



Phase 1

Environmental Assessment Report

**Land Adj. Sea Breeze,
Marsh Road,
Gedney Drove,
End Spalding**

Date: 15th January 2024

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Document Verification

Site Address	Land Adj. Sea Breeze, Marsh Road, Gedney Drove, End Spalding		
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Executive Summary

The preliminary environmental site assessment indicates that the site can be classified as low risk in terms of contamination and the risks to the identified receptors (e.g., human health, controlled waters, buildings) following redevelopment is considered to be low.

During site preparation works, if any unexpected visual or olfactory evidence of contamination is encountered, it is recommended that the material is removed and stockpiled on site and advice is sought from a suitably qualified person (Environmental Consultant) on how to deal with the material. Testing of the material will be necessary to identify whether it is suitable for re-use on site or if it will have to be taken off-site for disposal.

In addition, to ensure that they do not come into contact with contaminated soils and groundwater, it is recommended that workers wear appropriate personal protective equipment (PPE) and that suitable Health and Safety procedures be adopted to ensure that ingestion of contaminated soils and groundwater is avoided (e.g., by washing hands prior to eating, drinking and smoking).

The site does lie within a Flood Zone 3 (high probability). The completion of a detailed Flood Risk Assessment is deemed necessary for this site.

Disclaimer

This report has been prepared by EnviroSolution Ltd who has exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant experienced in preparing reports of a similar scope.

However, to the extent that the report is based on or relies upon information contained in records, reports or other materials provided to EnviroSolution Ltd, which have not been independently produced or verified, EnviroSolution Ltd, gives no warranty, representation or assurance as to the accuracy or completeness of such information.

The scope of this report is restricted to potential ground contamination and its environmental impact; it does not cover above-ground hazards (e.g., asbestos in buildings), ecological sensitivities (e.g., bats), biological or horticultural hazards (e.g., Japanese Knotweed) or structural hazards (e.g., building stability) unless specifically referred to in the text of this report.

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1.1 Introduction

1.2 Background

EnviroSolution Ltd was commissioned to undertake a Phase 1 Environmental Site Assessment at a site located at Land Adj. Sea Breeze, Marsh Road, Gedney Drove, End Spalding. This report was commissioned to provide information on the potential contamination status of the site.

1.3 Objectives

The objective of the preliminary environmental site assessment was:

1. To provide a summary of the environmental setting and historical land use of the site and immediate surrounding area.
2. To obtain information on the ground conditions present beneath the site.
3. To develop a conceptual site model and complete a generic quantitative risk assessment to identify any environmental risks and liabilities associated with ground conditions at the site.

1.4 Scope of Work

To achieve the objectives, the following scope of work was completed:

1. A desk-based study of the site comprising a review of available environmental information for the site such as geological and hydrogeological data and historical land use information.
2. A site walkover.
3. Assessment of potential hazards and constraints during construction and longer term.

This work has been devised to generally comply with the relevant principles and requirements of the following legalisation and guidance:

- Part IIA of the Environmental Protection Act, 1990 and Section 57 of the Environmental Act 1995;
- Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, April 2012);
- National Planning Policy Framework (Ministry of Housing, Communities and Local Government, July 2021);
- BS10175: 2011 +A2:2017 “Investigation of Potentially Contaminated Sites- Code of Practice”; and
- Environment Agency (2020) Land Contamination Risk Management Report LCRM “How to assess and manage the risks from land contamination”.

1.5 Information Sources

Historical Ordnance Survey maps have been obtained from historical records, ranging from 1887 to 2024. These maps provide high quality information on historical site use.

The British Geological Survey Geoindex database has been used to provide information on geo-environmental aspects of the site and the immediate surrounding area such as geological, hydrogeological and hydrological data.

The Environment Agency website (www.gov.uk/government/organisations/environment-agency) and Magic website (www.magic.gov.uk) was also used to obtain environmental information.

Industry Profiles produced by the Department of the Environment were utilised to obtain information on processes, materials and wastes associated with potential contaminative land uses near the site.

Readily available information sources have been used to produce this desk-based study. Additional information may be requested by the Local Planning Authority (e.g., local authority environmental information request).

2 The Site

2.1 Site Location

The site is located at Land Adj. Sea Breeze, Marsh Road, Gedney Drove, End Spalding. The British National Grid Reference for the approximate site centre is GR: 546496, 329146.

The site location is shown on **Figure 1** in **Appendix A**.

2.2 Site Description

The site description has been prepared following a walkover survey conducted by EnviroSolution Ltd on the 9th of January 2024. The site photographs are included in **Appendix B**.

The site is rectangular in shape and covers an approximate area of 60 square metres. The site is slopes north to south with an approximate elevation of 5m to 3m aOD.

The site is opposite the junction with Marsh Lane, the site appears as waste farmland with a bungalow that borders the property to the right and a house borders the property to the left. The land is not fenced at the front but there is a wire fence at the rear of the land. There are a couple of trees at the front of the land and the rest of the land is made up of green vegetation. There is some old fencing at the front of the land and rubble. On first inspection the land is made up of waste grassland and no obvious signs of debris.

The surrounding land use is predominantly residential and agricultural.

There are no active petrol filling stations identified within a 250m radius of the site.

The existing site plan is shown on **Figure 2** which is included in **Appendix A**.

2.3 Development Proposals

The proposed development is for a proposed dwelling with a private garden. The planning application is through South Holland District Council Planning.

The proposed development plan is shown on **Figure 3** which is included in **Appendix A**.

2.4 Site History

The development site and surrounding area has been reviewed with reference to historical Ordnance Survey (OS) maps. The history of the site and immediate surrounding area is summarised in Table 1. Copies of the historical OS maps are included in **Appendix C**. A search buffer of 250m has been used.

Table 1 - Historic Mapping Review

Date	Scale	On Site	Off Site
1887-88	1:10,560	The site is occupied by agricultural fields.	The surrounding site is occupied by agricultural and residential dwellings.
1888	1:2,500	No significant change.	Smithy 230m northwest. Pond 250m southeast.
1904-05	1:2,500	No significant change.	Pond 200m northwest.
1905-06	1:10,560	No significant change.	No significant change.
1951-52	1:10,560	No significant change.	No significant change.
1956	1:10,000	No significant change.	No significant change.
1972	1:2,500	The site is occupied by a dwelling.	Further residential dwellings north and south of the site. Pond 200m northwest has been infilled and replaced with residential dwellings. Smithy has been removed. Garage 200m northwest. Works 250m northwest.
1973	1:10,000	No significant change.	No significant change.
1989	1:2,500	No significant change.	No significant change.
1994	1:2,500	No significant change.	No significant change.
2000	1:10,000	No significant change.	Drain 80m west from the site.
2024	1:10,000	The dwelling has been demolished.	Pond 250m southeast has been infilled.

*According to Google Maps, the dwelling has been demolished since 2010s and the pond 250m southeast has been infilled since the 2000s.

3 Environmental Setting

3.1 Geology

Geological maps of the area indicate that the site is underlain by superficial Tidal Flat Deposits, deposited during Quaternary Period. Tidal Flat Deposits consists of clay, silt, sand and silt and mud flat and sand flat deposits.

The underlying bedrock is the Ampthill Clay Formation, deposited during the Jurassic Period. The Ampthill Clay Formation consists of mudstone.

There are no records of geological faults located within a 1km radius of the site.

A borehole (Ref: TF42NE1) located 290m northeast of the site was obtained from BGS online records. The borehole penetrated 100m bgl and shows 20m of recent deposits including fine sand and till, underlain with chalk clay till and glacial deposits.

A copy of the geological maps is included in **Appendix D**. A copy of the BGS borehole log is included in **Appendix E**.

3.2 Radon

The site lies within the lowest band of radon potential where it is estimated that less than 1% of the properties are above the action level (low probability). Radon protective measures are not deemed necessary for the development.

3.3 Coal Mining Activity

The site does not fall within a Coal Mining Reporting Area described as having minable coal deposits and does not lie within a 'Development High Risk Area' for coal mining, as defined by the Coal Authority. As such, it is considered that there are no coal mining related hazards which could affect the site.

3.4 Hydrogeology

Geological maps of the area indicate that the northern part of the site is partially underlain by superficial Tidal Flat Deposits. The Tidal Flat Deposits are designated as an Unproductive Aquifer, defined as; rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

The underlying Ampthill Clay Formation is designated as an Unproductive Aquifer, defined as; rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

There are no groundwater abstraction licences located within a 1km radius of the site.

The site is not located within a Source Protection Zone within a 1km radius of the site.

A copy of the hydrogeological maps is included in **Appendix F**.

3.5 Hydrology

There are no significant surface water features (rivers, lakes or reservoirs) located within a 1km radius of the site.

There is a single minor surface water features located within a 1km radius of the site. A drain 80m west from the site.

3.6 Flood Risk

The site lies within a Flood Zone 3 (high probability), land assessed as having less than a 1 in 100 annual probability of river flooding (1%) in any year (high risk). The completion of a detailed Flood Risk Assessment is deemed necessary for this site.

A copy of the flood risk map is included in **Appendix G**.

3.7 Waste Management Facilities

There is a single Environment Agency record of historic landfill sites located within a 1km radius of the site and is summarised in Table 2.

Table 2 – Historic Landfill Sites

Landfill Site	Operation Dates	Waste Type	Distance from Site
Marsh Road	Unknown	Household	65m NW

There are no Environment Agency records of currently authorised landfill sites located within a 1km radius of the site.

There are no records of site operating under an environmental permit for waste operations within a 1km radius of the site.

3.8 Environmental Permits, Incidents and Registers

There are 2 no. records of sites located within a 1km radius of the development site operating under an environmental permit for discharges to water and groundwater and are summarised in Table 3.

Table 3 – Environmental Permits for Discharges to water and groundwater.

Permit Holder Name	Site Name	Site Type	Start Date	Distance
ANGLIAN WATER SERVICES LIMITED	GEDNEY DROVE END STW	WwTW/Sewage Treatment Works (water company)	1995	400m NW
J E PICCAVER & CO	ONSLOW FARM	Domestic property (single) (incl farm house)	1998	700m SE

There are no records of pollution incidents recorded by the Environment Agency having occurred within a 1km radius of the site.

There are no records of sites located within a 1km radius of the development site operating under an environmental installation permit recorded by the Environment Agency.

3.9 Designated Environmentally Sensitive Sites

There is a single record of a designated environmentally sensitive sites located within a 1km radius of the site are summarised in Table 4 and shown on plans included in **Appendix I**.

Table 4 – Environmental Designations Summary

Designation	Distance	Details
Ramsar Sites (England)	815m NE	The Wash is located 815m northeast of the site.
Sites of Special Scientific Units (England)	815m NE	The Wash is located 815m northeast of the site.
Special Areas of Conservation (England)	815m NE	The Wash is located 815m northeast of the site.
Special Protection Areas (England)	815m NE	The Wash is located 815m northeast of the site.

4 Preliminary Conceptual Site Model

4.1 Introduction

In order to assess the environmental risks, present, a preliminary conceptual model has been developed for the site. This model has been developed using best practice guidelines in conjunction with the current assessment framework taking into account the development proposals. This preliminary conceptual model is based on the gathered desk-based information (e.g., historical OS data and data sourced from the EA, Geoindex and Magic databases).

The conceptual site model is a representation of the hypothesised relationships between sources, pathways and receptors which allows the identification of potential pollutant linkages and whether these linkages have the potential to comprise significant harm and/or pollution of controlled waters in relation to the site. This model comprises three elements:

Source – the key pollutant hazards associated with the site.

Receptor – the key targets at risk from the sources.

Pathway – the means by which the contaminant can cause harm to the receptor.

If all three elements are present, then a potential pollutant linkage exists, and this may require further assessment.

4.2 Potential Contamination Sources

The site has been occupied by a dwelling since 1970s and appears to be demolished before the 2010s. This land use is not likely to have contaminated the shallow soils beneath the site.

A number of off-site land uses have been identified in the surrounding area that have the potential to contaminate the shallow soils at the site. The land use and its associated contaminants are summarised in Table 5 below:

Table 5 – Off-Site Land Use Summary

Land Use	Potential Contaminants
Garage	Heavy metals, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), solvents.
Historic Landfill Sites	Table 2.
Pond infilled	Ground gases (carbon dioxide and methane)

Land Use	Potential Contaminants
Smithy	Heavy metals, polyaromatic hydrocarbons and polychlorinated biphenyls (PCBs)
Works	Heavy metals, inorganic compounds, acids/alkalis, asbestos, polychlorinated biphenyls (PCBs), organic solvents, halogenated compounds, mineral oils.

It is considered that the above land uses can be discounted as potential sources of contamination to the site due to the distance from the site (>65m) and the presence of impermeable superficial deposits which will act as an impermeable barrier, preventing the migration of any pollutants to the site and preventing the migration of any ground gases to the site.

4.3 Receptors

The potential receptors considered to be at risk from soil and groundwater contamination associated with the site are summarised in Table 6 below:

Table 6 - Receptor Description

Receptor	Details
Human (On Site)	- Construction workers - Future site users - Site visitors
Human (Off Site)	- Adjacent site users
Controlled Waters	- Unproductive Aquifer - Drains
Building/ construction materials	- Foundations - Buried services
Environmental Receptors	- Ramsar Sites (England) - Sites of Special Scientific Units (England) - Special Areas of Conservation (England) - Special Protection Areas (England)

4.4 Pathways

The potential exposure pathways linking contamination with the receptors identified above are summarised in Table 7 below:

Table 7 - Exposure Pathways Summary

Receptor	Details of Exposure Pathway
Human (on-site)	- Direct ingestion of contaminated soil/groundwater - Dermal contact with soil/groundwater - Inhalation of gases and vapours
Human (off-site)	- Inhalation of fibres and particulates - Inhalation of migrating gases and vapours
Controlled waters	- Vertical and lateral migration of dissolved phase contaminants via preferential pathways to groundwater aquifers - Direct surface water run-off to surface water features
Building/construction	- Buried materials/services - Contact with contaminated soil and/or groundwater

4.5 Potential Pollution Linkages

4.5.1 Human Health

The proposed development is for a proposed dwelling with a private garden. The planning application is through South Holland District Council Planning. There are formal plans for landscaping. This is considered to be a sensitive end-use.

The presence of buildings and hardstanding would eliminate the risk of exposure, via the dermal contact and ingestion pathways to future site users to any ground contamination that may remain following development.

There could be a potential risk of exposure to any ground contamination that remains following redevelopment in any areas of soft landscaping (i.e. gardens), to future site users, via all possible exposure pathways.

Any ground gases (i.e., methane and carbon dioxide) and vapours that are present within the soils beneath the site could potentially ingress into the existing buildings through preferential pathways (e.g., service entry points). Therefore, there would be a risk of exposure via inhalation to future site users.

There is the potential for construction workers and adjacent land users to be exposed to soil and groundwater contamination during site redevelopment. However, the use of appropriate PPE and the adoption of suitable Health and Safety methods will help to reduce the risks posed to human health during this work.

4.5.2 Controlled Waters

The site is directly underlain by the superficial Tidal Flat Deposits which are designated as an Unproductive Aquifer and therefore, it would be considered that it will act as an impermeable barrier, preventing the migration of contaminants to the underlying aquifer.

There are no groundwater abstraction licences located within a 1km radius of the site.

The site is not located within a Source Protection Zone within a 1km radius of the site.

There are no significant surface water features (rivers, lakes or reservoirs) located within a 1km radius of the site.

There is a single minor surface water features located within a 1km radius of the site. A drain 80m west from the site. Migration of pollutants via direct surface water run-off is deemed possible. However, they are considered low sensitivity water receptors.

The site does lie within a Flood Zone 3 (high probability). The completion of a detailed Flood Risk Assessment is deemed necessary for this site.

Overall, the risk to controlled waters is deemed to be moderate.

4.5.3 Building/Construction Materials/Buried Services

The presence of any soil and groundwater contaminants beneath the site could potentially impact on construction materials for future new developments, such as below ground structures and services. Concrete foundations are particularly sensitive to aggressive ground conditions, i.e., sulphate attack.

