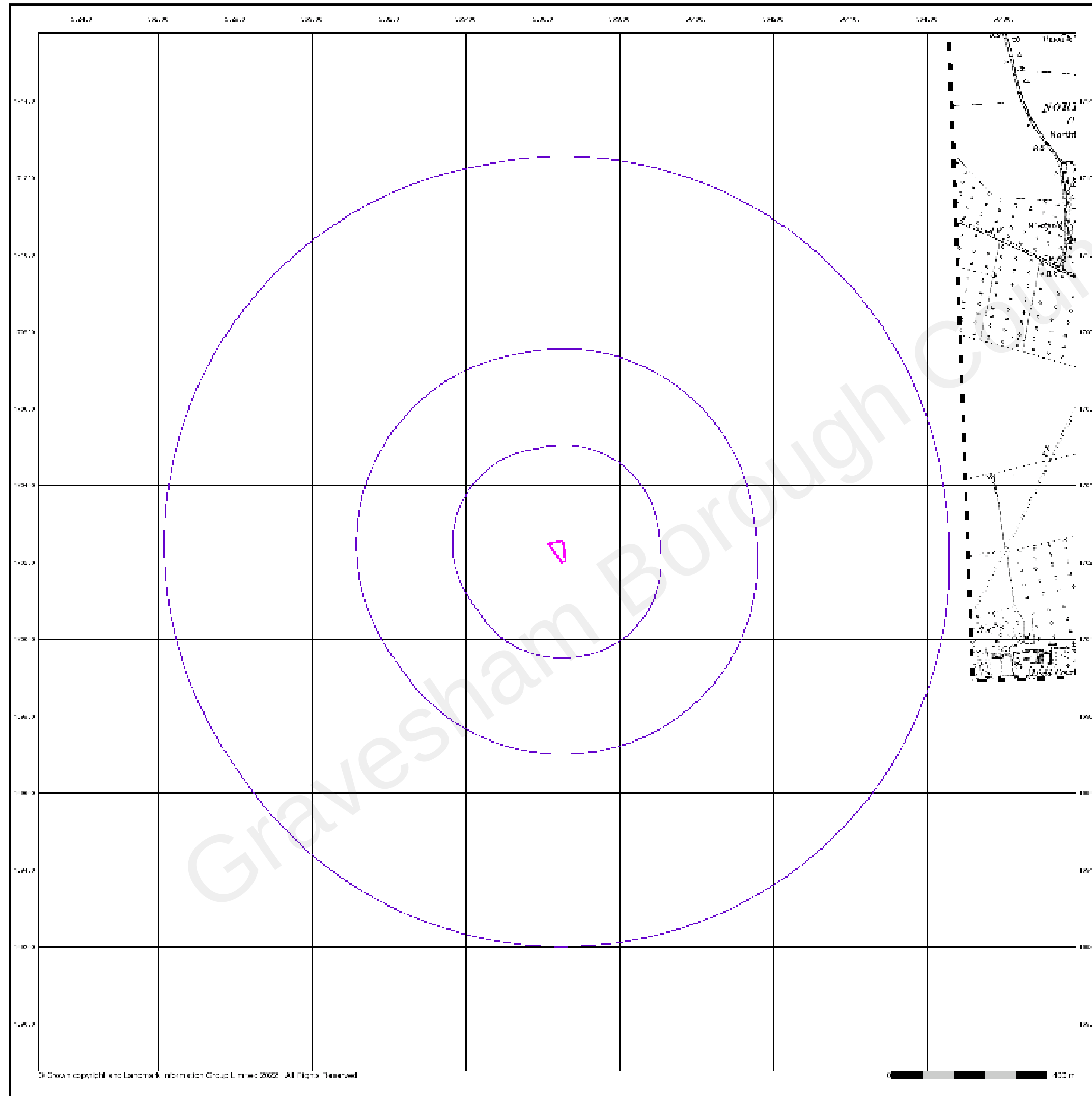
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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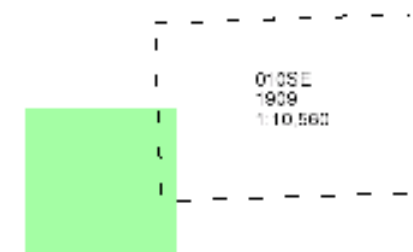
Kent

Published 1909

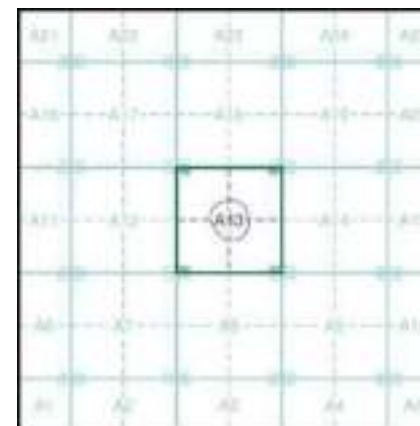
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

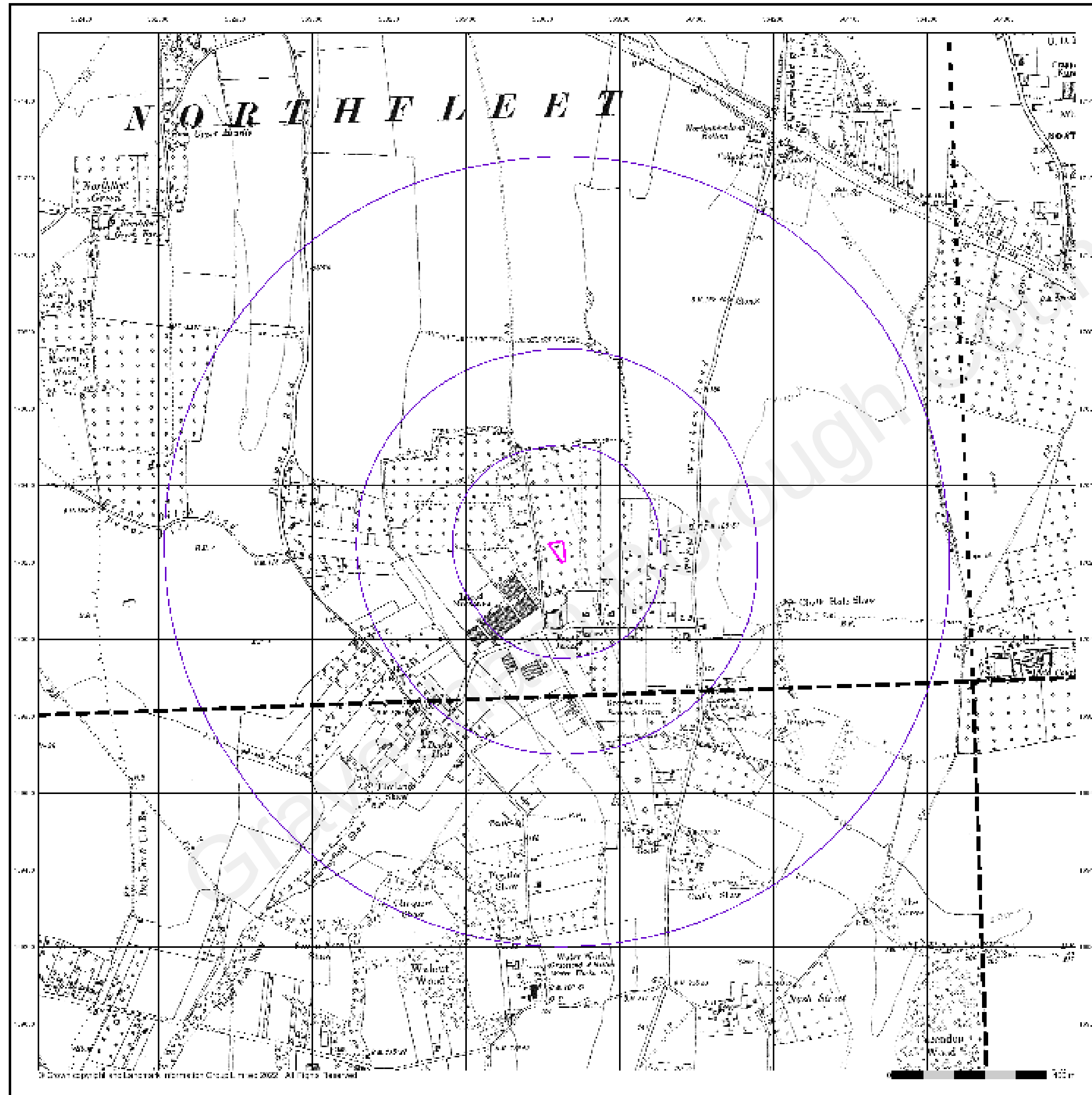
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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Kent

