STAGE 1 ENVIRONMENTAL RISK ASSESSMENT DESK STUDY

At

Land at rear of Sefter School House, Pagham

On behalf of

Hamilton Homes and Developments Ltd

PROJECT REFERENCE: 21.1146.ERA

March 2022

constructiveevaluation
site investigation • building pathology

ARUN DC - 21/P/15/22/DOC

Stage 1 Environmental Risk Assessment Desk Study

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Foreword

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1.0 Executive Summary

Site Address	Land at rear of Sefter School House, Sefter Road, Pagham PO21 3EE
Site Description	Triangular disused field.
Proposed Development	Construction of six two-storey dwellings, comprising four semi-detached houses and two detached houses, with associated access, parking and private garden areas.
Environmental Setting	Generally rural with some residential properties.
Geology and Hydrology	Superficial: Raised Beach Deposits - sand and gravel. Boundary of River Terrace Deposits to north Bedrock: London Clay Formation - clay, silt and sand
Site History	Open land/field since 1875. Some surface debris between 2005-2015.
Potential Areas of Concern	Potential ACM in surface debris. Fire pits Imported Made Ground (surface debris and stockpiles)
Conceptual Site Model	Human Health – high Controlled Waters – low/moderate Ground Gas - low Geological Hazard* - low UXO - medium
Ground Engineering	Shrinkable clay, and soakage to ground unlikely to be feasible in London Clay Formation.
Conclusions and Recommendations	Additional works to further refine the potential risks identified within the Conceptual Site Model. A Stage 2: Detailed Unexploded Ordnance Desktop Threat Assessment is recommended for the site to clarify the UXO risk to future ground works.

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2.0 Introduction

Constructive Evaluation Ltd (CE) was appointed by Hamilton Homes and Developments Ltd (*the Client*) to undertake a Stage 1 Desk Study Environmental Risk Assessment at Land rear of Sefter School House, Sefter Road, Pagham PO21 3EE, hereafter referred to as the "site". The Site Location Plan is provided as **Figure 1**. The Client is proposing to develop the site for residential use and this report has been prepared to comply with the likely conditions of planning.

The aims of this Environmental Risk Assessment report are as follows;

- To provide information on the anticipated geology, hydrology and hydrogeology of the subject site.
- Investigate the development history and most recent uses of the subject site.
- To identify whether there is any contamination on site which is likely to cause significant harm to human health, the environment or other sensitive receptors.

In order to achieve these aims, CE proposes the following objectives;

- Conduct a Site Walkover of the site to assess possible sources of contamination.
- Comprehensive assessment of Environmental Database Information.
- Develop a Conceptual Site Model (CSM) based on environmental database information.

The works described in this report are subject to the Service Constraints presented in **Appendix C**. This report was finalised in March 2022 and should be read in light of any subsequent changes in legislation, statutory requirements, statutory guidance, non-statutory guidance, relevant research and industry practices. This report is currently assigned to the Client for their sole reliance.

Previously, CE Ltd have completed two reports for the site: a contamination survey[1] and a geotechnical survey[2]. Both of these reports should be read in conjunction with this report and are summarised below;

Contamination Summary

Seven (non-targeted) window sampling boreholes were carried out to a maximum of 3mbgl. Anthropogenic materials were proven visually to 0.45mbgl, including concrete, brick and tile fragments. Metal, glass and suspected asbestos containing materials (ACM) were observed across the surface of site. Sandy gravelly Clay and clayey Sand were proven to an average depth of 1.7mbgl, with London Clay to 3mbgl. Twelve samples were screened for contamination testing. Chrysotile was detected and quantified with a maximum of 0.003%. Results were compared with GAC residential with plant uptake. Exceedances included lead and PAHs including Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenz(a,h)anthracene. Waste Acceptance Criteria (WAC) testing confirmed spoil will likely be accepted at Inert and Non-Hazardous waste facilities.

The report concluded that the ACM should be hand-picked and double-bagged and disposed of appropriately by a competent person. Areas of soft standing would require remediation with a minimum 450mm thick capping layer and use of a geotextile membrane.

[1] Letter Report. CE Ltd. 19.1295, dated February 2020.

[2] Interpretative Site Investigation Report. CE Ltd. 21.1146, dated August 2021.

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Geotechnical Summary

Four windowless sampling boreholes were carried out to a maximum of 6mbgl with two super heavy dynamic probes to a maximum of 6mbgl. Anthropogenic materials were proven to 1m-1.2mbgl. Slightly sandy slightly gravelly Clay was proven to a maximum depth of 2.4mbgl. Raised Beach Deposits were proven to a maximum depth of 2.7mbgl, with London Clay to 5.2mbgl and the Bognor Sand Member proven to 6.45mbgl.

2.1 Proposed Development

It is understood that the proposed development is for the construction of six two-storey dwellings, comprising four semi-detached houses and two detached houses, with associated access, parking and private garden areas. The Proposed Development Plan is provided in **Figure 2**.

2.2 Site Location

The site comprised a triangular shaped plot of land at approximate National Grid Reference SZ 89526 99488. The site comprised a disused field which was accessed via Sefter Road to the north. Topography was generally flat, however there was a small slope down to a drainage channel along the southeast border.

The site surroundings are as follows:

- North: Sefter Road and agricultural fields,
- East: A drainage channel trending NE-SW and agricultural fields,
- South: Residential properties and agricultural fields,
- West: Rear gardens of residential properties, Pagham Road and agricultural fields beyond.

The Site Location Plan is provided in **Figure 1**.

2.3 Site Description

The site is triangular in shape with maximum dimensions of ~70m north to south by ~60m east to west, covering an area of 0.29ha.

At the time of the site walkover the site was hoarded along the Sefter Road boundary. The site was an open piece of land, located to the rear of the Sefter School House. Site clearance had previously been carried out with a construction site set up located in the northwest quadrant, including a few equipment storage containers, water bowser, Heras fencing and a Portaloo. Groundwork materials were stored in preparation in various areas across the site.

Several stockpiles were located across the site, including topsoil, brick and concrete rubble. Surface debris across the site included plastic (roofing gutter) sections, brick, concrete and breezeblock fragments, metal pipes, strips and metal mattress springs, glass, polystyrene, timber fencing and pallets, concrete posts and plastic bags.

In addition, along the southeast border on the bank of the drainage channel possible asbestos containing materials (ACM) were noted in the form of sections of corrugated roofing. Two fire pits were also noted, containing burnt metal, timber and metal cans.

A shallow excavation along the northwest border was partly water-filled and contained some surface debris.

The site was bound by mature and semi-mature deciduous trees of various species to the south.

Site details are presented on the Site Walkover Plan on **Figure 3**. Site Photographs are presented in **Appendix A**.

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2.4 Site Walkover Observations

A site walkover was undertaken on 10th March 2022 with the aim of identifying any potential areas of concern that may be present on site prior to the commencement of future works.

Potential areas of concern were observed:

1 - Potential ACM from fragments of corrugated roofing identified on ground surface,

2 - Fire pits identified on ground surface,

3 - Imported Made Ground (surface debris and stockpiles).

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3.0 Physical Site Setting

3.1 Geology

3.1.1 Anticipated Geology

Published geological information indicates that the site lies upon bedrock of the London Clay Formation with superficial Raised Beach Deposits being recorded on site.

Raised Beach Deposits – sand and gravel. Superficial deposits formed up to 3 million years ago in the Quaternary Period. The local environment was previously dominated by shorelines. These sedimentary deposits are shallow-marine in origin. They are detrital, generally coarse-grained forming beaches and bars in coastal settings.

It is also noted that the boundary of the River Terrace Deposits is approximately 12m north of the site. These deposits comprise sand, silt and clay.

London Clay Formation – clay, silt and sand. Sedimentary bedrock formed approximately 48-56 million years ago in the Palaeogene Period. The local environment was previously dominated by deep seas. These sedimentary rocks are marine in origin. They are detrital and comprise coarse- to fine-grained slurries of debris from the continental shelf flowing into deep-sea environments, which formed distinctively graded beds.

3.1.2 Historical Boreholes

There is one historical borehole record within 250m of the site. The 142m deep borehole (BGS reference SZ89NE4) was drilled in 1890, located 34m northwest of the site, recording drift (to 5mbgl) over London Clay (to 55mbgl), Reading Beds (to 85mbgl) and Upper Chalk (proven to 142mbgl).

3.2 Hydrology

The nearest watercourse is an unnamed inland river (narrower than 5m), which is located 3m southeast of the site. There are 15no. surface water features (wider than 5m), located within 250m of the site.

The site is within the surface body catchment area of the River Pagham Rife, part of the Arun and Western Streams, which is located 606m southwest of the site.

The site has a High Risk of Flooding from Rivers and the Sea (RoFRaS) Flood rating.

There are no records of historical flood events for the site since 1946 when records began to be documented.

The site has been identified as being near floodplains:

- Zone 2 Environment Agency floodplain, which includes fluvial and tidal models, 1m south,
- Zone 3 Environment Agency floodplain, which includes fluvial models, 9m southwest.

The highest risk on site to surface water flooding is a 1 in 100 year chance of flooding with water depths between 0.3-1.0m. Within 50m of site the highest risk of flooding is a 1 in 30 year chance with water depths of 0.3-1m.

There is a high risk of groundwater flooding on site and within 50m of site.

3.3 Hydrogeology

The Raised Beach Deposits (Superficial Deposit) is classed as a Secondary A Aquifer. The geology is of permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

The London Clay Formation (Bedrock) is classed as unproductive strata. These are deposits with low permeability that have negligible significance for water supply or river basin flow.

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3.4 Controlled Waters

3.4.1 Groundwater Abstractions

There are no groundwater abstraction licenses recorded within 500m of the site.

3.4.2 Surface Water Abstractions

There are nine records within 2km of site. The nearest record is for spray irrigation at Pagham Rife Sefter Farm located 615m northwest of the site.

3.4.3 Potable Water Abstractions

There are no records within 2km of site.

3.4.4 Source Protection Zones

The site is not situated within an Environment Agency Source Protection Zone with regards to potable water abstraction.

3.4.5 Groundwater Vulnerability and Soil Leaching Potential

The Secondary A Aquifer, the Raised Beach Deposits (Superficial Deposit) which covers the whole site has a high groundwater vulnerability. The site is classified as having a high leaching potential.

3.5 Geological Hazards

3.5.1 Natural Hazards

The Natural Hazards Findings has identified a number of potential hazards which are summarised in Table 1 below.

Table 1 - Natural Hazard Findings

Natural Hazard	Risk Rating
Shrink Swell	*Low*
Landslides	*Very Low*
Soluble Rocks	*Negligible*
Compressible Ground	*Negligible*
Collapsible Rocks	*Very Low*
Running Sand	*Low*

3.5.2 Natural Cavities

There are no records of Natural Cavities within 500m of site.

3.5.3 Radon

The site is in a lower probability radon area, as between 1% and 3% of homes are at or above the action level. As a result, no radon protective measures are likely to be necessary in the construction of new dwellings or extensions.

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3.6 BGS Estimated Soil Chemistry

A summary of expected onsite soil chemistry concentration values is presented in Table 2.

Table 2 - BGS Soil Chemistry Average Concentration Values (mg/kg)

Contaminant	Concentration
Arsenic	*15*
Cadmium	*1.8*
Chromium	*60 - 90*
Lead	*100*
Nickel	*15 - 30*

3.7 Sensitive Land Use

The site lies within the Pagham Rife nitrate vulnerable zone, however, there are no sensitive land uses recorded within 250m of the site.

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4.0 Desk Study

4.1 Information Sources

Information used to compile this desk study includes;

- Site walkover – site walkover plan presented in **Figure 3** and photographs presented in **Appendix A**
- Environmental Database Information – presented in **Appendix B**

4.2 Programme of Works

The programme of works that was undertaken is presented in Table 3.

Table 3 - Programme of works

Item	Description	Start Date	Completion Date
1	*Site Walkover*	*10/03/2022*	*10/03/2022*
2	*Environmental Risk Assessment Report*	*09/03/2022*	*16/03/2022*

4.3 Historical Land Uses

The following assessment of the historical land uses adjacent to site summarises land uses and features land uses up to 250m from the site boundary, unless stated otherwise.

4.3.1 Historical Potentially Contaminative Industrial Sites

- Brick field (1938) – 328m SE

4.3.2 Historical Energy Features

- Electricity substation (1992-1994) – 368m SE

4.3.3 Historical Tank Database

- Unspecified Tank (1898) – 430m NW

4.3.4 Historical Garage and Motor Vehicle Repair Sites

There are no historical garage and motor vehicle repair sites recorded within 500m of the site.

4.3.5 Historical Petrol and Fuel Sites

There are no historical garages recorded within 500m of the site.

4.3.6 Historical Railway and Tunnel Features

There are no historical railway and tunnel features within 250m of the site.

4.3.7 Historical/Current Landfill/Waste Site

The nearest historic landfill is at Sefter Lodge, located 38m west of the site. The site operated between 1950-1960 dealing with waste types including inert, commercial and household waste.

The nearest licensed waste site is at Sefter Farm, located 373m northwest. The license issue date was 2010 for the anaerobic digestion facility.

4.4 Contemporary Land Uses Adjacent to Site

There are no potentially contaminative activities recorded within 500m of the site.

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4.4.1 Part A(2) and Part B Activities and Enforcements

There are no Part A(2) and Part B Activities and Enforcements within 500m of the site.

4.4.2 Petrol and Fuel Sites

There are no recorded petrol or fuel sites within 500m of the site.

4.4.3 Potentially Infilled Land

- Made Ground (artificial deposit, shown on maps along the river channel, linked to the drainage channel bordering the site) – from 67m SW

4.4.4 Pollution Incidents

There are four pollution incidents recorded on/within 500m of the site. The one on site, dated 2001 was for construction and demolition materials and wastes causing either no impact or minor impact to water, land and air. The nearest off-site located 12m west (at the old school) also dated 2001 was for specific metal waste, causing no impact to water, land and air.

4.4.5 Licensed Discharge Consents

There are no licensed discharge consents recorded within 500m of the site.

4.4.6 Waste Exemptions

There are four records within 500m of the site. The nearest is Sefter Farm for the use of non-agricultural waste in construction.

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4.5 Site History

The following observations have been formed based on the available historical map extracts of the site and are summarised in Table 4.

Table 4 - Summary of Historical Maps

Date	Map Scale	On Site	Off Site
1875	*1:10,560*	*The site appears as open land.*	*The site is within Pagham district. Three roads meet approximately at the site. Sefter Farm and Rookery Farm are both ~400m NW and SW respectively. Covets Farm >500m SE. General area is rural/agricultural with field dividers. Pagham Rife meanders ~N-W >500m W.*
1878-77	*1:2,500*	*The site appears as a section of a larger piece of land/field.*	*The area is shown as Sefter Bottom. Adjacent NW is a school with a well. A track borders to N. Open land to SE and SW. 2no. dwellings with a well S. Road trending NW-S ~25m W.*
1909-10	*1:10,560*	*No significant change.*	*Pagham Rife shown flowing S.*
1933-34	*1:10,560*	*No significant change.*	*Residential development >500m E adjacent to road. Brick Field shown ~400m SE.*
1938-40	*1:10,560*	*No significant change.*	*Further residential development SE.*
1957-61	*1:10,560*	*No significant change.*	*Further residential development SE.*
1965 & 1968	*1:2,500*	*No significant change.*	*The track bordering to N is shown as Sefter Road. A river cutting with track is shown >100m SW. The school is shown as Sefter School House. Pond >250m NW. Residential dwellings >300m SE.*
1977 & 1973-76	*1:2,500 1:10,000*	*No significant change.*	*Residential development >300m SE. Part of school shown as Works. Power lines shown trending ~NW-SE ~50m N. Drainage channels shown >250m SW and >250m E/NE.*
1992	*1:2,500*	*No significant change.*	*Channel shown on SE border flowing SW.*
2003	*1:1,250*	*No significant change.*	*Water channel shown flowing SW along SE border then diverting to SE and SW.*
2010	*1:10,000*	*No significant change.*	*Sefter Farm development with building structures and 2no. reservoirs >250m W/NW.*
2022	*1:10,000*	*No significant change.*	*A 3rd reservoir at Sefter Farm >250m W.*

4.6 Aerial Photography

Aerial photography images suggest that the site may have been active since 1999 with potential evidence of construction material or fly-tipping noted across the site. Between 2005 and 2012 this becomes more apparent with a site entrance and building and something of a builder's yard is shown, until 2012 when potential site clearance has occurred.

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4.7 Bomb Damage Maps

As part of the Desk Study enquiries were made to SafeLane Global Ltd to obtain a Stage1: Preliminary Unexploded Ordnance Risk Assessment of the site. This report concludes that there is an overall **Medium** risk from UXO. This report is provided in **Appendix B.** Subsequently, SafeLane Global recommend that a Stage 2: Detailed Unexploded Ordnance Desktop Threat Assessment is completed for the site to clarify the UXO risk to future ground works.

4.8 Potential Areas of Concern

One potential area of concern has been identified within the site boundaries from the historic maps and aerial photographs. This includes the potential for imported made ground from historic land use between 2005-2015.

All potential areas of concern including those detailed in Section 2.4 are summarised in Table 5 and shown on **Figure 4**.

Table 5 - Summary of Potential Areas of Concern

Ref	On Site
A	*Potential ACM associated with fragments of corrugated roofing identified on ground surface.*
B	*Fire pits identified on ground surface.*
C	*Imported Made Ground (surface debris and stockpiles)*

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5.0 Preliminary Risk Assessment

To assess the potential for risk, the Source-Pathway-Receptor relationships have been evaluated to determine whether there are potentially active pollutant linkages between sources and receptors. It is only when there is an active pollutant linkage, can there be a potential risk to a receptor from a source via a particular pathway. Each active pathway has been assigned a qualitative assessment as to the level of risk explained in Table 6 as per R&D 66[5].

Table 6 - Qualitative Risk Classification Scheme

		Consequence			
		Severe	Medium	Mild	Minor
Probability (Likelihood)	High	*Very High risk*	*High risk*	*Moderate risk*	*Low risk*
	Likely	*High risk*	*Moderate risk*	*Moderate/Low risk*	*Low risk*
	Low	*Moderate risk*	*Moderate/Low risk*	*Low risk*	*Very low risk*
	Unlikely	*Moderate/Low risk*	*Low risk*	*Very low risk*	*Very low risk*

5.1 Identification of Contaminant Sources

The potential sources of contamination on site and in the surrounding areas are summarised in Table 7.

Table 7 - Identification of Potential Sources of Contamination

	Potential Source	Potential Contaminants
On-site sources	*Potential imported made ground at ground surface including ACM and fire pits*	*Hydrocarbons (TPH, BTEX, PAH), Heavy Metals, Phenols, Inorganics, Asbestos*
Off-site sources	*Current and historical industrial land uses, and potentially infilled land*	*Hydrocarbons (TPH, BTEX, PAH), Heavy Metals, Phenols and Inorganics*

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5.2 Pathways

5.2.1 Human Health Pathways

The potential human health exposure pathways, based on the relevant guidance[3], for a residential receptor are indicated in Table 8.

Table 8- Potentially Active Human Health Exposure Pathways

Potential Pathway	Active/ Inactive	Comments
Ingestion of home grown produce	*Active*	*Qualitative Risk Assessment required*
Ingestion of soil and dusts	*Active*	*Qualitative Risk Assessment required*
Dermal contact with soils and dusts	*Active*	*Qualitative Risk Assessment required*
Inhalation of dusts	*Active*	*Qualitative Risk Assessment required*
Inhalation of organic vapours (generated by shallow soils) in external areas or inside buildings	*Active*	*Qualitative Risk Assessment required*
Inhalation of organic vapours generated by dissolved phase groundwater migrating onto site to neighbouring residential properties	*Active*	*Qualitative Risk Assessment required*
Inhalation of organic vapours generated by dissolved phase groundwater migrating onto site from off-site sources	*Active*	*Qualitative Risk Assessment required*
Contaminants from site entering groundwater and migrating into public water abstraction borehole for human consumption	*Inactive*	*No water abstractions within 250m. No further action required*

5.2.2 Controlled Water Pathways

The potentially active controlled waters migration pathways are indicated in Table 9.

Table 9 - Potentially Active Controlled Water Pathways

Potential Pathway	Active/Inactive	Comments
Impacted soils leaching to groundwater	*Active*	*Qualitative Risk Assessment required*
Impacted soils leaching to groundwater and migration to adjacent surface water	*Active*	*Qualitative Risk Assessment required*

5.2.3 Ground Gas Pathways

The potentially active migration pathways for ground gas are indicated in Table 10.

[3] Environment Agency. August 2008. Updated technical background to the CLEA model. Science Report – SC050021/SR3.

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Table 10 - Potentially Active Ground Gas Pathways

Potential Pathway	Active/Inactive	Comments
Ground gas generated from current/historic landfills within 250m radius	*Inactive*	*Landfill >50 years old[A]. No further action required*
Ground gas generated from historic infilled land within 250m radius	*Inactive*	*Artificial ground associated with river channel[B]. No further action required*

[A] After 50 years it is considered that the landfill would have reached its peak gassing potential and therefore no longer a potential concern.

[B] It is considered that superficial deposits were excavated as part of the river channel cutting, with very limited ground gas potential.

5.3 Receptors

Based on future residential land use, the potentially sensitive receptors are considered as the following:

- Residential Human Health: Future occupants on site
- Residential Human Health: Current occupants off-site
- Surface Water: Unnamed drainage channel bordering site to southeast
- Groundwater: Secondary A Aquifer of superficial deposits
- On site workers*

*The risks to on site workers (during development) can be minimised by following appropriate health and safety guidance on site (i.e. wearing protective clothing and washing).

5.4 Qualitative Risk Assessment

A summary of the relevant pollutant linkages based on a Source-Pathway-Receptor analysis is provided in Table 11.

Table 11 - Summary of Potentially Active Source-Pathway-Receptor Assessment

Source	Potential Pathway	Potential Receptor	Risk Classification
On-site Sources	*Ingestion of dust and soils*	*Human Health (On-site Residential)*	*High*
On-site Sources	*Outdoor inhalation and indoor inhalation*	*Human Health (On-site Residential)*	*Moderate*
On-site Sources	*Inhalation of organic vapours generated by dissolved phase groundwater migrating from site to neighbouring properties*	*Human Health (Off-site Residential)*	*Low/Moderate*
On-site Sources	*Impacted soils leaching to groundwater and migrating towards surface water*	*Controlled Waters (Surface Water)*	*Low/Moderate*
Off-site Sources	*Vapour inhalation from dissolved phase migration from off-site sources*	*Human Health (On-site Residential)*	*Low*

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Off-site Sources	*Migration via groundwater from off-site source onto site*	*Human Health (On-site Residential)*	*Low*
Off-site Infilled Land/Landfills	*Inhalation of organic vapours and ground gas*	*Human Health (On-site Residential)*	*Low*

The high risk is based on the potential ingestion of the heavy metal lead and PAHs, both of which have recorded GAC exceedances in laboratory testing results from the intrusive site works.

The moderate risk for inhalation is due to the ACM identified at site both visually and through laboratory testing.

The low risk for inhalation of organic vapours and ground gas from infilled land and landfills is detailed below Table 10.

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6.0 Ground Engineering Assessment

The Raised Beach Deposits (superficial deposits) are classed as a Secondary A Aquifer. They generally provide good foundation conditions, however the frost-susceptibility of near-surface silt and fine sand lithologies should be considered in the design of shallow foundations.

It is important to determine lithological variation and deposit geometry, particularly the presence and dimensions of buried channels and infilling deposits. Immediate support is required upon excavation and groundwater control measures will be necessary where deposits are below the water table.

The London Clay Formation are considered to be unproductive with low permeability, which will have an effect on the drainage strategy which is adopted for this site. There are also known mature trees on site, which will have a high water demand, that will be affected by high volume change potential clays of the London Clay Formation.

An assessment of the ground engineering parameters is provided in Table 12.

Table 12 - Qualitative Ground Engineering Assessment

Category	Parameter	Potential Issue	Likelihood/Consequence
Foundations	*Shrinkable clay in close vicinity of mature, high water demand trees*	*Shallow foundations may need to be extended in line with NHBC guidance or piling required*	*Likely*
Drainage	*Poorly permeable clays in shallow soils*	*Soakages to ground unlikely to be feasible*	*Unlikely*

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7.0 Conclusions and Recommendations

Based on the information provided within this Phase 1 Environmental Risk Assessment Report and information from the previous surveys, the conceptual site model and qualitative risk assessment have identified the following risk shown in Table 13.

Table 13 - Summary of Qualitative Risk Assessment

Category	Risk Classification
Human Health	*High*
Controlled Waters	*Low/Moderate*
Ground Gas	*Low*
*Geological Hazard**	*Low*
UXO	*Medium*

*Risk posed by Shrink/Swell of soils and Running Sand

To summarise, the remedial recommendations as specified in the previous contamination letter report should be followed for soft-standing areas including private gardens. Where natural ground is not proven during excavation geotextile membrane should be installed to prevent upward migration of Made Ground.

Therefore, any additional intrusive investigation work on site would be to;

1) Further refine the potential risks identified within the Conceptual Site Model.

It has been noted that as the contamination survey was non-targeted only one position has been carried out in the area of proposed private gardens. The firepits observed during the site walkover should also be investigated to understand the ground conditions.

The preliminary UXO report suggested an overall **Medium** risk from UXO. Subsequently, a Stage 2: Detailed Unexploded Ordnance Desktop Threat Assessment is recommended for the site to clarify the UXO risk to future ground works. This could have an effect on intrusive works and project programme.

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8.0 Statutory Consultees

We would recommend that this report be forwarded to the relevant Statutory Consultees including the Local Council's Environmental Health, Planning Department and potentially the Warranty Provider to seek their comments and subsequent approval prior to works commencing on site.

The Statutory Authorities may require a full Remediation Report and Validation and/or closure report providing documentation/audit trail for the importation/removal/reuse of material on site and any other remedial works completed on site.

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9.0 Relevant Guidance

Constructive Evaluation has duly taken account of the recommendations contained within the following current and historical guidance documents during the preparation of this report.

1. Land Contamination Risk Management (LCRM) produced by DEFRA and the Environment Agency[4]
2. Environment Agency Soil Science Report SR3[3].
3. Safe Development of Housing on Land Affected by Contamination[5].
4. British Standards guidance for the Investigation of Potentially Contaminated Sites[6] and for undertaking of Site Investigations[7]
5. Environment Agency Updated Technical Background to the CLEA Model[8]
6. Sampling Strategies for Contaminated Land[9]

The above documents produced by DEFRA, the Environment Agency, the National House-Building Council (NHBC) and the Chartered Institute of Environmental Health (CIEH) outline structured mechanisms to identify potential risk issues and, where necessary, provide a way forward to develop a robust risk management strategy to address potentially unacceptable risks in an appropriate manner.

The National Planning Policy Framework[10] has also been considered. This document states that, prior to development, a site must meet the following criteria;

- The site is made suitable for its intended use, taking account of all ground conditions arising from natural and former activities, pollution arising from previous uses and proposals for mitigation including land remediation.
- After remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990.
- Adequate site investigation information, prepared by a competent person, is presented.

[4] Environment Agency. October 2020. Land Contamination Risk Management.

[5] Environment Agency. 2008. Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D 66.

[6] British Standards. 2011. Investigation of Potentially Contaminated Sites – Code of Practice. BS10175: 2011.

[7] British Standards. 2015. Code of Practice for Ground Investigations. BS5930: 2015.

[8] Environment Agency. August 2008. Updated Technical Background to the CLEA Model. Science Report – SC050021/SR3.

[9] DOE. 1994. Sampling Strategies for Contaminated Land. CLR Report No 4.

[10] Department of Communities and Local Government. March 2012.

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FIGURES

Figure 1 – Site Location Plan

Figure 2 – Proposed Development Plan

Figure 3 – Site Walkover Plan

Figure 4 – Potential Areas of Concern

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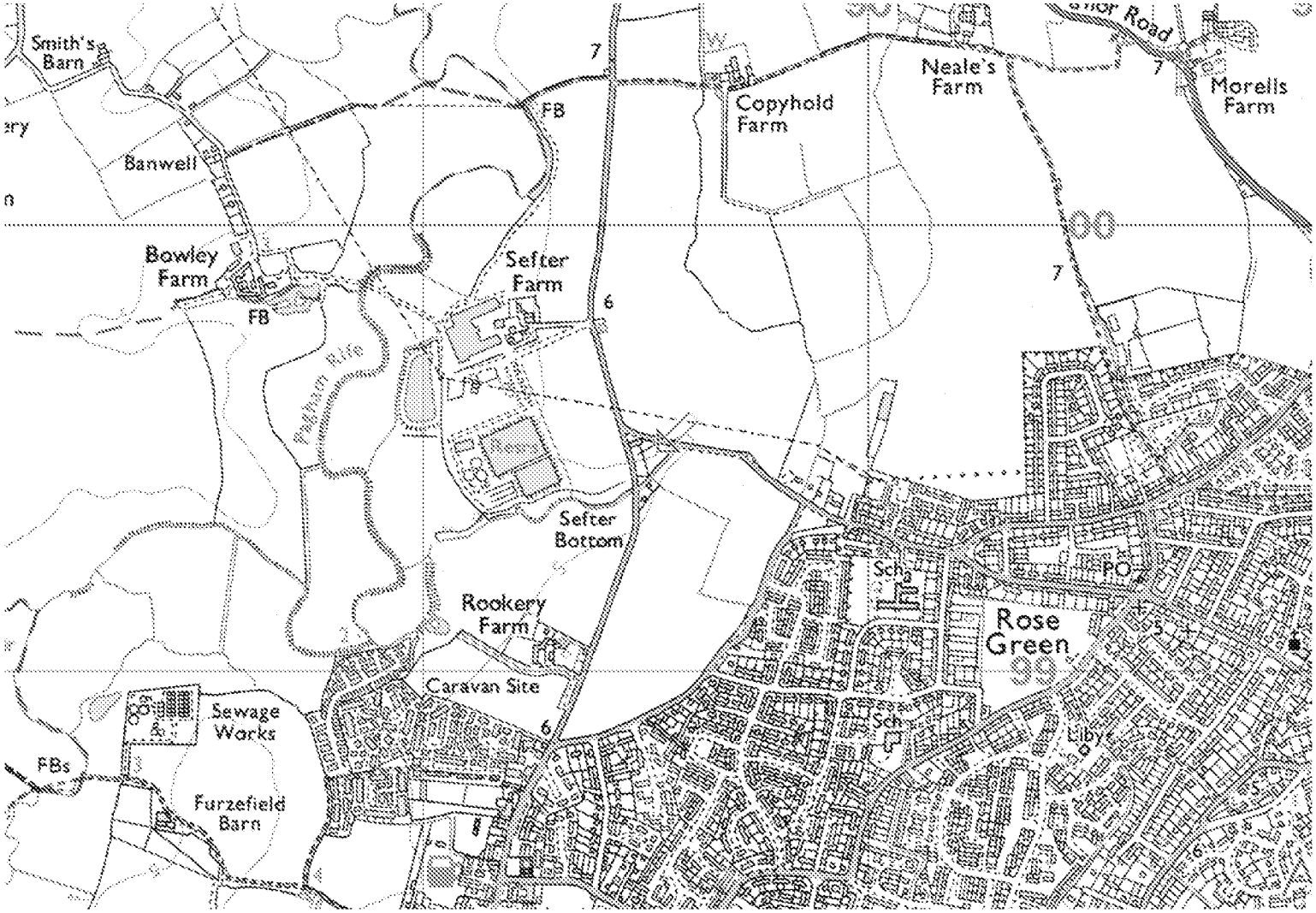


Figure 1: Site location plan showing the topographical location of the site.

Notes:
1. Do not scale from this drawing.
2. All dimensions must be checked on site prior to commencement of work.
3. Where applicable this drawing is to be read in conjunction with other consultants drawings.
4. This drawing is the copyright of Constructive Evaluation Ltd.

