

Halsnead Garden Village North

Coal Mining Risk Assessment

FRP Advisory

Project number: 60634607
Document Reference: 60634607_ACM_RP_EN_0002_A

June 2020

Quality information

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1. Introduction

1.1 General

AECOM Limited (herein referred to as 'AECOM') was commissioned by FRP Advisory to undertake a desk-based Coal Mining Risk Assessment to support the outline planning application for a proposed residential development at Halshead Garden Village North site (herein referred to as the 'Site').

1.2 Proposed Development

The proposed development (to be confirmed) comprises circa 300 2-4 storey dwellings including consideration of a care home, associated access, amenity space, green infrastructure, drainage and attenuation and ancillary works. The indicative layout plans and illustrative masterplan at the time of writing are presented in Appendix A.

1.3 Site Location and Description

The Site is located to the immediate south of the village of Whiston, in Merseyside, within the administrative district of Knowsley Metropolitan Borough Council. The Site is located within the South of Whiston/Land south of the M62 Sustainable Urban Extension (SUE), also known as 'Halshead Park'. The Site is centred on National Grid Reference 347218, 390362, a Site Location Plan is presented as Drawing 60634607.001 and Site Layout Plan is presented as Drawing 60634607.002.

This assessment is intended to inform the design of the proposed development and support the outline planning application for the Site.

The Site is comprised two land parcels, a larger site area located to the immediate south of Lickers Lane; Site area A and a smaller site area; Site area B located to the immediate east of Windy Arbor Road. A Site Layout Plan is presented on Drawing 60634607.002. An inset of Drawing 6063460.002 is presented in Figure 1.