Published 1931 - 1932

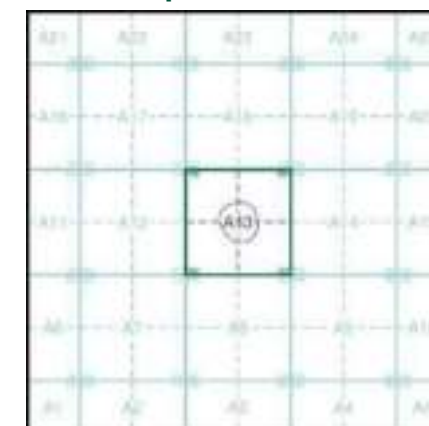
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)

0105W 1931 1:10,560	0105E 1932 1:10,560
0106W 1931 1:10,560	0106E 1931 1:10,560

Historical Map - Slice A



Order Details

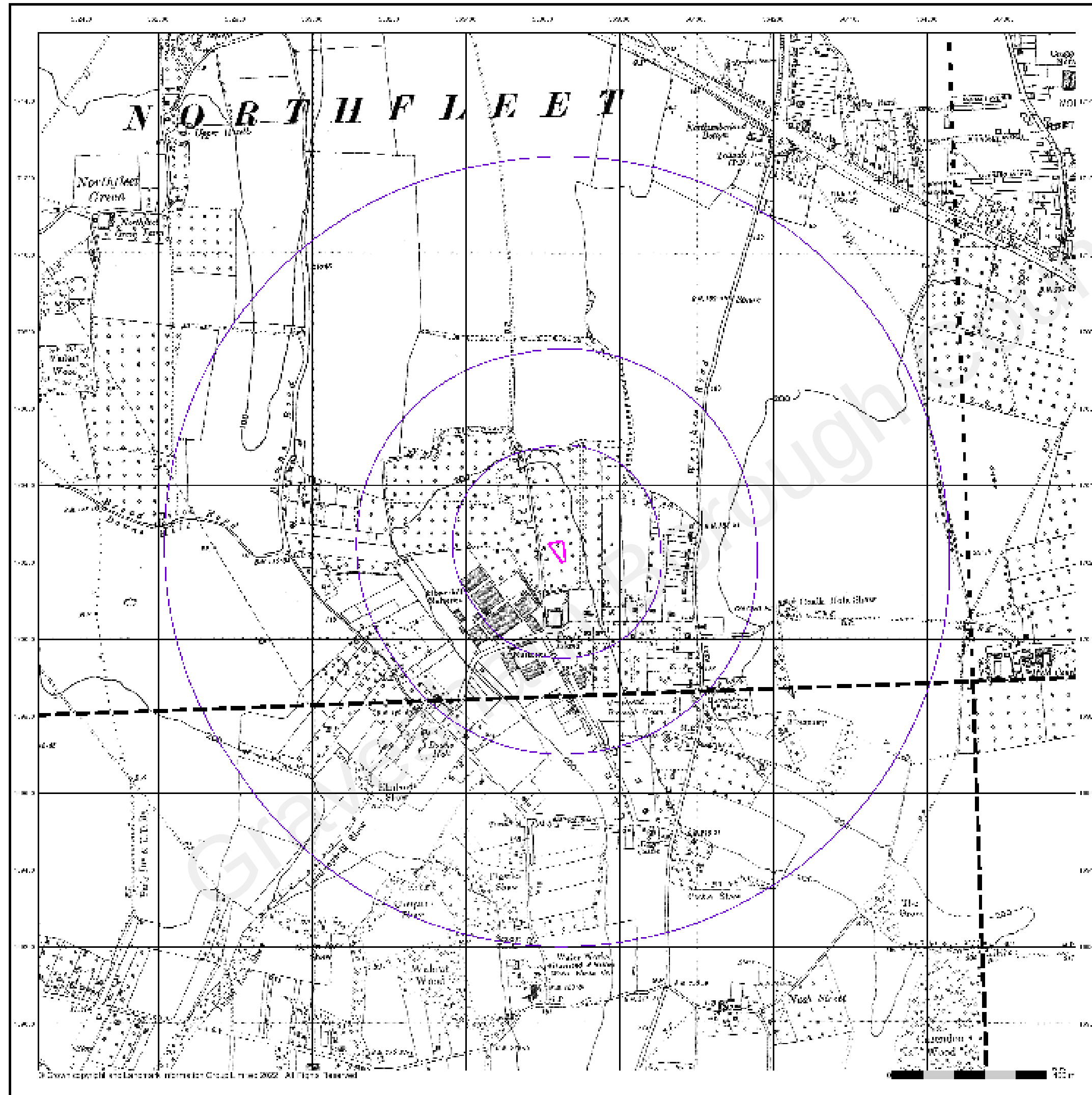
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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Kent

Published 1938 - 1939

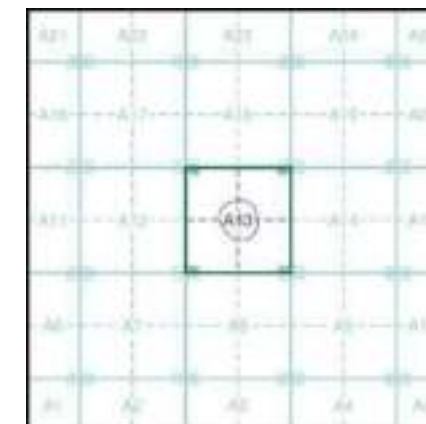
Source map scale - 1:10,560

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.

Map Name(s) and Date(s)

0105W 1938 1:10,560	0105E 1938 1:10,560
0106W 1938 1:10,560	0106E 1938 1:10,560

Historical Map - Slice A



Order Details

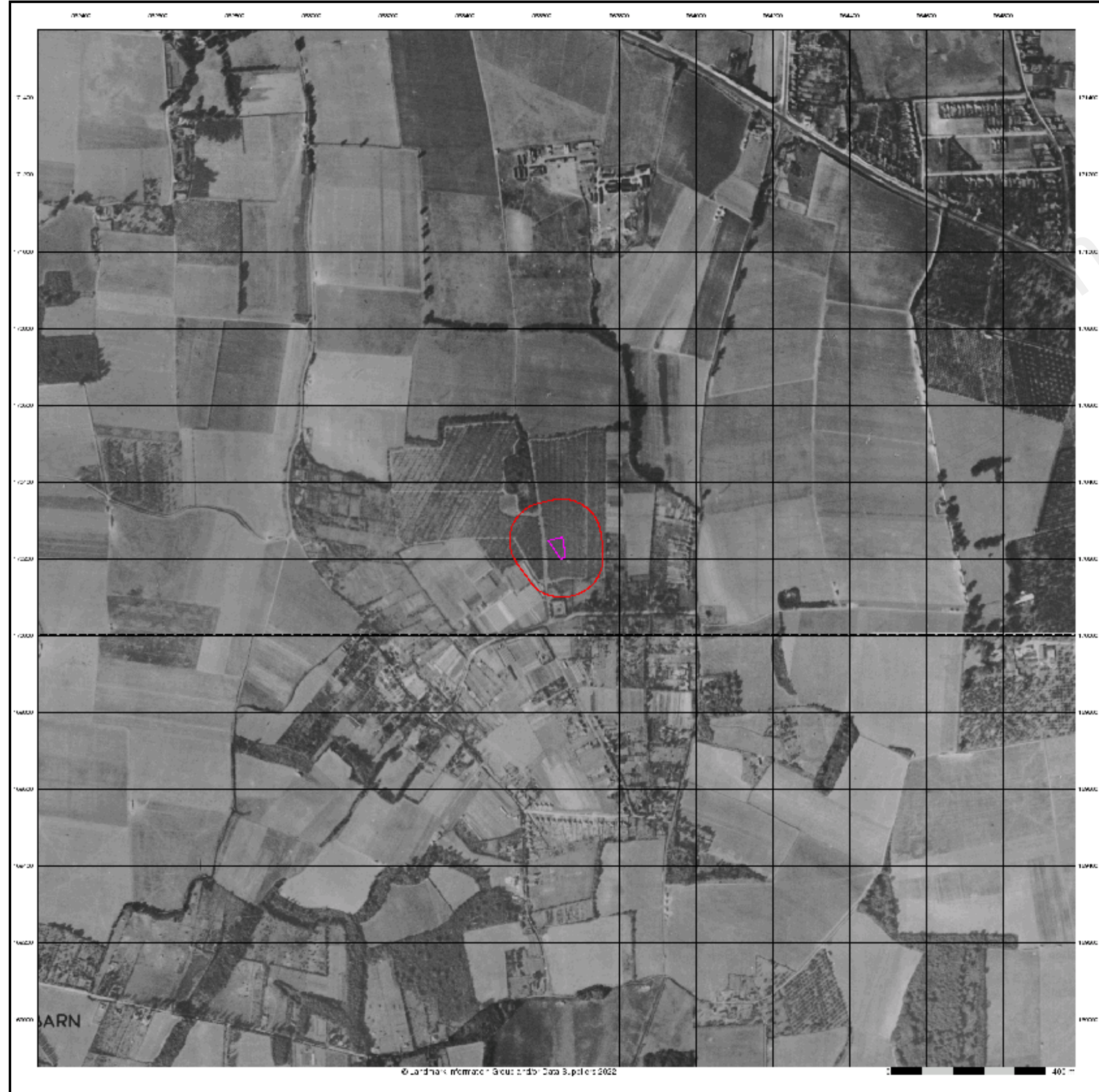
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