KEY

Site Location

Drawing Title:

Site Location Plan

Project Reference:

21.1146.ERA

Site Name:

Land rear of Sefter School House, Pagham

Revision: 0
Drawn by: Soils
Scale: Not to Scale

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ARUN DISTRICT COUNCIL P/15/22/DOC

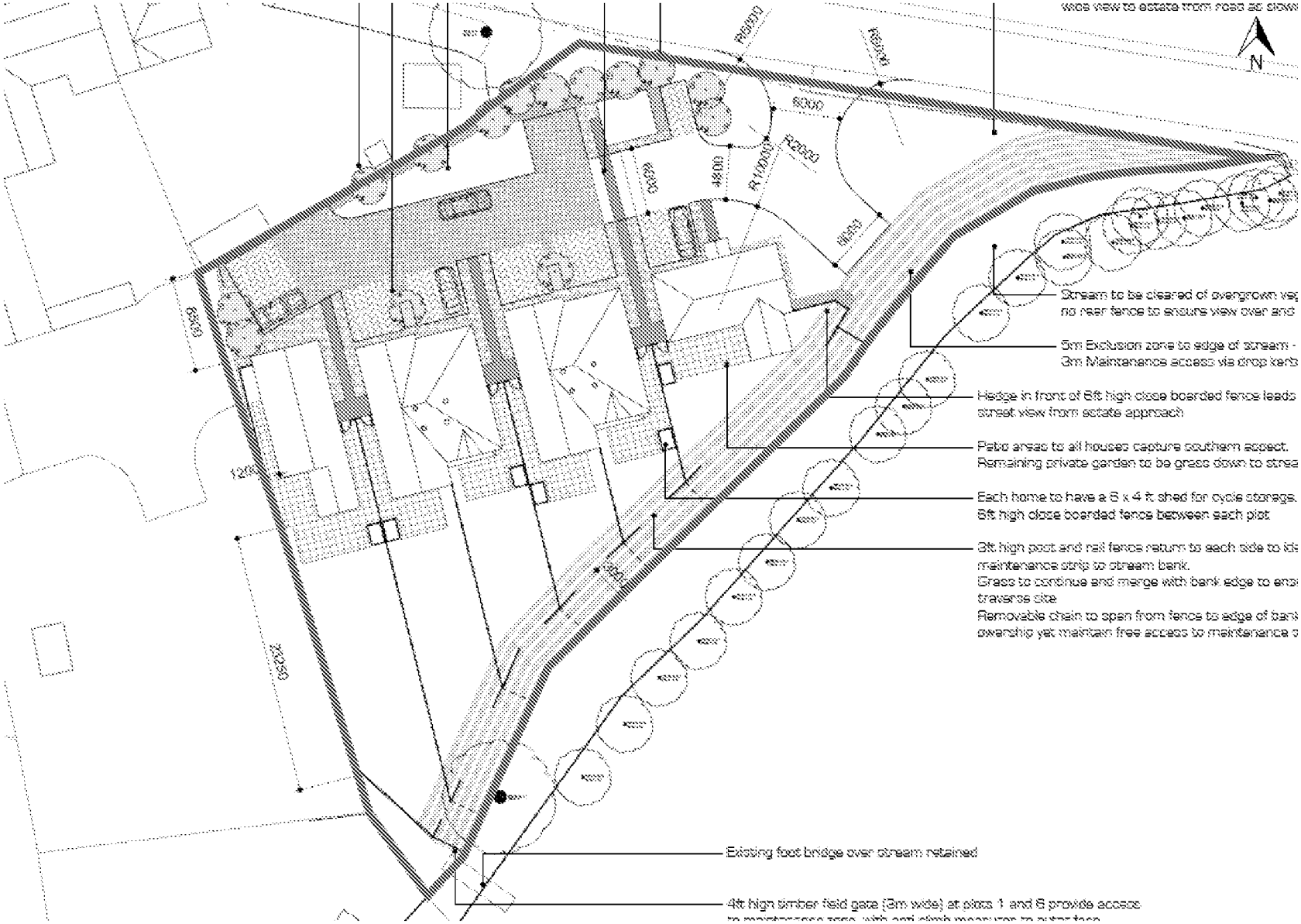


Figure 2:

Notes:
1. Do not scale from this drawing.
2. All dimensions must be checked on site prior to commencement of work.
3. Where applicable this drawing is to be read in conjunction with other consultants drawings.
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KEY

Drawing Title:

Proposed Development Plan

Project Reference:

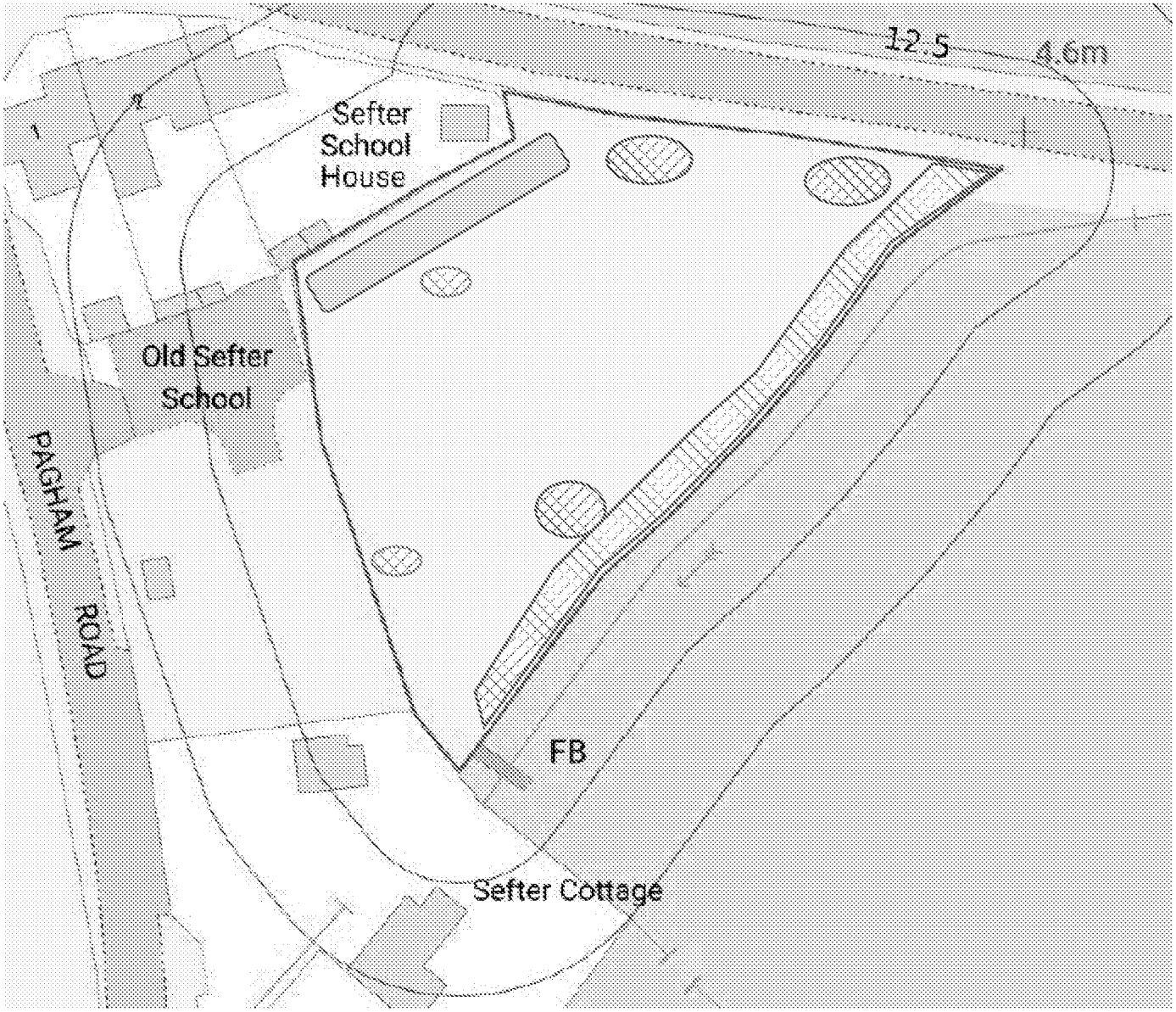
21.1146.ERA

Site Name:

Land rear of Sefter School House, Pagham

Revision: 0
Drawn by: Soils
Scale: Not to Scale

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Notes:
1. Do not scale from this drawing.
2. All dimensions must be checked on site prior to commencement of work.
3. Where applicable this drawing is to be read in conjunction with other consultants drawings.
4. This drawing is the copyright of Constructive Evaluation Ltd.

KEY

- Stockpiles
- Fire pits
- Surface debris (with possible ACM)
- Water part-filled excavation

Drawing Title:

Site Walkover Plan

Project Reference:

21.1146.ERA

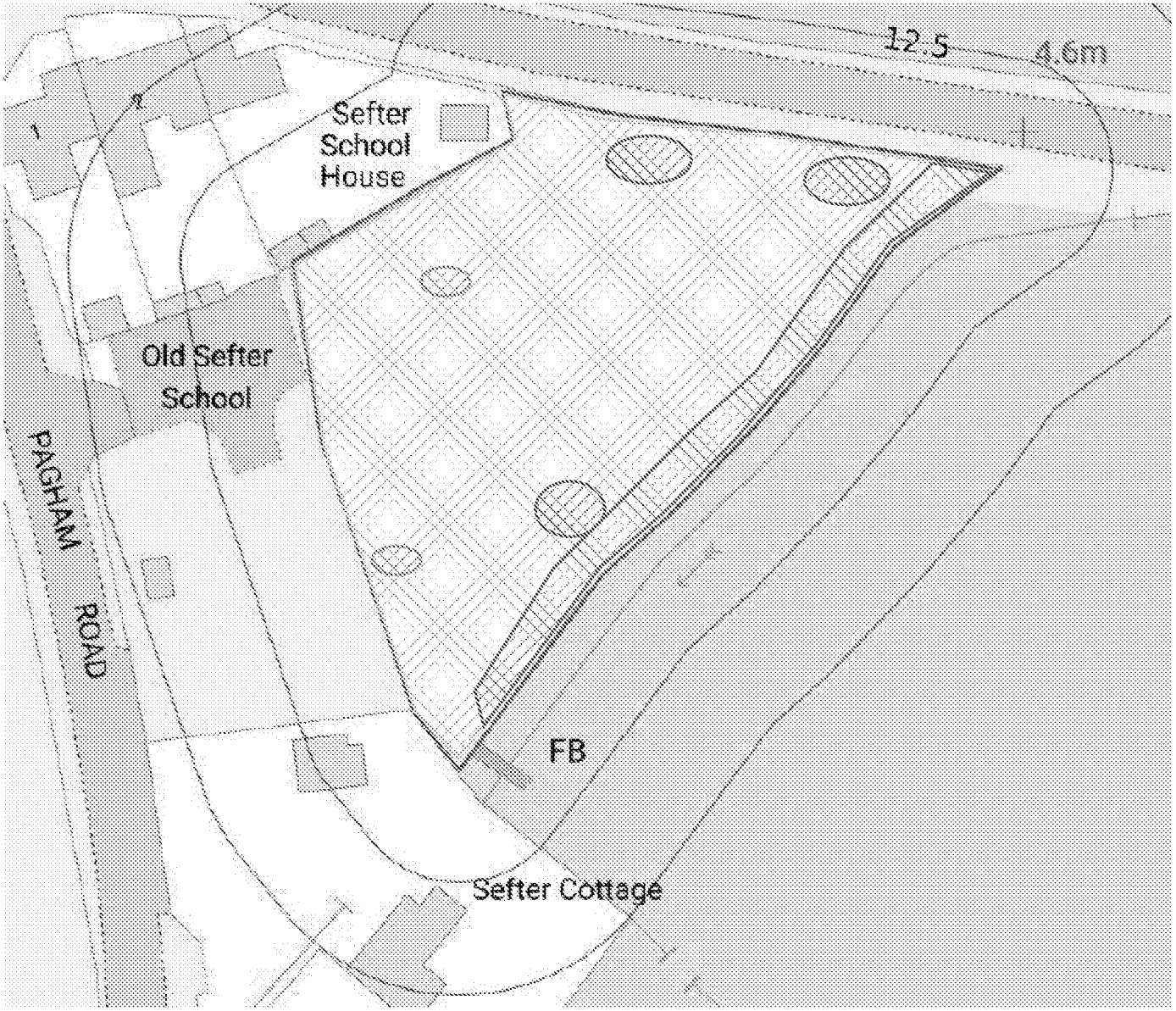
Site Name:

Land rear of Sefter School House, Pagham

Revision: 0
Drawn by: Soils
Scale: Not to Scale

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Figure 3:



Notes:
1. Do not scale from this drawing.
2. All dimensions must be checked on site prior to commencement of work.
3. Where applicable this drawing is to be read in conjunction with other consultants drawings.
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KEY

C Stockpiles

B Fire pits

A Surface debris (with possible ACM)

C Imported Made Ground (surface debris)

Drawing Title:
Potential Areas of Concern

Project Reference:
21.1146.ERA

Site Name:
Land rear of Sefter School House, Pagham

Revision: 0
Drawn by: Soils
Scale: Not to Scale

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Figure 4:

APPENDICES

Appendix A – Site Walkover Photographs

Appendix B – Environmental Database Information

Appendix C – Report Terms and Conditions

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APPENDIX A

Site Walkover Photographs

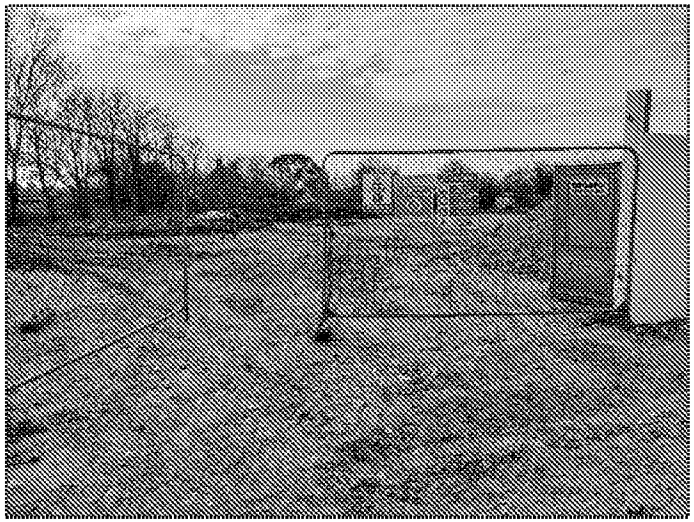
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Site Photographs

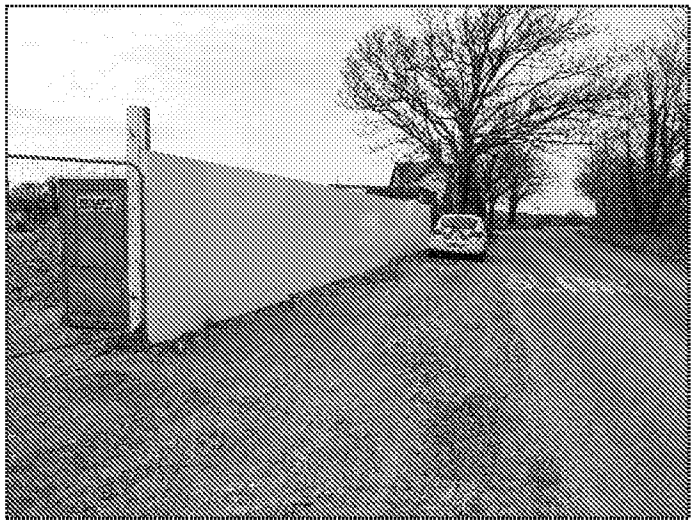
Project Ref: 21.1146.ERA

Site Name: Land at rear of Sefter School House, Pagham

1.



2.



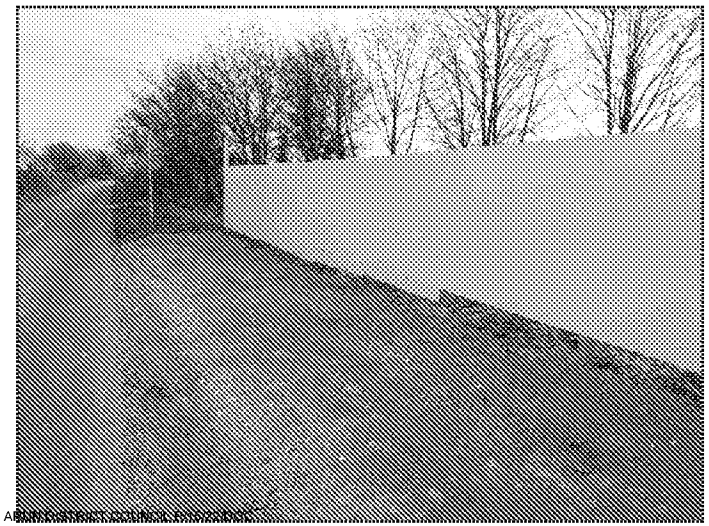
1) Site entrance – looking S

2) Site entrance – looking W

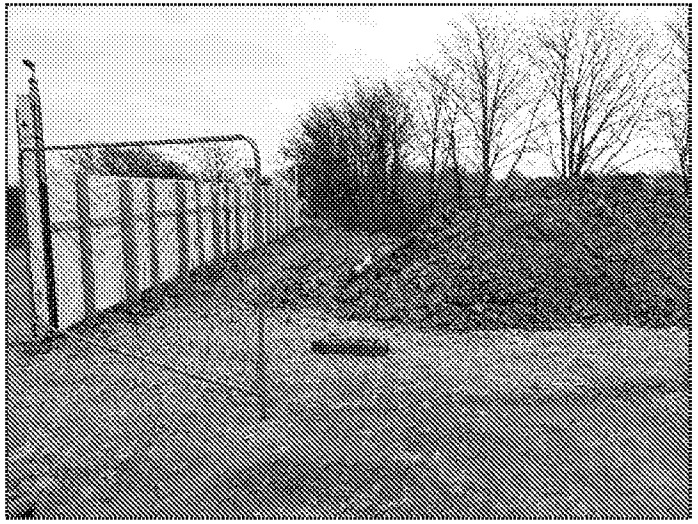
3) Site entrance – looking E

4) NE corner

3.



4.

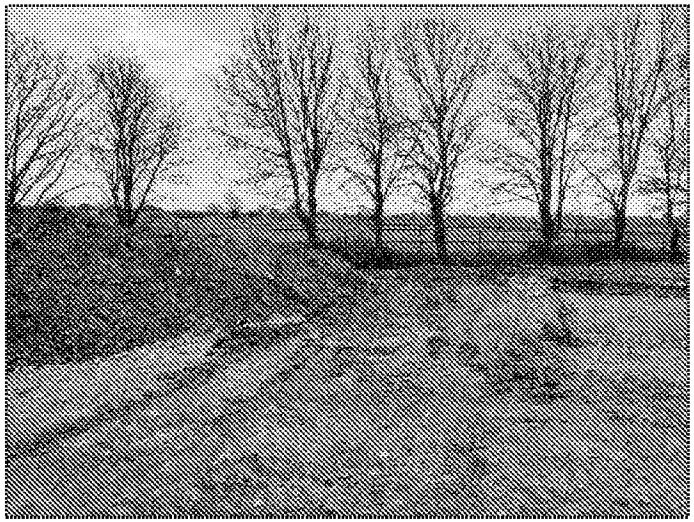


Site Photographs

Project Ref: 21.1146.ERA

Site Name: Land at rear of Sefter School House, Pagham

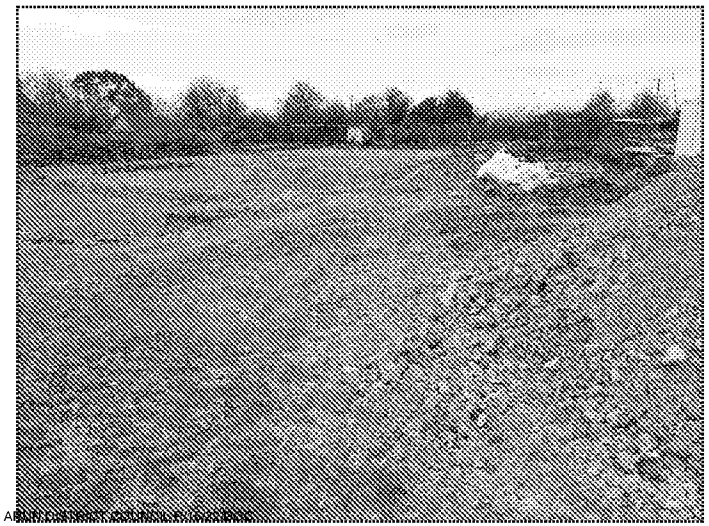
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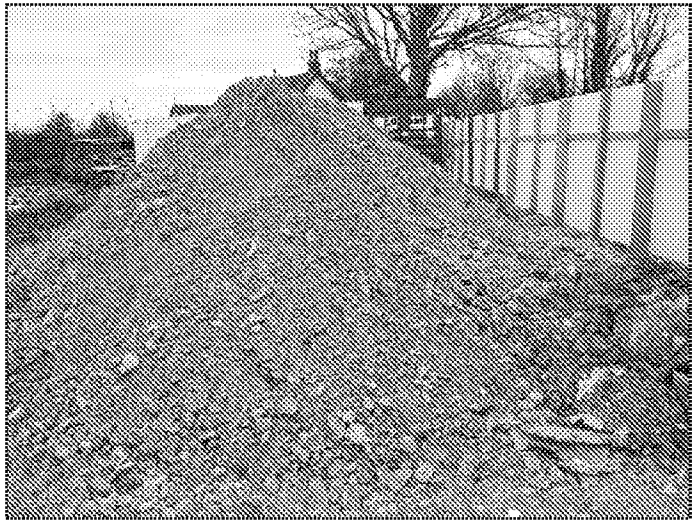
6.



7.



8.



5) View SE

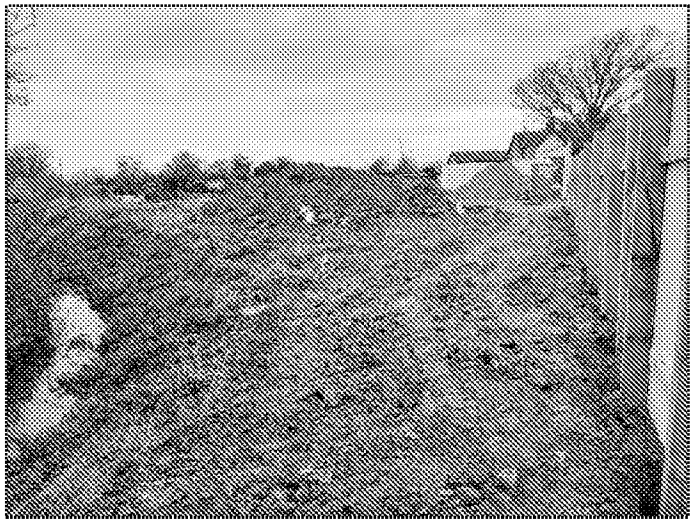
6) View S

7) View SW

8) View W

Site Photographs

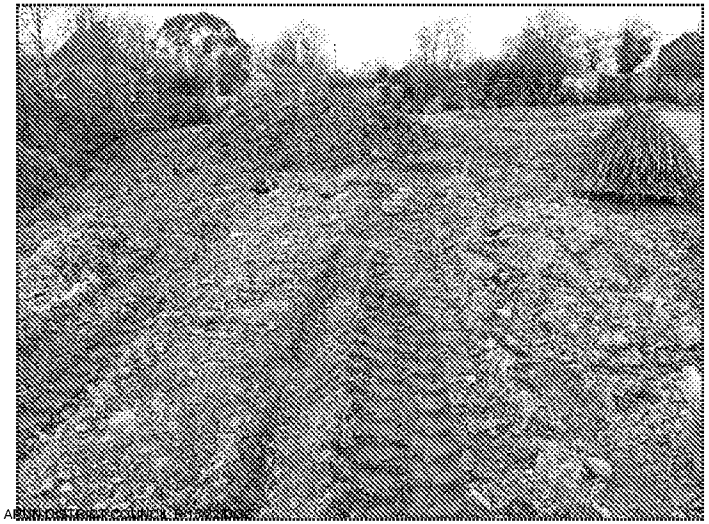
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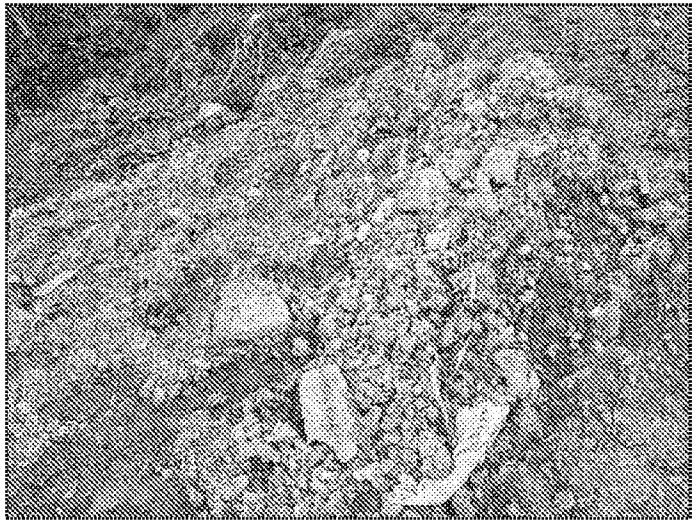
10.



11.



12.



9) View from NE corner

10) Embankment along SE border (possible ACM)

11) View SW to Sefter Cottage

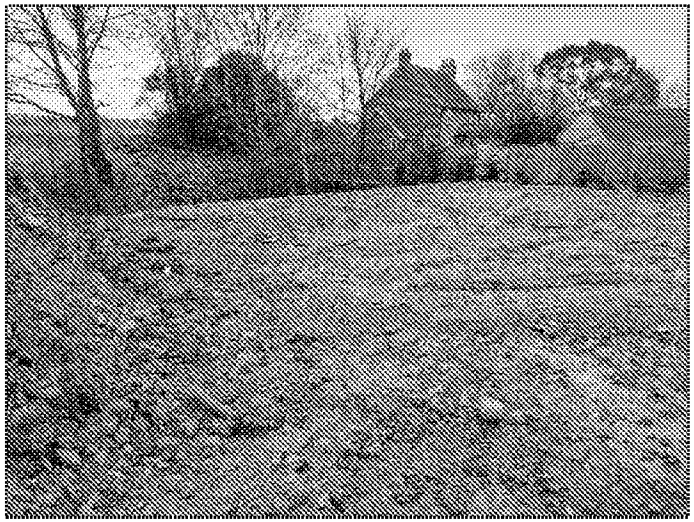
12) Surface debris along SE border (possible ACM)

Site Photographs

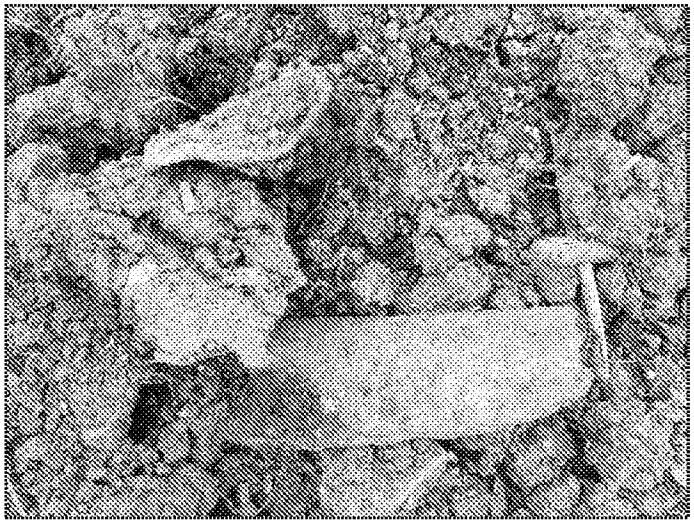
Project Ref: 21.1146.ERA

Site Name: Land at rear of Sefter School House, Pagham

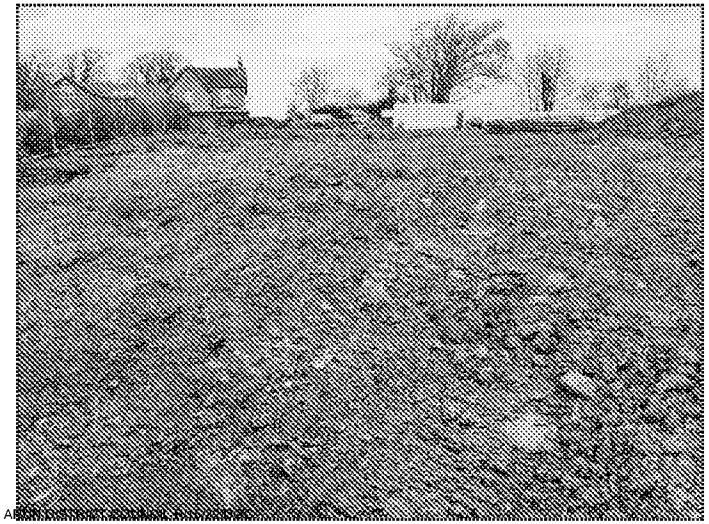
13.



14.



15.



16.



9) S corner – looking at Sefter Cottage

13) Surface debris along SE border (possible ACM)

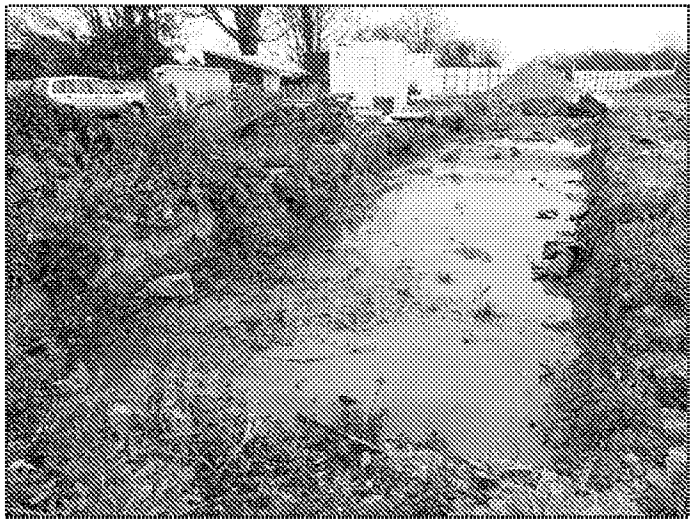
14) View NW to Sefter School House

15) Surface debris along SW border (fire pit)

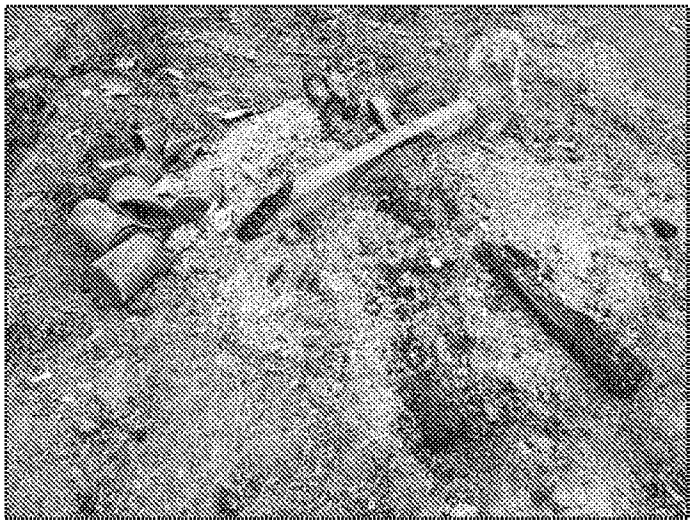
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Site Photographs

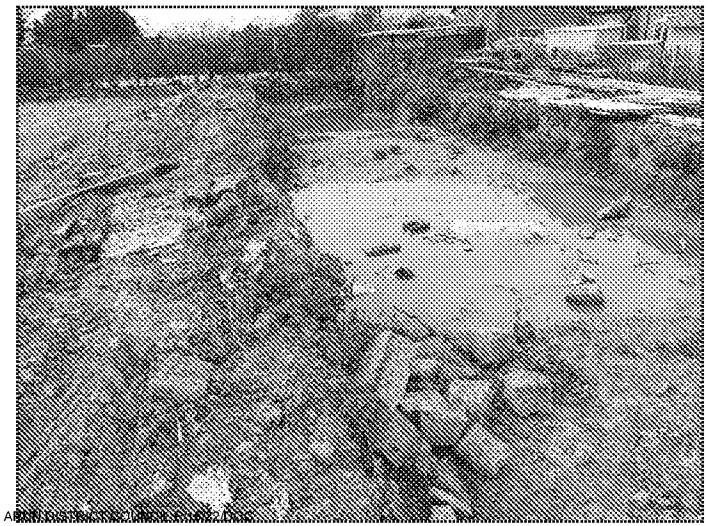
17.



18.



19.



20.



17) Shallow excavation along NW border

18) Surface debris adjacent to excavation (fire pit)

19) Shallow excavation – looking W

20) General view W to Sefter School House

APPENDIX B

Environmental Database Information

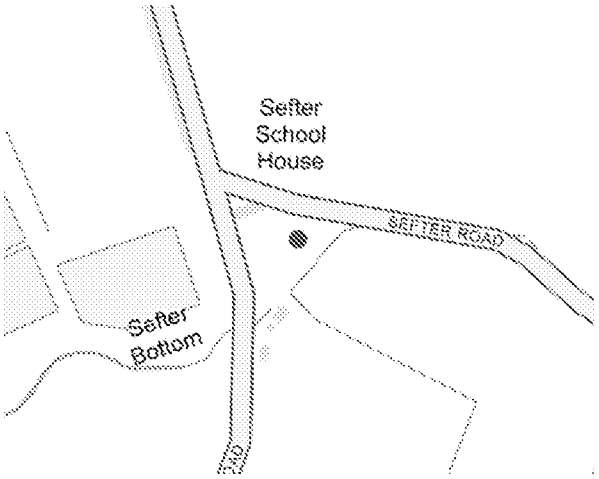
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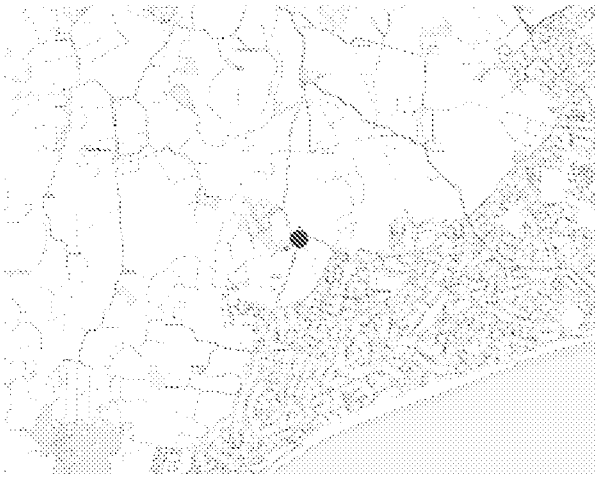
BOMB/RISK

Groundsure
LOCATION INTELLIGENCE

FIND

Preliminary Unexploded Ordnance Risk Assessment





Project: Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Groundsure Ref: GS-8585938

Report prepared by SafeLane Global and FIND Mapping Limited

Report reference: 504928

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ARUN DISTRICT COUNCIL

Preliminary Unexploded Ordnance Threat Assessment

For:
Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Contents **Page**

1 Executive Summary 02

2 Introduction 03

3 Methodology 05

4 Search Results 06

5 Risk of UXO Based on WWII German Bombing Density 08

6 Conclusions 09

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1 Has a potential unexploded ordnance (UXO) risk been identified at the site in question?