If ground gases and vapour are present in the soil beneath the site, then there would be the potential risk of ingress into the properties which could present a risk of explosion.

4.6 Environmental Designations

The proposed development is not considered to pose a risk to the identified environmental receptors.

4.7 Preliminary Hazard Assessment

A preliminary hazard assessment is presented in Table 8. The preliminary hazard assessment is a qualitative assessment of the risks posed by each potential pollutant linkage described above and is used to identify the requirement for additional work (e.g., intrusive ground investigation).

Table 9 – Preliminary Hazard Assessment

Source 1	Pathway	Receptor	Likelihood	Effect	Risk	Assessment
Contaminated soil	Ingestion (via soil dust), inhalation (via soil dust and vapours), ingestion through dirty hands, dermal contact with soil/water.	Future site users Adjacent site users Construction workers	1	3	Low	No on-site contamination source potential identified. Impermeable superficial deposits will limit the migration of off-site contaminations to the site.
Contaminated soil groundwater	Direct contact	Buildings/ services	1	3	Low	No on site contamination source potential identified.
Contaminated groundwater	Downward or lateral migration Surface water run-off	Unproductive Aquifer Drains	1	3	Low	The site does not lie within a Source Protection Zone. There are no sensitive groundwater abstraction licences located nearby. The potential migration of pollutants via water run-off is to low sensitivity receptors. The site does lie within a Flood Zone 3 (high probability). The completion of a detailed Flood Risk Assessment is deemed necessary for this site.

Source 1	Pathway	Receptor	Likelihood	Effect	Risk	Assessment
Ground gas / vapours Radon	Inhalation, ingress into buildings	Buildings / services Future site users Adjacent site users Construction workers	1	3	Low	No significant ground gas or vapours source identified. Site lies within a low probability area for radon.

Using Risk Matrix (Table 9) Degree of Risk (R) = Likelihood (L) x Effect (E)

Table 9 - Risk Matrix, Degree of Risk (R) = Likelihood (L) x Effect (E)

Likelihood	Description	Probability	Effect (E)	Description
5	Almost certain	>70%		
4	Probable	50-70%	4	Severe
3	Likely	30-50%	3	Medium
2	Unlikely	10-30%	2	Mild
1	Negligible	<10%	1	Minor
Risk (R)	Risk Level	Action		
1-5	Low	None required		
6-10	Moderate	Further assessment via Phase 2 intrusive ground investigation.		
>10	High	Further assessment via Phase 2 intrusive ground investigation.		

5 Conclusions and Recommendations

The preliminary environmental site assessment indicates that the site can be classified as low risk in terms of contamination and the risks to the identified receptors (e.g., human health, controlled waters, buildings) following redevelopment is considered to be low.

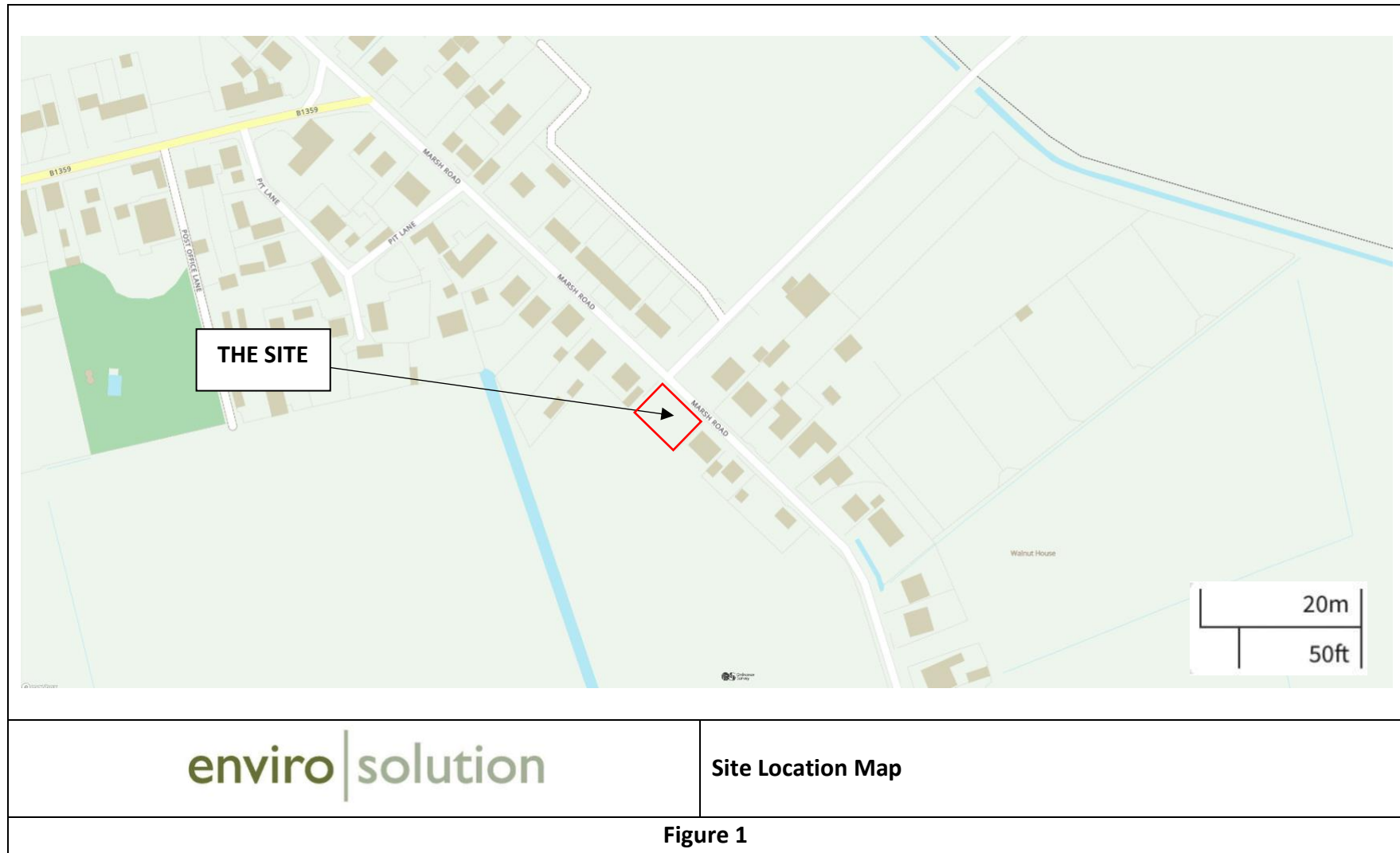
During site preparation works, if any unexpected visual or olfactory evidence of contamination is encountered, it is recommended that the material is removed and stockpiled on site and advice is sought from a suitably qualified person (Environmental Consultant) on how to deal with the material. Testing of the material will be necessary to identify whether it is suitable for re-use on site or if it will have to be taken off-site for disposal.

In addition, to ensure that they do not come into contact with contaminated soils and groundwater, it is recommended that workers wear appropriate personal protective equipment (PPE) and that suitable Health and Safety procedures be adopted to ensure that ingestion of contaminated soils and groundwater is avoided (e.g., by washing hands prior to eating, drinking and smoking).

The site does lie within a Flood Zone 3 (high probability). The completion of a detailed Flood Risk Assessment is deemed necessary for this site.

APPENDICES

Appendix A – Site Location and Site Plan





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Existing Site Plan

Figure 2



Appendix B – Site Photographs



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Centre of site stood at Marsh Lane Junction.



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Looking a rear of site - fenced boundary



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Debris on site by road



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Rear of site - telegraph poles maybe on
site



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Rear of site



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Site from Marsh Lane Junction right
boundary



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Site Marsh Lane Junction left boundary



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Stood on site looking at left boundary



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Trees & Debris towards left boundary



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Vegetation on site

Appendix C – Historic Maps

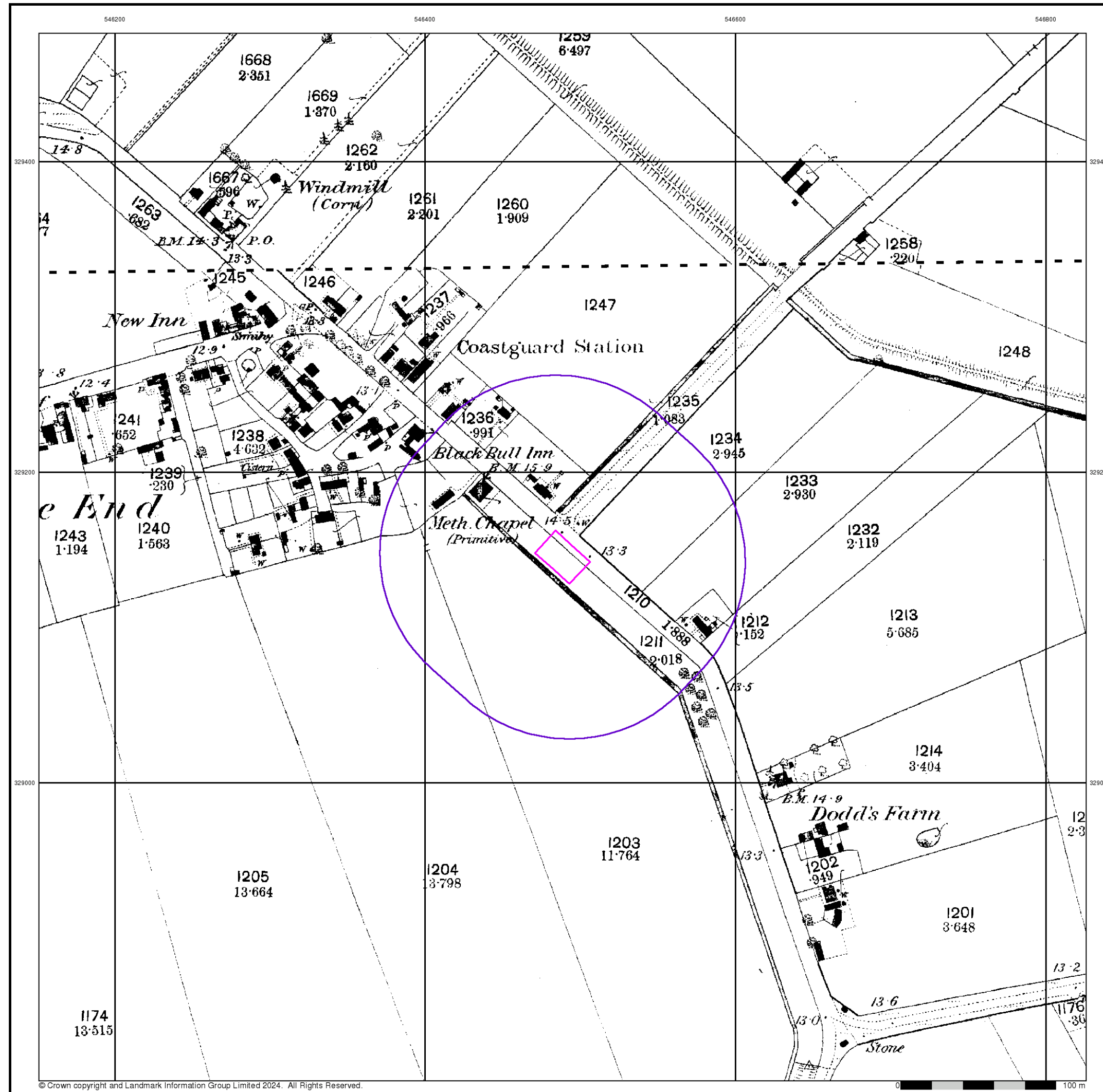
Ordinance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

	Quarry		Gravel Pit		Sand Pit
	Clay Pit		Shingle		Refuse Heap
	Sloping Masonry		Flat Rock		
	Marsh		Reeds		Osiers
	Rough Pasture		Furze		Wood
	Mixed Wood		Brushwood		Orchard
	Fir		Ford		Stepping Stones
	Ferry		Waterfall		Lock
	Trig. Station	507		Altitude at Trig. Station	
B.M. 325.9	Bench Mark	342		Surface Level	
	Arrow denotes flow of water		Antiquities (site of)		
	Cutting		Embankment		
	Railway crossing Road		Level Crossing		Road crossing Railway
	Railway crossing River or Canal		Road over single stream		Road over River or Canal
-----	County Boundary (Geographical)				
- . - . - .	County & Civil Parish Boundary				
+ . + . + .	Administrative County & Civil Parish Boundary				
Co. Boro. Bdy.	County Borough Boundary (England)				
Co. Burgh Bdy.	County Burgh Boundary (Scotland)				
B.P.	Boundary Post or Stone	P.C.B.	Police Call Box		
B.R.	Bridle Road	P	Pump		
E.P.	Electricity Pylon	S.P.	Signal Post		
F.B.	Foot Bridge	Sl.	Sluice		
F.P.	Foot Path	Sp.	Spring		
G.P.	Guide Post or Board	T.C.B.	Telephone Call Box		
M.S.	Mile Stone	Tr.	Trough		
M.P. M.R.	Mooring Post or Ring	W	Well		

	Inactive Quarry, Chalk Pit or Clay Pit		Active Quarry, Chalk Pit or Clay Pit
	Rock		Boulders
	Cliff		Slopes
	Roofed Building		Glazed Roof Building
	Sloping Masonry		Archway
	Non-Coniferous Tree (surveyed)		Coniferous Tree (surveyed)
	Non-Coniferous Trees (not surveyed)		Coniferous Trees (not surveyed)
	Orchard Tree		Scrub
	Coppice, Osier		Reeds
	Rough Grassland		Heath
	Direction of water flow		Bench Mark
	Cave Entrance		Triangulation Station
	Electricity Transmission Line		Antiquity (site of)
	County Boundary (Geographical)		Electricity Pylon
	County & Civil Parish Boundary		Symbol marking point where boundary mereing changes
	Civil Parish Boundary		
	Admin. County or County Bor. Boundary		
	London Borough Boundary		
BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

	Cliff		Slopes		Top
	Rock		Rock (scattered)		Boulders (scattered)
	Boulders		Scree		Non-Coniferous Tree (surveyed)
	Positioned Boulder		Coniferous Tree (surveyed)		Non-Coniferous Trees (not surveyed)
	Orchard Tree		Scrub		Coniferous Trees (not surveyed)
	Coppice, Osier		Bracken		Reeds
	Rough Grassland		Marsh, Saltings		Heath
	Direction of water flow		Culvert		Triangulation Station
	Electricity Transmission Line		Antiquity (site of)		Electricity Pylon
	Bench Mark		Buildings with Building Seed		Roofed Building
	Glazed Roof Building		Civil parish/community boundary		District boundary
	Boundary post/stone		County boundary		Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks	Barracks	P	Pillar, Pole or Post		
Bty	Battery	PO	Post Office		
Cemy	Cemetery	PC	Public Convenience		
Chy	Chimney	Pp	Pump		
Cis	Cistern	Ppg Sta	Pumping Station		
Dismtd Rly	Dismantled Railway	PW	Place of Worship		
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station		
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge		
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light		
FB	Filter Bed	Spr	Spring		
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track		
Gas Gov	Gas Valve Compound	Tr	Trough		
GVC	Gas Governor	Wd Pp	Wind Pump		
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap		
MH	Manhole	Wks	Works (building or area)		
MP, MS	Mile Post or Mile Stone	W	Well		

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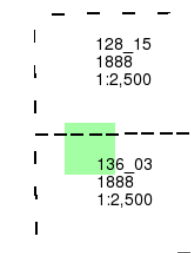
Lincolnshire