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Historical Aerial Photography

Published 1947

Source map scale - 1:10,560

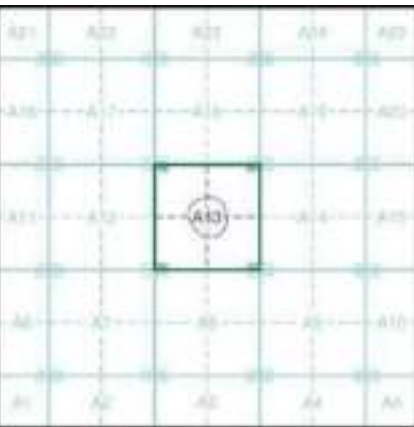
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

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Map Name(s) and Date(s)

DA13 9LB
1947
1:10,560
DA13 9LB
1947
1:10,560

Historical Aerial Photography - Slice A



Order Details

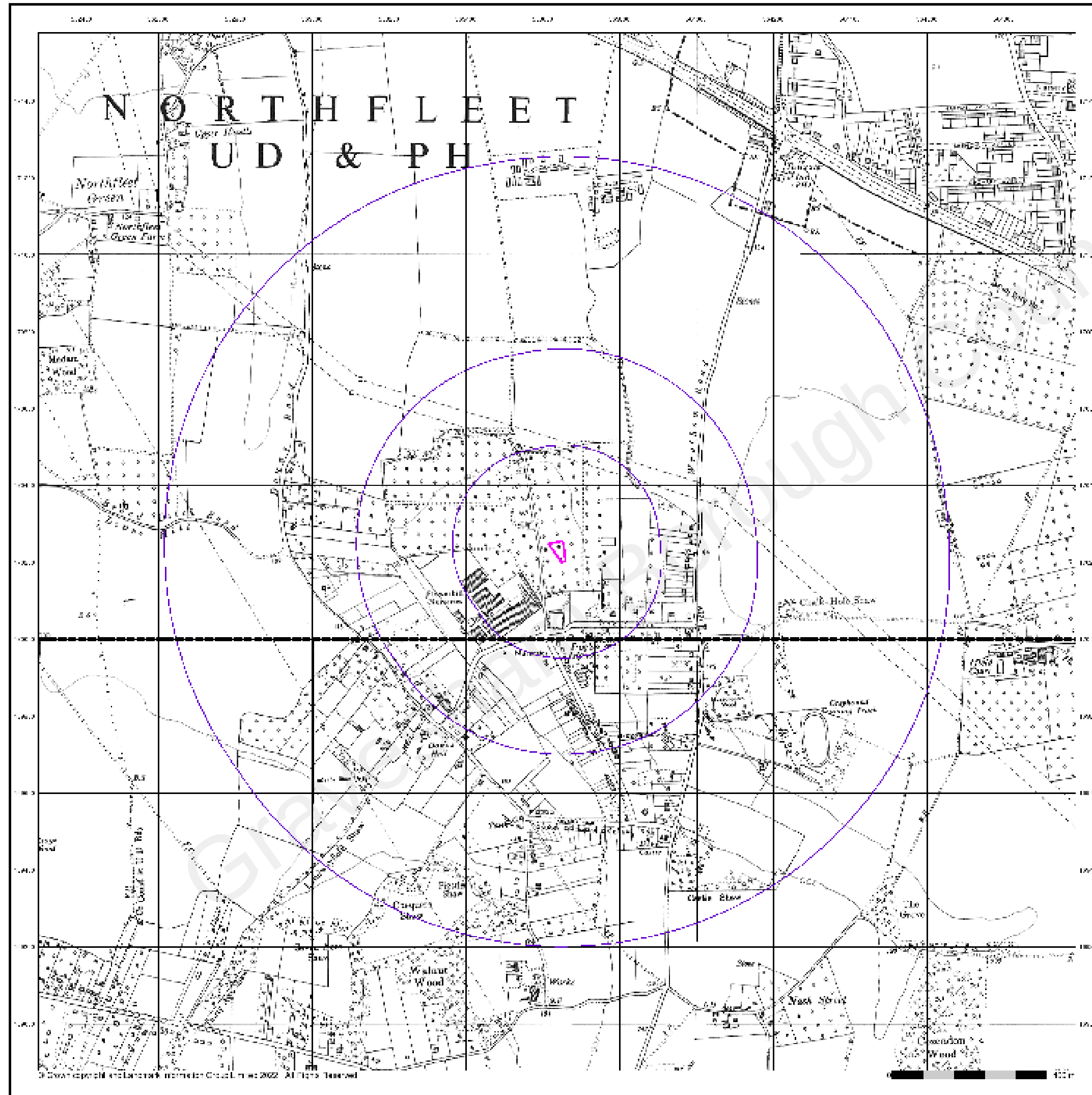
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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Ordnance Survey Plan

Published 1961 - 1962

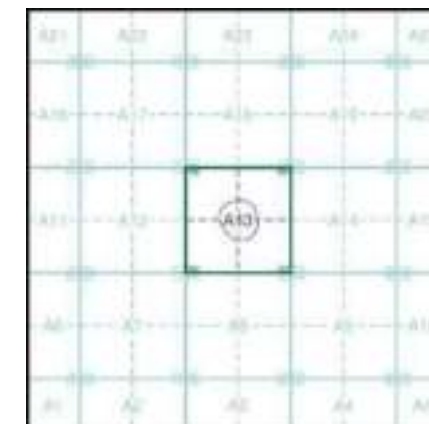
Source map scale - 1:10,000

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)