YES

Indicative British / Allied UXO Risk	MEDIUM
Indicative German UXO Risk	MEDIUM

2 Does the site in question require further research to clarify the unexploded ordnance (UXO) risk to future ground works?

YES

3 SafeLane Global's recommendation:

A Stage 2 Detailed Unexploded Ordnance Desktop Threat Assessment of the site is carried out.

To request a quotation please call SafeLane Global on 01634 471 340

If you order the recommended Stage 2 Detailed Desktop Threat Assessment, you will be refunded the fee for this BombRisk Preliminary Threat Assessment.

www.bombrisk.com/uk/terms-and-conditions

About SafeLane Global Limited

Operational for over 30 years for 10,000+ clients, SafeLane Global supports the UK construction industry with its BombRisk service. This assesses the risk of encountering items of unexploded ordnance (UXO) during intrusive works.

Safelane Global's specialist advice provides essential information for risk assessments, improving safety and enhancing reputations, helping contractors avoid costly delays.

SafeLane Global holds the following accreditations:

- **Occupational Health & Safety Management Systems (OHAS 18001:2007)**
- **Environmental Management Systems (ISO 14001:2004)**
- **Quality Management Systems (ISO 9001:2008).**

The risk of encountering UXO on most sites in the UK is low. However, where a site is at increased risk it is necessary to take measures to mitigate that risk. The factors affecting UXO risk assessment are based upon the history and previous usage of a site and its surroundings.

In 2009, the Construction Industry Research and Information Association (CIRIA) established a set of guidelines to assist industry professionals; SafeLane Global was a significant contributor to the guide, under former company name Dynasafe BACTEC.

CIRIA recommends a four-stage risk management process:

- **Preliminary risk assessment**
- **Detailed risk assessment**
- **Risk mitigation**
- **Implementation**

The preliminary risk assessment enables a non-UXO specialist to place a site in context and to identify whether a more detailed assessment is necessary. The assessment is based upon data obtained from desktop reviews of the site's history and its proximity to potential indicators of UXO contamination.

There are two principal groups of onshore UXO in the UK:

- **British / Allied army, air force and navy activities - domestic military activity**
- **Enemy bombing during WWI and WWII - aerial bombing and naval bombardment**

These two groups comprise many potential UXO risk contributing sources within the UK, the most significant of which are listed below. Georeferenced databases containing this information are used

www.districtcouncil.gov.uk

by BombRisk.com to identify areas of potentially elevated UXO risk.

- **Historic army, navy and air-force facilities**
- **Explosives / ammunition factories**
- **Munitions storage depots**
- **Historic military training areas and firing ranges**
- **British army explosive ordnance clearance tasks / recces**
- **WWII heavy anti-aircraft batteries**
- **WWII anti-invasion defensive fortifications**
- **Miscellaneous WWII pipe mined locations**
- **WWII prisoner of war camps**
- **WWII German bombing density statistics**
- **WWII bombing decoy sites**
- **Press articles regarding UXO finds**
- **Locations of SafeLane Global UXO finds**
- **Locations of SafeLane Global desktop threat assessments**
- **Locations of SafeLane Global on-site support services**

About FIND Mapping Limited

Established in 2006, FIND Mapping Limited is a pioneering web mapping and spatial data technology company offering online mapping and consultancy services. FIND technology powers the generation of this report.

www.findmaps.co.uk provides detailed mapping and a wealth of data sets to hundreds of the UK's top property, environmental and design/build companies.

FIND's consultancy services provide bespoke internet mapping solutions to a range of businesses enabling them to manage their spatial data more effectively.

While working closely with a wide range of reputable data providers including Ordnance Survey and the Environment Agency, FIND works independently of these organisations. A similar arm's-length relationship is maintained in terms of software and hardware providers. This enables the team at FIND to offer truly independent advice.

www.bombrisk.com/uk/sample

SafeLane Global Limited and FIND have compiled a geo-referenced database of potential sources of UXO risk within the UK. From this information a range of risk zones have been defined.

The weighting of these zones is based upon the influence of all relevant factors. A WWII-era RAF airfield, for example, has a far greater zone of influence than a single WWII-era anti-aircraft battery, as it would have covered a larger area, housed a much greater quantity / variety of munitions, seen more domestic troop training activities and would have been a more likely target for enemy bombers.

An online Preliminary Automated UXO Threat Assessment will determine an indicative level of UXO risk relating to a site. Note that these risk levels could be subject to change following the completion of any Detailed Desktop Threat Assessment for the same site.

The assessment will list all factors contributing to this weighting and will also give appropriate recommendations for further action, if considered necessary.

www.bombriskcouncil.org

SafeLane Global Limited's UXO Source Database

Within 10km of the site the following potential sources of explosive ordnance have been recorded:

Source	Number within 10km
Military Airfield Sites	5
Bombing Decoy Sites	3
Abandoned Bombs	1
Press Articles Regarding UXO Finds	2
WWII Defence Related Positions & Pillboxes	58
Historic Army Camps	1
Heavy Anti-Aircraft Batteries	3
Army Explosive Ordnance Clearance Tasks/Recces	13
Miscellaneous WWII Pipe Mined Locations	6
Sites Related to the Manufacture of Explosives and Explosive Ordnance	1
SafeLane Global Desk-top Threat Assessments	3
Prisoner of War Camps	None recorded
Military Training Areas and Firing Ranges	None recorded
Pipe Mined WWII Airfields	None recorded
SafeLane Global Unexploded Ordnance Finds	None recorded
SafeLane Global On-Site Support Services	None recorded

Of these sources, the following are deemed the most significant:

Military Airfield Sites

Facility Name	Approximate distance (km) from site
Bognor	0.8

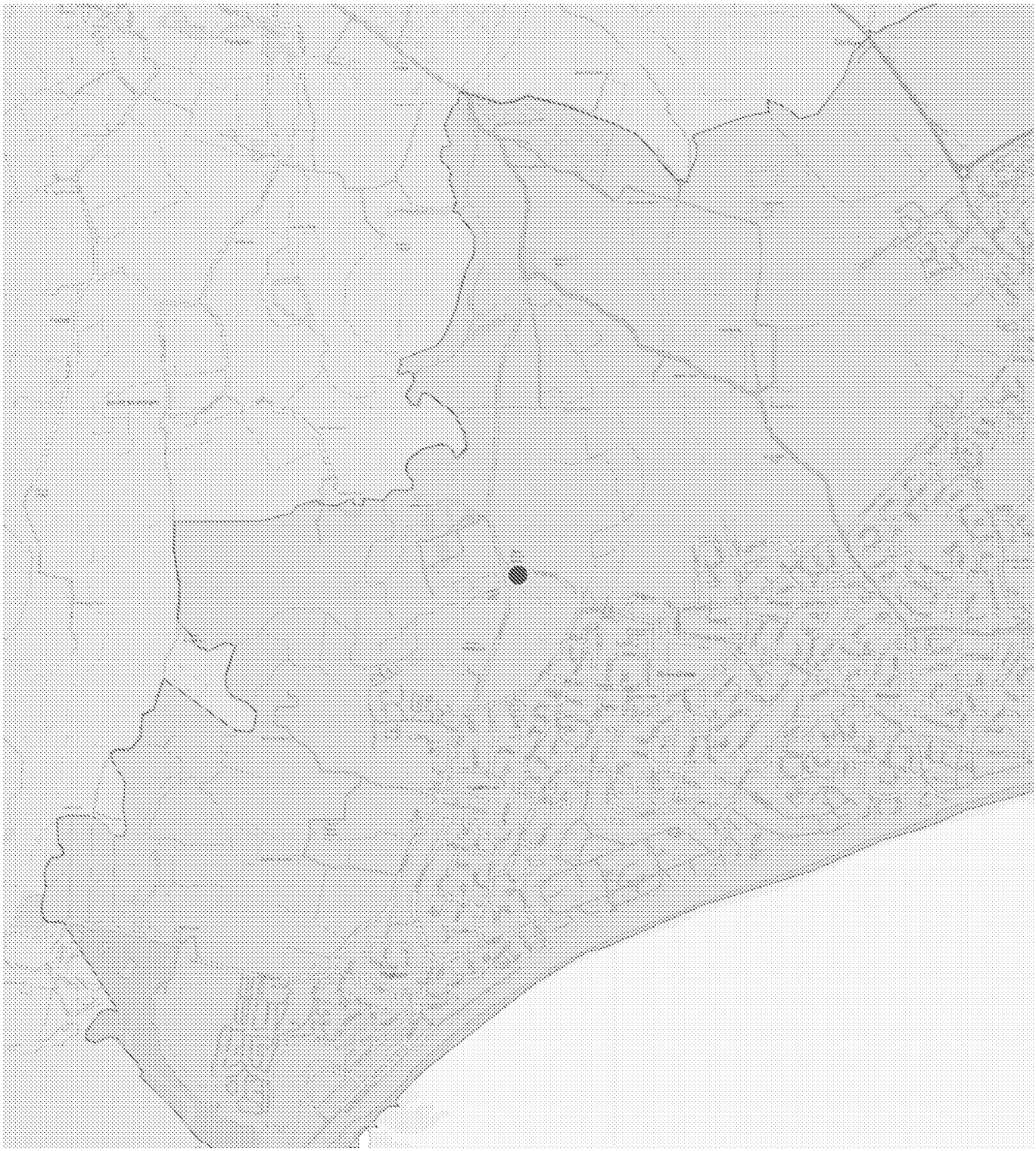
The risk of encountering UXO at the site of an airfield is highly dependent upon the history of the site. Factors to be considered include the type of airfield and its role before, during and after WWII. Additional factors affecting the site include records of aerial attacks, test firing butts, bomb stores, remote wooded training areas, practice bomb areas, ammunition storage locations, defensive positions, aircraft crash sites etc.

The 'housekeeping' of such sites, especially those which were active and operational during WWII, was often poor. Experience has shown that on and around many such facilities, ordnance was lost, burnt,

buried or otherwise discarded. Live and expended munitions are regularly encountered on such sites.

The proximity of the site to the recorded location of military airfield facilities increases the risk that there may be unexploded ordnance in the area. This should be more fully investigated.

BOMB/RISK FIND



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BOMB/RISK

SAFELANE® GLOBAL FIND OS Map data

NEGLIGIBLE
LOW
MEDIUM
HIGH

1:20000

N
W E
S

0 400 800
Metres

Risk Levels and Recommendation

Indicative British / Allied UXO Risk

MEDIUM

There are potential sources of British / Allied UXO recorded in SafeLane Global's historical database in proximity to the site. It is recommended that further research is undertaken to determine more about these potential sources and how they may have affected the site. Given the proximity of these sources, the risk on site from UXO is considered to be Medium.

Indicative German UXO Risk

MEDIUM

Historical records indicate a medium level of bombing density across the borough in which the site was situated during WWII.

More research should be undertaken to identify whether the site itself was bombed or damaged during WWII.

This preliminary assessment has identified a medium risk from German unexploded bombs at this site.

Conclusion

This preliminary assessment has resulted in an overall Medium risk from UXO. SafeLane Global would recommend that a Detailed UXO Threat Assessment Desk Top Study is undertaken for this site. Detailed assessments are conducted offline by SafeLane Global's researchers and use information such as historical mapping, WWII-era aerial photography, written air-raid precaution records and where necessary local archive research to fully qualify the risk on site. Land use, changes to building layout during WWII and post war redevelopment will also have an impact on any remaining level of risk from UXO. It is often possible to zone sites into different risk categories. The lead time for a detailed assessment will vary between 3-10 working days dependent upon the complexity of the site and the additional site specific information required.

For a quotation, or more information, please contact SafeLane Global's research team on 01634 471 340, or at research@safelaneglobal.com

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Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Order Details

Date: 10/03/2022

Your ref: 21-1146

Our Ref: GS-8585939

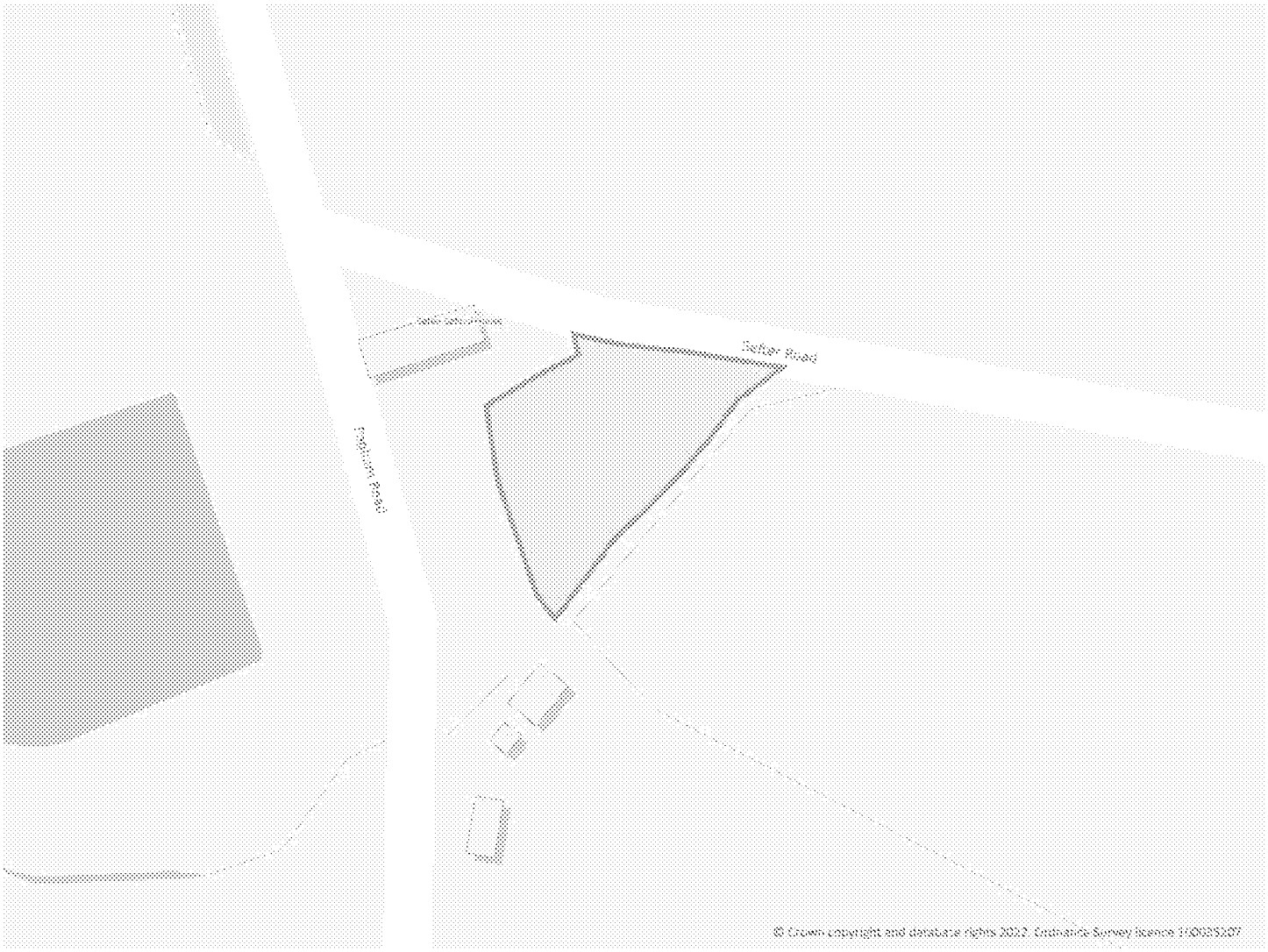
Client: Jocelyn Middleton

Site Details

Location: 489526 099489

Area: 0.29 ha

Authority: Arun District Council



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Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

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Contact us with any questions at:
info@groundsure.com
08444 159 000

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Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	0	0	0	4	-
15	1.2	Historical tanks	0	0	0	1	-
15	1.3	Historical energy features	0	0	0	7	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
17	2.1	Historical industrial land uses	0	0	0	5	-
18	2.2	Historical tanks	0	0	0	1	-
18	2.3	Historical energy features	0	0	0	12	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
21	3.4	Historical landfill (EA/NRW records)	0	1	0	0	-
21	3.5	Historical waste sites	0	0	0	0	-
21	3.6	Licensed waste sites	0	0	0	3	-
22	3.7	Waste exemptions	0	0	0	4	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
24	4.1	Recent industrial land uses	0	0	0	-	-
24	4.2	Current or recent petrol stations	0	0	0	0	-
25	4.3	Electricity cables	0	0	0	0	-
25	4.4	Gas pipelines	0	0	0	0	-
25	4.5	Sites determined as Contaminated Land	0	0	0	0	-

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25	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
25	4.7	Regulated explosive sites	0	0	0	0	-
26	4.8	Hazardous substance storage/usage	0	0	0	0	-
26	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
26	**4.10**	**Licensed industrial activities (Part A(1))**	0	0	0	2	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
27	4.12	Radioactive Substance Authorisations	0	0	0	0	-
27	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
27	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
27	4.15	Pollutant release to public sewer	0	0	0	0	-
28	4.16	List 1 Dangerous Substances	0	0	0	0	-
28	4.17	List 2 Dangerous Substances	0	0	0	0	-
28	**4.18**	**Pollution Incidents (EA/NRW)**	1	3	0	0	-
29	**4.19**	**Pollution inventory substances**	0	0	0	3	-
30	4.20	Pollution inventory waste transfers	0	0	0	0	-
30	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
31	**5.1**	**Superficial aquifer**	Identified (within 500m)				
33	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
35	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
36	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
36	5.5	Groundwater vulnerability- local information	None (within 0m)				
37	**5.6**	**Groundwater abstractions**	0	0	0	0	2
38	**5.7**	**Surface water abstractions**	0	0	0	0	9
40	5.8	Potable abstractions	0	0	0	0	0
41	5.9	Source Protection Zones	0	0	0	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
42	**6.1**	**Water Network (OS MasterMap)**	0	7	6	-	-

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44	6.2	Surface water features	0	5	10	-	-
44	6.3	WFD Surface water body catchments	1	-	-	-	-
44	6.4	WFD Surface water bodies	0	0	0	-	-
45	6.5	WFD Groundwater bodies	0	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
46	7.1	Risk of flooding from rivers and the sea	High (within 50m)				
47	7.2	Historical Flood Events	0	0	0	-	-
47	7.3	Flood Defences	0	0	0	-	-
47	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
47	7.5	Flood Storage Areas	0	0	0	-	-
48	7.6	Flood Zone 2	Identified (within 50m)				
49	7.7	Flood Zone 3	Identified (within 50m)				

Page	Section	Surface water flooding	
50	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
52	9.1	Groundwater flooding	High (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
53	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	3
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	1
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	2
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55	10.6	Local Nature Reserves (LNR)	0	0	0	0	1
56	10.7	Designated Ancient Woodland	0	0	0	0	1
56	10.8	Biosphere Reserves	0	0	0	0	0
56	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	Green Belt	0	0	0	0	0
57	10.12	Proposed Ramsar sites	0	0	0	0	0

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57	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
58	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	1
59	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
60	**10.18**	**SSSI Units**	0	0	0	0	5
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	11.1	World Heritage Sites	0	0	0	-	-
63	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
63	11.3	National Parks	0	0	0	-	-
63	11.4	Listed Buildings	0	0	0	-	-
64	11.5	Conservation Areas	0	0	0	-	-
64	11.6	Scheduled Ancient Monuments	0	0	0	-	-
64	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
65	**12.1**	**Agricultural Land Classification**	Grade 2 (within 250m)				
66	12.2	Open Access Land	0	0	0	-	-
66	12.3	Tree Felling Licences	0	0	0	-	-
67	**12.4**	**Environmental Stewardship Schemes**	0	1	1	-	-
67	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
68	13.1	Priority Habitat Inventory	0	0	0	-	-
68	13.2	Habitat Networks	0	0	0	-	-
68	13.3	Open Mosaic Habitat	0	0	0	-	-
68	13.4	Limestone Pavements Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
69	**14.1**	**10k Availability**	Identified (within 500m)				
70	**14.2**	**Artificial and made ground (10k)**	0	0	1	0	-
71	**14.3**	**Superficial geology (10k)**	1	1	2	4	-

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72	14.4	Landslip (10k)	0	0	0	0	-
73	14.5	Bedrock geology (10k)	1	0	1	5	-
74	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
75	15.1	50k Availability	Identified (within 500m)				
76	15.2	Artificial and made ground (50k)	0	0	1	0	-
77	15.3	Artificial ground permeability (50k)	0	0	-	-	-
78	15.4	Superficial geology (50k)	1	1	2	1	-
79	15.5	Superficial permeability (50k)	Identified (within 50m)				
79	15.6	Landslip (50k)	0	0	0	0	-
79	15.7	Landslip permeability (50k)	None (within 50m)				
80	15.8	Bedrock geology (50k)	1	0	1	1	-
81	15.9	Bedrock permeability (50k)	Identified (within 50m)				
81	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
82	16.1	BGS Boreholes	0	1	0	-	-
Page	Section	Natural ground subsidence					
83	17.1	Shrink swell clays	Low (within 50m)				
84	17.2	Running sands	Low (within 50m)				
86	17.3	Compressible deposits	Negligible (within 50m)				
87	17.4	Collapsible deposits	Low (within 50m)				
88	17.5	Landslides	Very low (within 50m)				
89	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
90	18.1	Natural cavities	0	0	0	0	-
91	18.2	BritPits	0	0	0	1	-
91	18.3	Surface ground workings	0	0	0	-	-
91	18.4	Underground workings	0	0	0	0	0
91	18.5	Historical Mineral Planning Areas	0	0	0	0	-

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92	18.6	Non-coal mining	0	0	0	0	0
92	18.7	Mining cavities	0	0	0	0	0
92	18.8	JPB mining areas	None (within 0m)				
92	18.9	Coal mining	None (within 0m)				
92	18.10	Brine areas	None (within 0m)				
93	18.11	Gypsum areas	None (within 0m)				
93	18.12	Tin mining	None (within 0m)				
93	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
94	19.1	Radon	Between 1% and 3% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
95	20.1	BGS Estimated Background Soil Chemistry	4	2	-	-	-
95	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
96	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
97	21.1	Underground railways (London)	0	0	0	-	-
97	21.2	Underground railways (Non-London)	0	0	0	-	-
97	21.3	Railway tunnels	0	0	0	-	-
97	21.4	Historical railway and tunnel features	0	0	0	-	-
97	21.5	Royal Mail tunnels	0	0	0	-	-
98	21.6	Historical railways	0	0	0	-	-
98	21.7	Railways	0	0	0	-	-
98	21.8	Crossrail 1	0	0	0	0	-
98	21.9	Crossrail 2	0	0	0	0	-
98	21.10	HS2	0	0	0	0	-

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Recent aerial photograph



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Capture Date: 23/07/2018

Site Area: 0.29ha

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Recent site history - 2015 aerial photograph



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Capture Date: 20/05/2015

Site Area: 0.29ha

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Recent site history - 2012 aerial photograph



Capture Date: 13/09/2012

Site Area: 0.29ha

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Recent site history - 2005 aerial photograph



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Capture Date: 22/06/2005

Site Area: 0.29ha

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Recent site history - 1999 aerial photograph

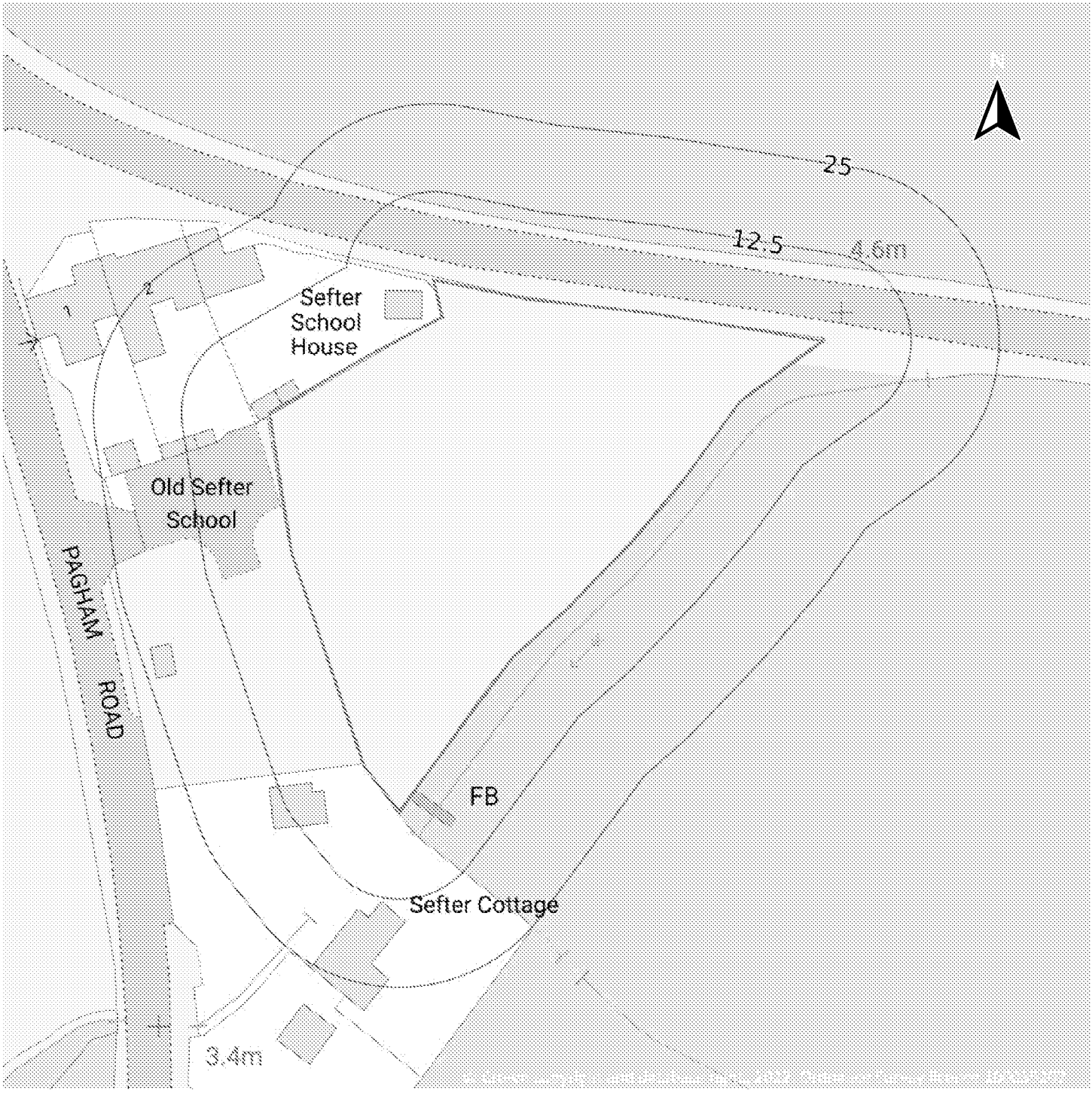


Capture Date: 06/09/1999

Site Area: 0.29ha

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OS MasterMap site plan



Site Area: 0.29ha

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1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	4

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

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

ID	Location	Land use	Dates present	Group ID
A	328m SE	Brick Field	1938	1980756

ID	Location	Land use	Dates present	Group ID
A	328m SE	Brick Field	1933	1977994
B	381m E	Electric Substation	1989	1974326
3	459m E	Electric Substation	1973	1981794

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	1

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

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

ID	Location	Land use	Dates present	Group ID
2	430m NW	Unspecified Tank	1898	328874

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	7

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

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

ID	Location	Land use	Dates present	Group ID
1	368m SE	Electricity Substation	1992 - 1994	214793
6	418m E	Electricity Substation	1992	215710
9	420m E	Electricity Substation	1994	212954
8	430m E	Electricity Substation	1992	212942

ID	Location	Land use	Dates present	Group ID
B	432m E	Electricity Substation	1980	215599
B	433m E	Electricity Substation	1979	214052
4	496m SE	Electricity Substation	1992 - 1994	215111

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	5

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

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

ID	Location	Land Use	Date	Group ID
A	328m SE	Brick Field	1938	1980756
A	328m SE	Brick Field	1953	1977994
A	328m SE	Brick Field	1933	1977994

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ID	Location	Land Use	Date	Group ID
C	381m E	Electric Substation	1989	1974326
2	459m E	Electric Substation	1973	1981794

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	1

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

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

ID	Location	Land Use	Date	Group ID
1	430m NW	Unspecified Tank	1898	328374

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	12

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

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

ID	Location	Land Use	Date	Group ID
B	368m SE	Electricity Substation	1994	214793
B	369m SE	Electricity Substation	1992	214793
B	369m SE	Electricity Substation	1992	214793
C	418m E	Electricity Substation	1992	215710
C	418m E	Electricity Substation	1992	215710
C	420m E	Electricity Substation	1994	212954
C	430m E	Electricity Substation	1992	212942
C	432m E	Electricity Substation	1980	215599

ID	Location	Land Use	Date	Group ID
C	433m E	Electricity Substation	1979	214052
D	496m SE	Electricity Substation	1994	215111
D	496m SE	Electricity Substation	1992	215111
D	496m SE	Electricity Substation	1992	215111

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

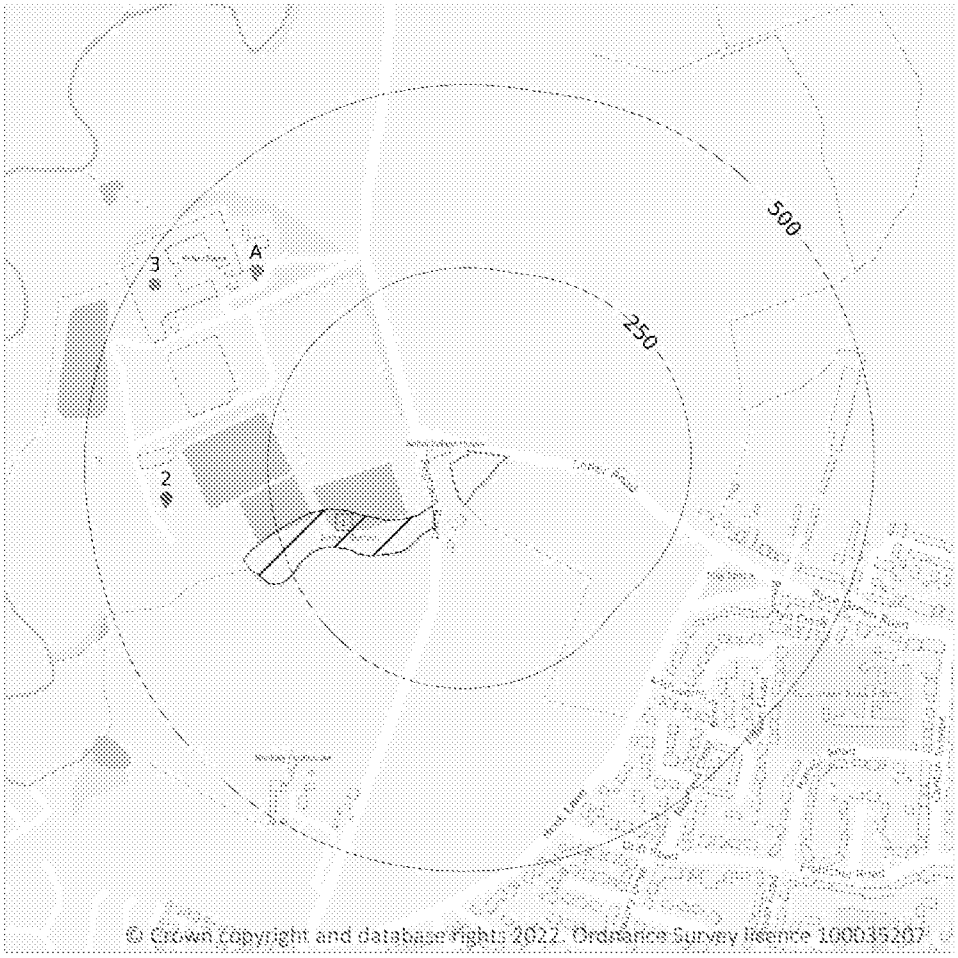
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

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3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

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

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

ID	Location	Details		
1	38m W	Site Address: Sefter Lodge, Pagham, Sussex Licence Holder Address: -	Waste Licence: Yes Site Reference: WD27/168 Waste Type: inert, Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/01/1976 Licence Surrender: -	Operator: - Licence Holder: - First Recorded: 31/12/1950 Last Recorded: 31/12/1960

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	3

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

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

ID	Location	Details		
A	373m NW	Site Name: Sefter Farm Site Address: Sefter Farm, Pagham Road, Pagham, West Sussex, PO21 3PX Correspondence Address: -	Type of Site: Anaerobic digestion facility 75,000 tpy Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAR168 EPR reference: EA/EPR/GP3293LW/A001 Operator: Barfoot Energy Ltd Waste Management licence No. 101484 Annual Tonnage: 74999	Issue Date: 04/08/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
A	373m NW	Site Name: Sefter Farm Site Address: Sefter Farm, Pagham Road, Bognor Regis, West Sussex, PO21 3PX Correspondence Address: -	Type of Site: Biological Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAR168 EPR reference: EA/EPR/GP3293LW/V004 Operator: Barfoot Energy Ltd Waste Management licence No: 101484 Annual Tonnage: 74999	Issue Date: 04/08/2010 Effective Date: - Modified: 23/12/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC
2	392m W	Site Name: Sefter Farm Site Address: Sefter Farm, Pagham Road, Bognor Regis, West Sussex, PO21 3PX Correspondence Address: -	Type of Site: Biological Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAR168 EPR reference: EA/EPR/GP3293LW/V004 Operator: Barfoot Energy Ltd Waste Management licence No: 101484 Annual Tonnage: 74999	Issue Date: 04/08/2010 Effective Date: - Modified: 23/12/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC

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

3.7 Waste exemptions

Records within 500m	4

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

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

ID	Location	Site	Reference	Category	Sub-Category	Description
A	373m NW	SEFTER FARM PAGHAM ROAD BOGNOR REGIS WEST SUSSEX PO21 3PX	EPR/ME5683RS/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
A	374m NW	Barfoot Farm Ltd, Little Sefter Farm, Pagham road, Bognor Regis, PO21 3PX	WEX122465	Treating waste exemption	On a farm	Treatment of waste in a biobed or biofilter
A	374m NW	SEFTER FARM PAGHAM ROAD BOGNOR REGIS WEST SUSSEX PO21 3PX	EPR/BE5548VZ/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
3	473m NW	SEFTER FARM, PAGHAM ROAD, BOGNOR REGIS, PO21 3PX	WEX167825	Using waste exemption	On a farm	Use of waste in construction

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Part A(1) industrial activities

Pollution Incidents (EA/NRW)

Pollution inventory substances

4.1 Recent industrial land uses

Records within 250m	0

Current potentially contaminative industrial sites.