Published 1888

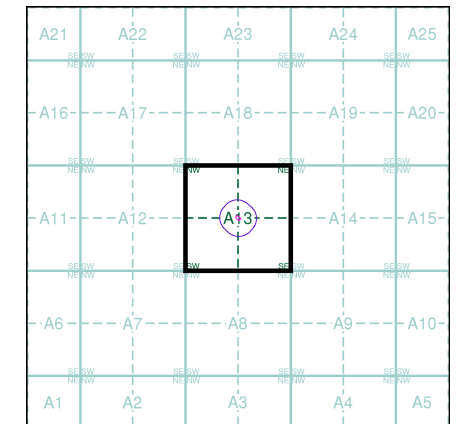
Source map scale - 1:2,500

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

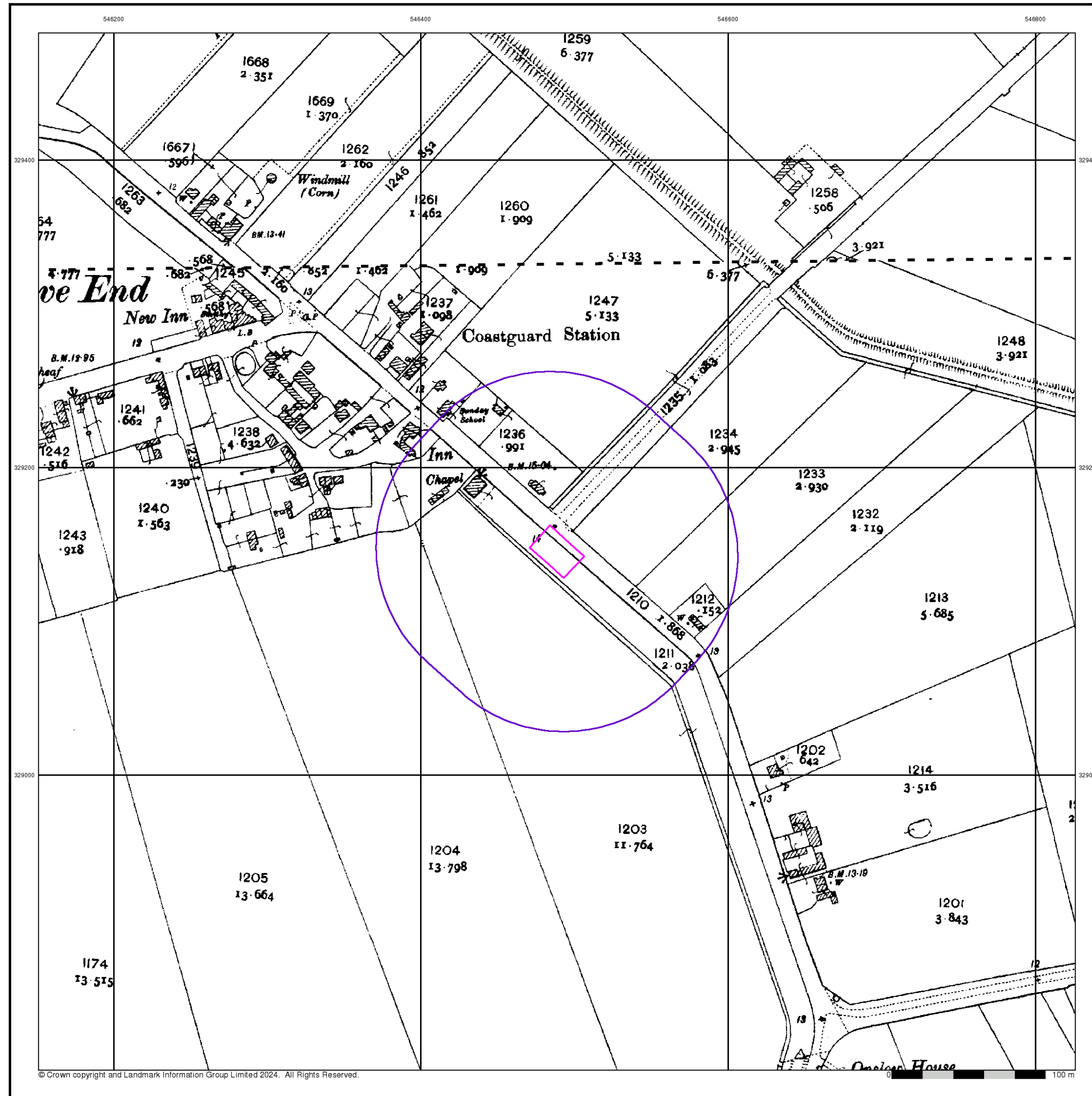


Order Details

Order Number: 331055149_1_1
Customer Ref: ES120124
National Grid Reference: 546490, 329150
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 100

Site Details

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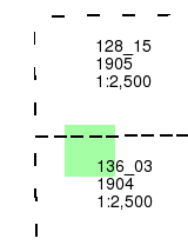
Lincolnshire

Published 1904 - 1905

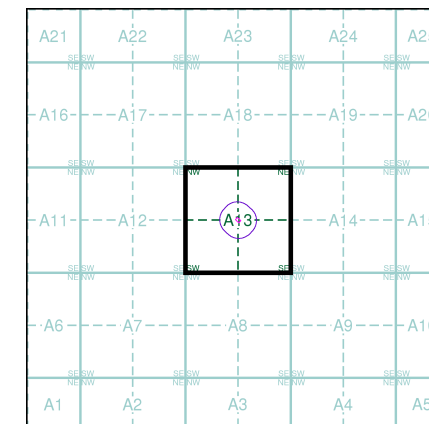
Source map scale - 1:2,500

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

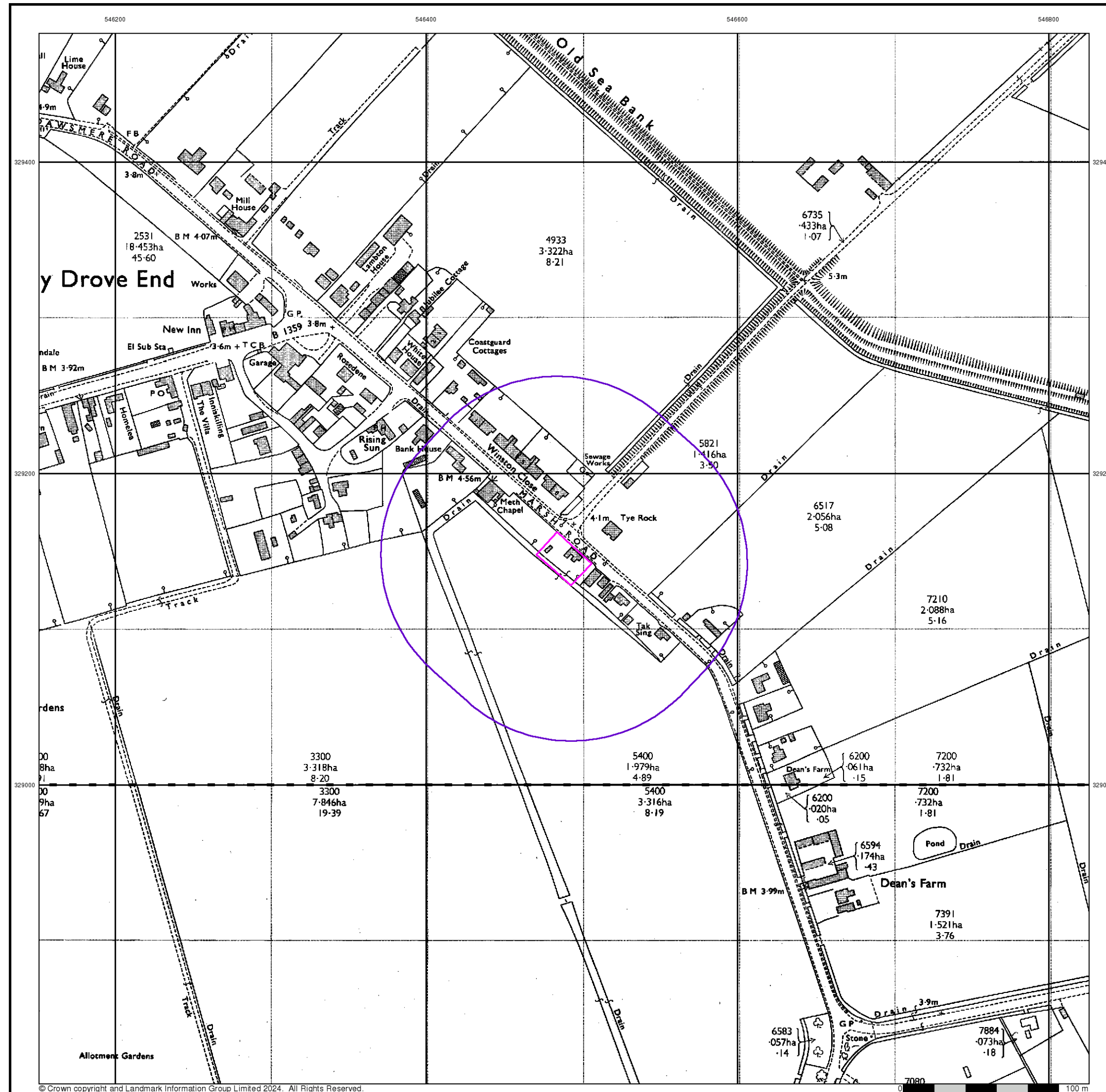
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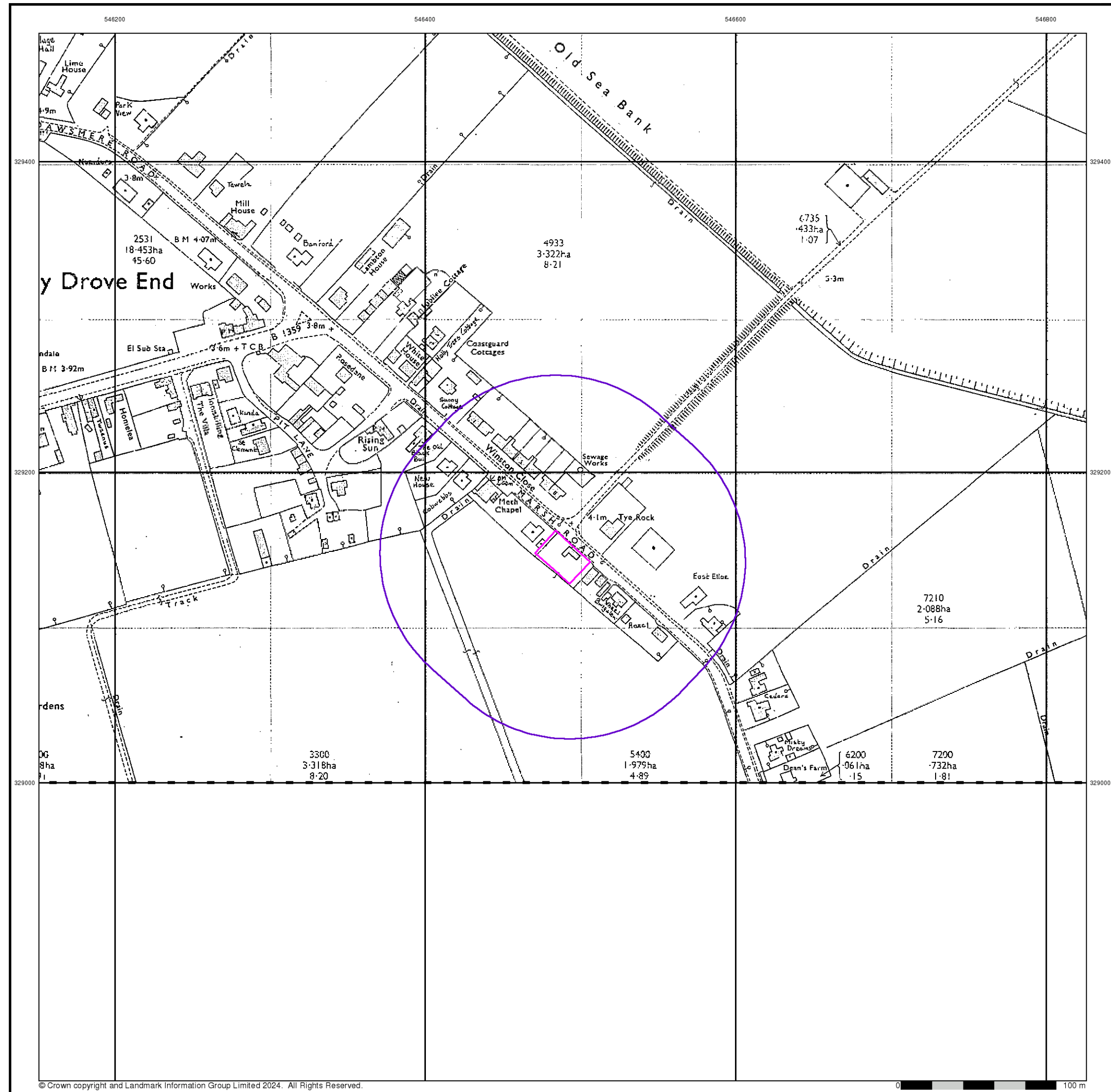
Site Details

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Additional SIMs

Published 1989

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)

TF4629
1989
1:2,500

Historical Map - Segment A13

A21	A22	A23	A24	A25
A16	A17	A18	A19	A20
A11	A12	A13	A14	A15
A6	A7	A8	A9	A10
A1	A2	A3	A4	A5

Order Details

Order Number:	331055149_1_1
Customer Ref:	ES120124
National Grid Reference:	546490, 329150
Slice:	A
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Search Buffer (m):	100

Site Details

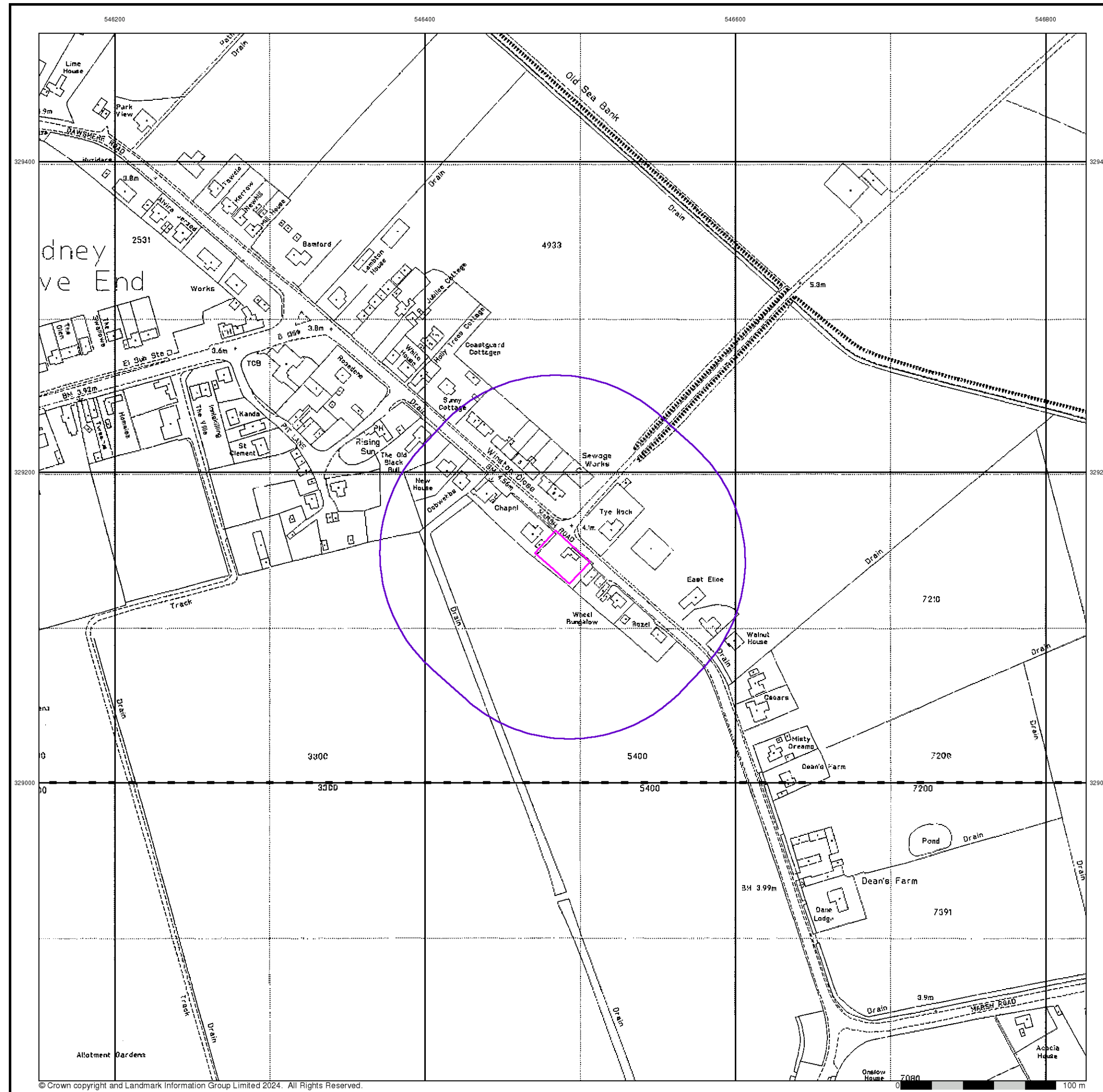
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Large-Scale National Grid Data