TQ57SW
1962
1:10,560
TQ66NW
1961
1:10,560

Historical Map - Slice A



Order Details

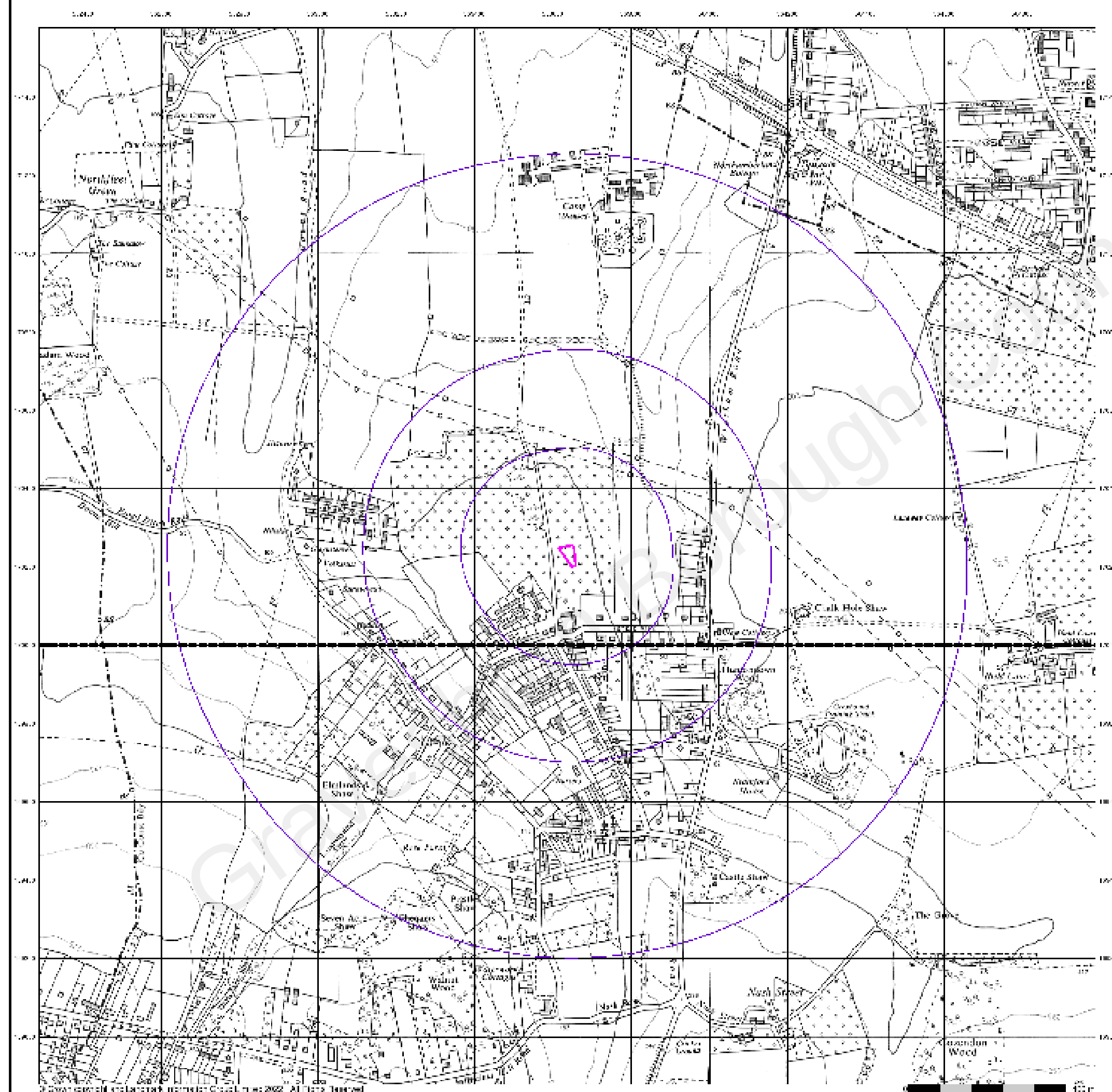
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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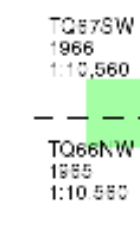
Ordnance Survey Plan

Published 1965 - 1966

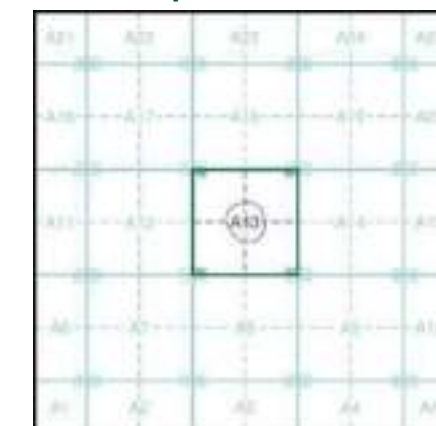
Source map scale - 1:10,000

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



Order Details

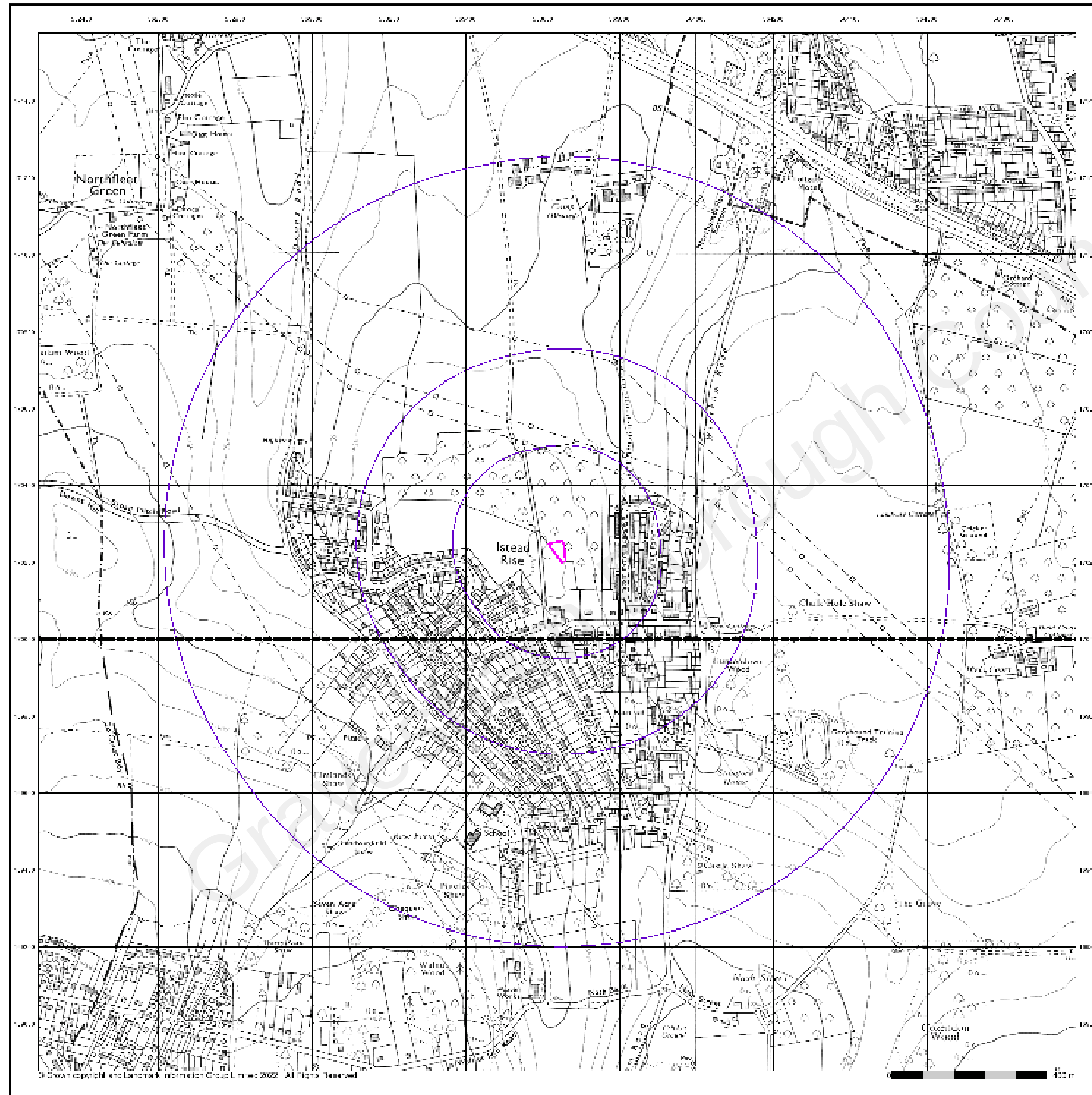
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1973 - 1975

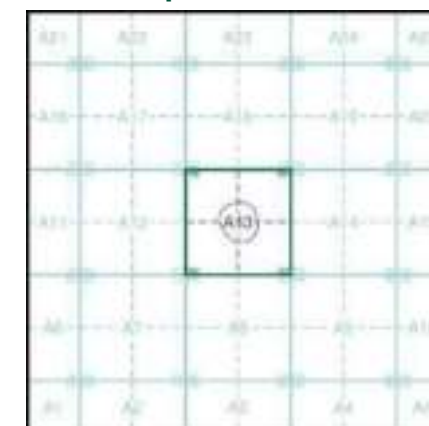
Source map scale - 1:10,000

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)