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	2

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

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Details	
8	344m W	Operator: BARFOOT ENERGY LTD Installation Name: SEFTER FARM EPR/GP3293LW Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: OP3404LP Original Permit Number: GP3136WS	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/01/2022 Status: DETERMINATION
8	344m W	Operator: BARFOOT ENERGY LTD Installation Name: SEFTER FARM EPR/GP3293LW Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: GP3136WS Original Permit Number: GP3136WS	EPR Reference: - Issue Date: 23/12/2015 Effective Date: 23/12/2015 Last date noted as effective: 01/01/2022 Status: EFFECTIVE

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	4

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

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Details	
A	**On site**	**Incident Date: 19/07/2001** **Incident Identification: 17571** **Pollutant: Inert Materials and Wastes** **Pollutant Description: Construction and Demolition Materials and Wastes**	**Water Impact: Category 4 (No Impact)** **Land Impact: Category 3 (Minor)** **Air Impact: Category 4 (No Impact)**
A	12m W	Incident Date: 18/07/2001 Incident Identification: 17566 Pollutant: Specific Waste Materials Pollutant Description: Metal Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
A	16m W	Incident Date: 18/07/2001 Incident Identification: 17575 Pollutant: Specific Waste Materials Pollutant Description: Vehicles and Vehicle Parts	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	20m W	Incident Date: 19/07/2001 Incident Identification: 17574 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

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4.19 Pollution inventory substances

Records within 500m	3

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

Features are displayed on the Current industrial land use map on **page 24**

ID: C, Location: 373m NW, Permit: GP3293LW
Operator: Barfoot Energy Ltd
Activity: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT
Address: Sefter Farm Pagham Road Bognor Regis West Sussex PO21 3PX
Sector Biowaste Treatment, Sub-sector: Biowaste Treatment
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold
Air	Sulphur oxides (SO2 and SO3) as SO2	100000kg	Below Reporting Threshold

ID: C, Location: 373m NW, Permit: GP3293LW
Operator: Barfoot Energy Ltd
Activity: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT
Address: Sefter Farm Pagham Road Bognor Regis West Sussex PO21 3PX
Sector Biowaste Treatment, Sub-sector: Biowaste Treatment
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Methane	10000kg	52779kg

ID: C, Location: 373m NW, Permit: GP3293LW
Operator: Barfoot Energy Ltd
Activity: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT
Address: Sefter Farm Pagham Road Bognor Regis West Sussex PO21 3PX
Sector Biowaste Treatment, Sub-sector: Biowaste Treatment
Releases:

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Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Carbon dioxide	10000000kg	8217000kg
Air	Carbon Dioxide From Qualifying Renewable Fuel Sources	0kg	8217000kg

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

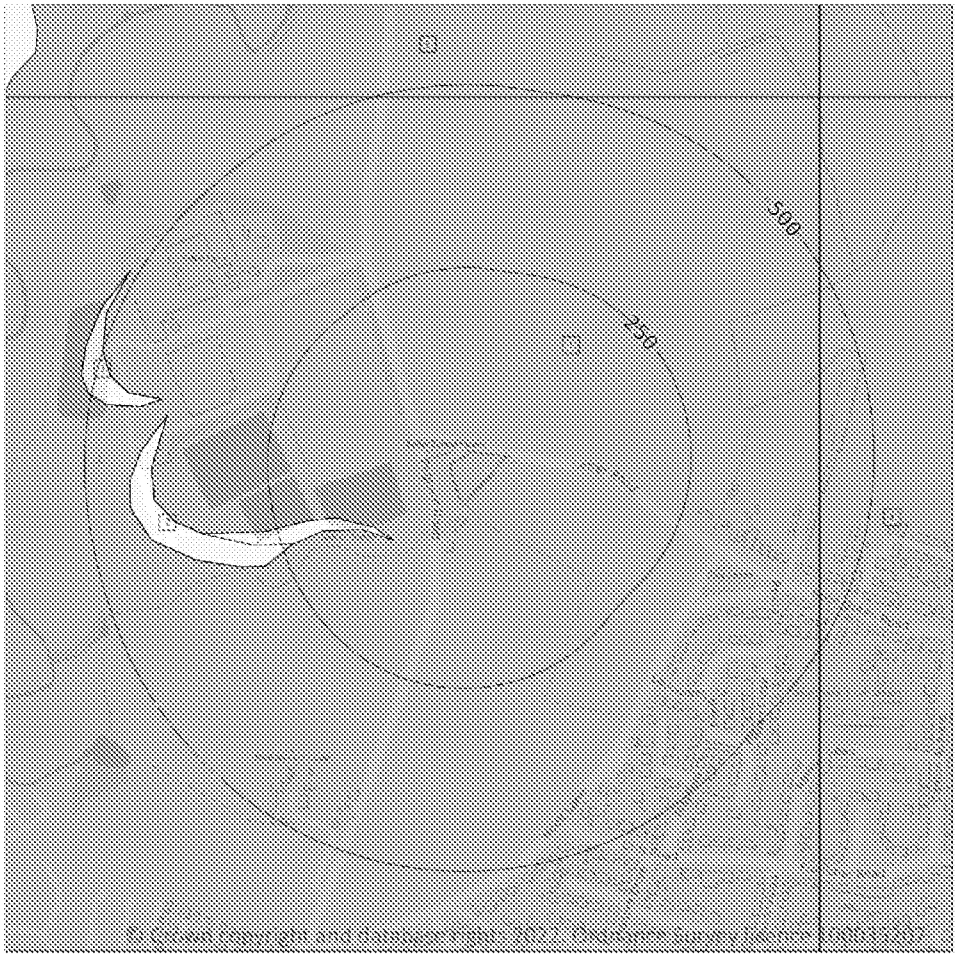
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m	5

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 31**

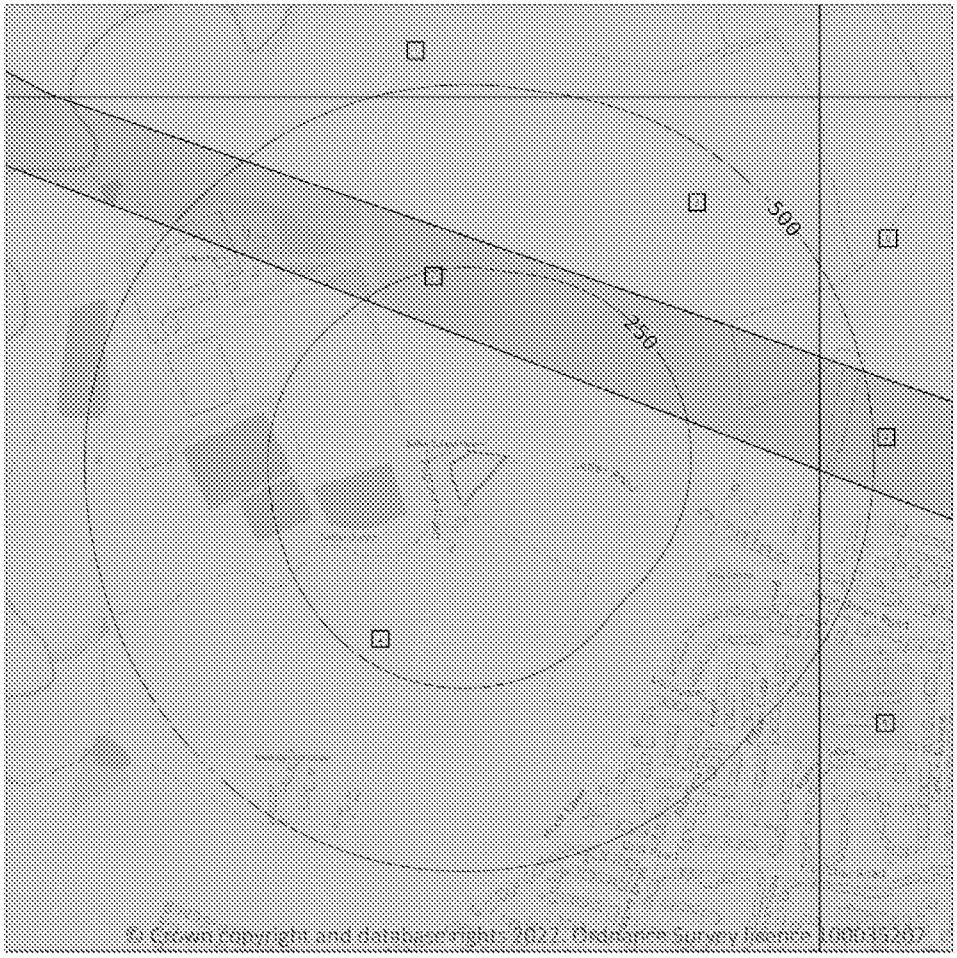
ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	236m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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ID	Location	Designation	Description
3	405m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	425m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	483m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	7

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 33**

ID	Location	Designation	Description
1	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**
2	132m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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ID	Location	Designation	Description
3	267m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
4	425m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	426m E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
6	447m E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
7	483m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

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

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

Features are displayed on the Groundwater vulnerability map on **page 35**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: High	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**

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ID	Location	Details	
-	1007m W	Status: Historical Licence No: 10/41/531308 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: BOWLEY FARM, SOUTH MUNDAM Data Type: Point Name: Clarke Easting: 488560 Northing: 99870	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 15/11/1983 Version End Date: -
-	1902m NW	Status: Historical Licence No: 10/41/531309 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: MANOR FARM, SOUTH MUNDAM Data Type: Point Name: Ranger Easting: 487790 Northing: 100340	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 26/07/2000 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	9

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 37**

ID	Location	Details	
A	615m NW	Status: Historical Licence No: 27/205 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: PAGHAM RIFE Data Type: Point Name: Tim Clarke Easting: 488930 Northing: 99740	Annual Volume (m^3): 45460 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/11/2007 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 16/06/2009 Version End Date: -

ID	Location	Details	
A	615m NW	Status: Active Licence No: 27/184 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: PAGHAM RIFE AT SEFTER FARM, PAGHAM Data Type: Point Name: Barfoot Farms Ltd Easting: 488930 Northing: 99740	Annual Volume (m^3): 113,636 Max Daily Volume (m^3): 753 Original Application No: NPS/WR/007856 Original Start Date: 05/10/1995 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2021 Version End Date: -
A	615m NW	Status: Active Licence No: 27/205/R01 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: PAGHAM RIFE Data Type: Point Name: Tim Clarke Easting: 488930 Northing: 99740	Annual Volume (m^3): 45,460 Max Daily Volume (m^3): 600 Original Application No: NPS/WR/019256 Original Start Date: 01/04/2016 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/04/2016 Version End Date: -
-	731m NW	Status: Historical Licence No: 27/205 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: PAGHAM RIFE Data Type: Point Name: Tim Clarke Easting: 488860 Northing: 99860	Annual Volume (m^3): 45460 Max Daily Volume (m^3): 600 Original Application No: - Original Start Date: 01/11/2007 Expiry Date: 21/03/2016 Issue No: 1 Version Start Date: 16/06/2009 Version End Date: -
-	813m SW	Status: Active Licence No: 10/41/531304 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: PAGHAM RIFE AT CHURCH FARM, PAGHAM Data Type: Line Name: Ashmansen Limited Easting: 487710 Northing: 98250	Annual Volume (m^3): 4,546 Max Daily Volume (m^3): 81.80 Original Application No: NPS/WR/030680 Original Start Date: 13/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 13/12/2018 Version End Date: -
-	1110m NW	Status: Active Licence No: 10/41/531327 Details: Spray Irrigation - Direct Direct Source: Southern Region Surface Waters Point: POINTS C-D, PAGHAM RIFE,NORTH MUNDHAM Data Type: Line Name: Langmead Farms Ltd Easting: 488430 Northing: 101040	Annual Volume (m^3): 13,638 Max Daily Volume (m^3): 1,045.50 Original Application No: NPS/WR/013806 Original Start Date: 01/04/1981 Expiry Date: - Issue No: 101 Version Start Date: 22/06/2015 Version End Date: -

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ID	Location	Details	
-	1478m W	Status: Active Licence No: SO/041/0027/005 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: POINT 'A' CHURCH BARTON FARM Data Type: Point Name: Ashmarden Limited Easting: 488097 Northing: 99008	Annual Volume (m^3): 125,455 Max Daily Volume (m^3): 1,000 Original Application No: NPS/WR/030682 Original Start Date: 20/05/2011 Expiry Date: 31/03/2028 Issue No: 2 Version Start Date: 13/12/2018 Version End Date: -
-	1993m NW	Status: Historical Licence No: 27/197 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: POINT A AT LIMEKILN BARN ON THE PAGHAM RIFE Data Type: Point Name: Fleming Easting: 488390 Northing: 101160	Annual Volume (m^3): 45432 Max Daily Volume (m^3): 500 Original Application No: - Original Start Date: 14/04/2000 Expiry Date: 13/4/2015 Issue No: 1 Version Start Date: 16/06/2009 Version End Date: -
-	1993m NW	Status: Active Licence No: 27/197/R01 Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: POINT A AT LIMEKILN BARN ON THE PAGHAM RIFE Data Type: Point Name: Langmead Easting: 488390 Northing: 101160	Annual Volume (m^3): 45,432 Max Daily Volume (m^3): 500 Original Application No: NPS/WR/017805 Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2016 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

5.10 Source Protection Zones (confined aquifer)

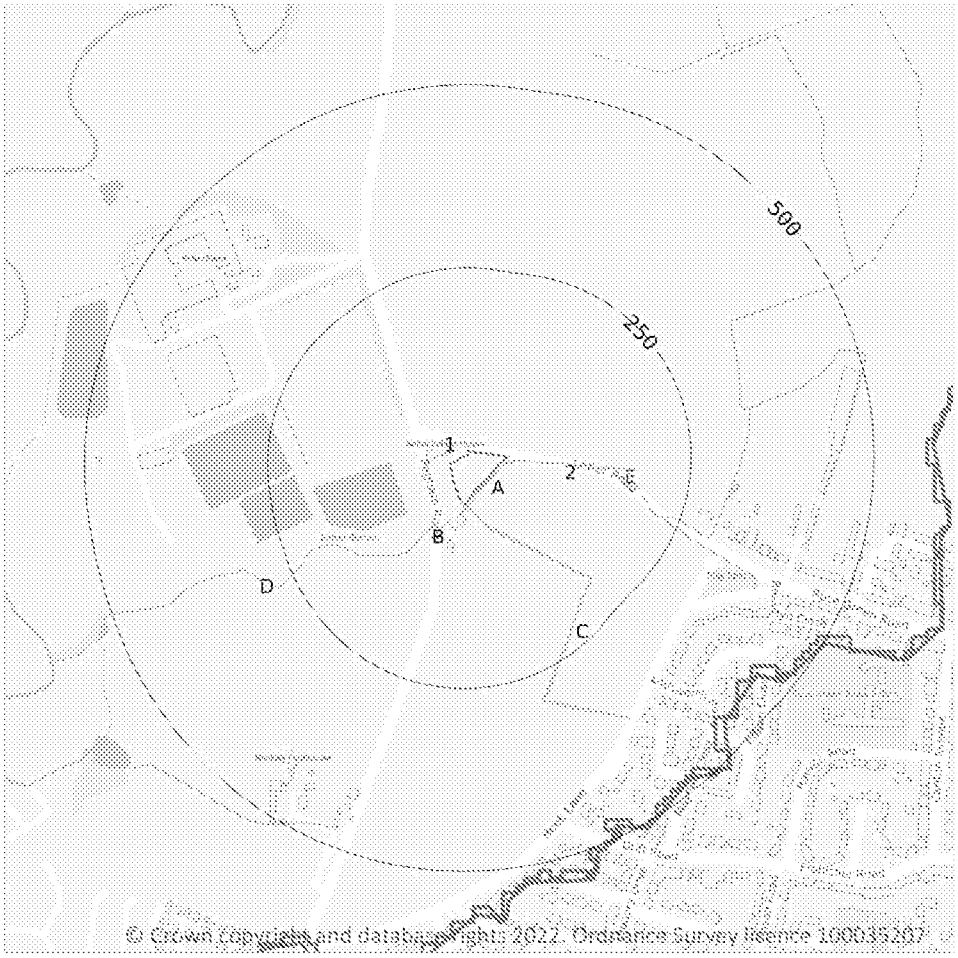
Records within 500m	0

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

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

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6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	13

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	3m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
B	4m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	4m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	15m E	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
B	25m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	31m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	35m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	113m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	125m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	179m E	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
E	212m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	224m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	224m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey

6.2 Surface water features

Records within 250m	15

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

Features are displayed on the Hydrology map on **page 42**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Pagham Rife**	**GB107041012880**	**Western Streams**	**Arun and Western Streams**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	606m SW	River	Pagham Rife	GB107041012880	Poor	Fail	Poor	2019

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

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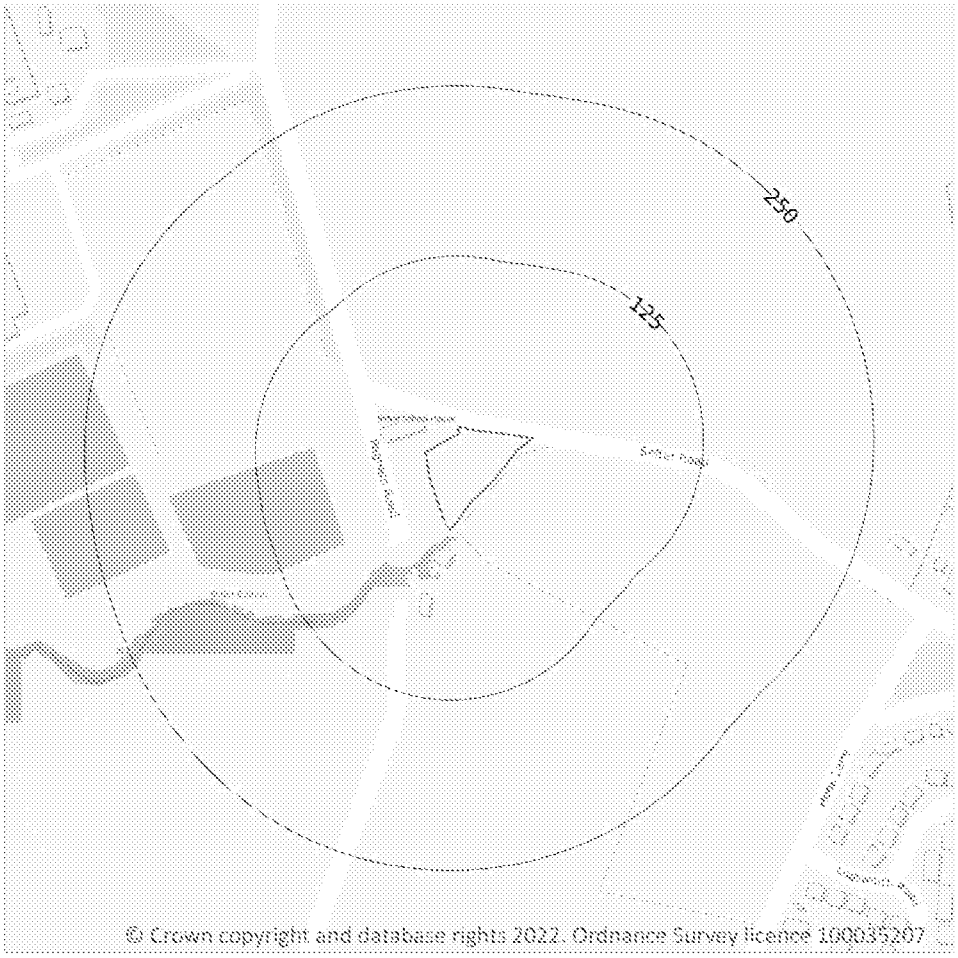
6.5 WFD Groundwater bodies

Records on site	0

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

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

7 River and coastal flooding



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7.1 Risk of flooding from rivers and the sea

Records within 50m	4

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 46**

Distance	Flood risk category
On site	N/A
0 - 50m	High

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

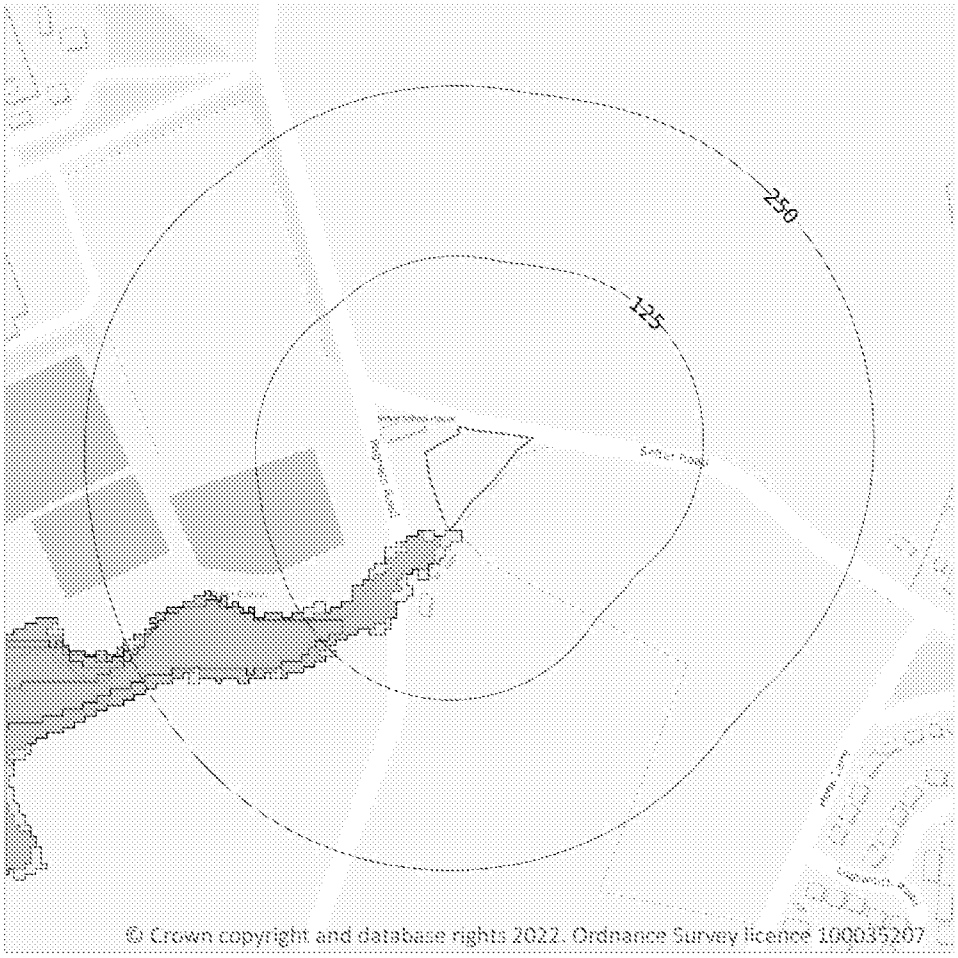
7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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

Features are displayed on the River and coastal flooding map on **page 46**

Location	Type
1m S	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m	1

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

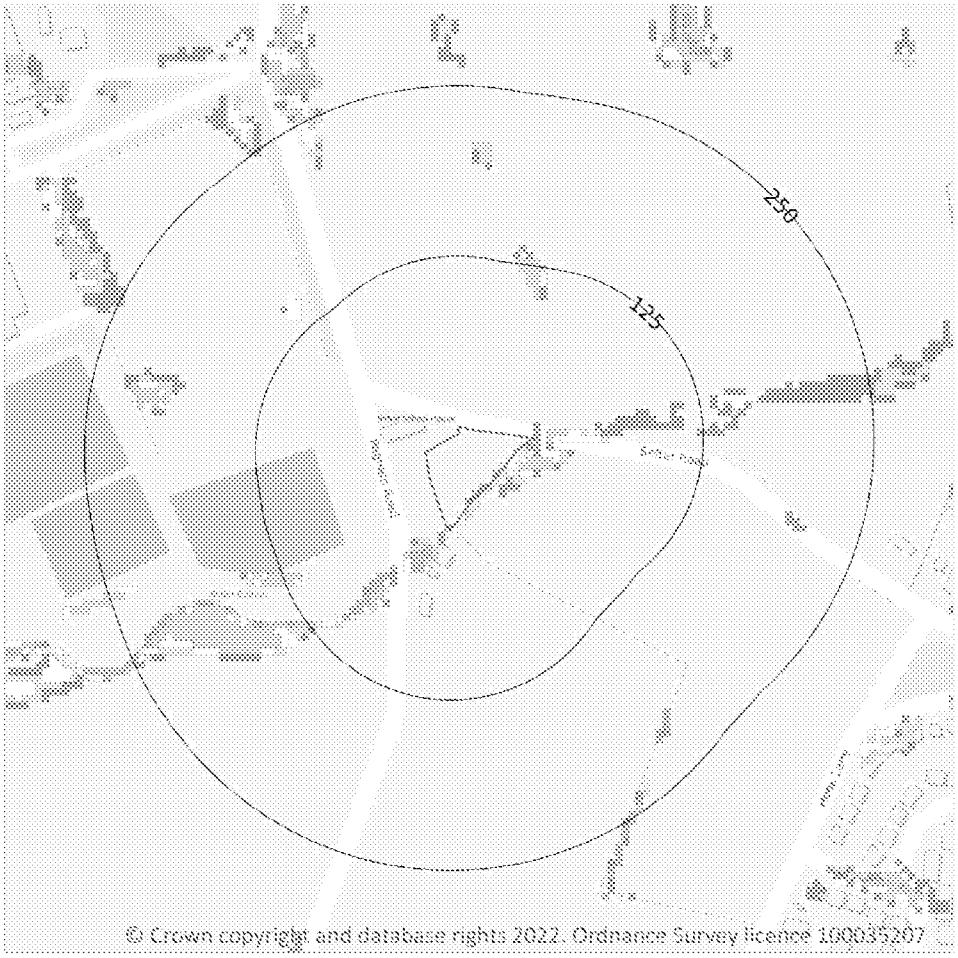
Features are displayed on the River and coastal flooding map on **page 46**

Location	Type
9m SW	Zone 3 - (Fluvial Models)

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

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8 Surface water flooding



Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 100 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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

Features are displayed on the Surface water flooding map on **page 50**

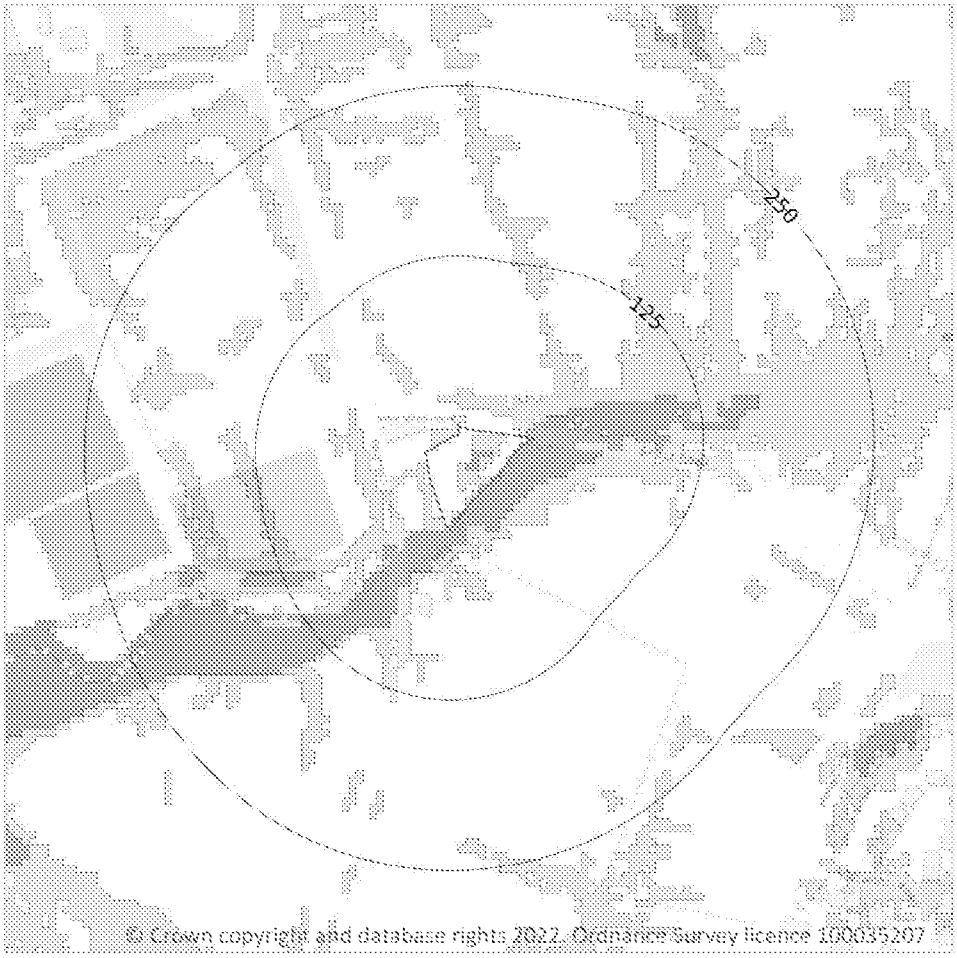
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site	**High**
Highest risk within 50m	**High**

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

Features are displayed on the Groundwater flooding map on **page 52**

This data is sourced from Ambiental Risk Analysis.