Published 1994

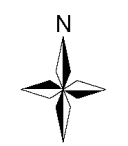
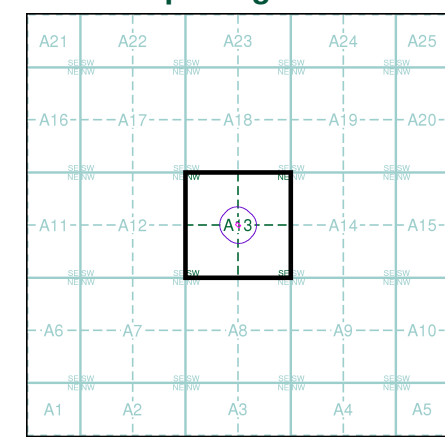
Source map scale - 1:2,500

'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)

TF4629	1994	1:2,500
TF4628	1994	1:2,500

Historical Map - Segment A13



Order Details

Order Number: 331055149_1_1
Customer Ref: ES120124
National Grid Reference: 546490, 329150
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 100

Site Details

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

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

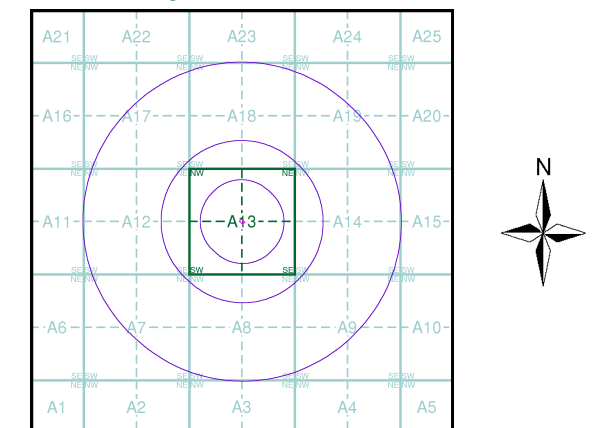
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lincolnshire	1:10,560	1887 - 1888	2
Lincolnshire	1:10,560	1905 - 1906	3
Lincolnshire	1:10,560	1905 - 1906	4
Lincolnshire	1:10,560	1951 - 1952	5
Ordnance Survey Plan	1:10,000	1956	6
Ordnance Survey Plan	1:10,000	1973	7
10K Raster Mapping	1:10,000	2000	8
Street View	Variable		9

Historical Map - Slice A



Order Details

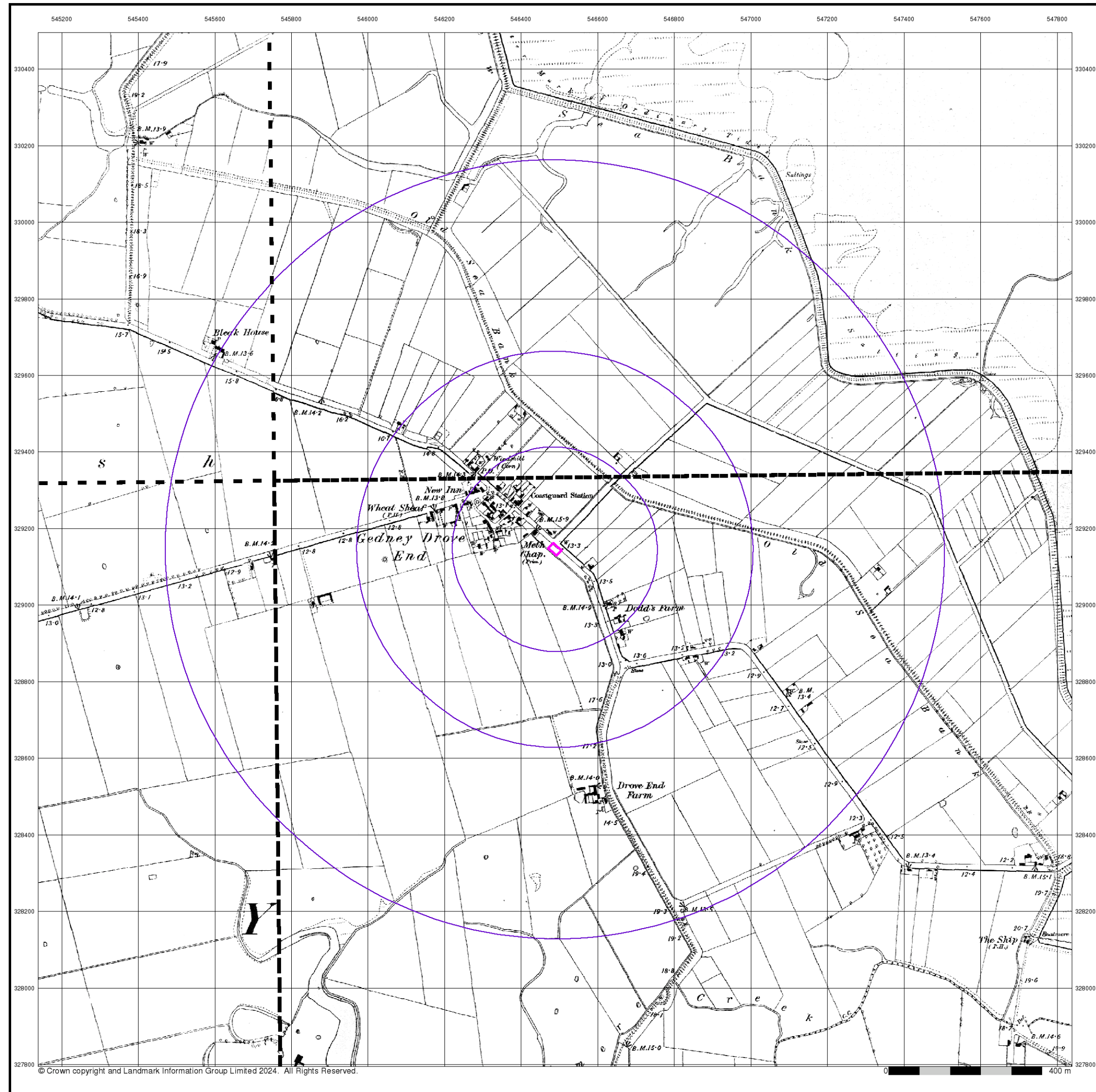
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Customer Ref: ES120124
National Grid Reference: 546490, 329150
Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

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Lincolnshire

Published 1887 - 1888

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)

128SW 1888 1:10,560	128SE 1888 1:10,560
136NW 1887 1:10,560	136NE 1887 1:10,560

Historical Map - Slice A

Order Details

Order Number:	331055149_1_1
Customer Ref:	ES120124
National Grid Reference:	546490, 329150
Slice:	A
Site Area (Ha):	0.06
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Site Details

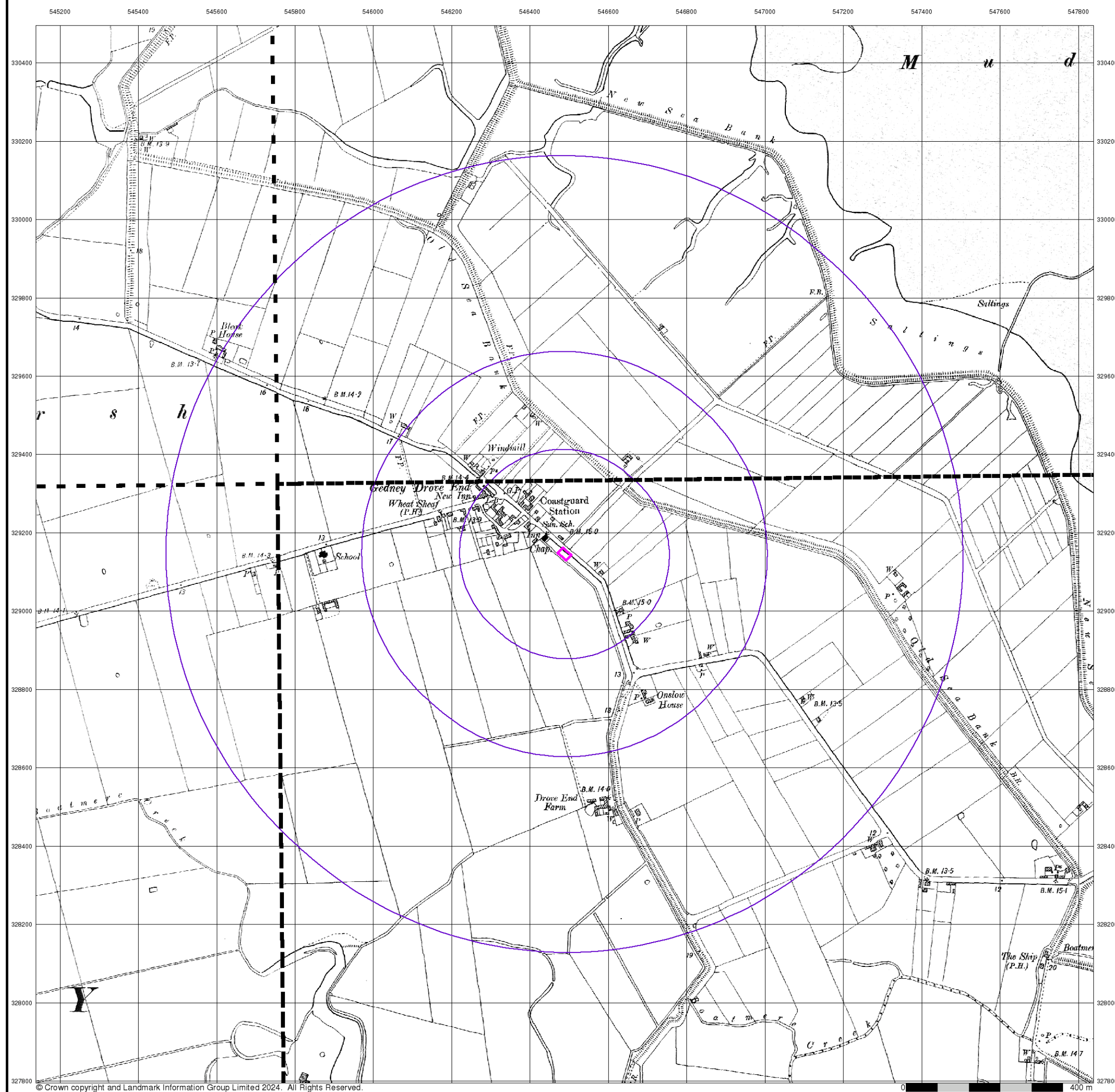
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Lincolnshire

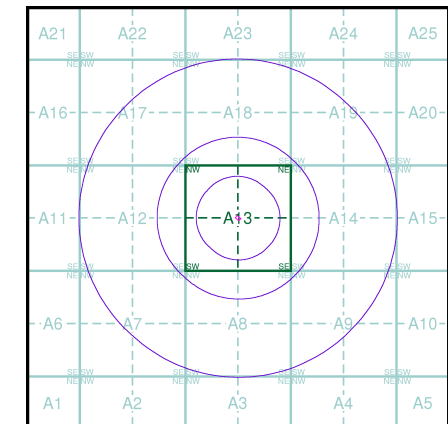
Published 1905 - 1906

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

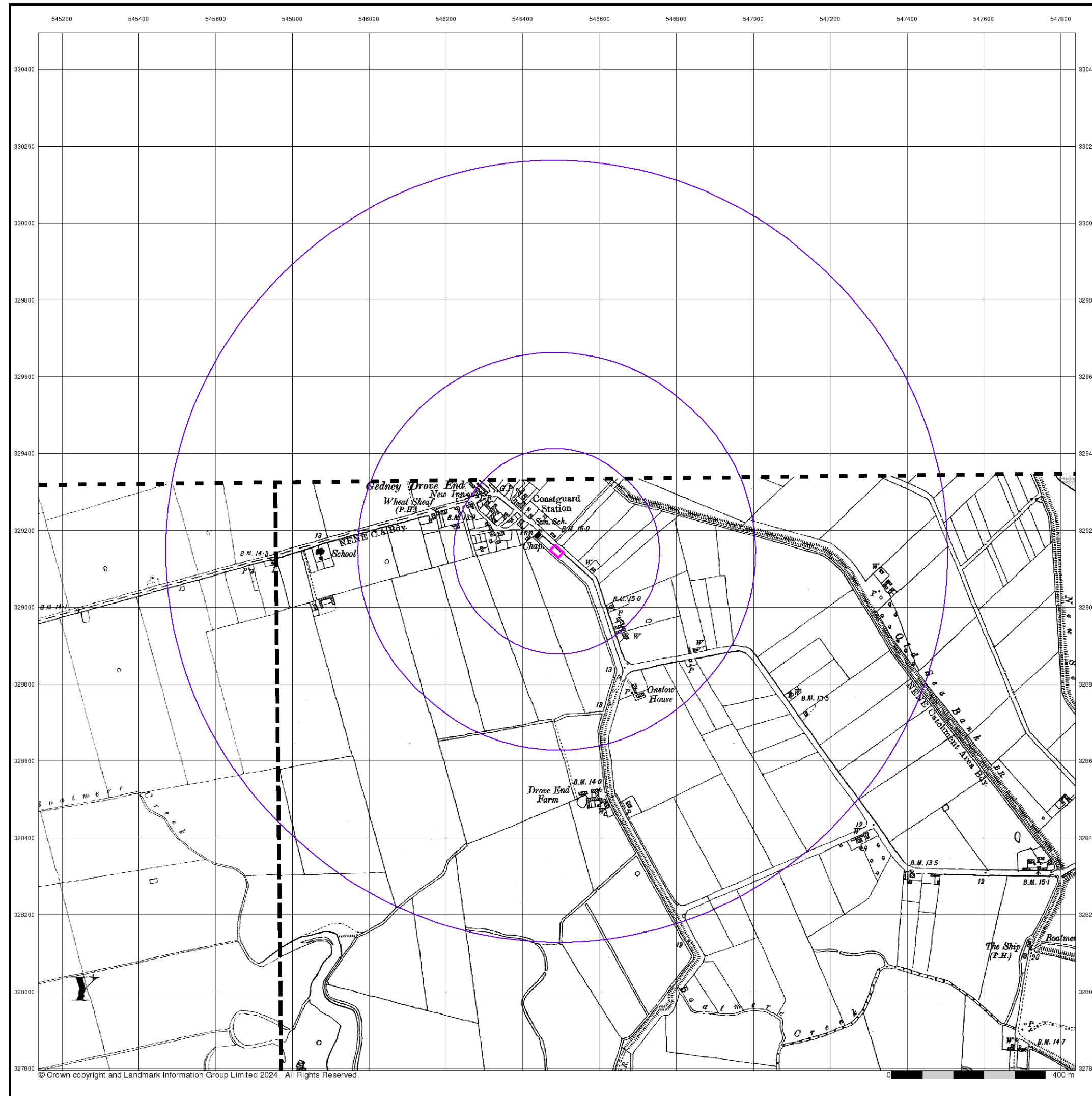
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Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