TQ57SW
1973
1:10,000
TQ66NW
1975
1:10,000

Historical Map - Slice A



Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

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Gravesend

Published 1977

Source map scale - 1:10,000

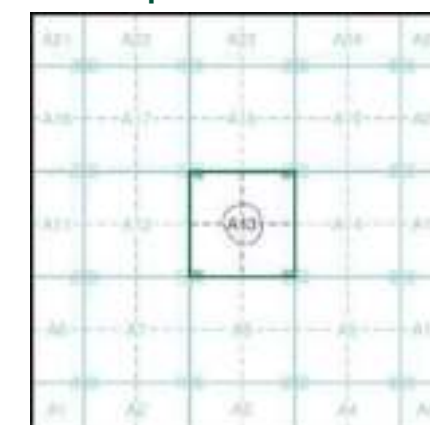
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

TCB/EW
1977
1:10,000
KORONA
1977
1:10,000

Russian Map - Slice A

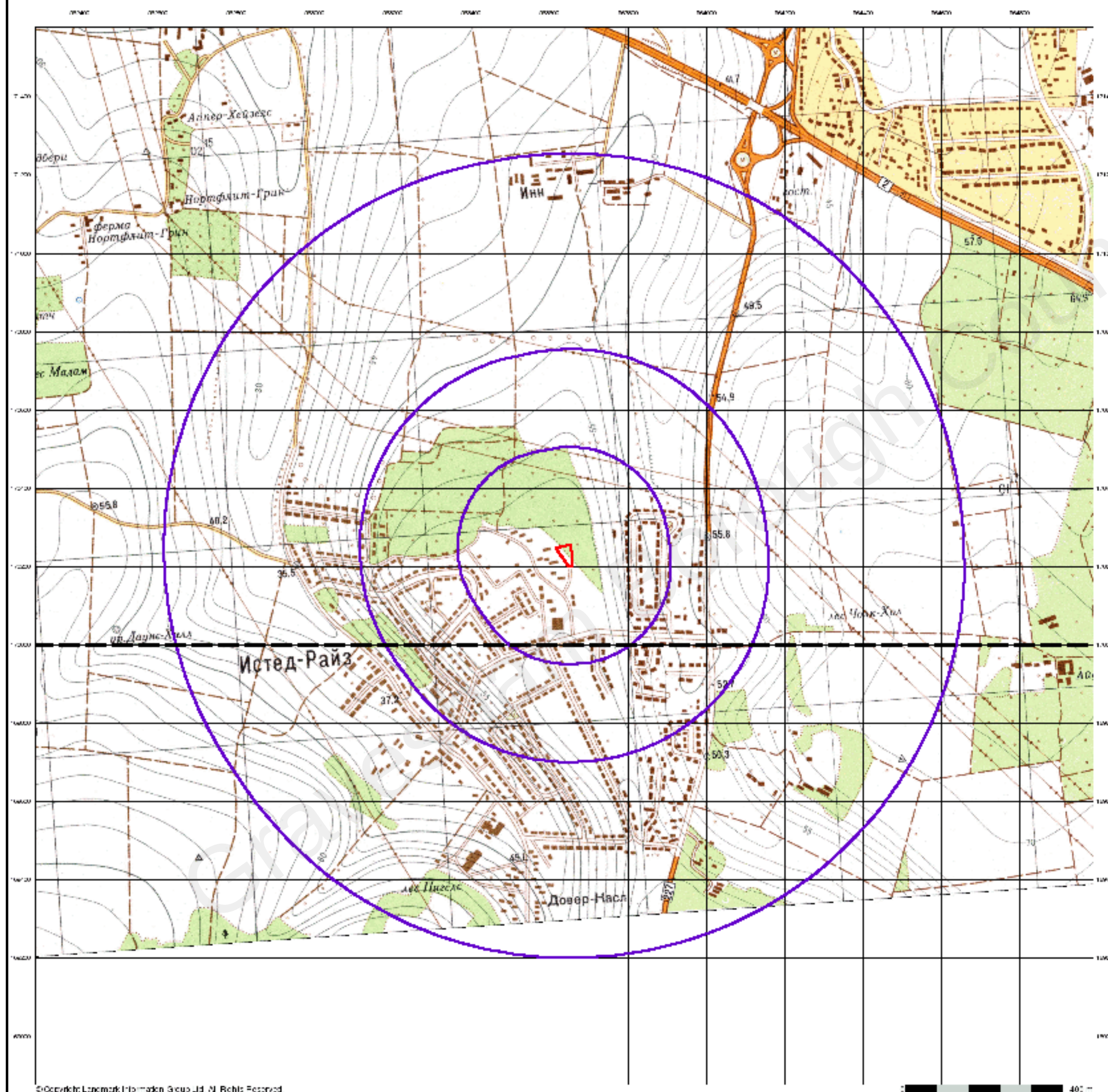


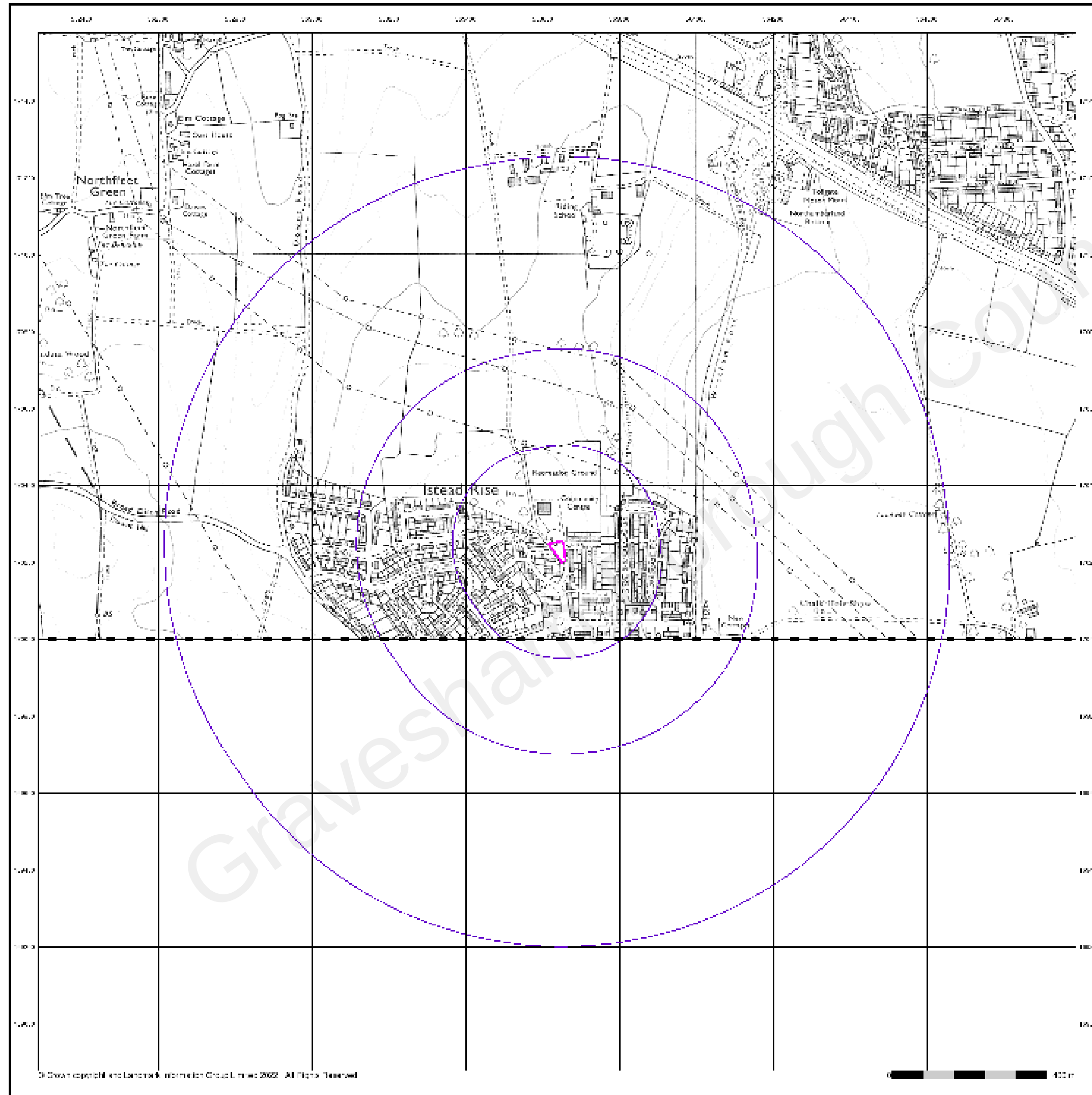
Order Details

Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB





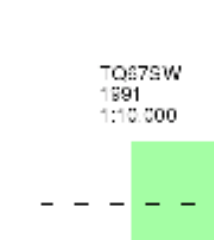