10 Environmental designations



Site Outline

Search buffers in metres (m)

- Sites of Special Scientific Interest (SSSI)
- Conserved wetland sites (Ramsar sites)
- Special Protection Areas (SPA)
- Local Nature Reserves (LNR)
- Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	3

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

Features are displayed on the Environmental designations map on **page 53**

ID	Location	Name	Data source
-	1701m SE	Bognor Reef	Natural England

ID	Location	Name	Data source
-	1895m S	Pagham Harbour	Natural England
-	1908m S	Bognor Reef	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 53**

ID	Location	Site	Details
-	1894m S	Name: Pagham Harbour Site status: Listed Data source: Natural England	Overview: Pagham Harbour comprises an extensive central area of saltmarsh and tidal mudflats with surrounding habitats including lagoons, shingle, open water, reed swamp and wet permanent grassland. The intertidal mudflats are rich in invertebrate and algae, and provide important feeding areas for birds. The lower saltmarsh is dominated by common cord-grass but also includes patches of glasswort. At higher levels sea-purslane is abundant. The area supports internationally important numbers of wintering pintail and nationally important numbers of dark-bellied brent goose, grey plover and black-tailed godwit. Ramsar criteria: -

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	2

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

Features are displayed on the Environmental designations map on **page 53**

ID	Location	Name	Species of interest	Habitat description	Data source
-	1783m S	Solent and Dorset Coast	Sandwich tern; Common tern; Little tern	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Shingle, Sea cliffs, Islets; Other land (including Towns, Villages, Roads, Waste places, Mines, industrial sites)	Natural England
-	1895m S	Pagham Harbour	Ruff; Common tern; Little tern; Dark-bellied brent goose	Improved grassland; Shingle, Sea cliffs, Islets; Inland water bodies (Standing water, Running water); Marine areas, Sea inlets; Broad-leaved deciduous woodland; Bogs, Marshes, Water fringed vegetation, Fens; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins), Salt marshes, Salt pastures, Salt steppes	Natural England

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 53**

ID	Location	Name	Data source
-	1939m S	Pagham Harbour	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 53**

ID	Location	Name	Woodland Type
-	1767m N	Unknown	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	2

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

Location	Name	Type	NVZ ID	Status
On site	**Pagham Rife NVZ**	**Surface Water**	**685**	**Existing**
1519m NE	Aldingbourne Rife NVZ	Surface Water	517	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 59**

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ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha. Residential - Any residential developments with a total net gain in residential units. Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more. Notes: Solent nutrient impact area. for new development with overnight accommodation reg 63 of the conservation of habitats and species regulations 2017 must be applied. lpa to refer to natural england's solent nutrient neutrality advice note june 2019.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	5

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

Features are displayed on the SSSI Impact Zones and Units map on page 59

ID:	-
Location:	1701m SE
SSSI name:	Bognor Reef
Unit name:	2
Broad habitat:	Supralittoral Sediment
Condition:	Unfavourable - Recovering
Reportable features:	

Feature name	Feature condition	Date of assessment
Coastal vegetated shingle (SD1-3)	Unfavourable - Recovering	20/07/2012
EC - Tertiary Palaeobotany	Favourable	20/07/2012

ID: -
Location: 1772m S
SSSI name: Bognor Reef
Unit name: 3 Foreshore
Broad habitat: Earth Heritage
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
EC - Aves	Favourable	20/07/2012
EC - Palaeoentomology	Favourable	20/07/2012
EC - Tertiary Palaeobotany	Favourable	20/07/2012

ID: -
Location: 1895m S
SSSI name: Pagham Harbour
Unit name: West Front Road Shingle Foreshore
Broad habitat: Supralittoral Sediment
Condition: Unfavourable - No change
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of breeding birds - Little tern, Sterna albifrons	Not Recorded	01/01/1900
Coastal vegetated shingle (SD1-3)	Not Recorded	01/01/1900
IA - Coastal Geomorphology	Unfavourable - No change	10/06/2010

ID: -
Location: 1908m S
SSSI name: Bognor Reef
Unit name: 1
Broad habitat: Acid Grassland - Lowland
Condition: Unfavourable - Declining
Reportable features:

Feature name	Feature condition	Date of assessment
EC - Tertiary Palaeobotany	Favourable	02/07/2012
Population of Schedule 8 plant - Petrorhagia nanteuilii, Childing Pink	Unfavourable - Declining	02/07/2012

ID: -
Location: 1940m S
SSSI name: Pagham Harbour
Unit name: Intertidal Shingle (East)
Broad habitat: Earth Heritage
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
EC - Tertiary Palaeobotany	Not Recorded	01/01/1900
IA - Coastal Geomorphology	Not Recorded	01/01/1900

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	3

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

Features are displayed on the Agricultural designations map on **page 65**

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ID	Location	Classification	Description
1	**On site**	**Grade 2**	**Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.**
2	3m SE	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
3	4m SE	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

This data is sourced from Natural England

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	2

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

Location	Reference	Scheme	Start Date	End date
36m NW	AG00419968	Entry Level plus Higher Level Stewardship	01/12/2012	30/11/2022
215m W	AG00419968	Entry Level plus Higher Level Stewardship	01/12/2012	30/11/2022

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

ARUN DISTRICT COUNCIL P/15/22/DOC

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m 3

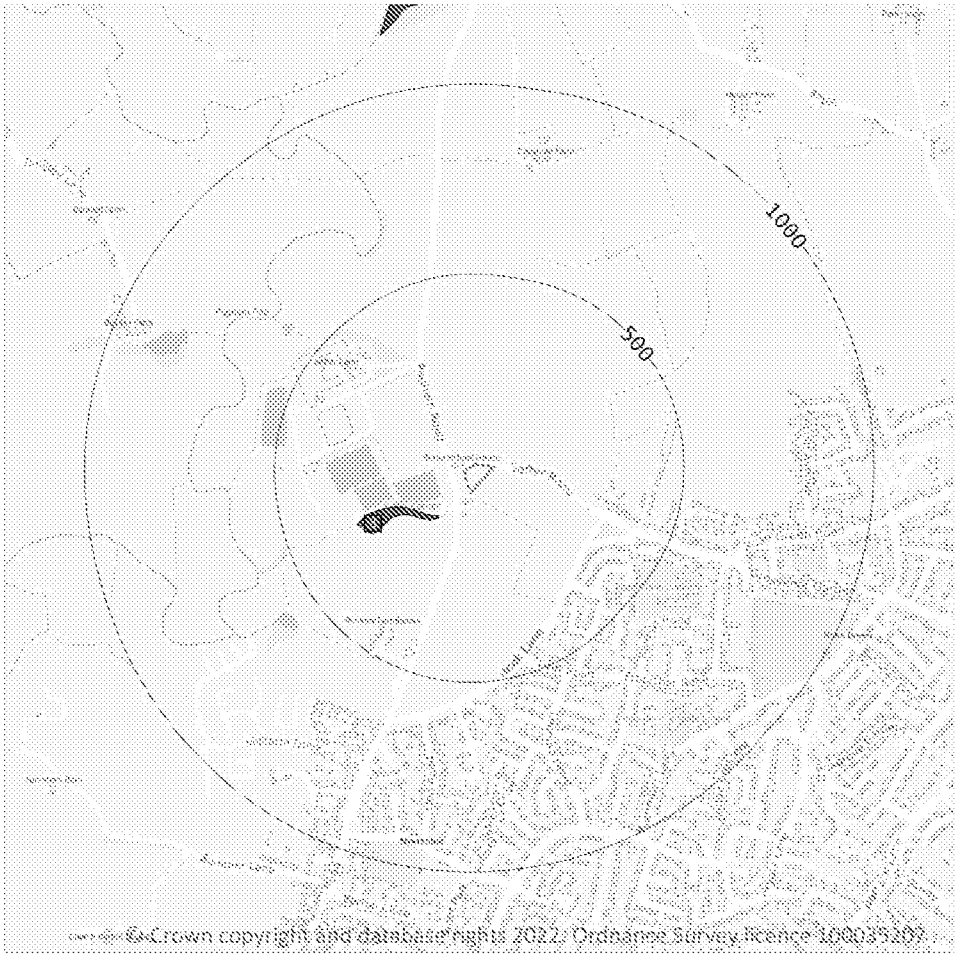
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 69**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SZ89NE**
2	425m E	No coverage	Full	Full	No coverage	SZ99NW
3	483m N	Full	Full	Full	No coverage	SU80SE

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 70**

ID	Location	LEX Code	Description	Rock description
1	104m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m 8

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 71**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**RBD1-XSV**	**Raised Beach Deposits, 1 - Sand And Gravel**	**Sand And Gravel**
2	17m NW	RTDU-Z	River Terrace Deposits (undifferentiated) - Silt (unlithified Deposits Coding Scheme)	Silt
3	104m SW	SUPNM-UKNOWN	Superficial Theme Not Mapped (for Digital Map Use Only) - Unknown/unclassified Entry	Unknown/unclassified Entry

ARUN DISTRICT COUNCIL P/15/22/DOC

ID	Location	LEX Code	Description	Rock description
4	122m SW	RMD-XCZSV	Raised Marine Deposits - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
5	268m W	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
6	425m E	RTDU-Z	River Terrace Deposits (undifferentiated) - Silt (unlithified Deposits Coding Scheme)	Silt
7	430m W	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	480m N	RTDU-Z	River Terrace Deposits (undifferentiated) - Silt (unlithified Deposits Coding Scheme)	Silt

This data is sourced from the British Geological Survey.

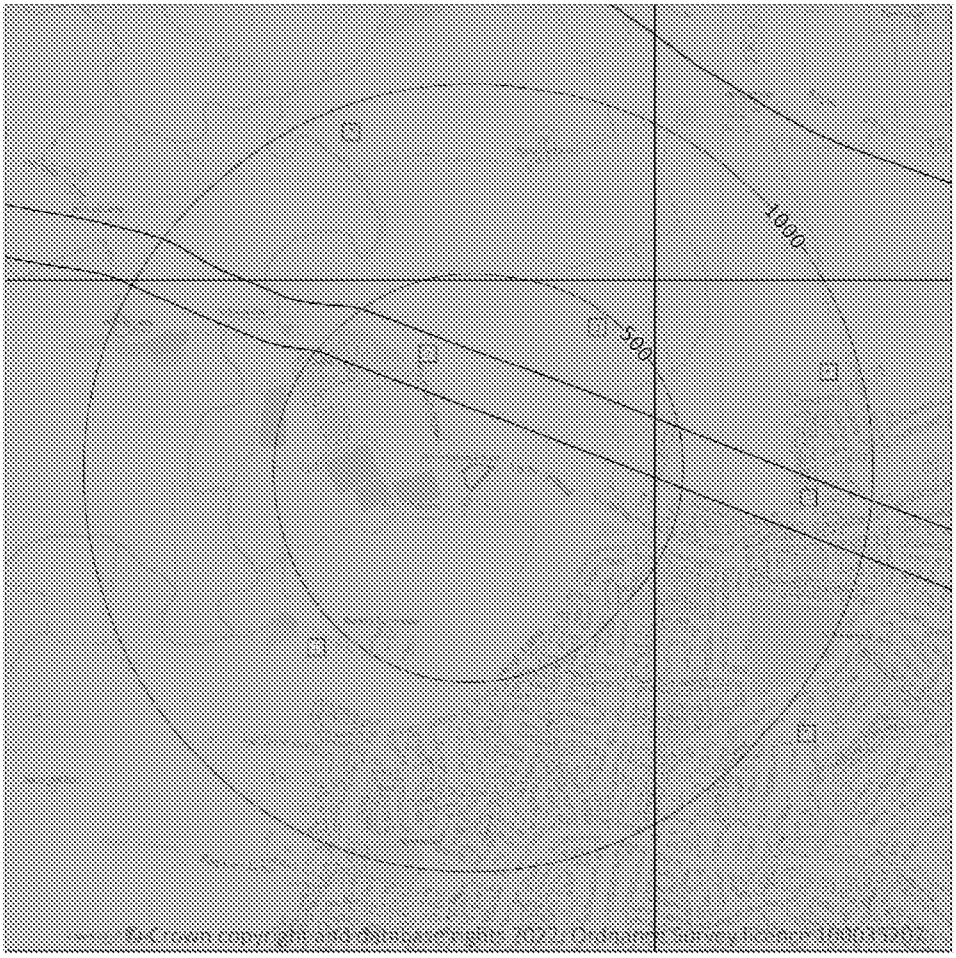
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m 7

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 73**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LC-CLSISA**	**London Clay Formation - Clay, Silt And Sand**	**Eocene Epoch**
2	126m N	BOSA-SANDU	Bognor Sand Member - Sand	Eocene Epoch
3	273m N	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch

ID	Location	LEX Code	Description	Rock age
4	425m E	BOSA-SANDU	Bognor Sand Member - Sand	Eocene Epoch
5	426m E	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch
6	445m E	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch
7	483m N	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch

This data is sourced from the British Geological Survey.

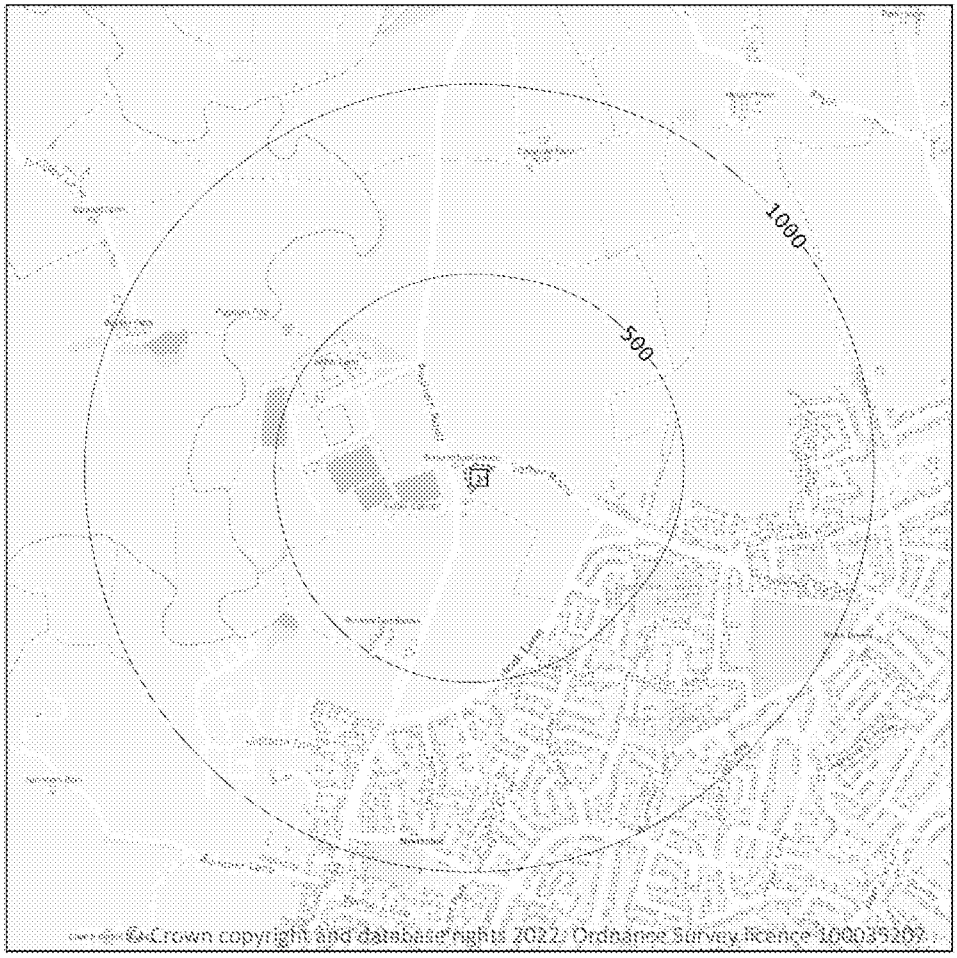
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

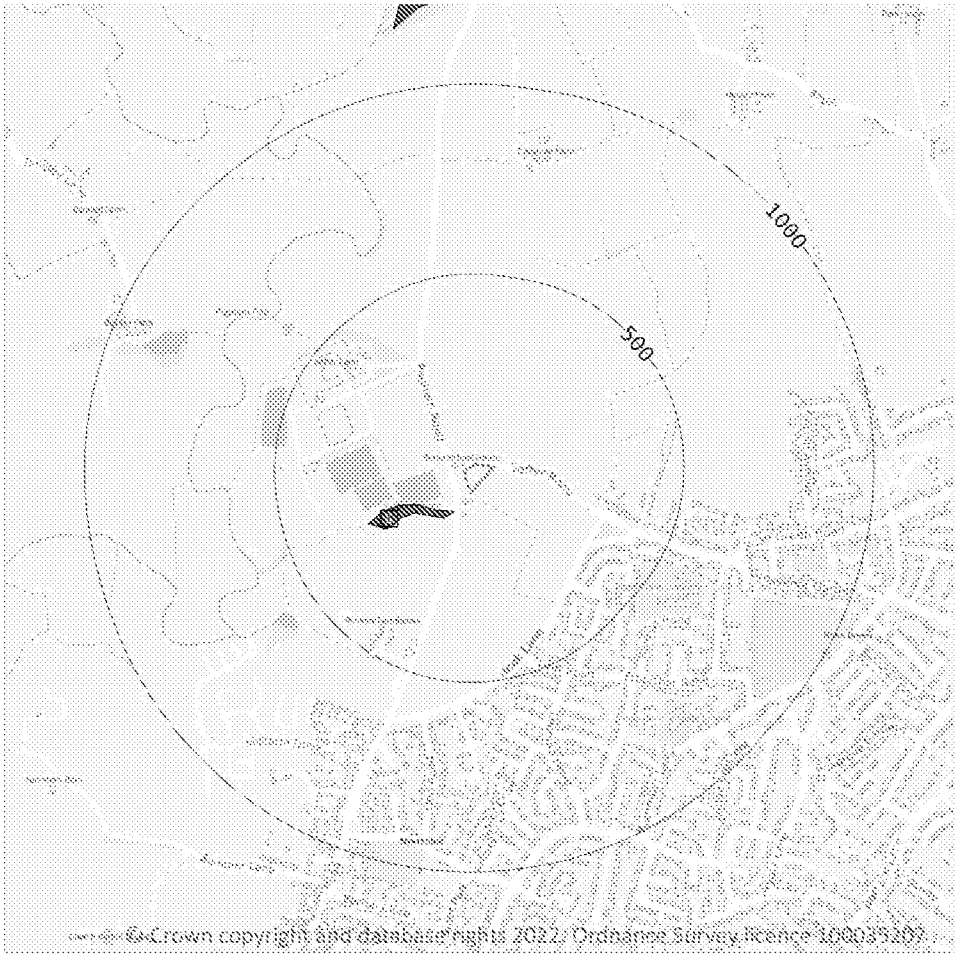
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 75**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW317_332_chichester_and_

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 76**

ID	Location	LEX Code	Description	Rock description
1	67m SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	5

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 78**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**RBD1-XSV**	**RAISED BEACH DEPOSITS, 1**	**SAND AND GRAVEL**
2	12m N	RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
3	67m SW	RMD-XCZSV	RAISED MARINE DEPOSITS	CLAY, SILT, SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
4	236m W	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
5	405m W	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	2

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Very High**	**High**
12m S	Intergranular	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	3

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 80**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LC-XCZS**	**LONDON CLAY FORMATION - CLAY, SILT AND SAND**	**YPRESIAN**
2	132m N	BOSA-S	BOGNOR SAND MEMBER - SAND	-
3	267m N	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

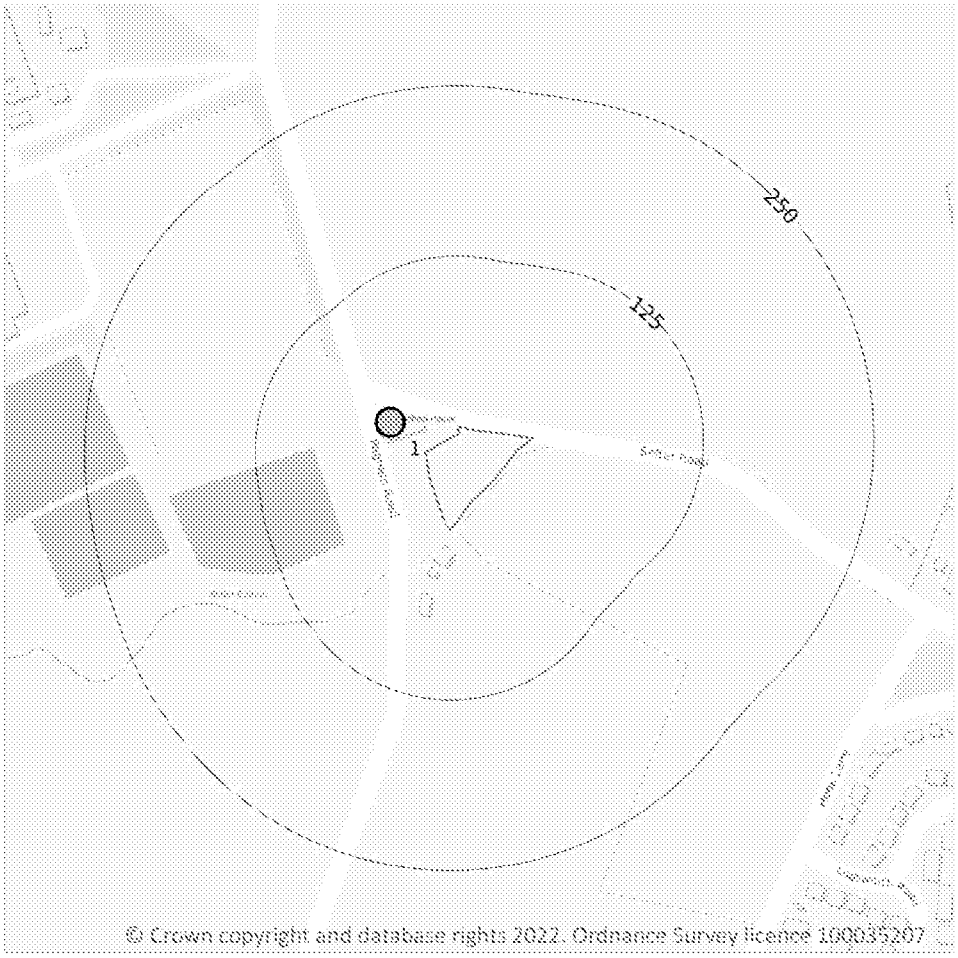
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	1

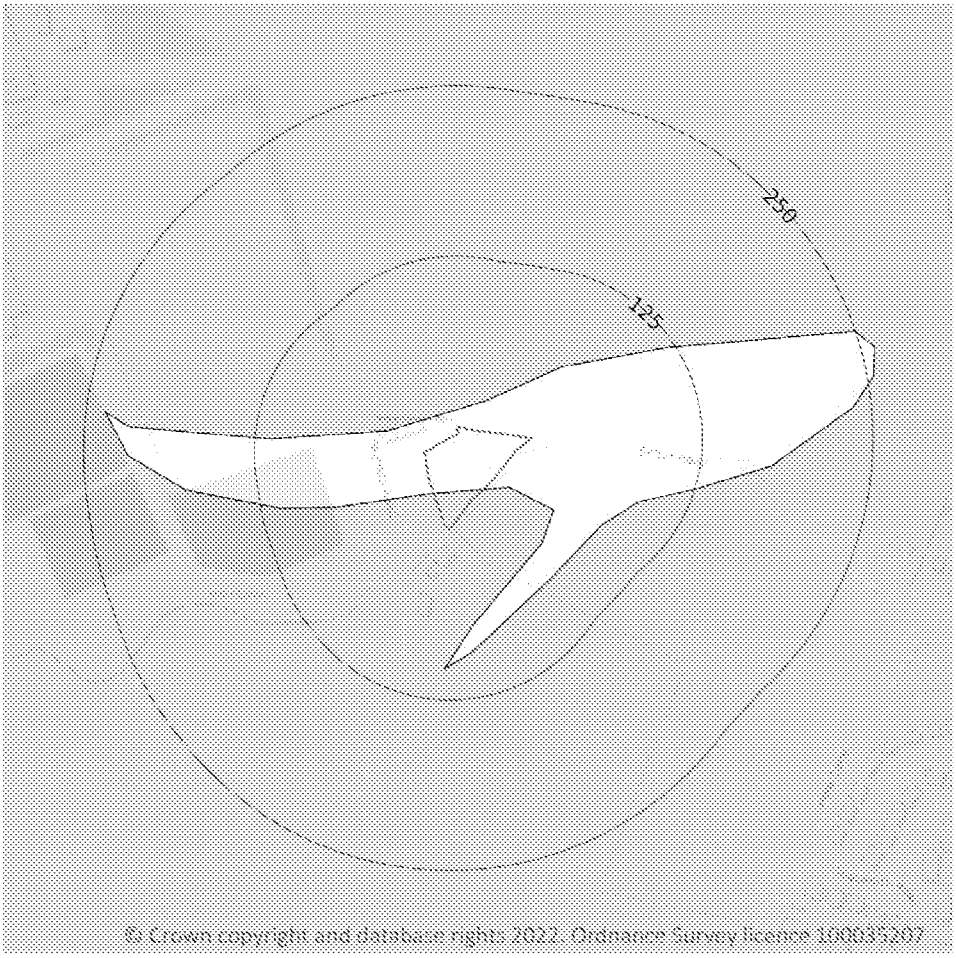
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

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

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	34m NW	489470 99520	SEFTER SCHOOL PAGHAM	142.34	N	456072

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



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Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

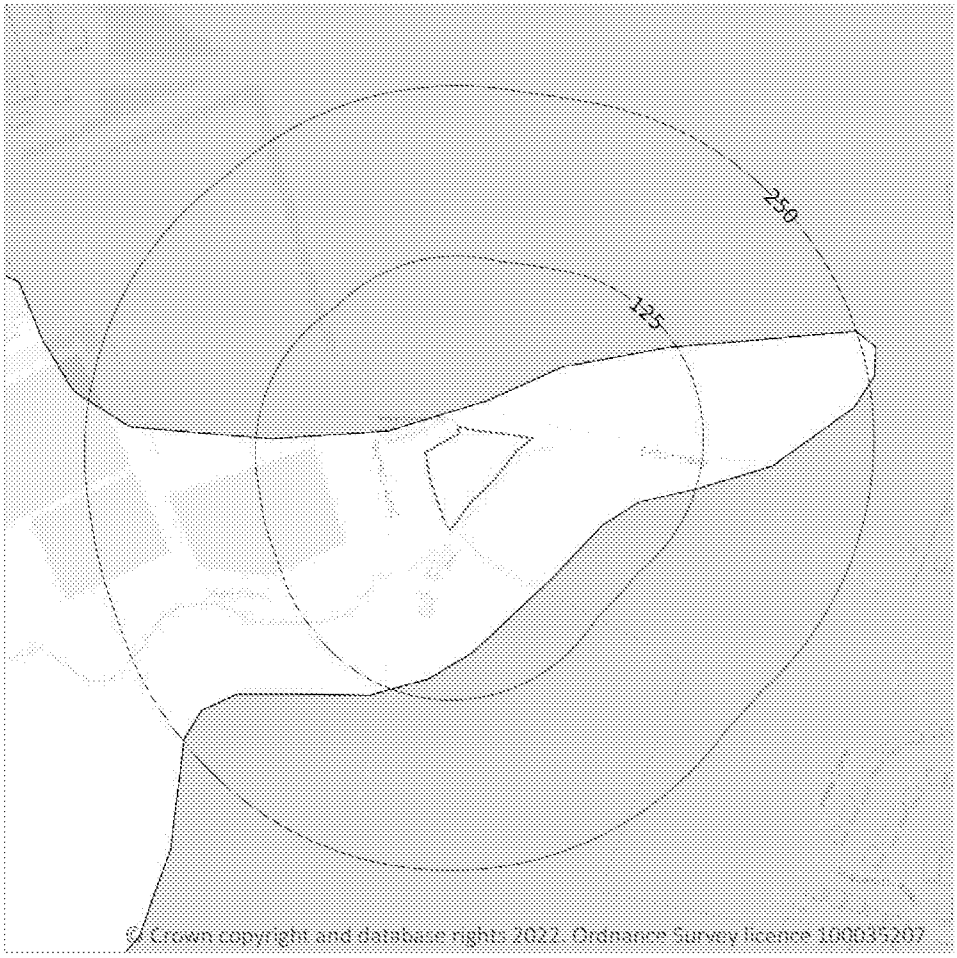
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 83**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Low**	**Ground conditions predominantly medium plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	2

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

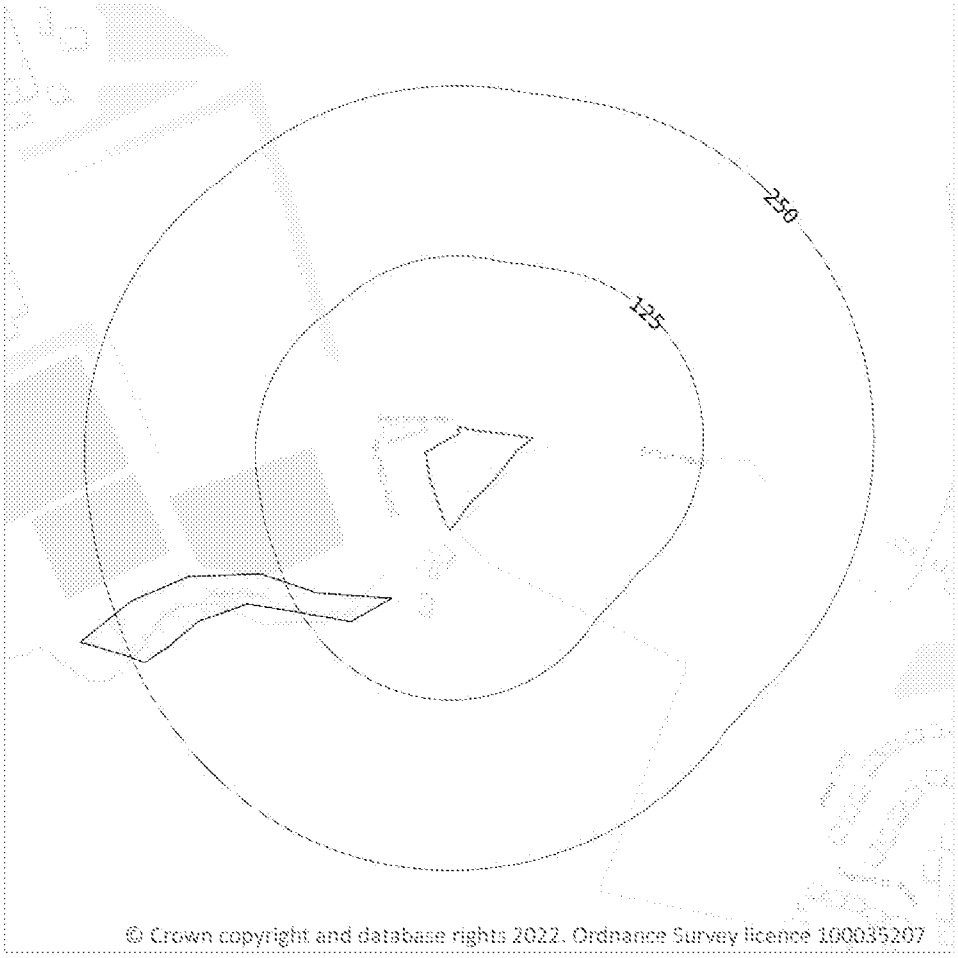
Features are displayed on the Natural ground subsidence - Running sands map on **page 84**

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

Location	Hazard rating	Details
12m N	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

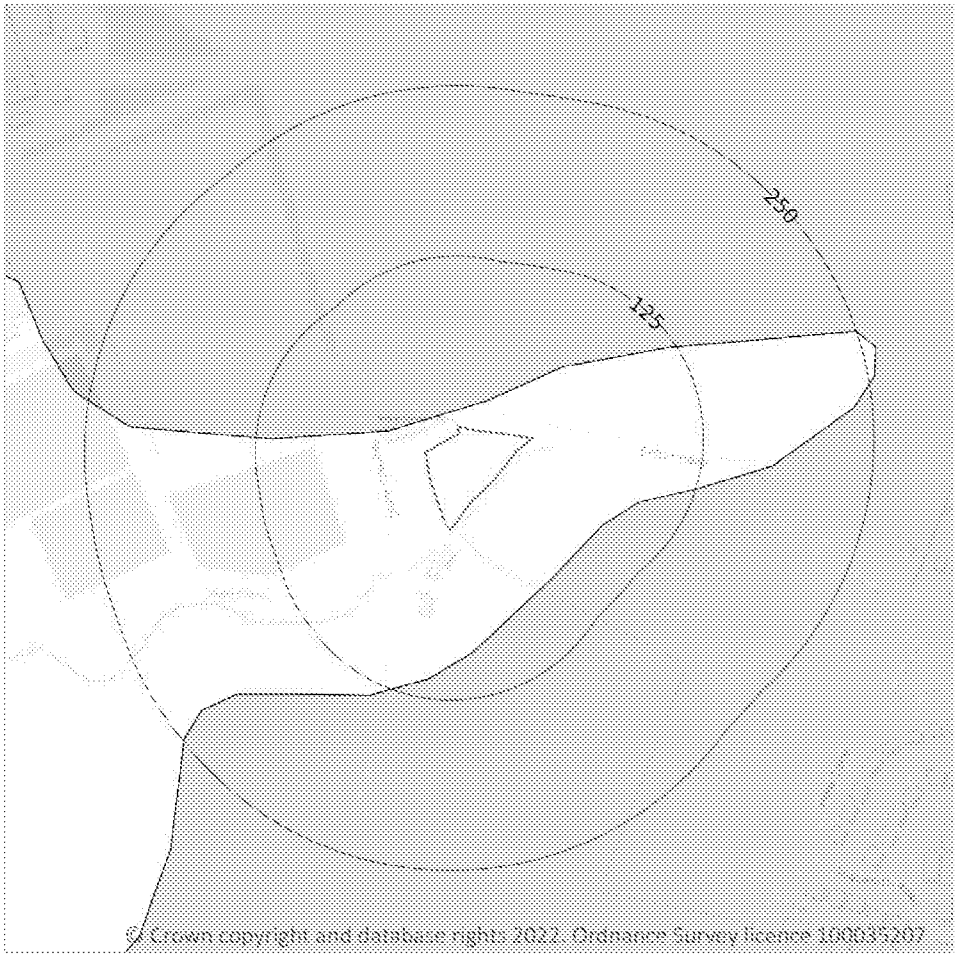
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 86**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	2