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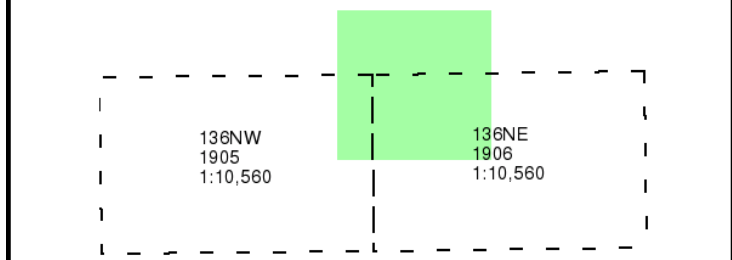
Lincolnshire

Published 1905 - 1906

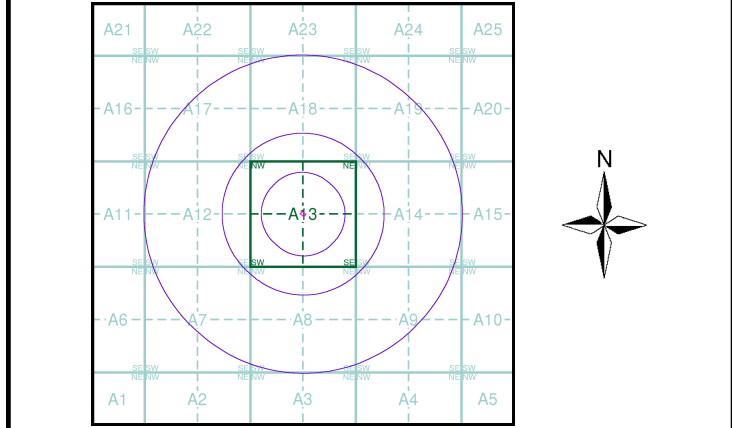
Source map scale - 1:10,560

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

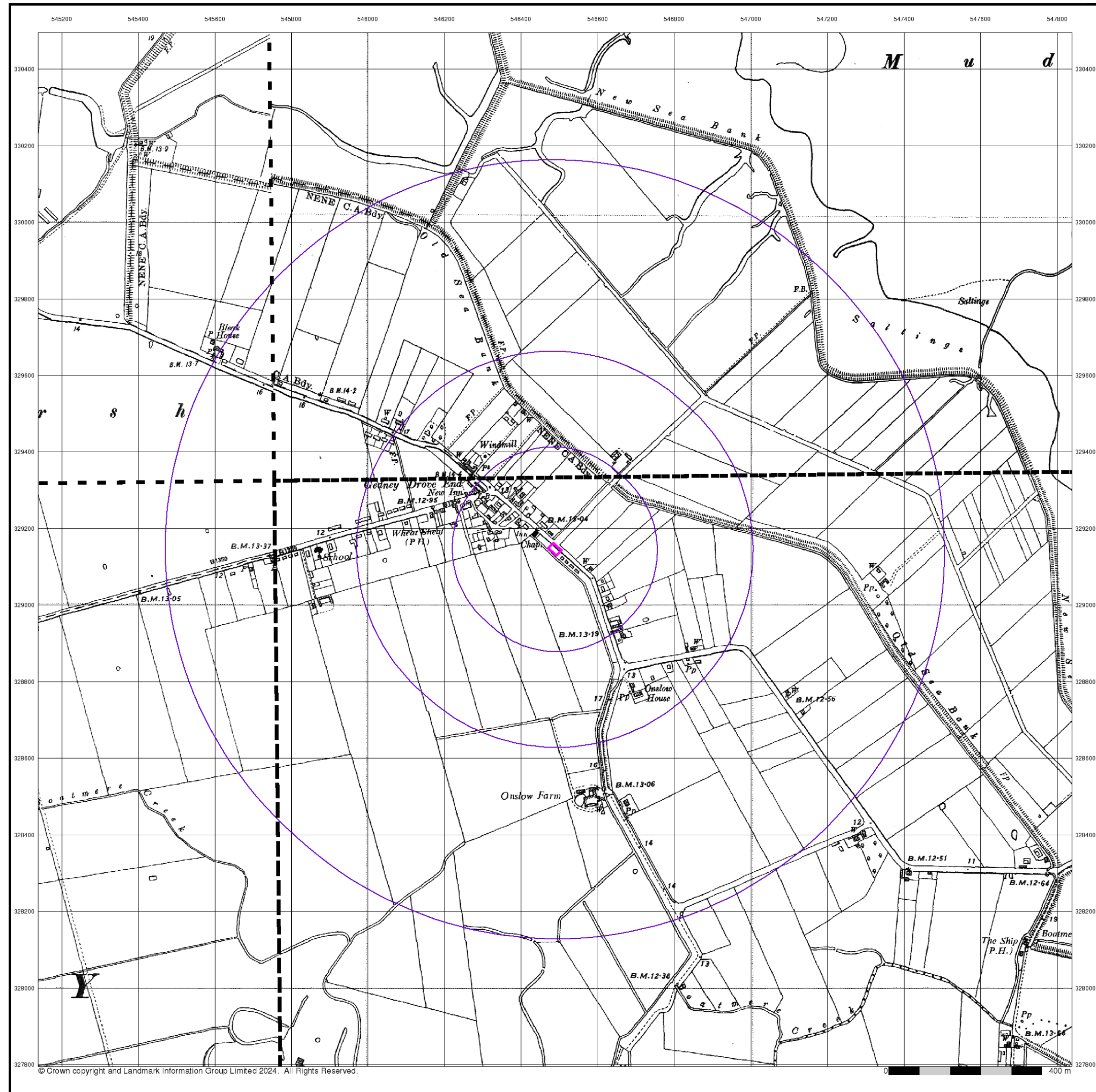


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National Grid Reference:	546490, 329150
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Search Buffer (m):	1000

Site Details

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Lincolnshire

Published 1951 - 1952

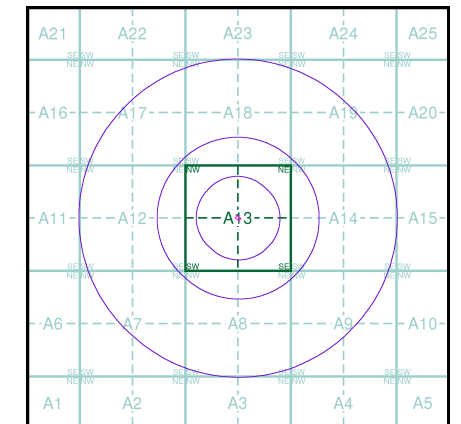
Source map scale - 1:10,560

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)

128SW 1951 1:10,560	128SE 1951 1:10,560
136NW 1952 1:10,560	136NE 1952 1:10,560

Historical Map - Slice A

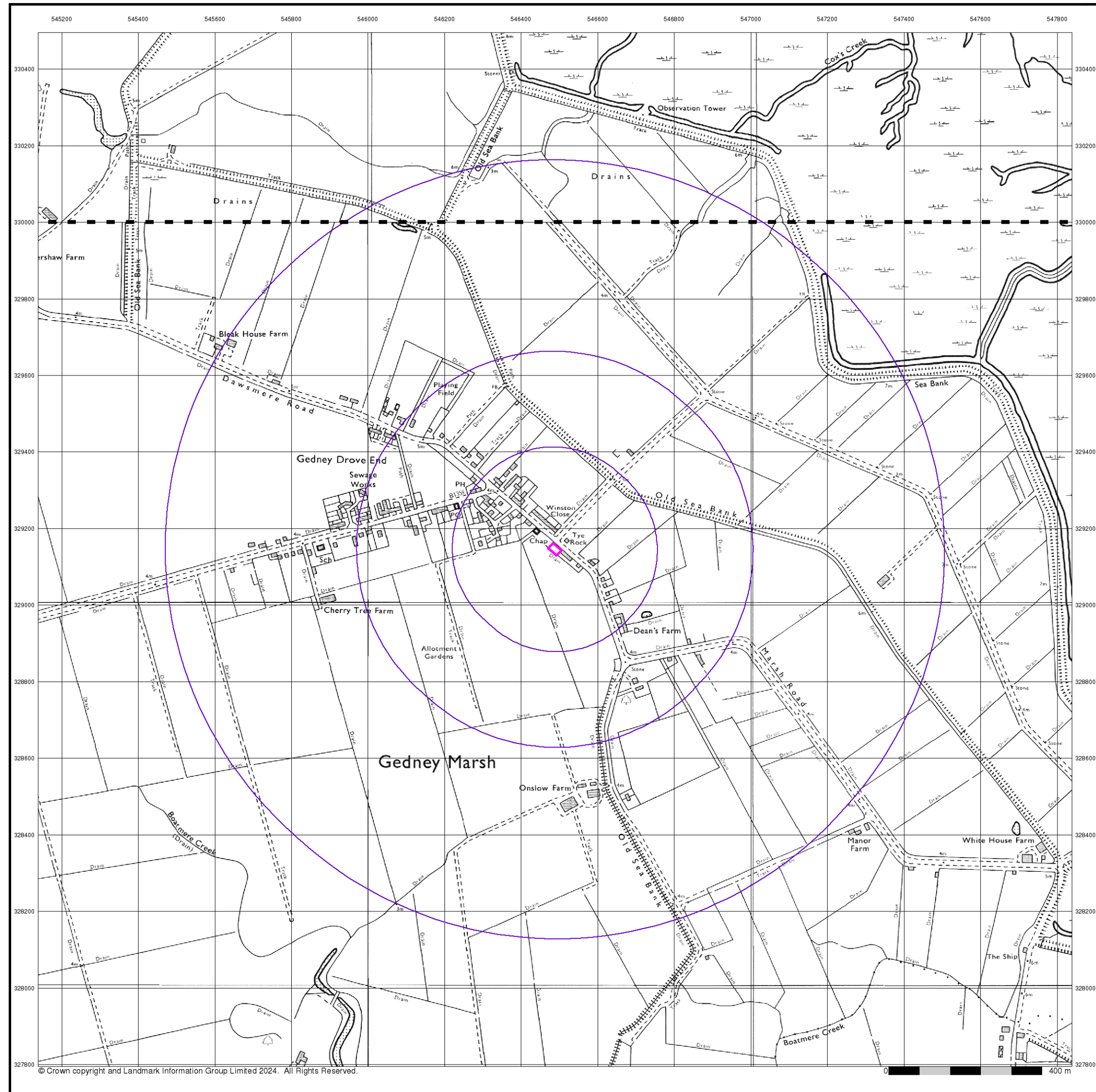


Order Details

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Site Area (Ha): 0.06
Search Buffer (m): 1000

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Ordnance Survey Plan

Published 1973

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)

TF43SE	1973	1:10,000
TF42NE	1973	1:10,000

Historical Map - Slice A

Order Details

Order Number:	331055149_1_1
Customer Ref:	ES120124
National Grid Reference:	546490, 329150
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Site Details

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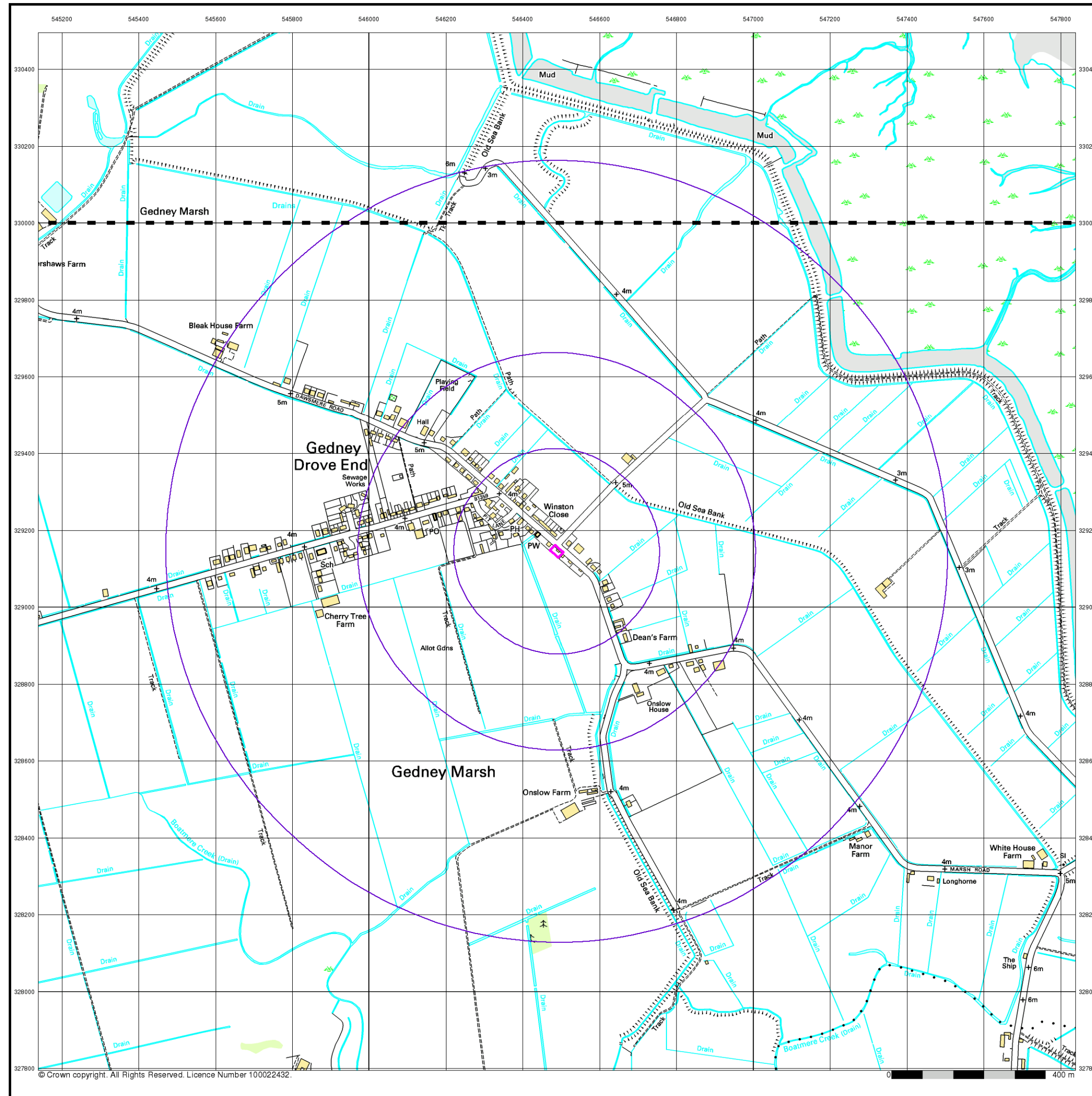
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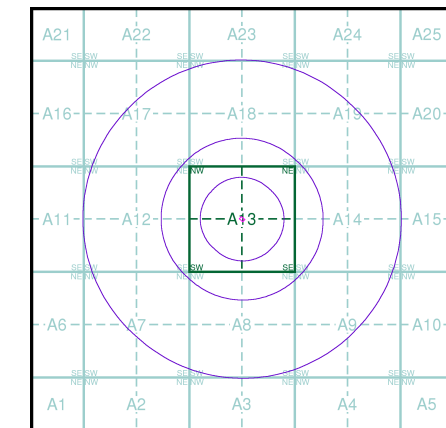
10k Raster Mapping
Published 2000
Source map scale - 1:10,000

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)