Ordnance Survey Plan

Published 1991

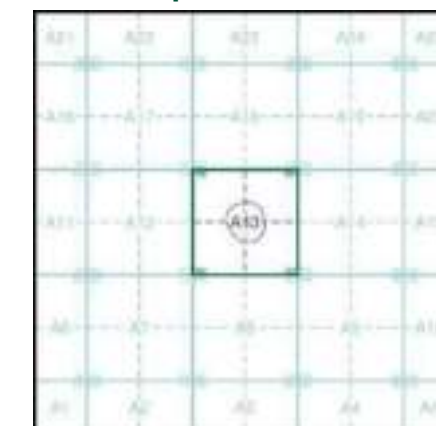
Source map scale - 1:10,000

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



Order Details

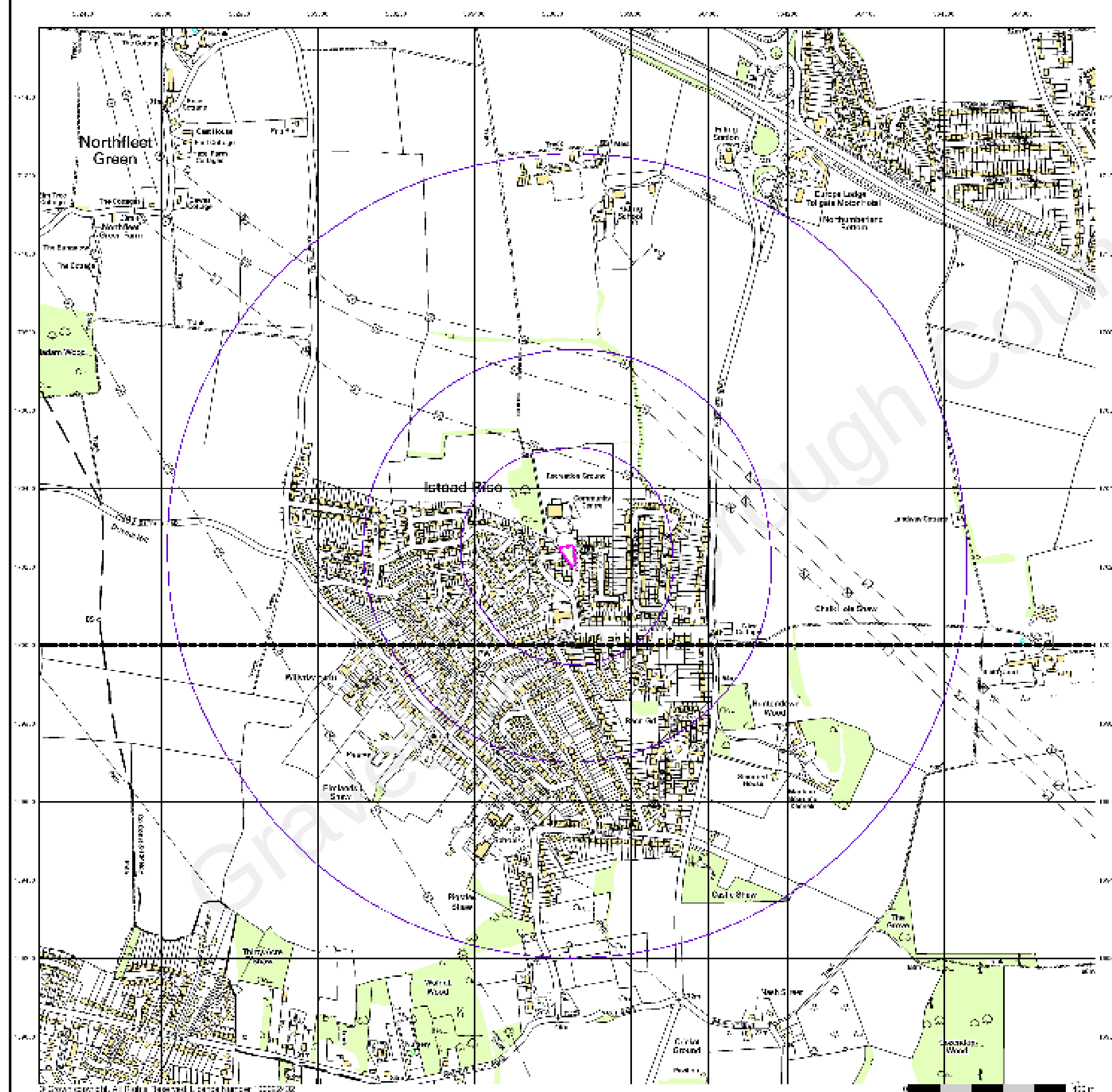
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

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soils
LIMITED
Geotechnical & Environmental
Consultants

10k Raster Mapping

Published 1999

Source map scale - 1:10,000

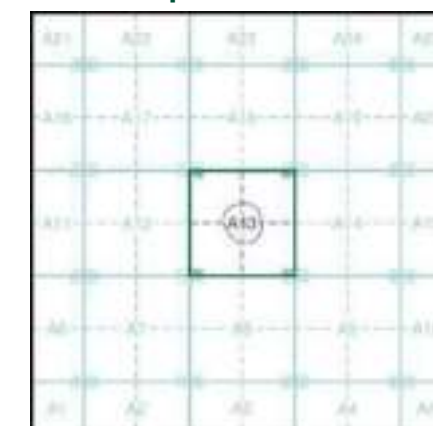
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks 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)