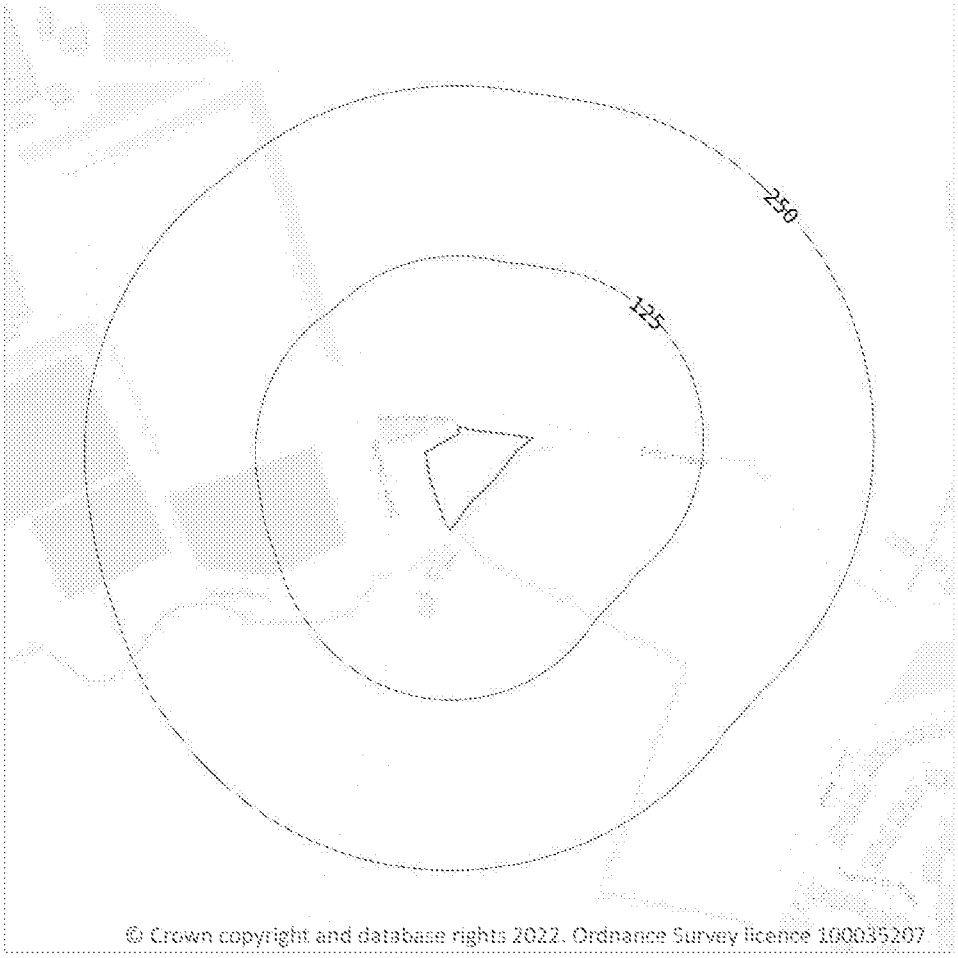
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 87**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**
12m N	Low	Deposits with potential to collapse when loaded and saturated are possibly present in places.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

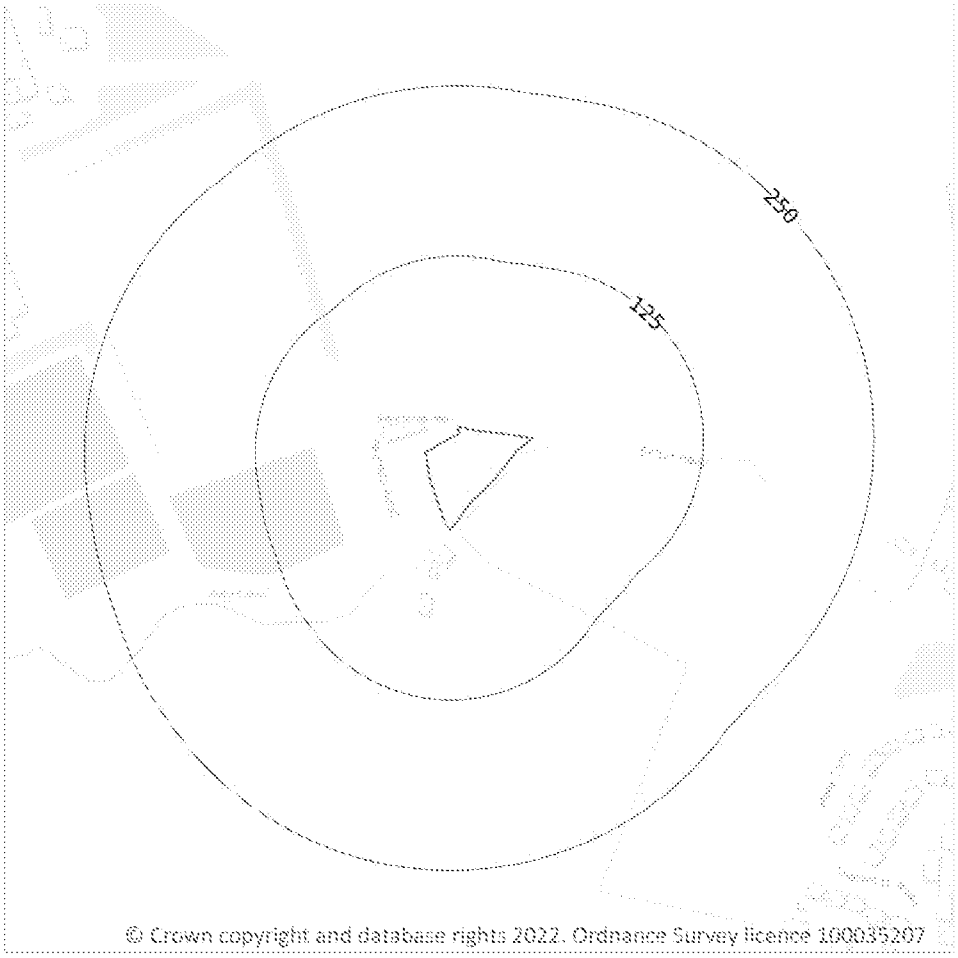
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 88**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

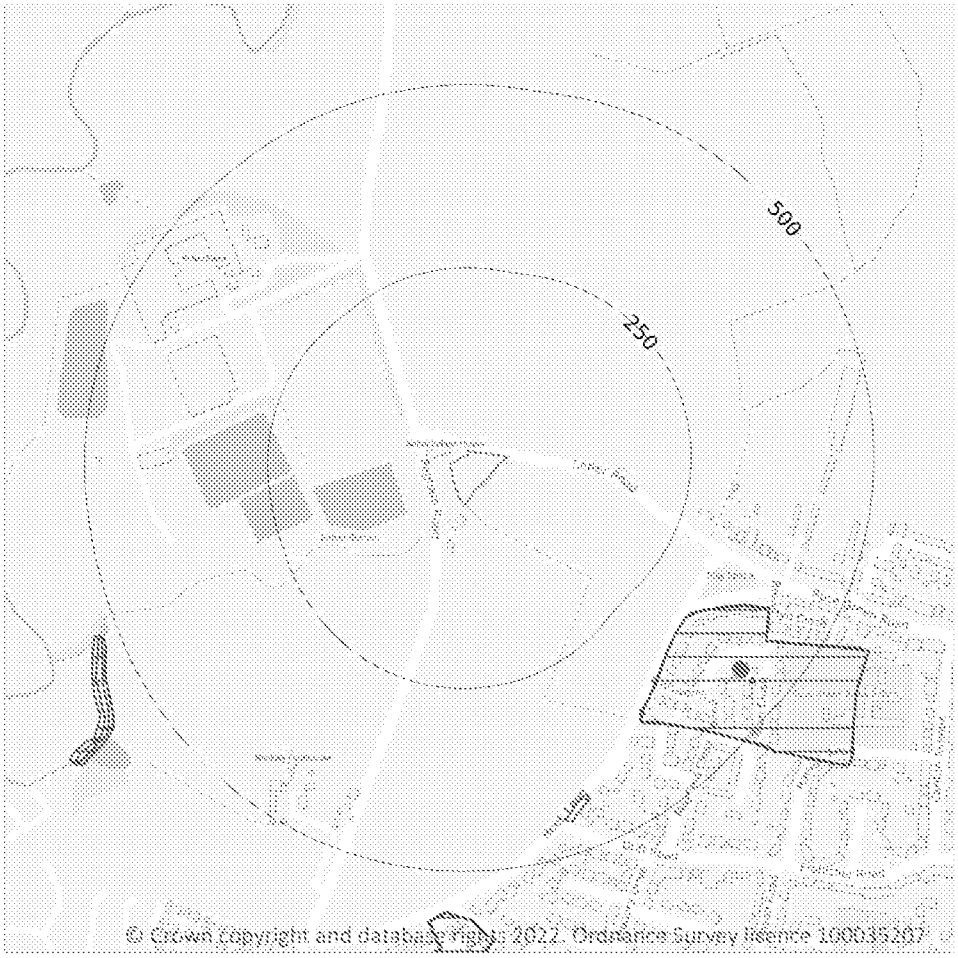
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 89**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 90**

ID	Location	Details	Description
A	430m SE	Name: Rose Green Brick Field Address: Aldwick, BOGNOR REGIS, West Sussex Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

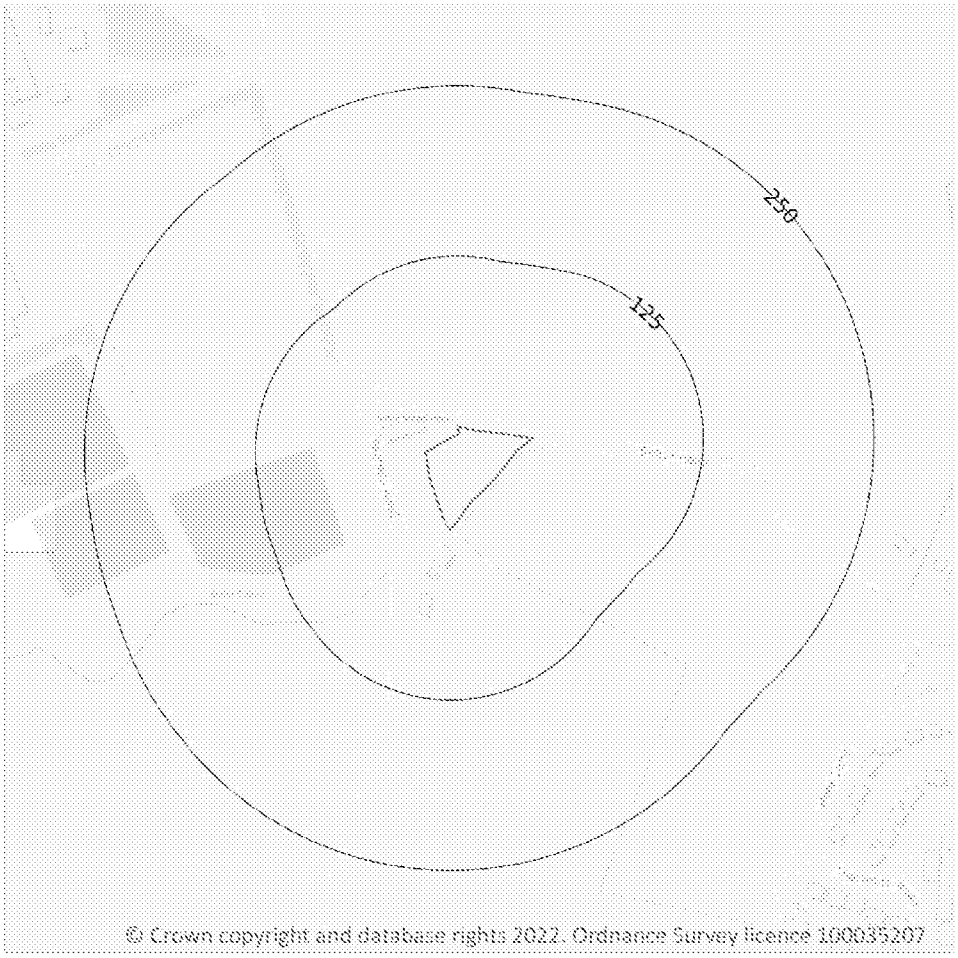
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 94**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**None**

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	6

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
12m NE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
20m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

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20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

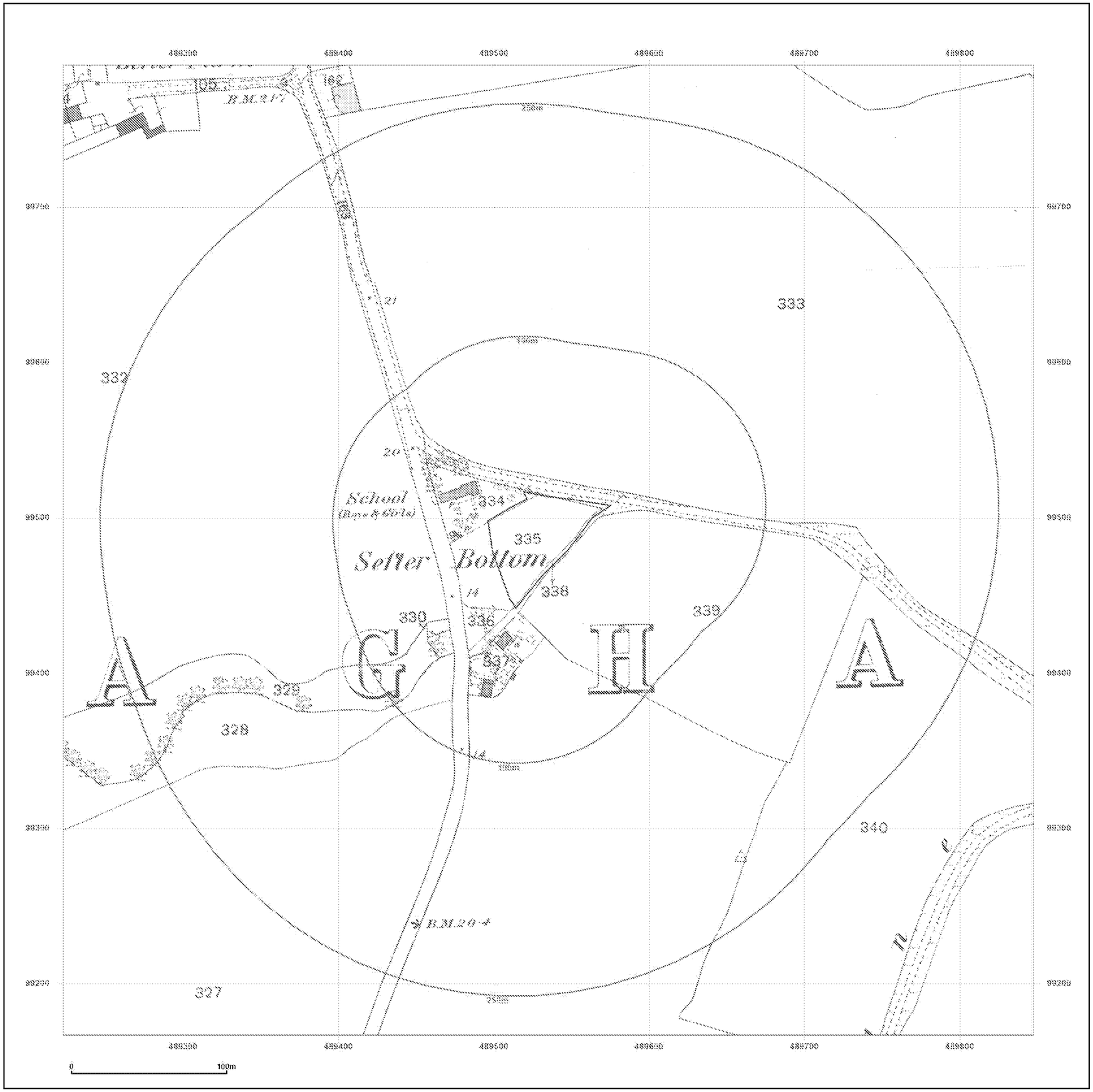
Data providers

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

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Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series

Map date: **1875-1877**

Scale: 1:2,500

Printed at: 1:2,500

N W E S

Surveyed 1877
Revised 1877
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1875
Edition N/A
Copyright N/A
Levelled N/A

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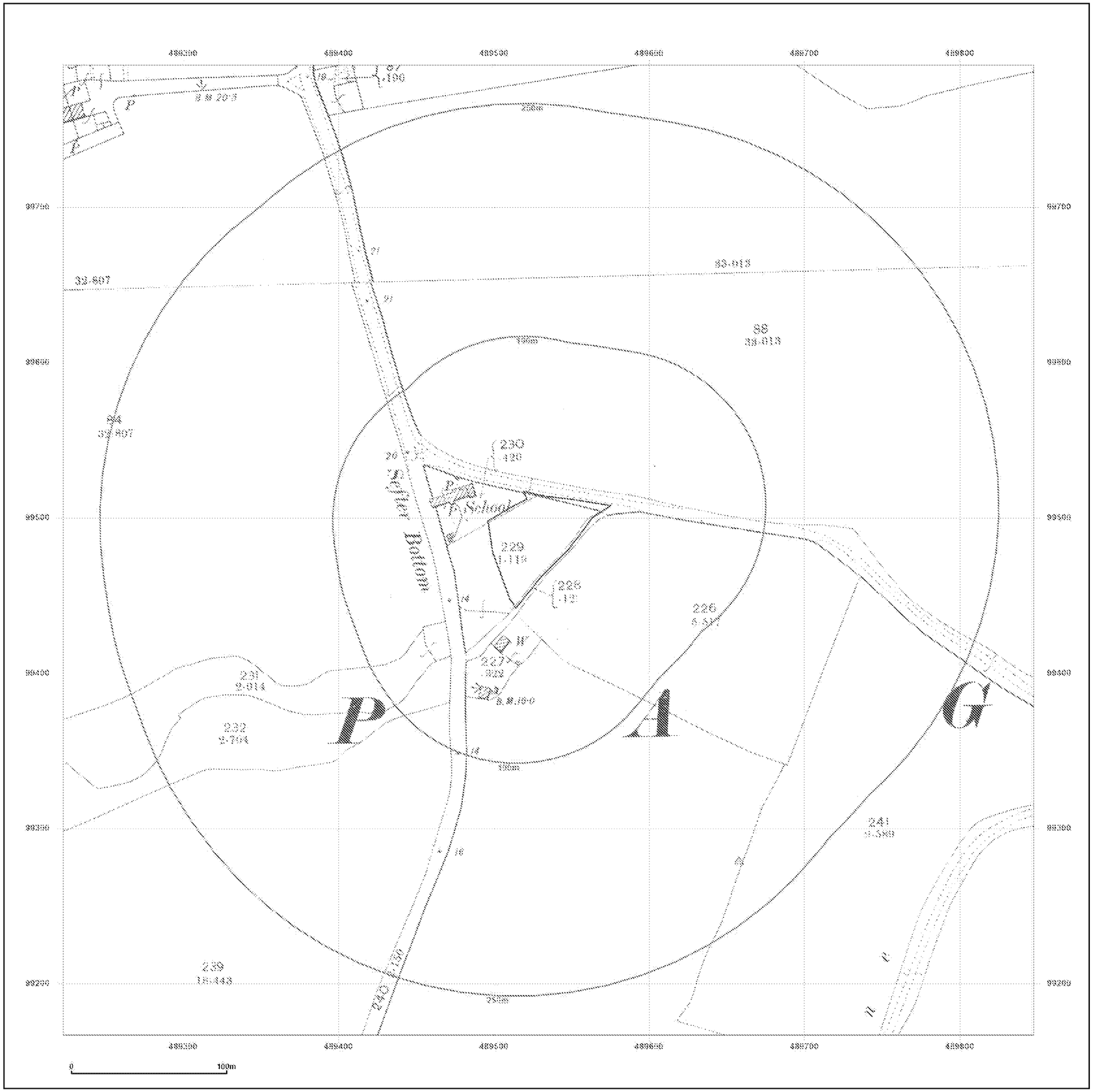
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series

Map date: **1898**

Scale: 1:2,500

Printed at: 1:2,500

N W E S

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Revised 1898
Edition N/A
Copyright N/A
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Surveyed 1898
Revised 1898
Edition N/A
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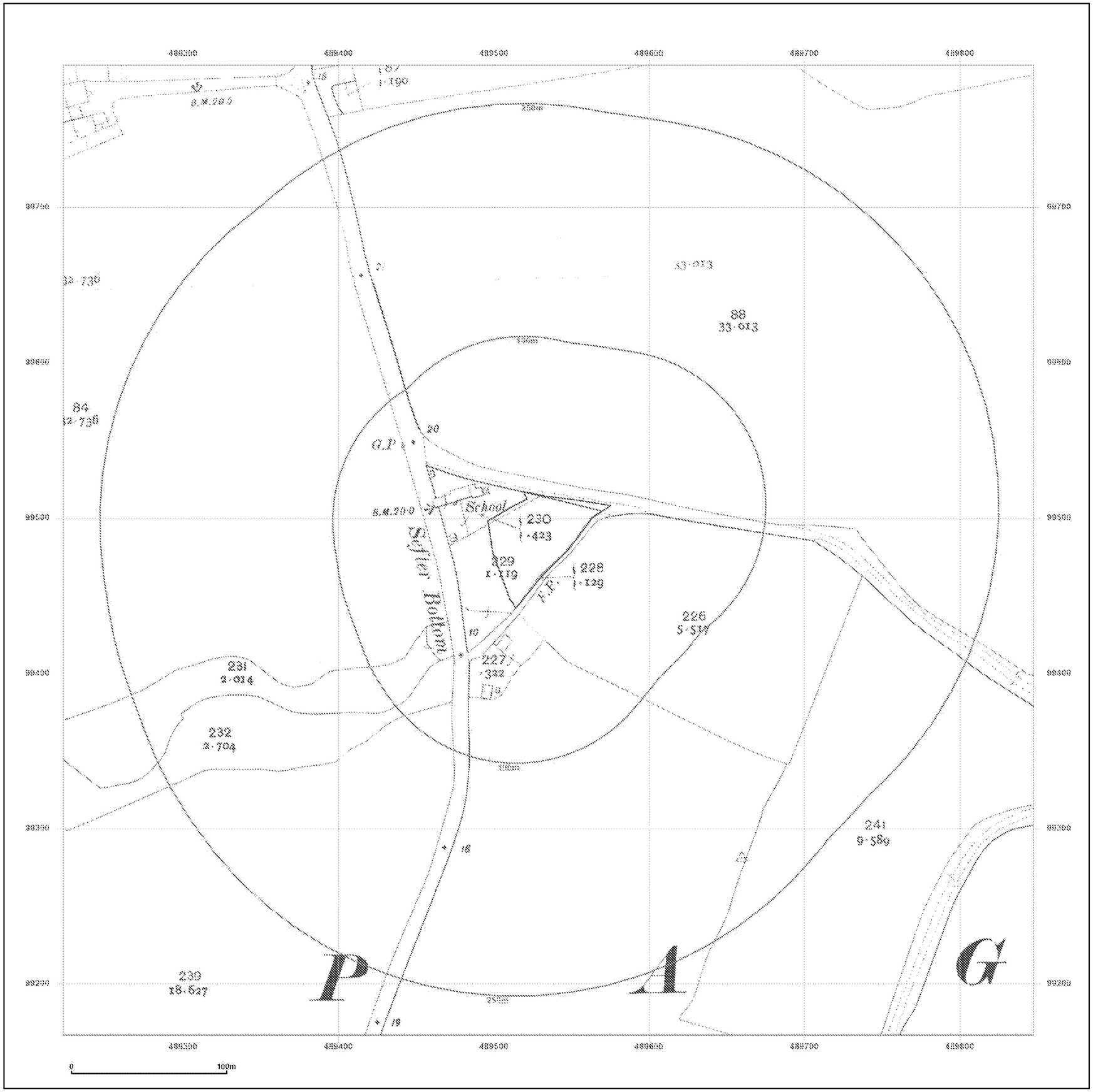
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series

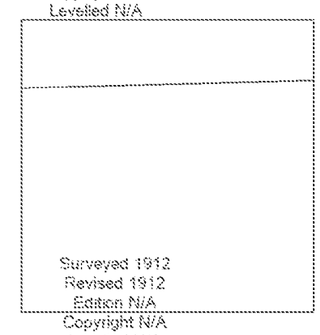
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Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1912
Revised 1912
Edition N/A
Copyright N/A
Levelled N/A



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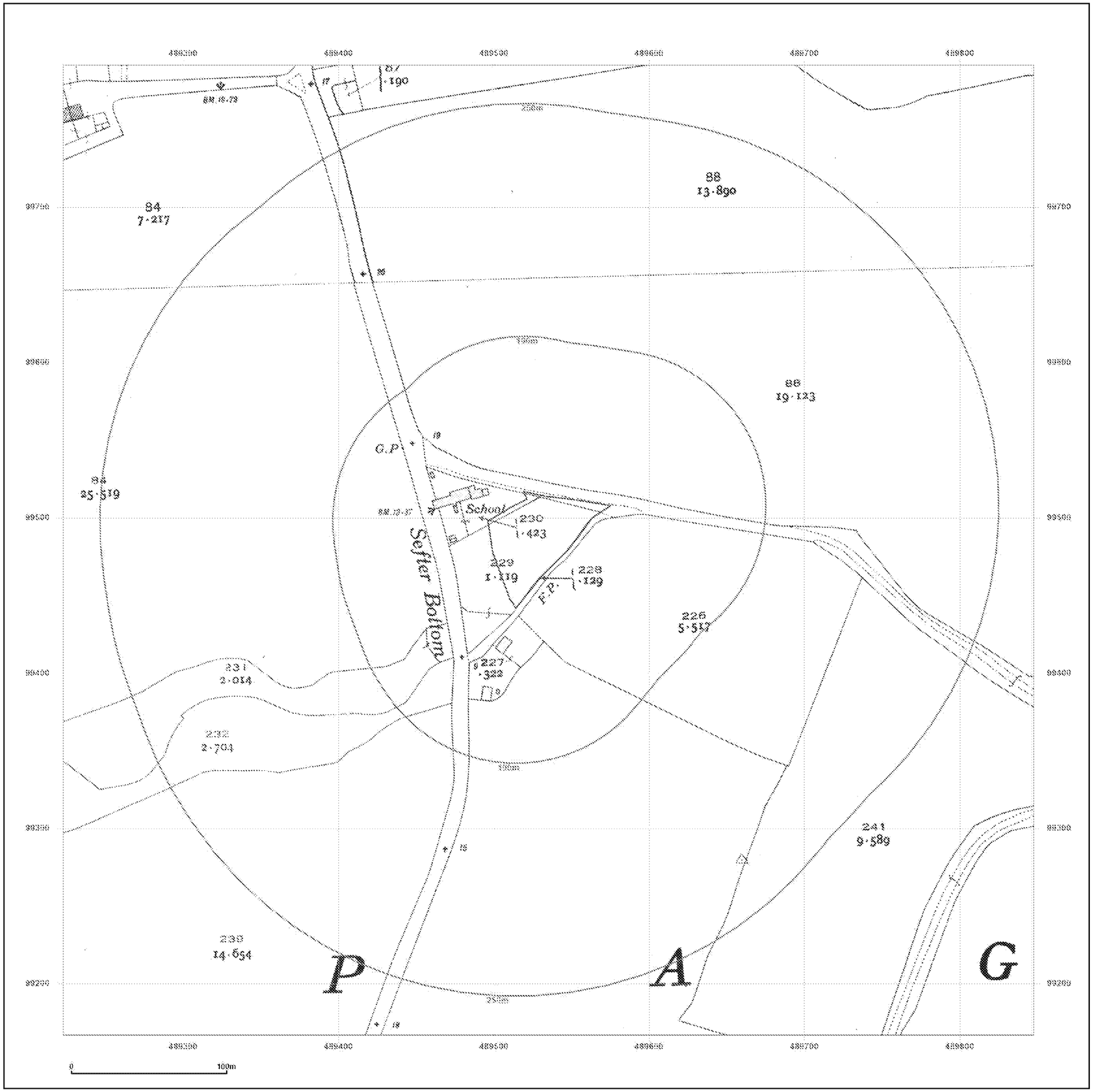
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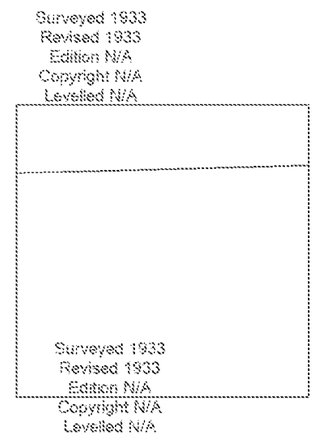
Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series
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Printed at: 1:2,500

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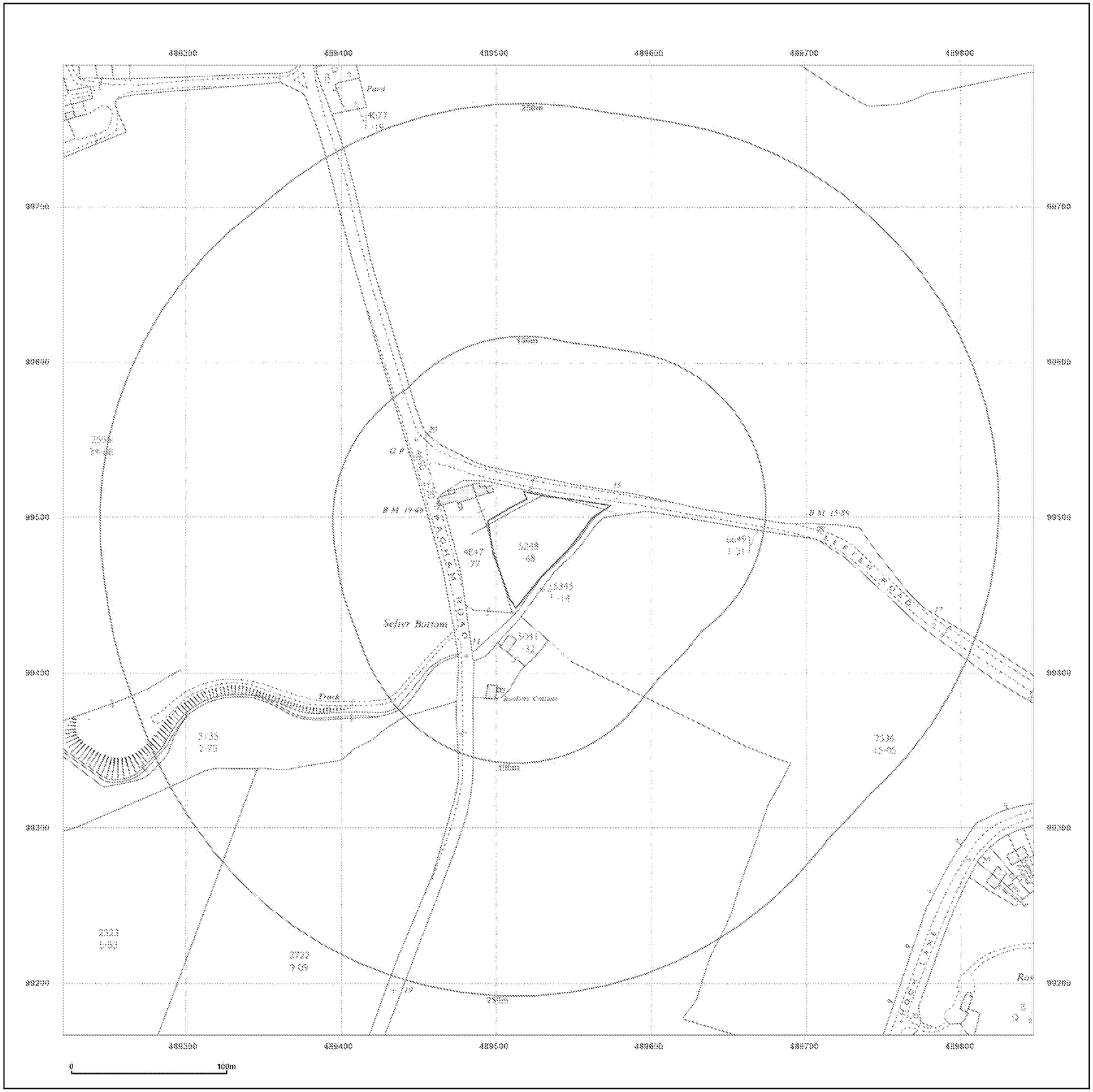
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1965**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1964
Revised 1964
Edition N/A
Copyright 1965
Levelled N/A