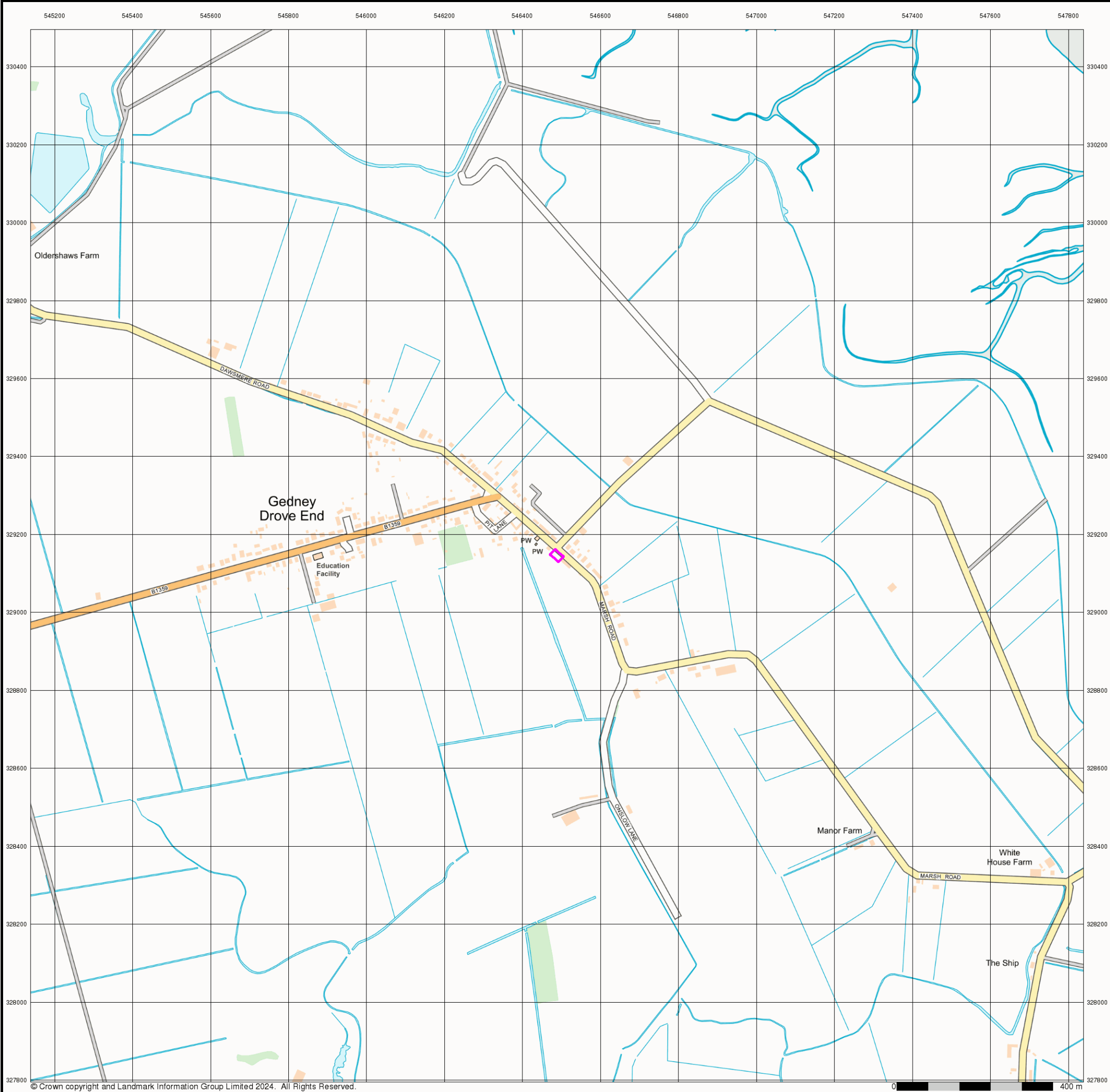
TF43SE	2000	1:10,000
TF42NE	2000	1:10,000

Historical Map - Slice A



Order Details
Order Number: 331055149_1_1
Customer Ref: ES120124
National Grid Reference: 546490, 329150
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Search Buffer (m): 1000

Site Details
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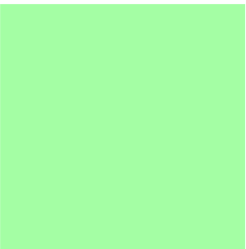
Street View

Published 2024

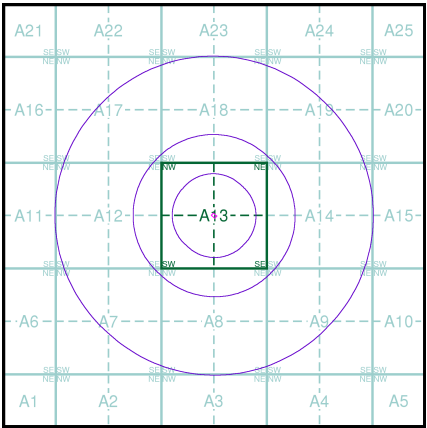
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Street View Map - Slice A



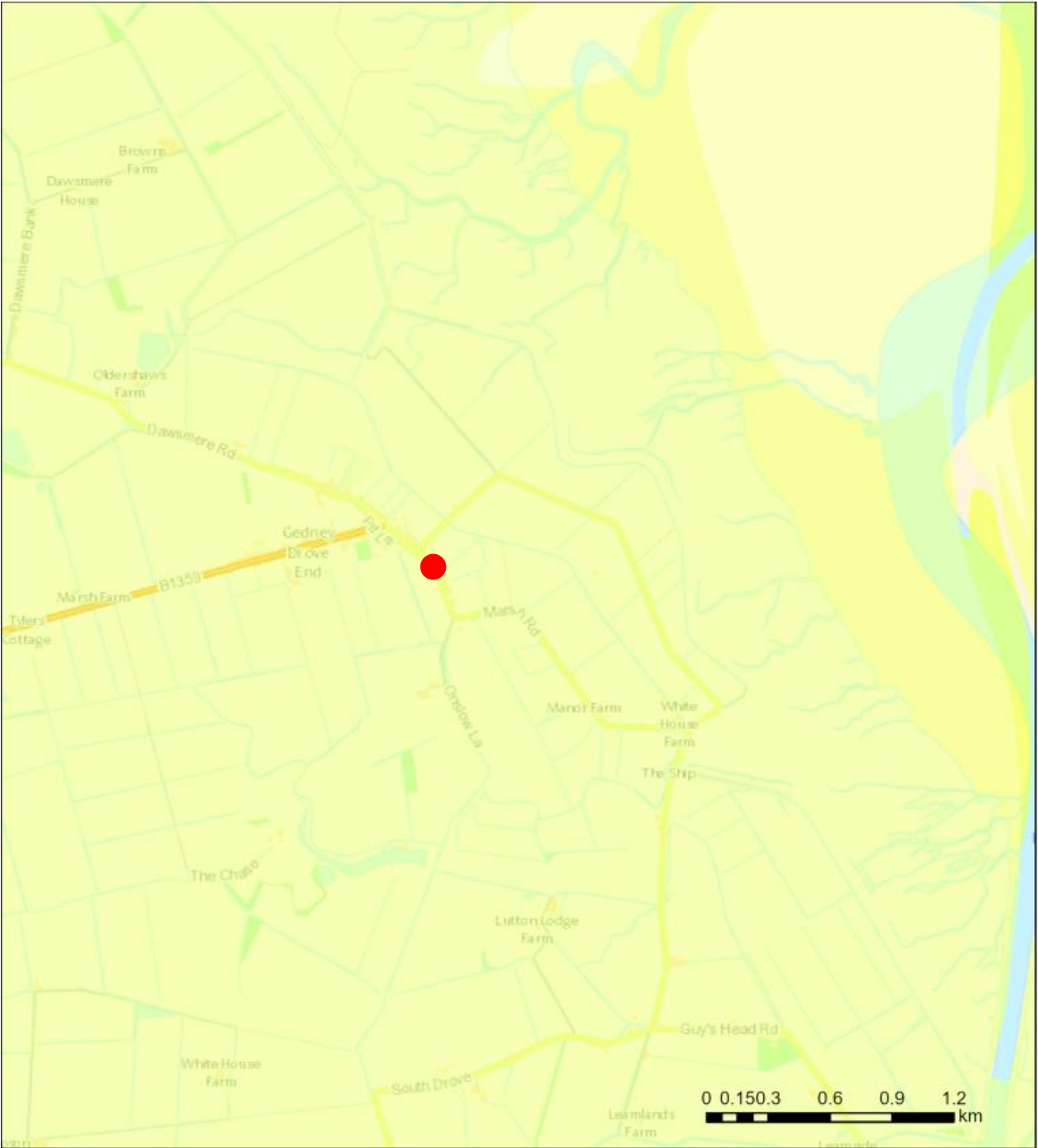
Order Details

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Slice: A
Site Area (Ha): 0.06
Search Buffer (m): 1000

Site Details

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Appendix D – Geological Maps



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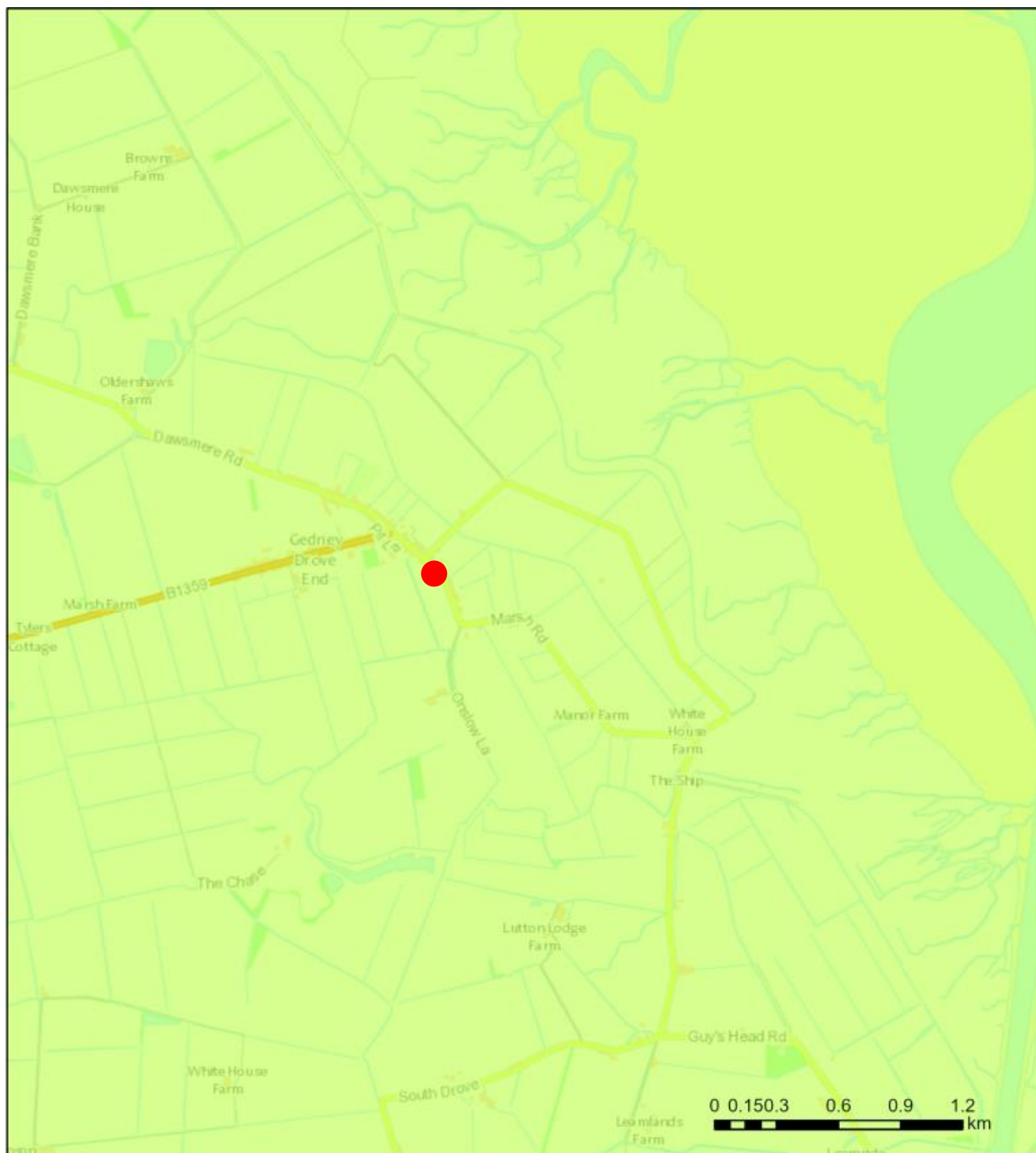
Superficial Geology

Superficial deposits 1:50,000 scale

-  INTERTIDAL DEPOSITS (UNDIFFERENTIATED) - SAND, SILT AND CLAY
-  TIDAL FLAT DEPOSITS - CLAY AND SILT
-  TIDAL FLAT DEPOSITS - CLAY, SILT AND SAND
-  TIDAL FLAT DEPOSITS - SAND, SILT AND CLAY
-  BANK DEPOSITS - SAND