TQ67SW
1999
1:10,000

TQ66NW
1999
1:10,000

Historical Map - Slice A



Order Details

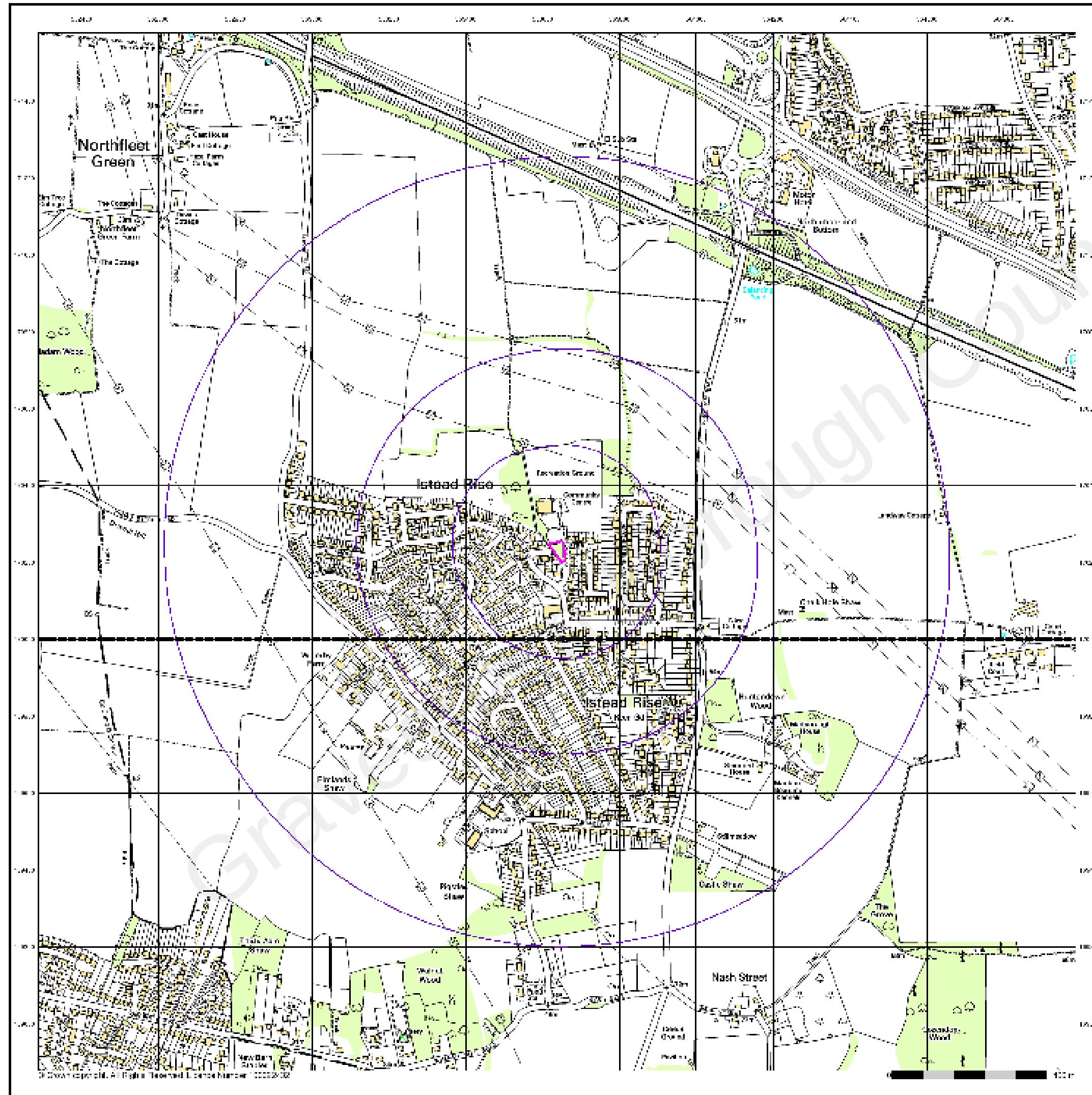
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

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Landmark
INFORMATION GROUP

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Web: www.envirocheck.co.uk



10k Raster Mapping

Published 2006

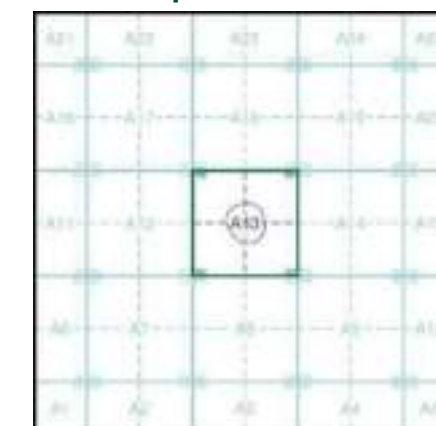
Source map scale - 1:10,000

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)

TQ57SW
2006
1:10,000
TQ66NW
2006
1:10,000

Historical Map - Slice A



Order Details

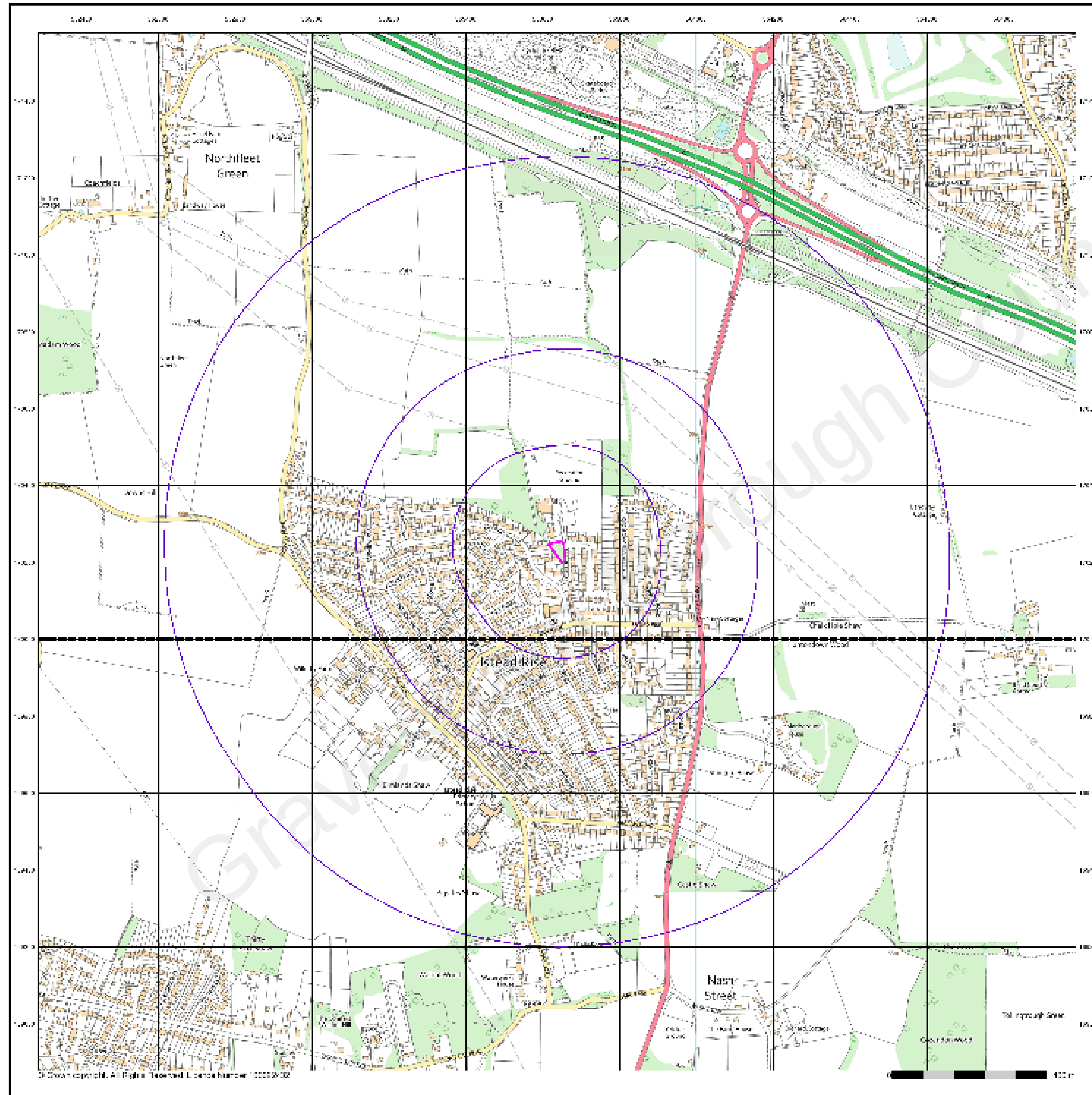
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

Worcester Close, Istead Rise, GRAVESEND, DA13 9LB



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VectorMap Local

Published 2021

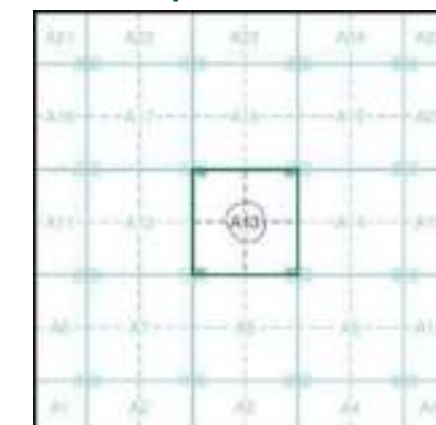
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

TQ67SW
2021
Variable
TQ66NW
2021
Variable

Historical Map - Slice A



Order Details

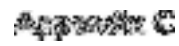
Order Number: 299386280_1_1
Customer Ref: 20374
National Grid Reference: 563640, 170230
Slice: A
Site Area (Ha): 0.14
Search Buffer (m): 1000

Site Details

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Landmark Envirocheck Report

Gravesham Borough Council

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

299386280_1_1

Customer Reference:

20374

National Grid Reference:

563640, 170230

Slice:

A

Site Area (Ha):

0.14

Search Buffer (m):

1000

Site Details:

Worcester Close

Istead Rise

GRAVESEND

DA13 9LB

Client Details:

Mr N Lambert

Soils Ltd

Newton House

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Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client. In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes		n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				1
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1		1		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 1				Yes
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 1				3 (*6)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 3	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk	pg 3	1	n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 3	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 4	2		2	1
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 4				1

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 5				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 5	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 5			1	4
Potentially Infilled Land (Water)					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 6	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 6	Yes			Yes
BGS Recorded Mineral Sites	pg 6		1	1	6
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability	pg 7	Yes	n/a	n/a	n/a
Man-Made Mining Cavities	pg 8			1	1
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 8	Yes	Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 8	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 8		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 8	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 9		Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 9		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 9		Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 11		7	10	4
Fuel Station Entries					
Points of Interest - Commercial Services	pg 12			7	4
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 13			1	2
Points of Interest - Public Infrastructure					
Points of Interest - Recreational and Environmental	pg 13		2		
Gas Pipelines	pg 14			2	
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 15				1
Areas of Adopted Green Belt	pg 15	1			
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
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National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 15	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	0	1	563642 170230
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (S)	201	1	563642 170000
1	Discharge Consents Operator: A.Mcalpine-Amec Joint Venture Property Type: Undefined Or Other Location: A.Mcalpine-Amec Joint Venture, Ctrl Contract 330 Site Office, Northumberland Bottom, Wrotham Road Gravesend Kent, Da13 9re Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P07541 Permit Version: 1 Effective Date: 13th April 1999 Issued Date: 13th April 1999 Revocation Date: 15th November 2002 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge: Land/Soakaway Environment: Into Land Receiving Water: Into Land Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	A18NE (N)	844	2	563870 171070
2	Local Authority Pollution Prevention and Controls Name: Northfleet Dry Cleaners Location: 52 Istead Rise, Northfleet, Da13 9jf Authority: Gravesend Borough Council, Environmental Health Department Permit Reference: PP6/06/54 Dated: 22nd August 2006 Process Type: Local Authority Air Pollution Control Description: PG6/46 Dry cleaning Status: Authorised Positional Accuracy: Manually positioned to the address or location	A13SE (S)	121	3	563641 170080
	Nearest Surface Water Feature	A19NW (NE)	821	-	564009 170995
3	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 9/40/01/0511/G Permit Version: 100 Location: Lower Greensand Boreholes, Wells And Adits At Northfleet Ps Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Discharged To Chalk Strata Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SE (S)	982	2	563900 169250
3	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 9/40/01/0511/G Permit Version: 100 Location: Chalk Boreholes, Wells And Adits At Northfleet Ps Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: N/A Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SE (S)	982	2	563900 169250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	Water Abstractions Operator: Southern Water Services Plc Licence Number: 9/40/01/0511/G Permit Version: 100 Location: Lower Greensand Boreholes, Wells And Adits At Northfleet Ps Authority: Environment Agency, Southern Region Abstraction: Water Supply Related: Transfer Between Sources Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Discharge To Chalk Strata. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 6th December 1988 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SE (S)	982	2	563900 169250
	Water Abstractions Operator: Skanska Civil Engineering Licence Number: 01/164 Permit Version: 1 Location: Tollgate Junction Authority: Environment Agency, Southern Region Abstraction: Extractive: Dust Suppression Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 March Authorised End: 31 October Permit Start Date: 1st November 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A23SE (N)	1026	2	563900 171250
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 1/0511/G/G Permit Version: Not Supplied Location: Northfleet Pumping Station, NORTHFLEET Authority: Environment Agency, Southern Region Abstraction: Public Water Supply Abstraction Type: Not Supplied Source: Pond or Lake Daily Rate (m3): 20000 Yearly Rate (m3): 7320000 Details: Additional Purpose: Public Water Supply Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3NW (S)	1116	2	563500 169095
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 1/0511/F/G Permit Version: Not Supplied Location: Hazells Pumping Station Authority: Environment Agency, Southern Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Pond or Lake Daily Rate (m3): 9000 Yearly Rate (m3): 3294000 Details: Additional Purpose: Public Water Supply Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22SW (NW)	1266	2	562905 171295

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 01/026 Permit Version: Not Supplied Location: Hazells Ps, SOUTHFLEET Authority: Environment Agency, Southern Region Abstraction: Public Water Supply Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 9000 Yearly Rate (m3): 3294000 Details: H5 Chalk; Licence Status: Revoked; Lapsed Or Cancelled Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22SW (NW)	1273	2	562900 171300
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 9/40/01/0511/G Permit Version: 100 Location: Boreholes, Wells And Adits At Hazells Ps, Northfleet Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: N/A Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A22SW (NW)	1280	2	562950 171340
	Water Abstractions Operator: Mid Kent Golf Club Limited Licence Number: So/040/0001/019 Permit Version: 1 Location: Mid Kent Golf Club Borehole Authority: Environment Agency, Southern Region Abstraction: Sports Grounds/Facilities: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Mid Kent Golf Course, Gravesend Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th October 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A24NE (NE)	1749	2	564325 171869
	Groundwater Vulnerability Map Combined Classification: Principle Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Well Connected Fractures Dilution: <300 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13NE (NE)	0	4	563642 170230
	Groundwater Vulnerability - Soluble Rock Risk Classification: Very Significant Risk - Moderate Possibility	A13NE (NE)	0	4	563642 170230
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13NE (NE)	0	4	563642 170230
	Superficial Aquifer Designations No Data Available				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	Source Protection Zones Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A13NE (NE)	0	2	563642 170230
5	Source Protection Zones Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A13NE (NE)	0	2	563642 170230
6	Source Protection Zones Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A8NE (S)	398	2	563728 169809
7	Source Protection Zones Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A8NE (S)	447	2	563697 169756
8	Source Protection Zones Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A17SE (NW)	715	2	563258 170866
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
9	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 79.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Medway Primacy: 1	A19NW (N)	925	5	563976 171122

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	Historical Landfill Sites Licence Holder: Not Supplied Location: Gravesend, Kent Name: Lewis Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD19358 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Deposited Waste included Inert and Household Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2200/7029 BGS Ref: Not Supplied Other Ref: GR10	A8NE (S)	617	2	563761 169593
11	Historical Landfill Sites Licence Holder: Not Supplied Location: Tollgate, Kent Name: Tollgate Stables Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD19344 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2200/7043 BGS Ref: Not Supplied Other Ref: GR9	A18NE (N)	706	2	563728 170957
	Local Authority Landfill Coverage Name: Gravesham Borough Council - Has no landfill data to supply		0	6	563642 170230
	Local Authority Landfill Coverage Name: Kent County Council - Had landfill data but passed it to the relevant environment agency		0	7	563642 170230
12	Potentially Infilled Land (Non-Water) Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1991	A13NW (N)	263	10	563535 170497
13	Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1981	A9NW (SE)	551	10	564025 169789
14	Potentially Infilled Land (Non-Water) Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1991	A14SW (E)	596	10	564240 170070
15	Potentially Infilled Land (Non-Water) Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1981	A8NE (S)	625	10	563804 169593
16	Potentially Infilled Land (Non-Water) Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1991	A17SE (NW)	846	10	562979 170805

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	A13NE (NE)	0	1	563642 170230
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil and Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	563642 170230
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A18NE (N)	745	1	563642 171000
17	BGS Recorded Mineral Sites Site Name: Istead Rise Chalkwell Location: Istead Rise, Gravesend, Kent Source: British Geological Survey, National Geoscience Information Service Reference: 220345 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cretaceous Geology: White Chalk Subgroup Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A13NW (NW)	225	1	563422 170362
18	BGS Recorded Mineral Sites Site Name: Frog'S Island Chalk Pit Location: Istead Rise, Gravesend, Kent Source: British Geological Survey, National Geoscience Information Service Reference: 131068 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cretaceous Geology: White Chalk Subgroup Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A13NW (N)	269	1	563537 170504
19	BGS Recorded Mineral Sites Site Name: Huntontdown Chalk Pit Location: Istead Rise, Gravesend, Kent Source: British Geological Survey, National Geoscience Information Service Reference: 131103 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Cretaceous Geology: White Chalk Subgroup Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	577	1	564039 169767