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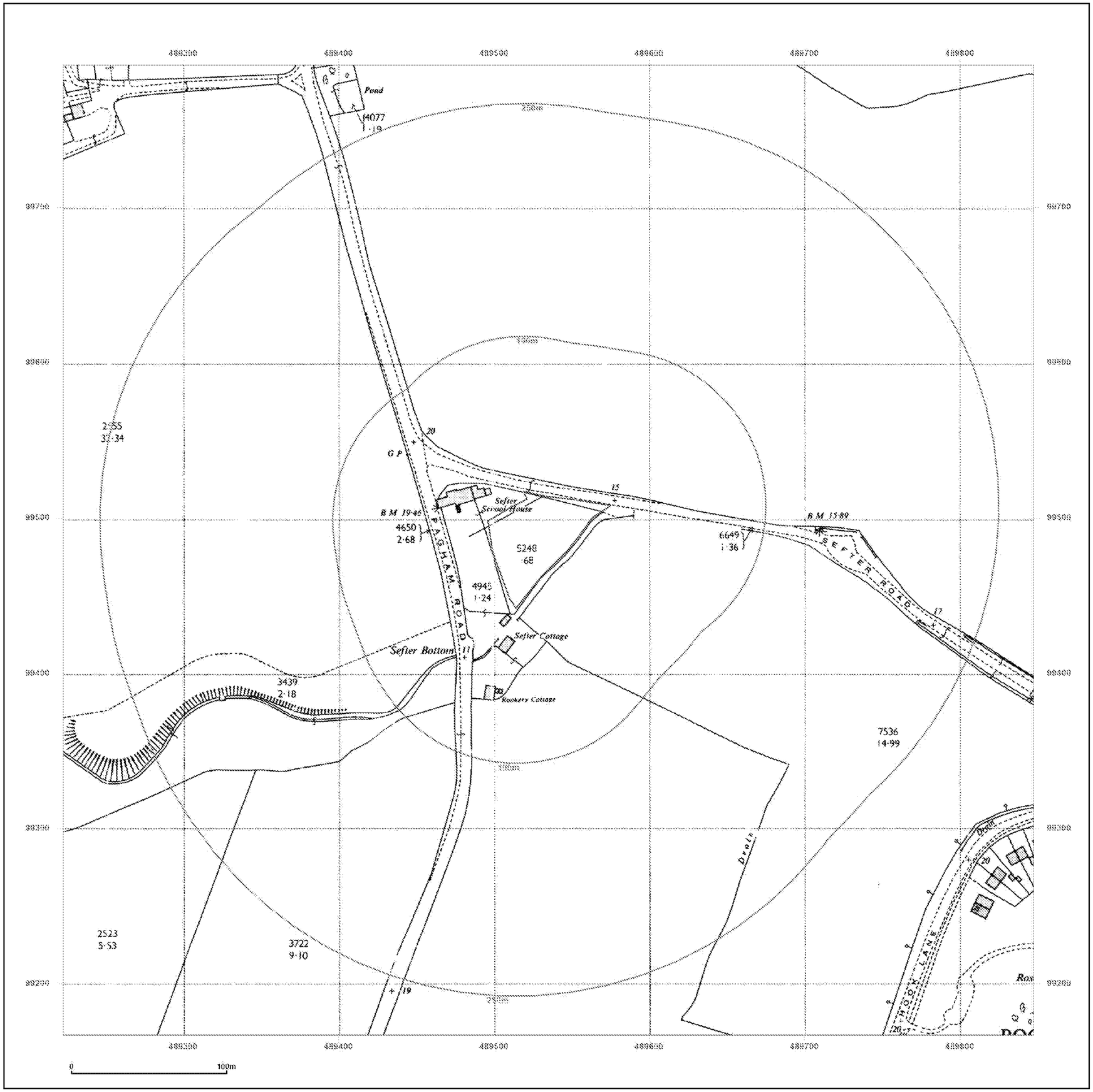
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1968**

Scale: 1:2,500

Printed at: 1:2,500

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

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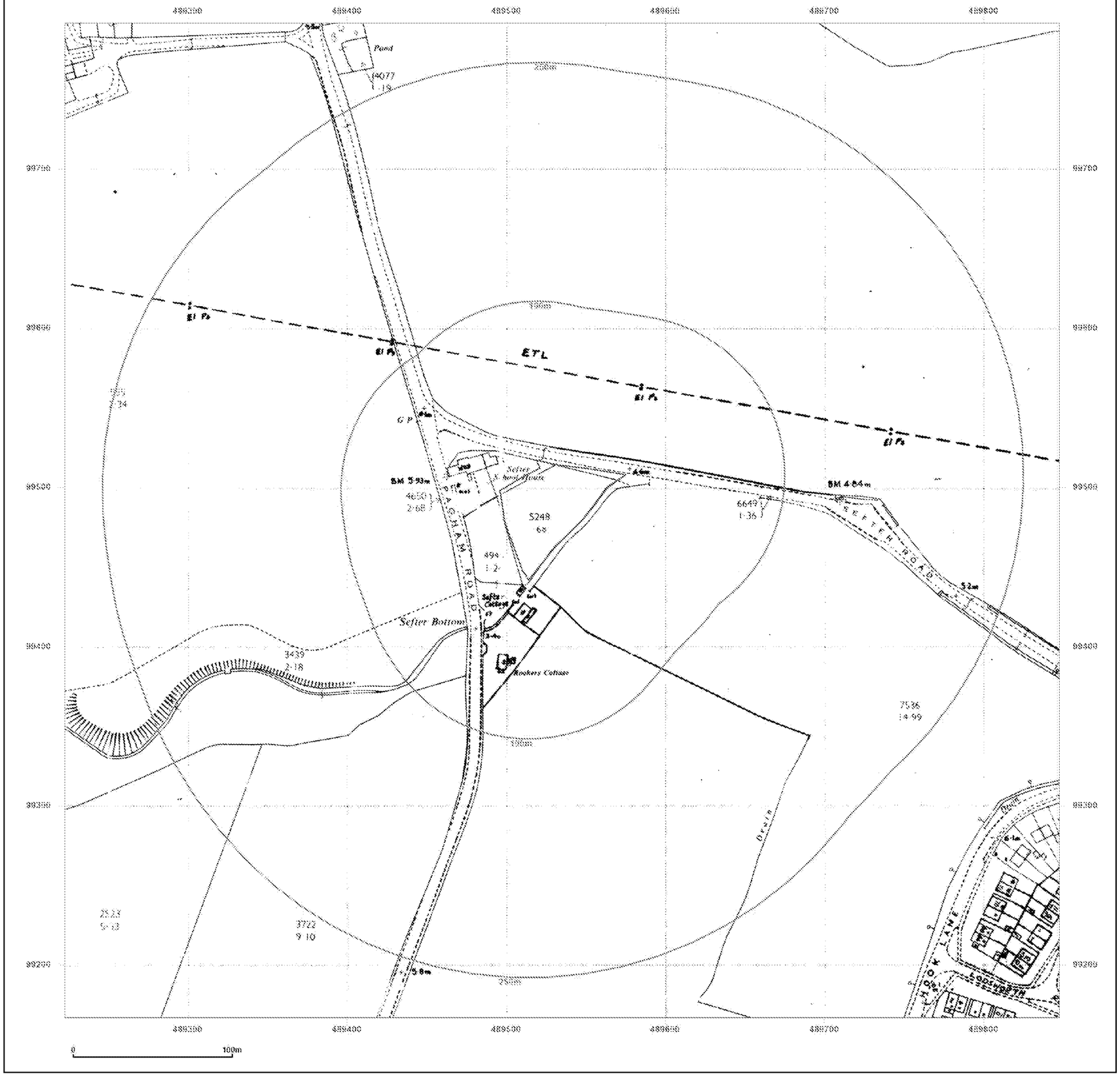
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1977**

Scale: 1:2,500

Printed at: 1:2,500

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

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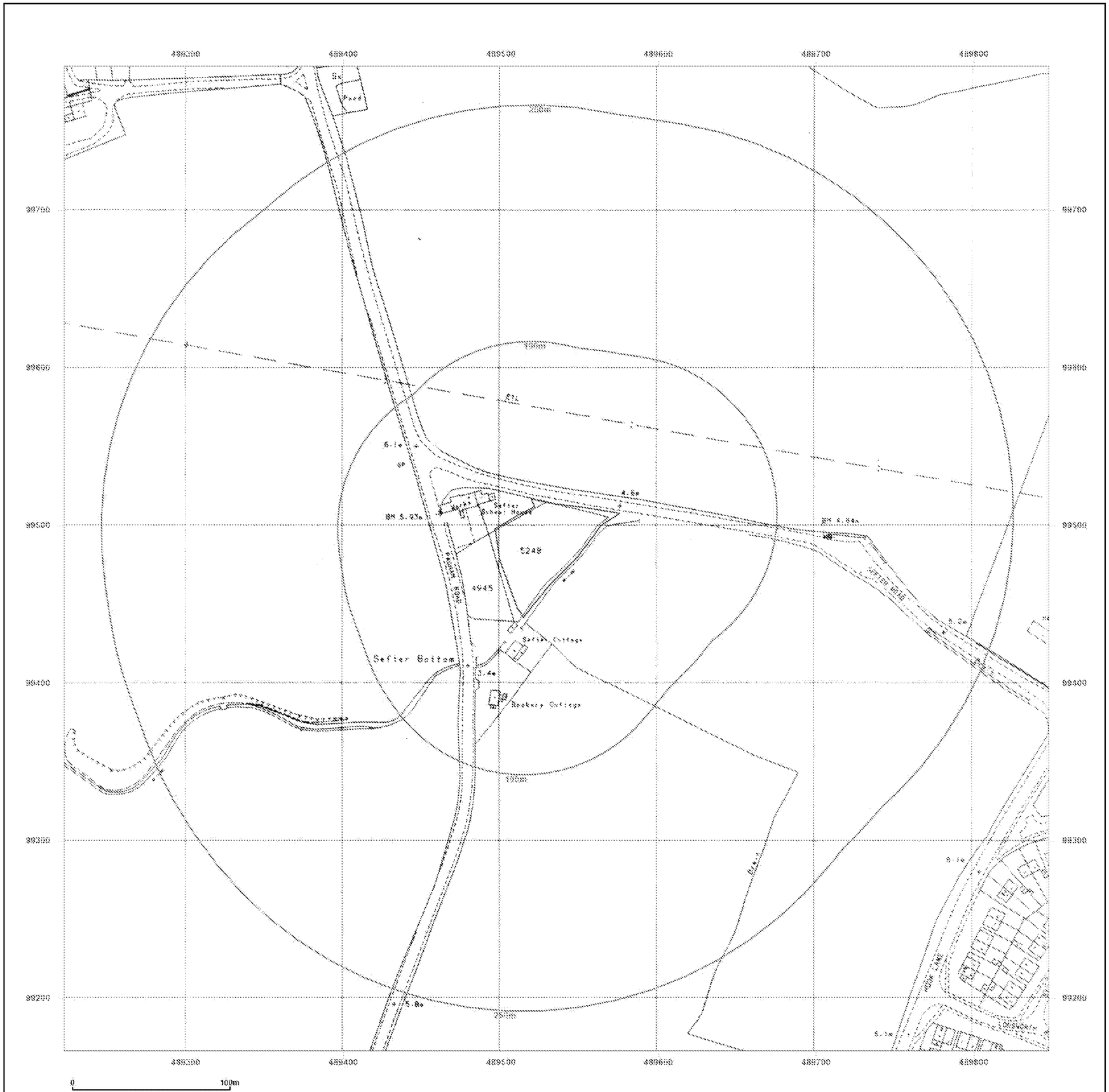
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: 1992

Scale: 1:2,500

Printed at: 1:2,500

N W E S

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

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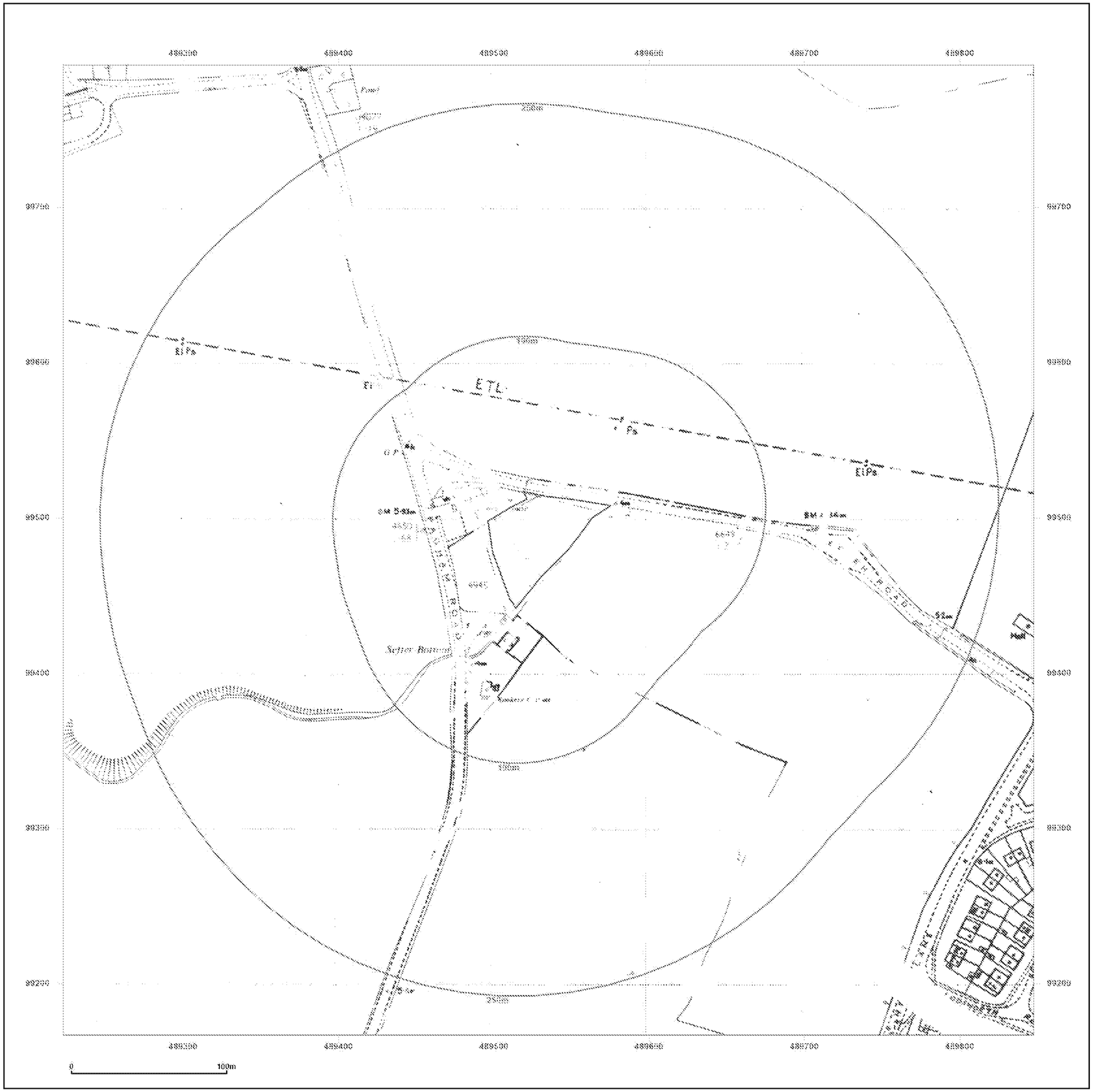
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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1992**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1958
Revised 1992
Edition N/A
Copyright 1992
Levelled 1958

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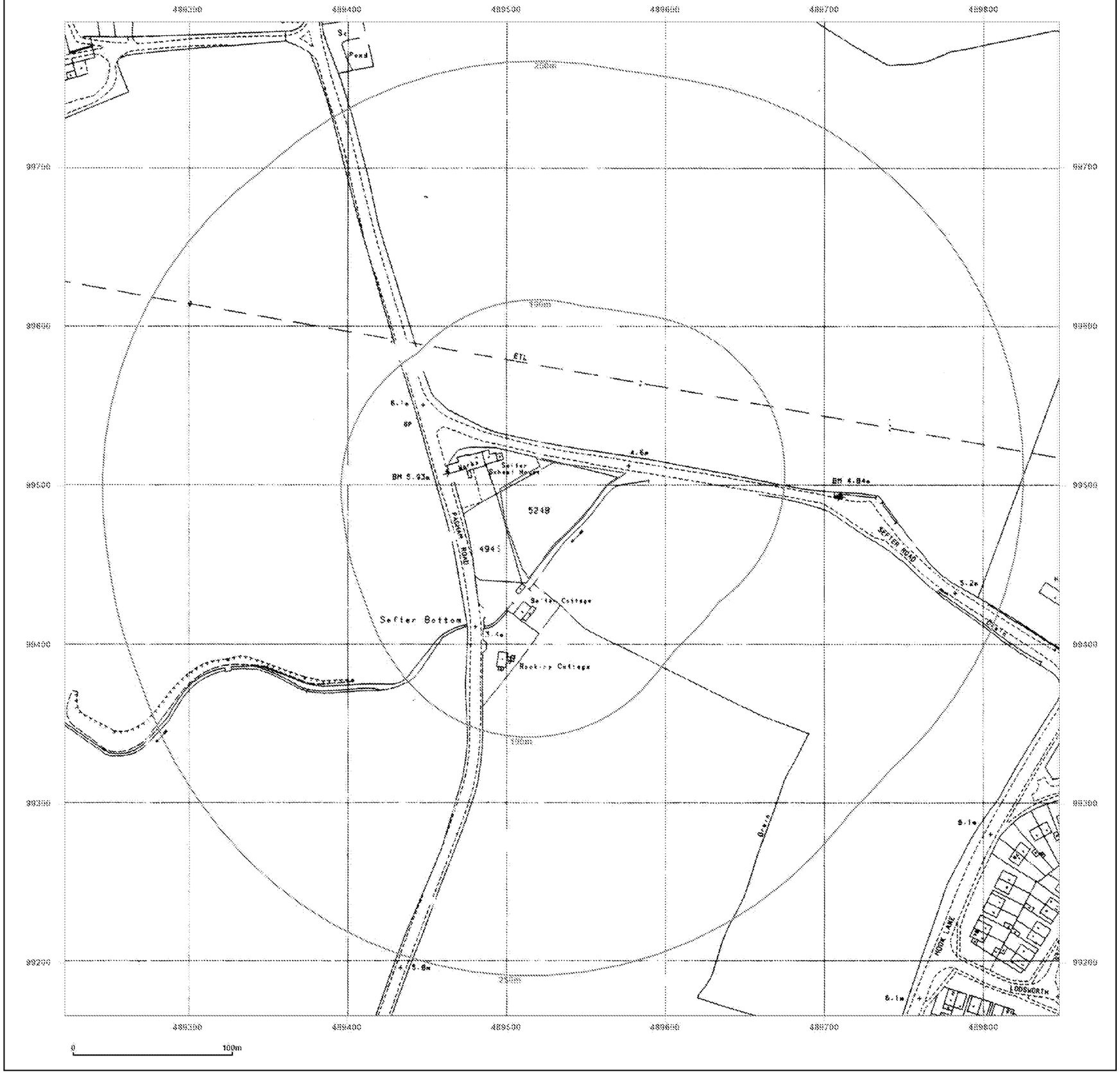
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Site Details:

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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500

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

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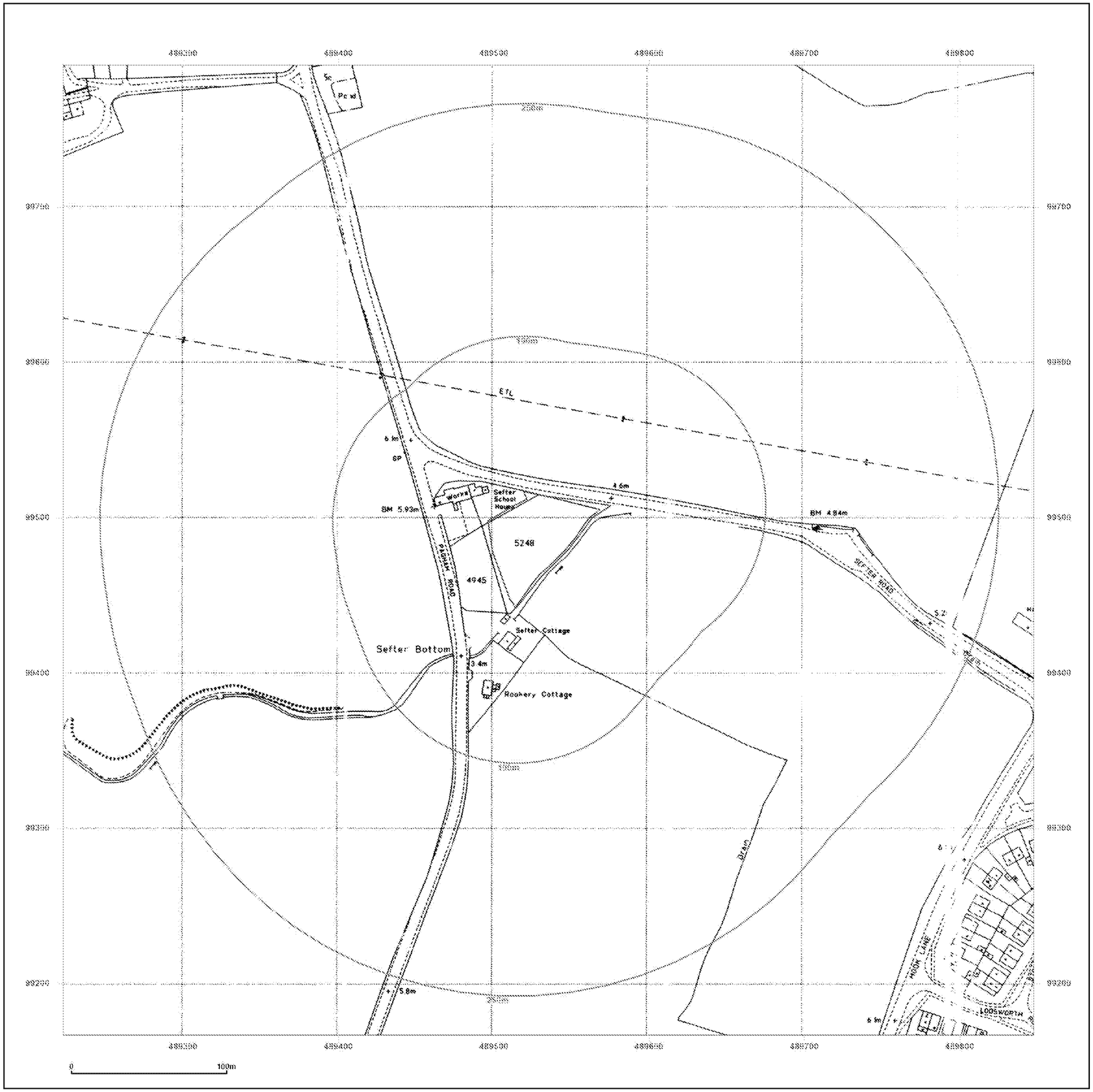
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Site Details:

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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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

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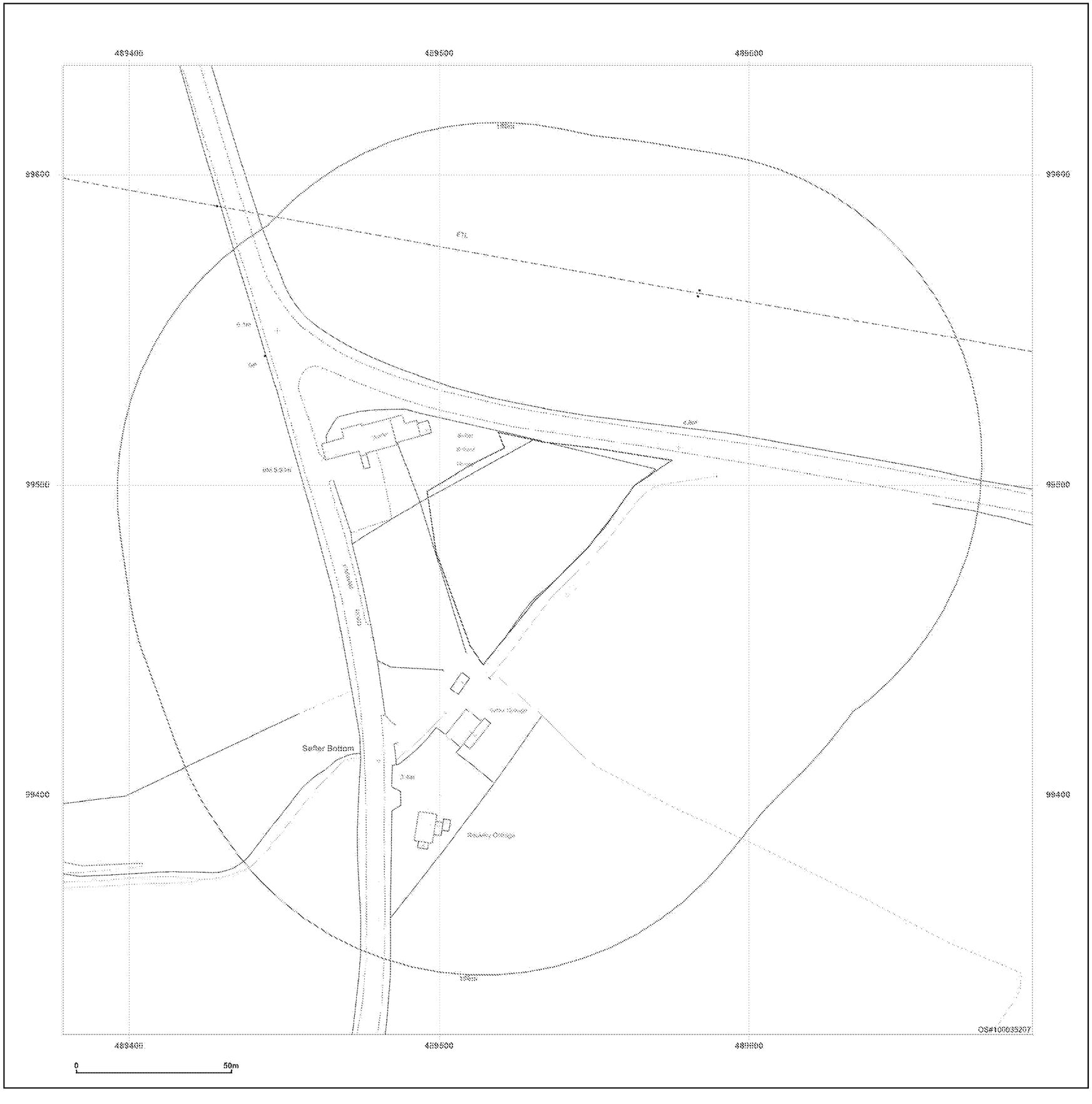
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Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
Printed at: 1:1,250

N W E S

2003

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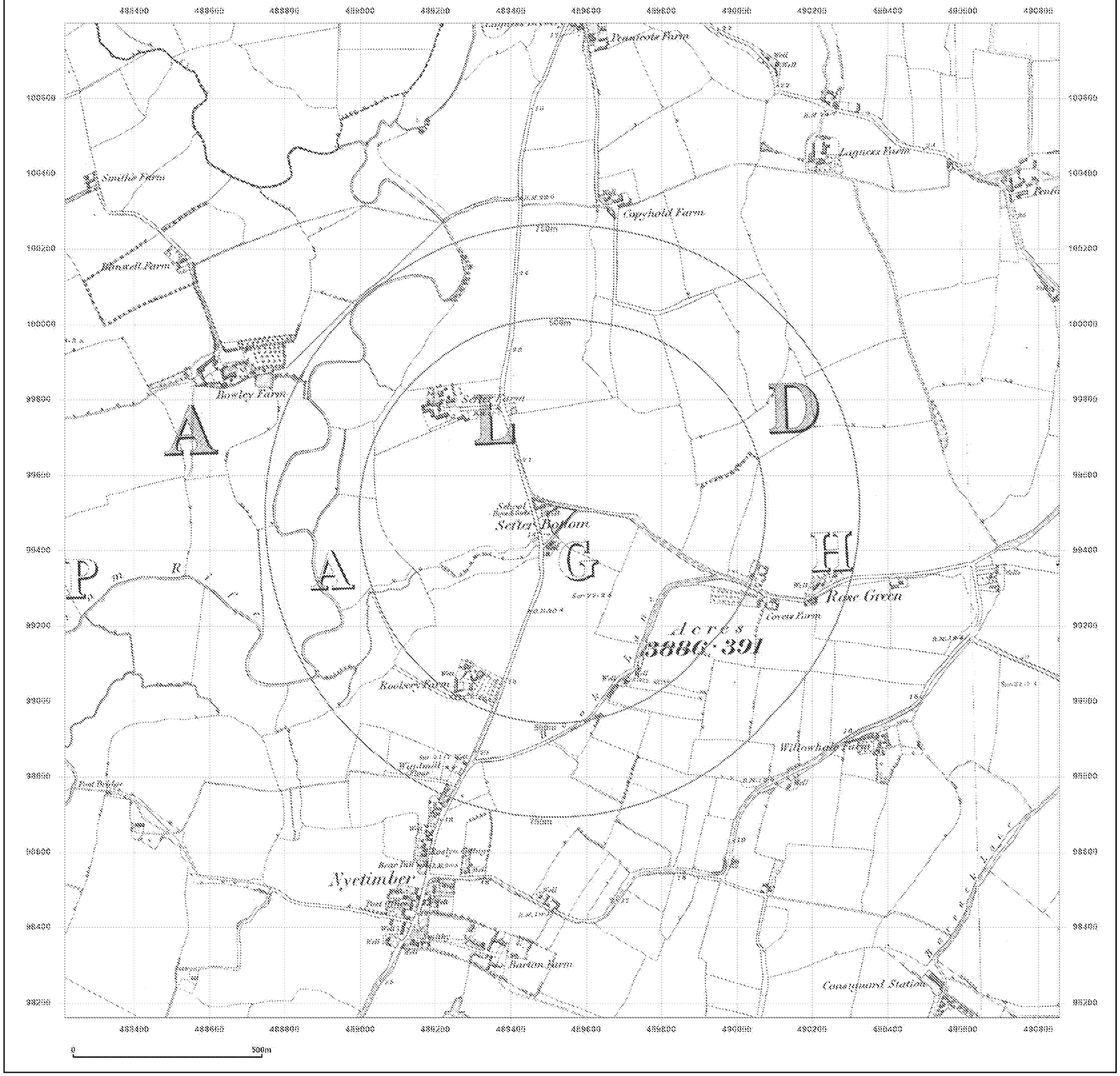
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Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

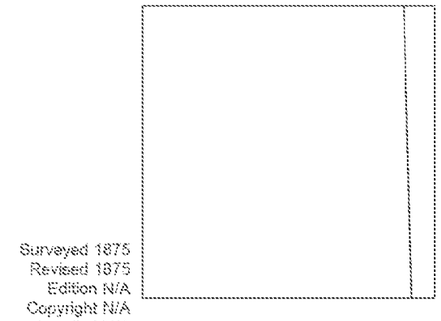
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Map date: **1875-1876**

Scale: 1:10,560

Printed at: 1:10,560

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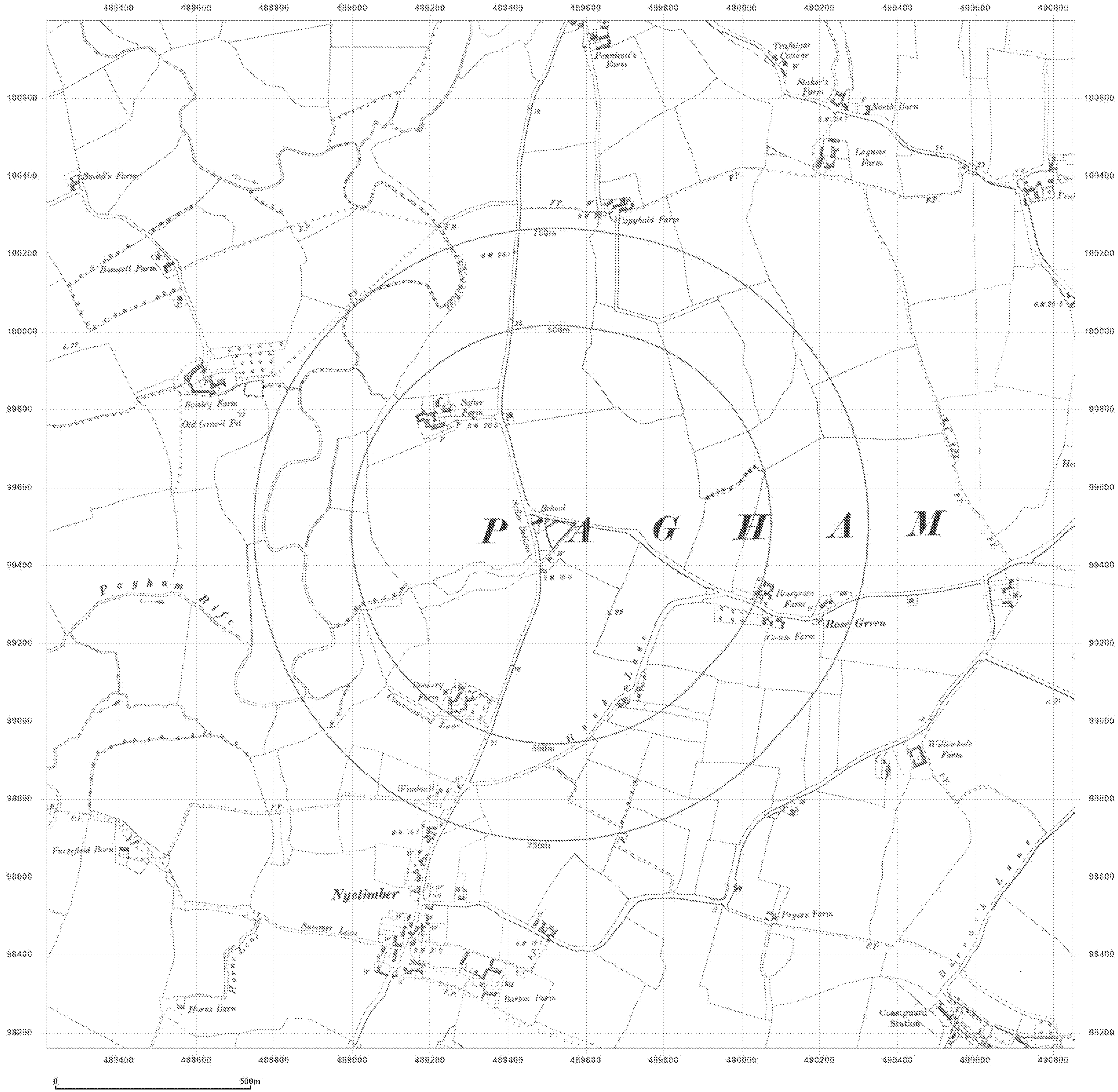
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Site Details:

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Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series

Map date: **1896**

Scale: 1:10,560

Printed at: 1:10,560

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Revised 1896
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Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1896
Edition N/A
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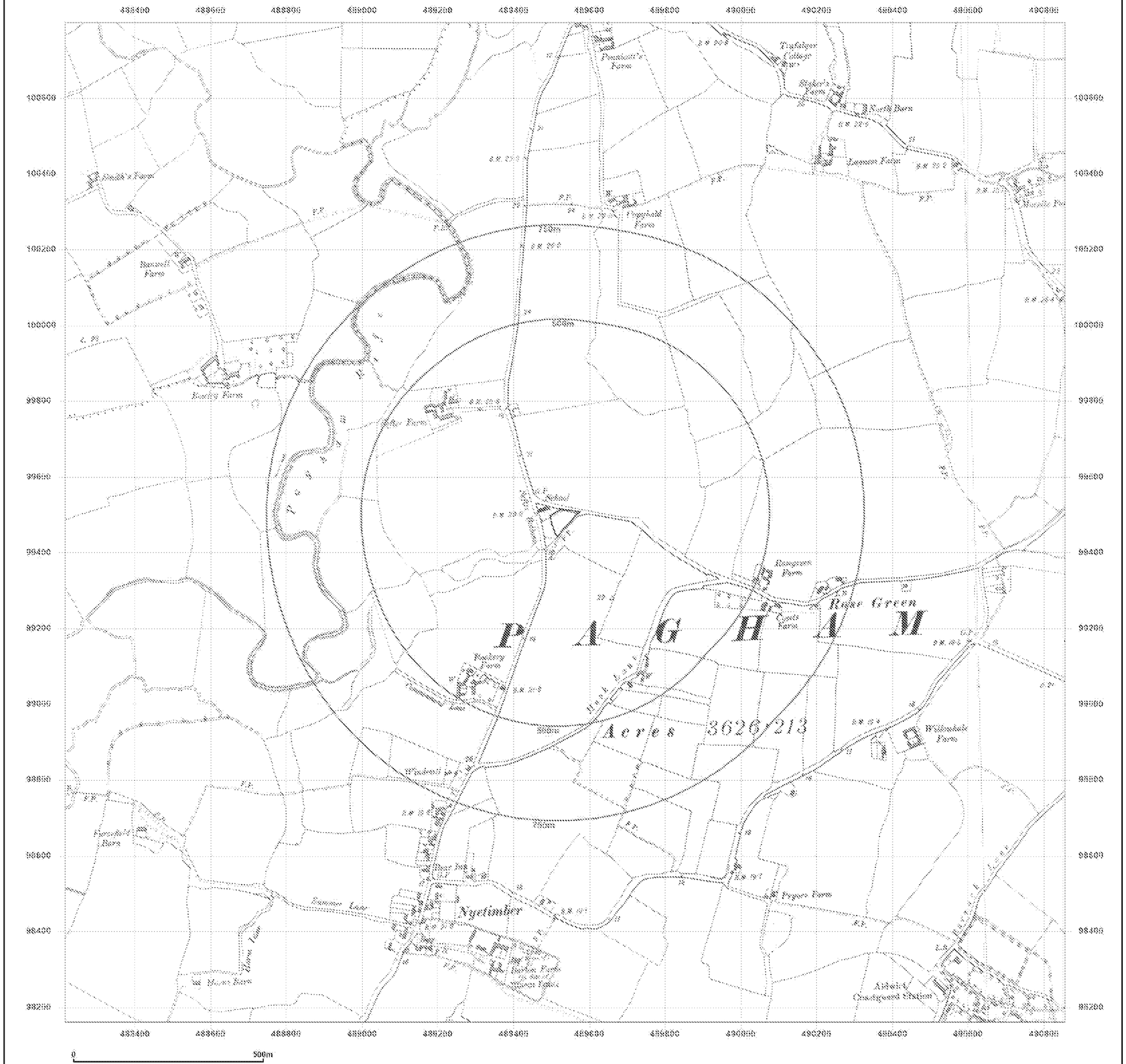
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ARUN DISTRICT COUNCIL P/152/22/DOC



Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

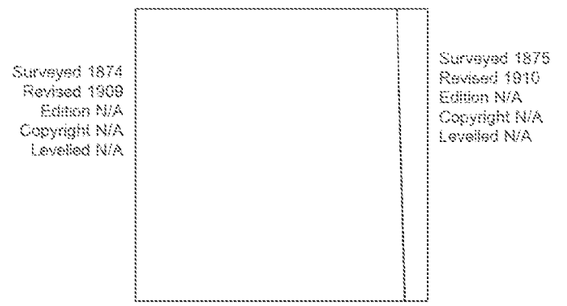
Map Name: County Series

Map date: **1909-1910**

Scale: 1:10,560

Printed at: 1:10,560

N
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Powered by OS

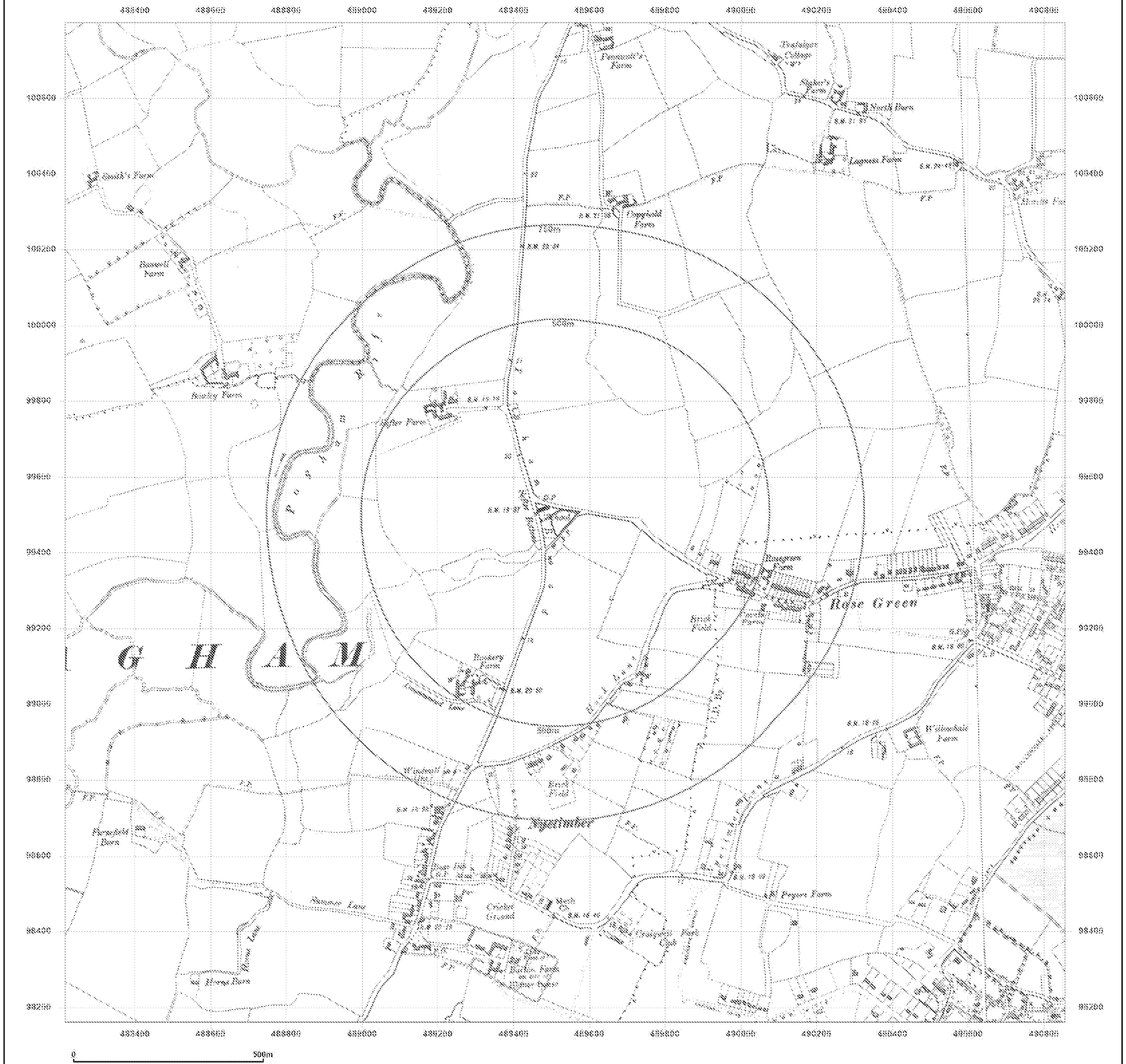
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Production date: 10 March 2022

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series

Map date: **1933-1934**

Scale: 1:10,560

Printed at: 1:10,560

N W E S

Surveyed 1874
Revised 1933
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1934
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: County Series

Map date: **1938-1940**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1874
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1940
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 10 March 2022

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: Provisional
Map date: **1957-1961**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1961
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1957
Revised 1957
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1957
Edition N/A
Copyright N/A
Levelled N/A

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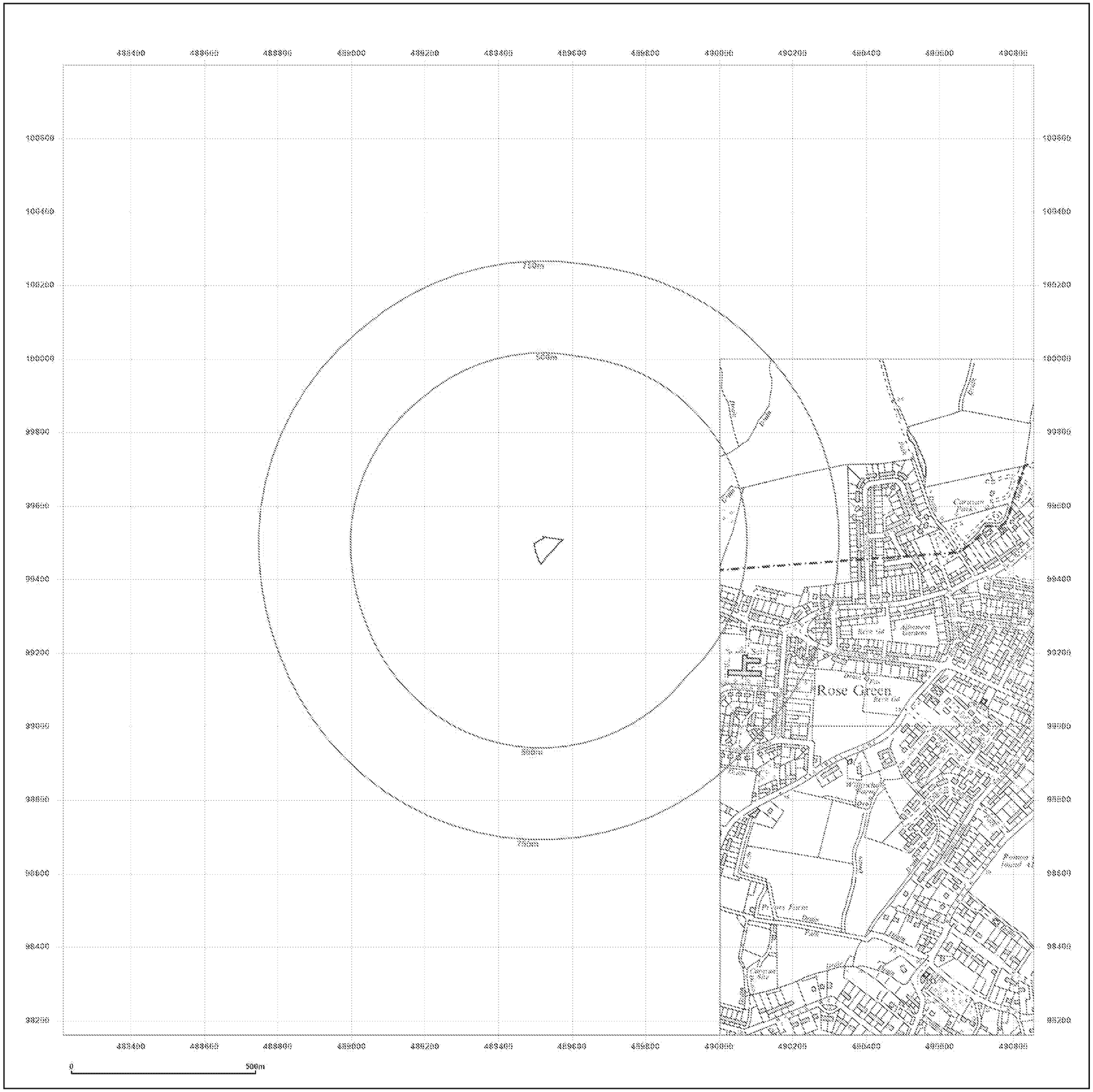
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Production date: 10 March 2022

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

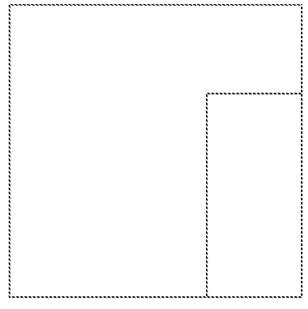
Map Name: Provisional

Map date: **1967**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1973-1976**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

Surveyed 1972
Revised 1973
Edition N/A
Copyright 1973
Levelled N/A

Surveyed 1974
Revised 1975
Edition N/A
Copyright 1976
Levelled 1975

Surveyed 1972
Revised 1973
Edition N/A
Copyright 1975
Levelled 1968

Powered by OS

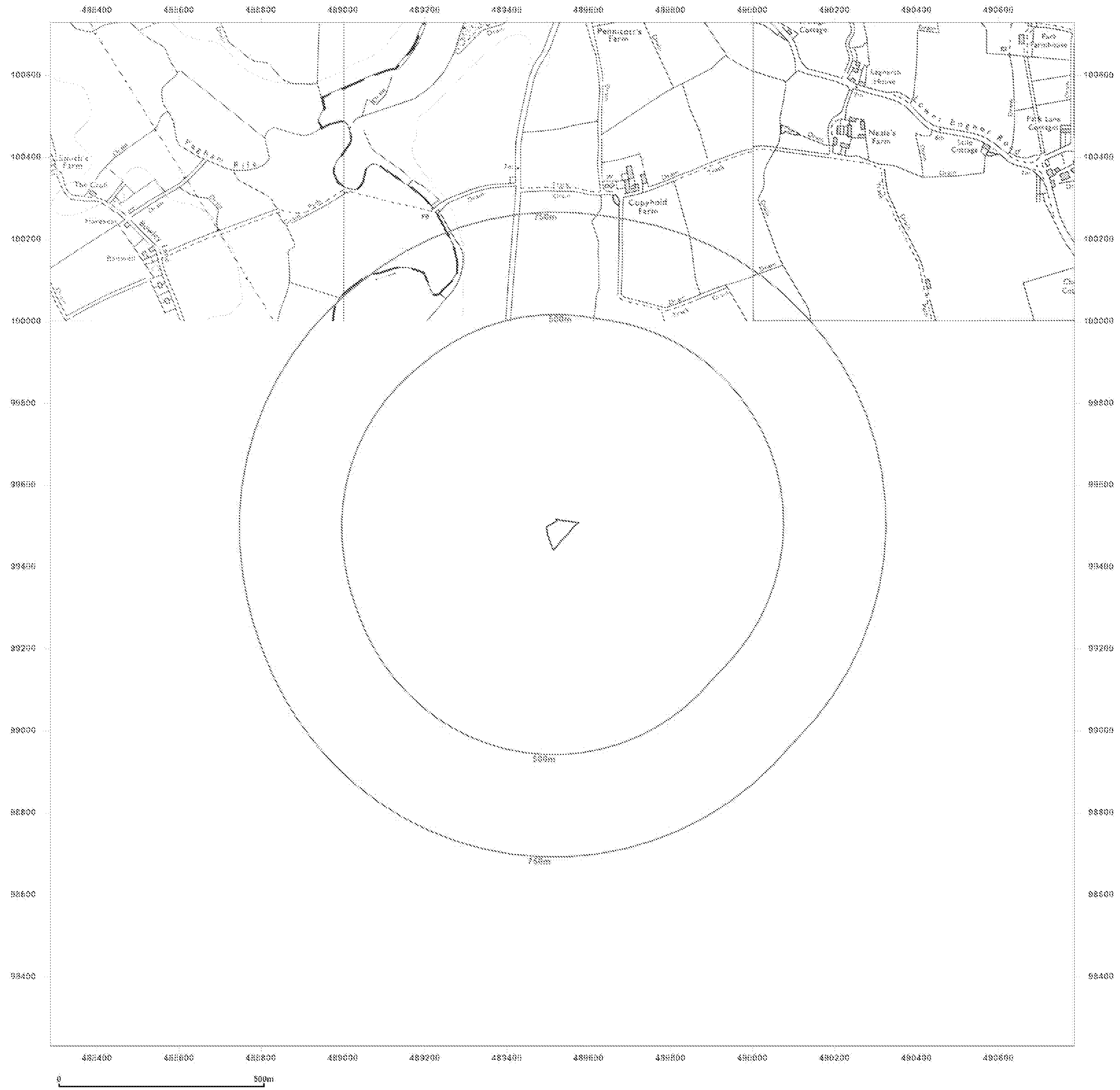
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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1979-1980**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1975
Revised 1980
Edition N/A
Copyright 1980
Levelled 1975

Surveyed 1975
Revised 1979
Edition N/A
Copyright 1979
Levelled 1975

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **1989-1994**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1975
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1992
Revised 1993
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1988
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

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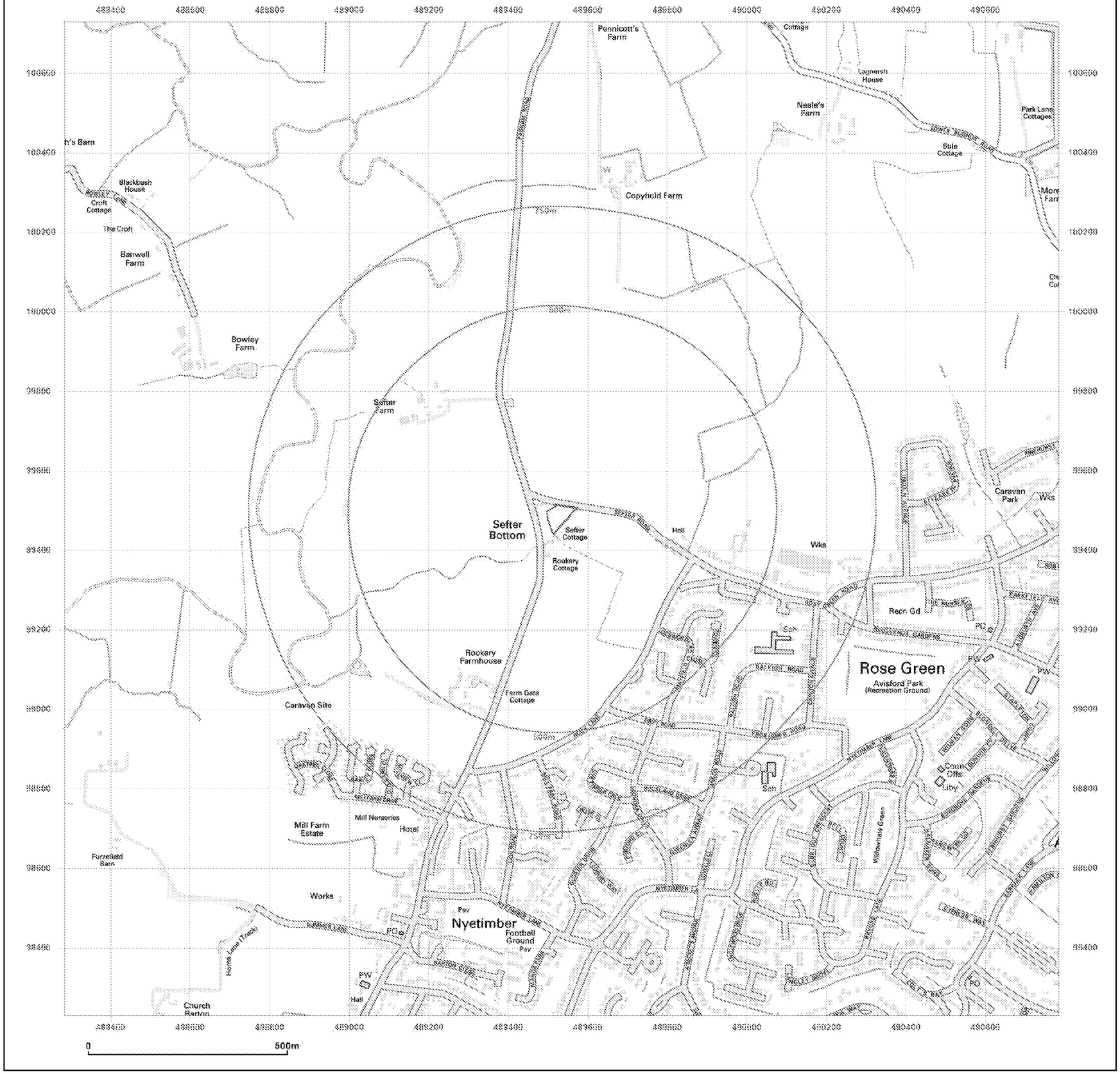
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Production date: 10 March 2022

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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

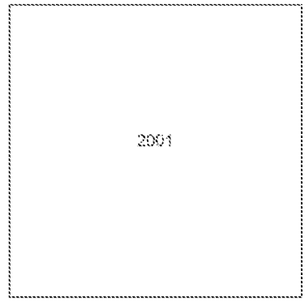
Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S



Powered by OS

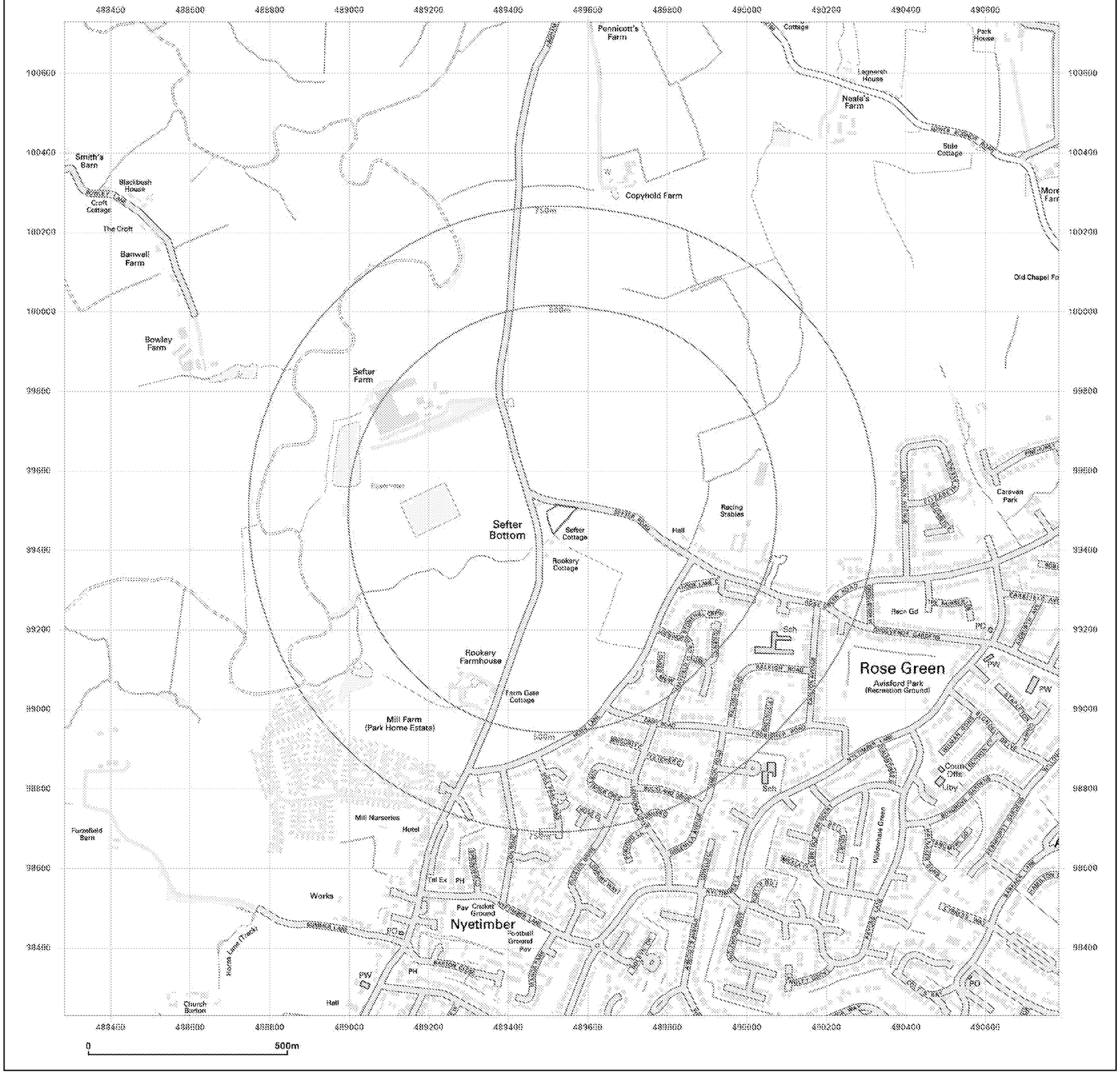
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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

2010

Powered by OS

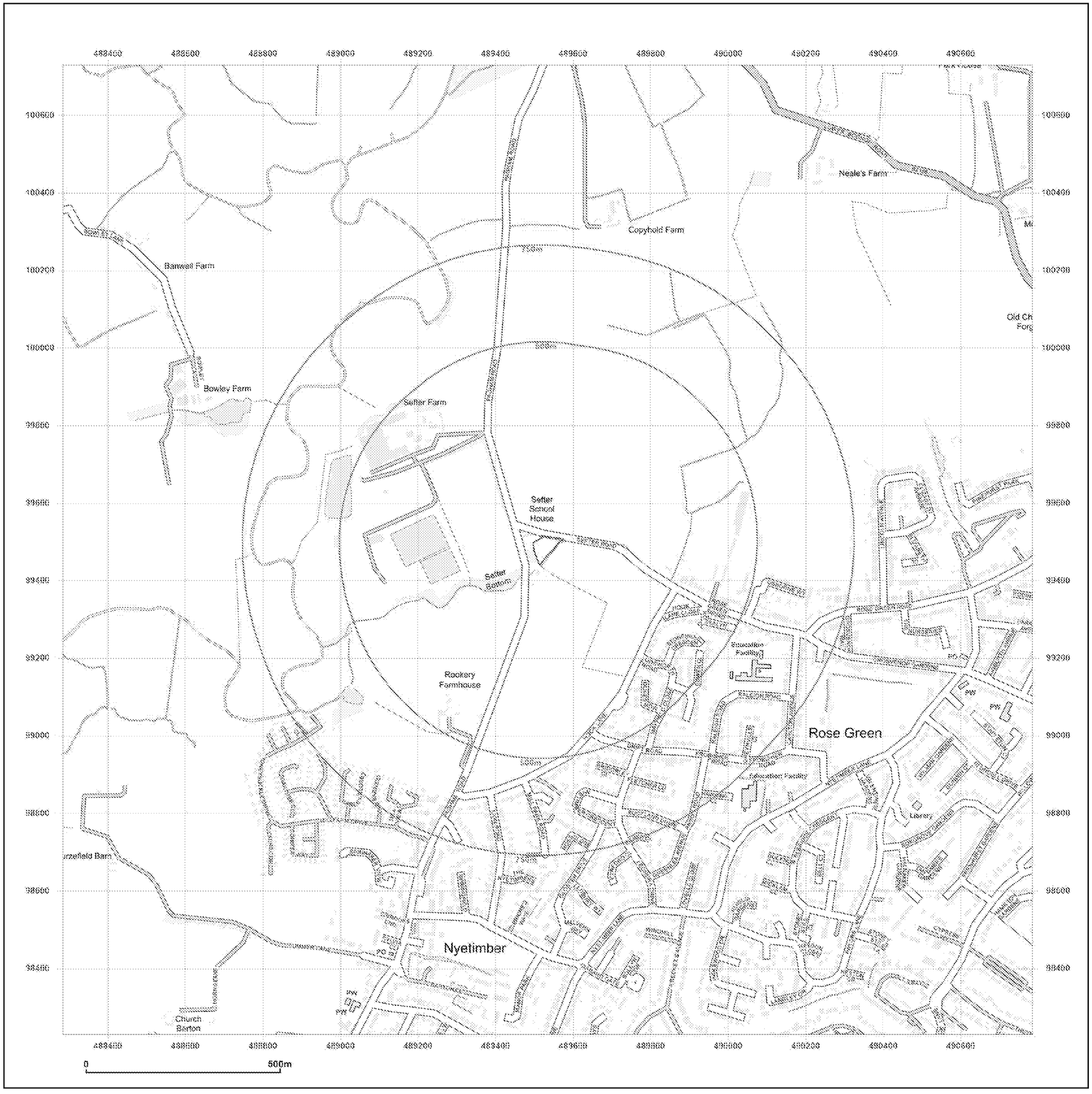
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Groundsure INSIGHTS

Site Details:

Land rear of Sefter School House, SEFTER ROAD, PAGHAM, PO21 3EE

Client Ref: 21-1146
Report Ref: GS-8585937
Grid Ref: 489535, 99479

Map Name: National Grid

Map date: 2022

Scale: 1:10,000

Printed at: 1:10,000

N W E S

2022

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Production date: 10 March 2022

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APPENDIX C

Report Terms and Conditions

Trading Terms

Unless specifically stated within the tender/quotation or unless identified within the introduction to this report it is confirmed that this report has been compiled wholly in accord with Constructive Evaluation Limited's terms of engagement. This report is provided for sole use by the Client and is confidential to them. No responsibility whatsoever for the contents of the report will be accepted to anyone other than the Client.

Copyright

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Context

This report is written in the context of an agreed scope of work between Constructive Evaluation Limited and the Client and should not be used in a different context. In light of additional information becoming available, improved practices and changes in legislation amendment or re-interpretation of the report in whole or part may be necessary after its original submission.

Professional Interpretation

The recommendations made and opinions expressed in the report are based on the conditions revealed by the site works together with an assessment of the data from the insitu and laboratory testing or in respect of the desktop reports. No responsibility can be accepted for conditions that have not been revealed by the research, site works and testing.

The Client is advised that the conditions observed on site by Constructive Evaluation Limited at the time of any site survey may be subject to change. Certain indicators of the presence of hazardous substances may have been latent at the time of the most recent site reconnaissance and they may subsequently have become evident. It is not possible to assess areas which are inaccessible or where access is not granted and CE accept no liability for risks subsequently identified therein.

The conceptual model, Risk assessment and sampling regime has been formulated in accordance with current UK guidance at time of production based upon the relevant information gained from Phase 1 and Phase 2 investigations. While the model and assessment offer opinions and interpretations of these guidelines, the comments made are for guidance only and no liability can be accepted for their accuracy. It is possible that aspects of desktop study may need to be altered to conform to the requirements of the statutory regulatory bodies.

Intrusive Field Operations

The data collected through direct operations in the production of this report has been so obtained, unless directly otherwise stated, in accordance with current UK guidance, law or accepted industry practice, including but not limited to: BS.5930: 1990 Code of Practice for Site Investigations (Amendment 2: 2010), BS 10175:2011+A1:2013 Investigations into Potentially Contaminated Sites, and BS.8576:2013 Guidance on Investigations for Ground Gas – Permanent Gases and Volatile Organic Compounds. Exact exploratory locations will depend upon access conditions, site use and plant capability, CE do not accept liability for issues arising from material identified between or outside of the area of exploratory locations.

Laboratory Testing

Unless stated otherwise within the text, all geotechnical and material laboratory tests have been performed in accordance with the relevant British Standard Documents. Laboratory testing for contaminated land assessment is completed under the UKAS / MCERTS accreditation schemes, unless identified as otherwise in the report.

Human Health Risk Assessment Criteria

The Environment Agency has recently undertaken revision of the Soil Guideline Values (SGVs) which are partially complete. Where standards are available using the "new" approach, these have been utilised for correlative purposes. Where standards have not yet been revised, guidance following the "old" approach has been utilised. Please note that upon release of the remaining guidelines, the standards contained within this report may be subject to change. In addition, the second edition of the LQM CIEH guidance has now been released and will be utilised in favour of previously published guideline values.

Third Parties

The findings and opinions conveyed in this report are based on information obtained from a variety of sources, including that from previous Site investigations and chemical testing laboratories. Constructive Evaluation Limited has assumed that such information is correct. Constructive Evaluation Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon and can accept no responsibility for inaccuracies with the data supplied by other parties.

The accuracy of the historical map extracts supplied cannot be guaranteed and it should be noted that different conditions may have existed between mapping sheet editions. Therefore, there can be no certainty that all areas of contamination have been identified during the Phase 1 investigation.

Definitions

Reference to the word "contamination" in this report does not relate to the statutory definition of contaminated land under 1990 Environmental Protection Act unless otherwise stated. The definition used in this report is: "Land that contains substances that, when present in sufficient quantities or concentrations, are likely to cause harm, directly or indirectly, to man, to the environment, or on occasion to other targets" (NATO CCMS, 1985).

CE Ltd 2014

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