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Superficial Geology Key



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Bedrock Geology

Bedrock geology 1:50,000 scale



AMPTHILL CLAY FORMATION - MUDSTONE



KIMMERIDGE CLAY FORMATION - MUDSTONE

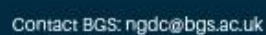
Linear features 1:50,000 scale

— **Cementstone_bed**

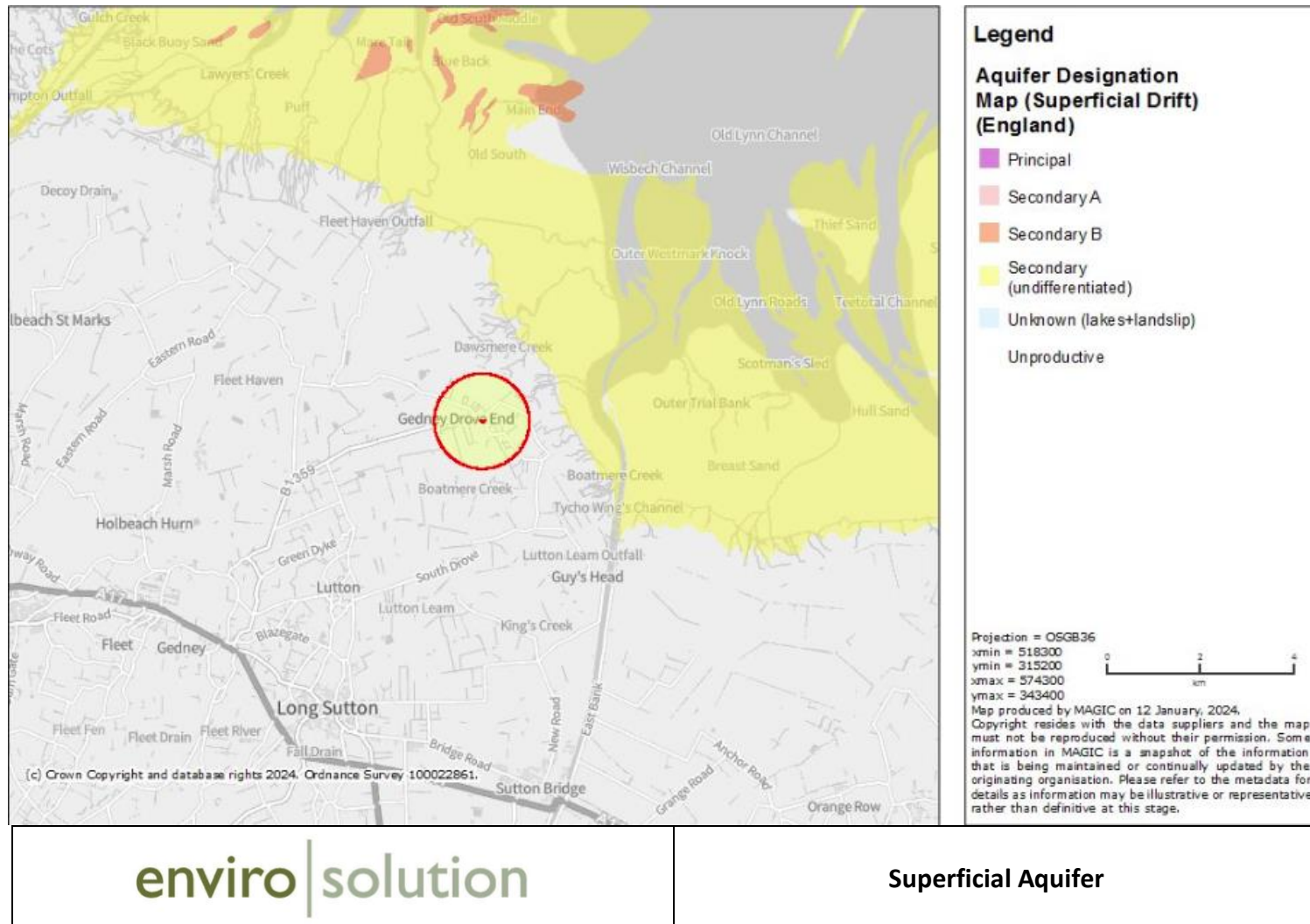
enviro|solution

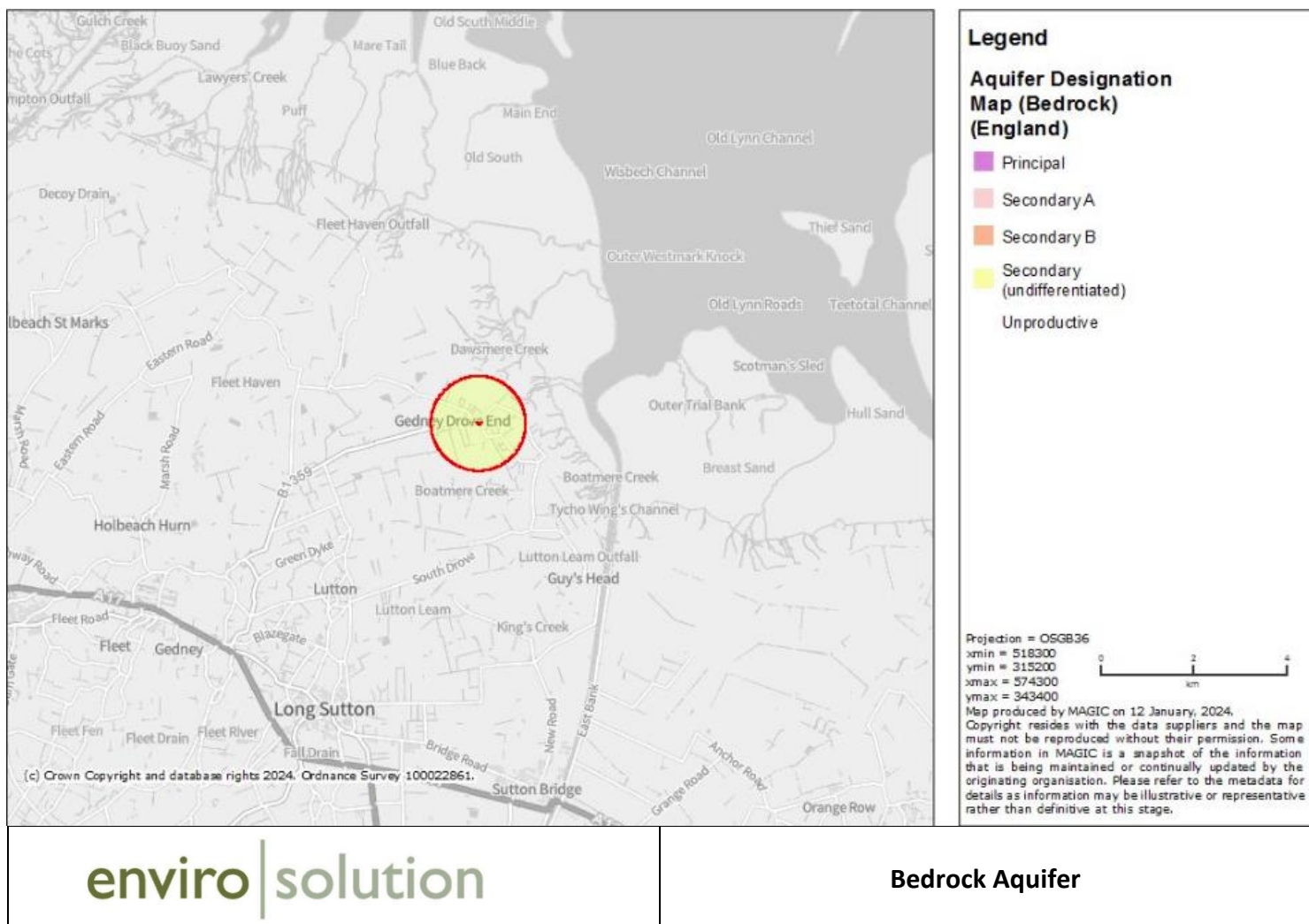
Bedrock Geology Key

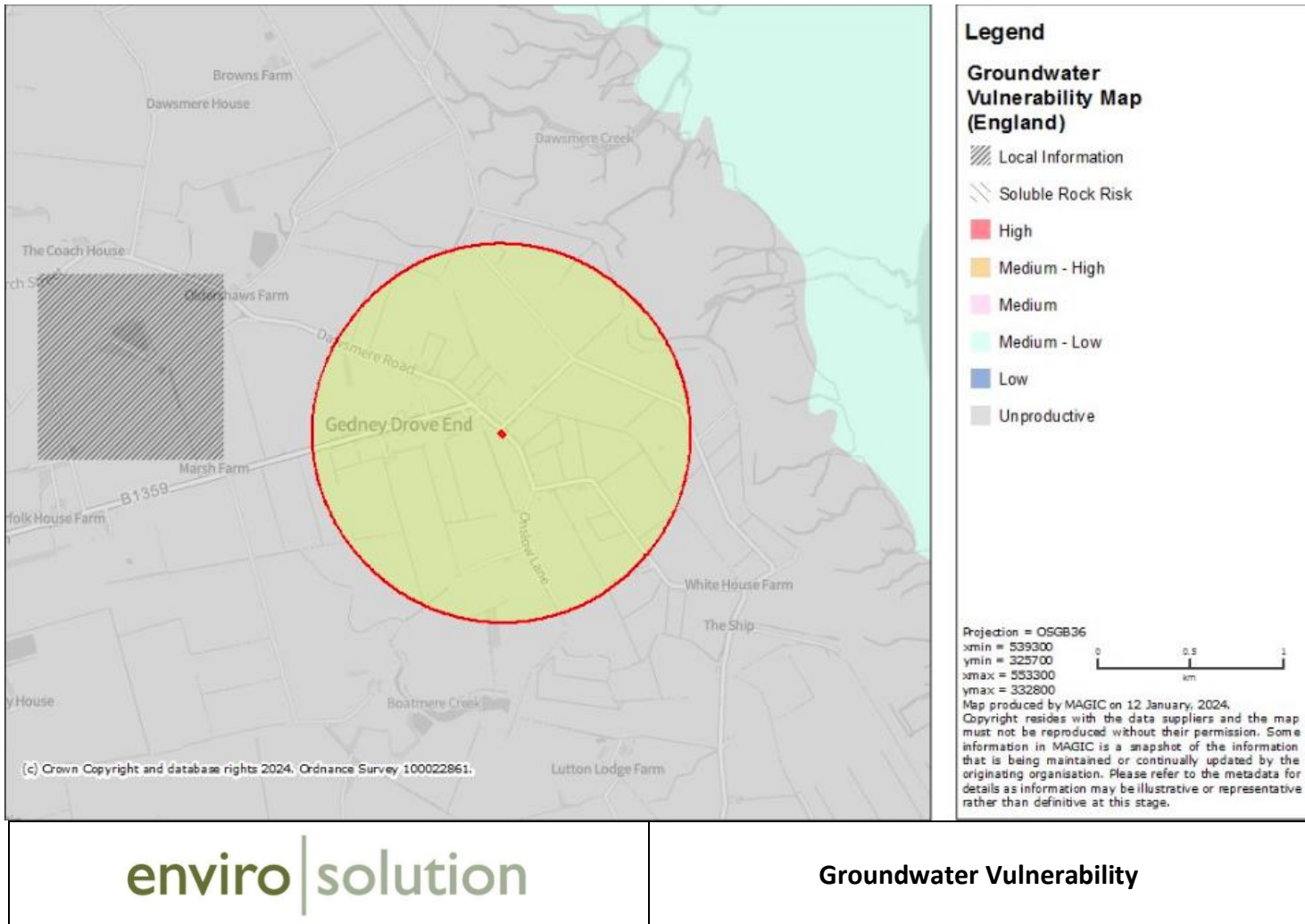
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British National Grid (27700): 546650,329390



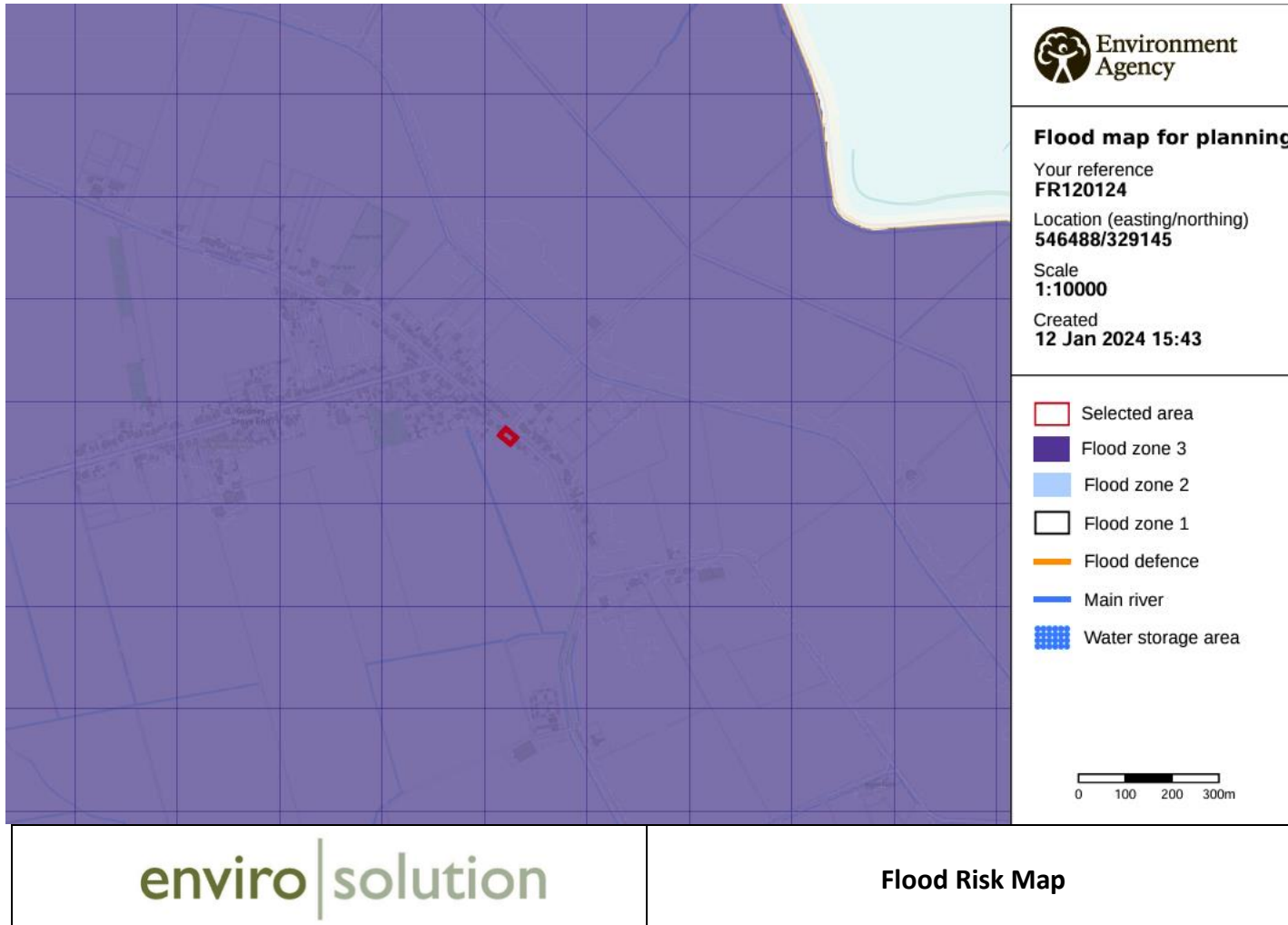
Appendix F – Hydrogeological Maps



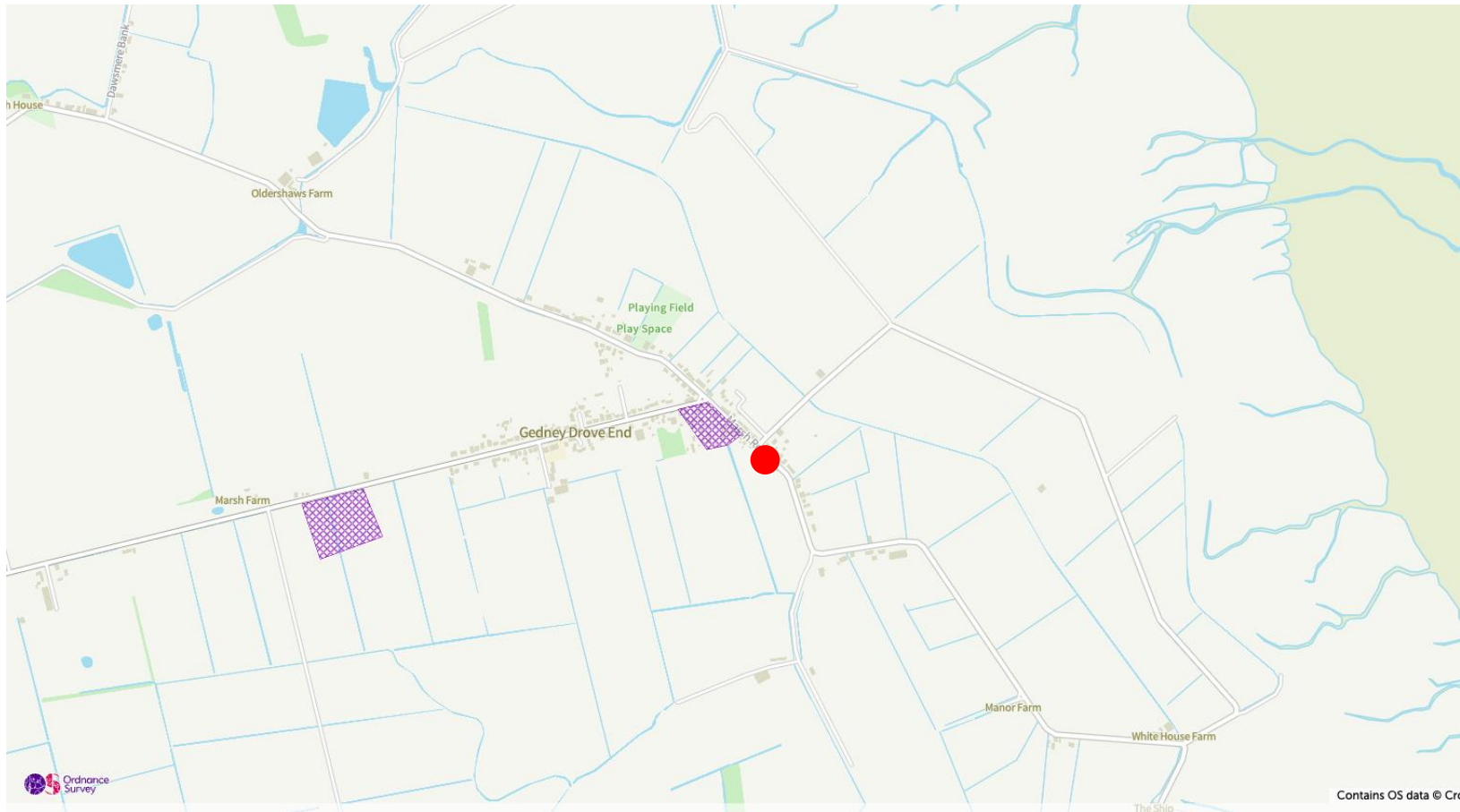




Appendix G – Flood Risk Map



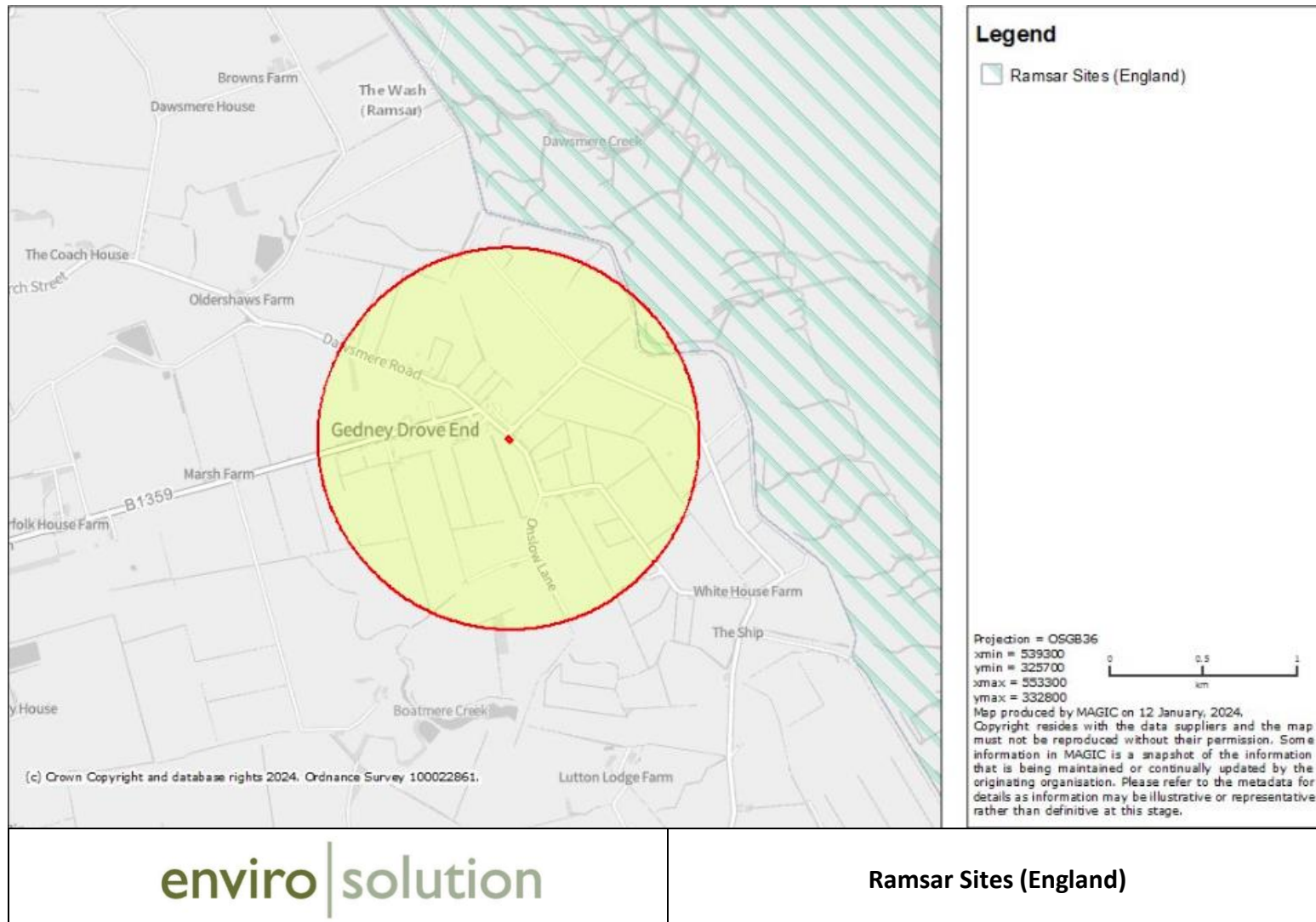
Appendix H – Historic Landfill Map

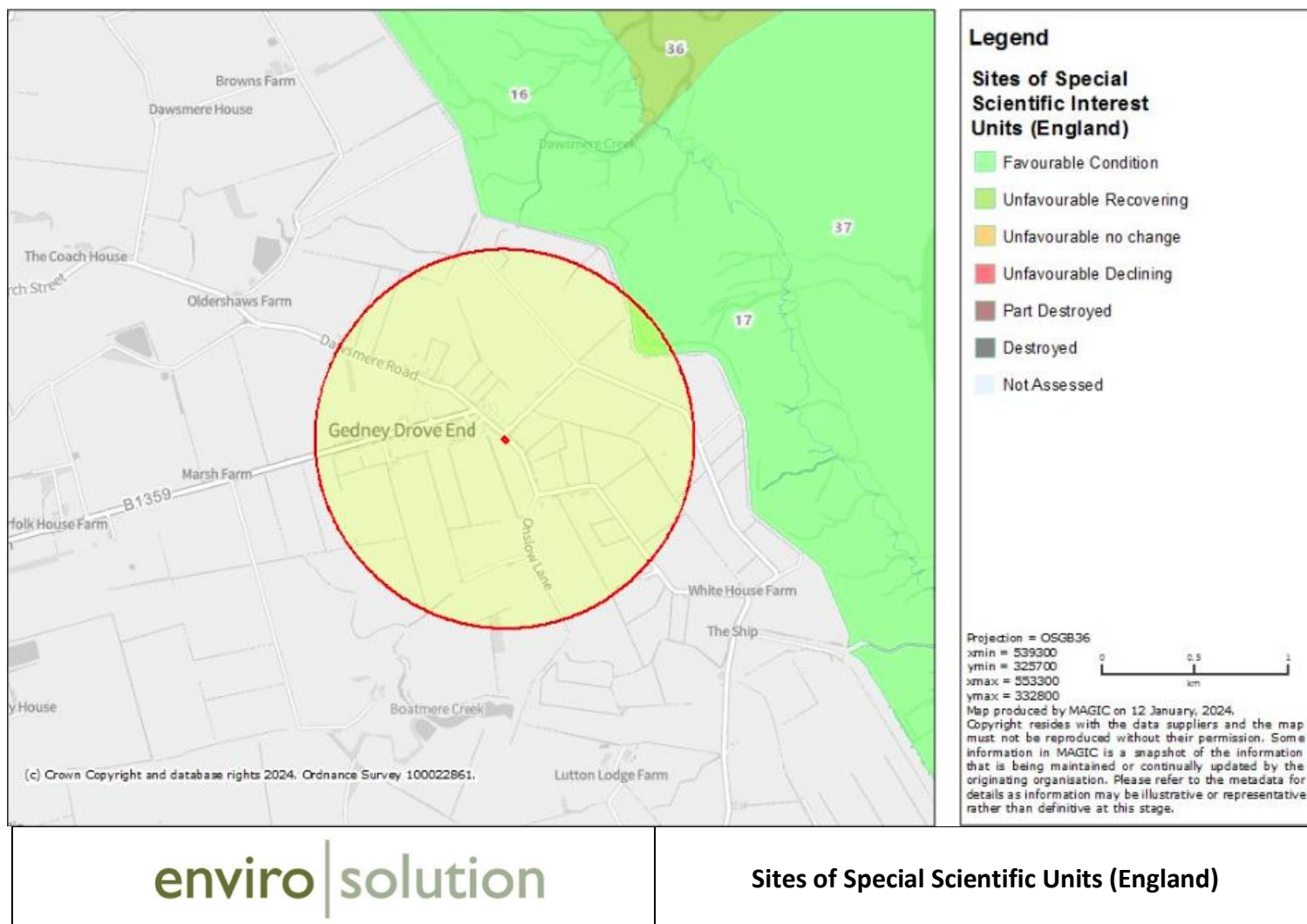


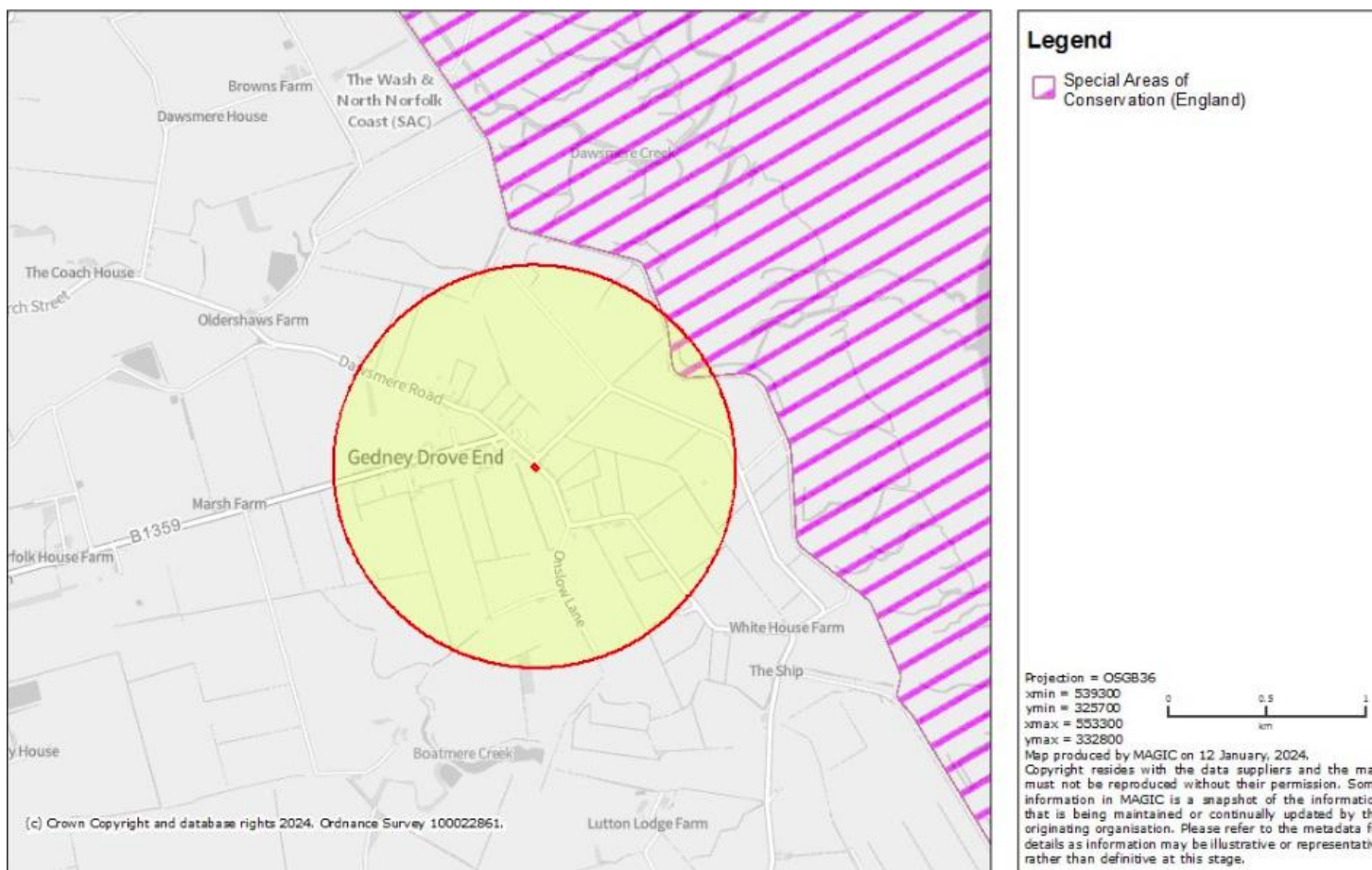
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Historic Landfill Map

Appendix I – Environmental Designations

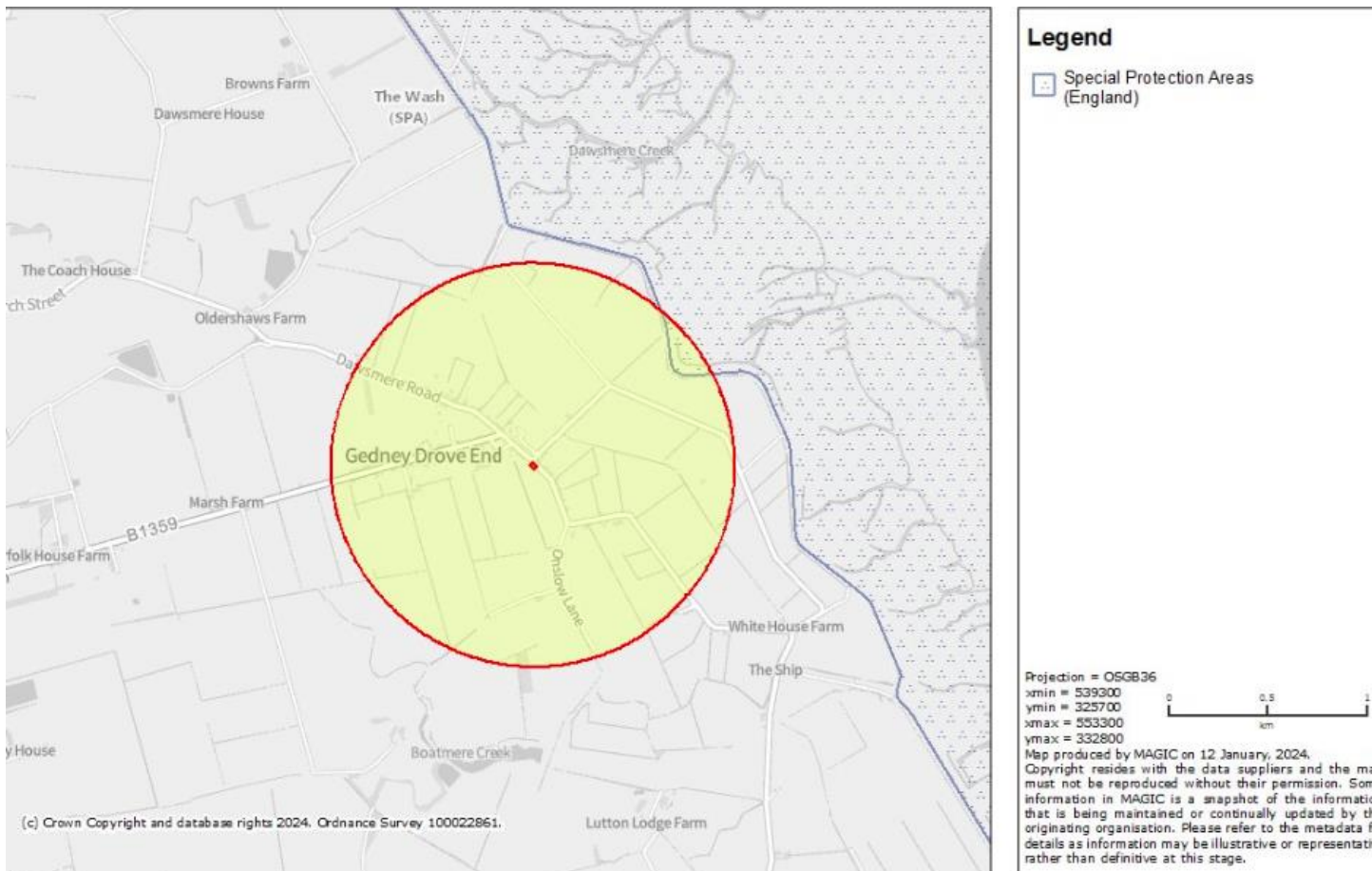






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Special Areas of Conservation (England)



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Special Protection Areas (England)