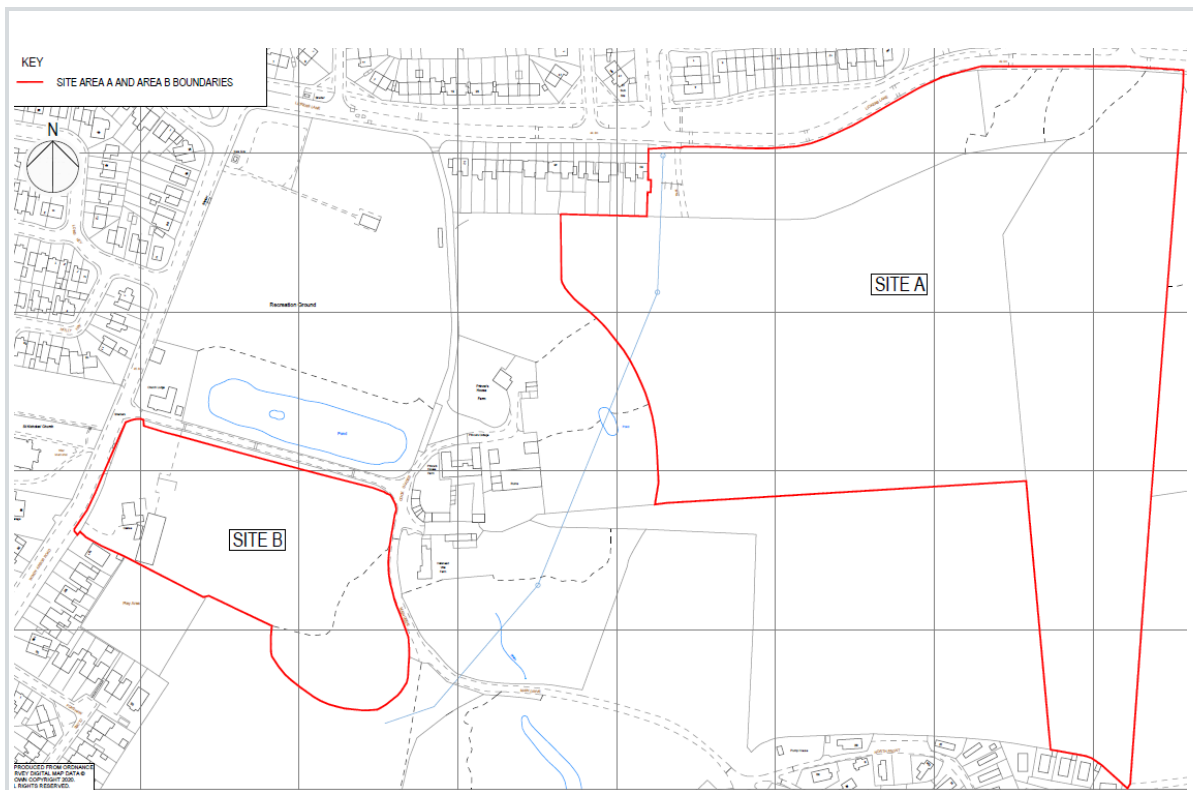


Figure 1. Site Area A and Site Area B Boundaries

Full drawing presented as 6063460.002

Site area A is defined by existing field boundaries to the south, east and west. Hedgerows and woodland are interspersed along the eastern boundary as well as the northern portion of the western boundary of site area A. The very south of site area A abuts the residential settlement of Halsnead Park while there is a row of semi-detached dwellings to the south of Lickers Lane which abuts the north-west corner of the site area. Site area A is predominantly in agricultural use, comprising a single field parcel. Lickers Land Wood Local Wildlife Site (LWS) stretches along the north extent of Site area A and an area of scrub vegetation and woodland is located within the east and south eastern extent.

Site area B is bound by roads to the north and east (Main Drive) as well as to the west (Windy Arbor Road) and a field to the south. Residential properties and a small play park are located to the immediate south west. Site area B comprises a mixture of hardstanding and dense vegetation and woodland. There are also two buildings within the south west of Site area B which are no longer in use and in disrepair.

The land between the two areas includes Main Drive, a cluster of detached dwellings, a recreation ground, and agricultural buildings, which are interspersed by mature trees and agricultural land.

1.4 Purpose

The Coal Authority has divided the UK coalfield into 'Development Low Risk Areas' and 'Development High Risk Areas'. Any site falling within a 'Development High Risk Area' now requires a Coal Mining Risk Assessment to be undertaken to inform the planning application. The Coal Authority, as a statutory consultee in coal mining areas, is required to review and approve the risk assessment.

The Coal Authority Interactive Map Viewer (accessed June 2020) confirms that the Site is within a Development High Risk Area, and as such, a Coal Mining Risk Assessment is required.

The purpose of this desk-based Coal Mining Risk Assessment is to:

- Review the geology and historical land uses of the Site and surrounds to identify potential hazards relating to coal mining;
- Present a desk-based review of all available information on the coal mining hazards and related risks which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of hazards and risks;
- Set out appropriate mitigation measures to address the coal mining legacy hazards and risks affecting the site, including any necessary remedial works and/or demonstrate how coal mining hazards and risks may influence the proposed development; and
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirement of national planning policy with regard to development on unstable land.
- This CMRA follows the guidance issued by the Coal Authority (2017) 'Risk Based Approach to Development Management: Guidance for Developers' Version 4.

1.5 Methodology

The Coal Mining Risk Assessment methodology has three stages:

- Obtain coal mining information;
- Identify what risks past, present or future coal mining poses to the proposed development; and
- Identify how coal-mining hazards could influence or be influenced by the proposed development and whether any mitigation measures are required.

The overall aim of the report is to identify the mining risks present on site, if any, and to recommend any necessary further actions in order for the site to be developed safely without influencing or being influenced adversely by any past, present or future coal mine workings.

1.6 Information Sources

The following sources of information were consulted the risk assessment:

- AECOM, Halsnead Garden Village North, Phase 1 Geo-environmental Desk Study, (June 2020);

- Barton Willmore, Halsnead Park, Knowsley, Environmental Impact Assessment Briefing Note, April 2020, Ref. 31613/A5/EIABriefing;
- Barton Willmore, Halsnead Park, Desk Study Assessment Report, LC/C3593/7001, July 2017;
- Barton Willmore, Halsnead Park, Whiston, Geo-environmental Assessment Report, LC/C3593/7018, July 2017;
- British Geological Survey 1:50,000, Solid and Drift Geological Map Sheet 97 for Runcorn;
- British Geological Survey (BGS) website (www.bgs.ac.uk) (last accessed June 2020);
- Brownfield Solutions LTD, Steward Milne Homes, Halsnead Park Whiston, Coal Mining Risk Assessment, LC/C3593/7004) July 2017;
- Groundsure Report GS-6777657, June 2020 presented in Appendix B
- Coal Authority, Consultants Coal Mining Report, 2nd June 2020, Ref. 51002285427001 (Appendix C)
- Coal Authority Mine Abandonment Plans presented in Appendix D;
- Coal Authority Risk Based Approach to Development Management, Guidance for Developers. Version 4. 2017;
- Coal Authority Interactive Map Viewer (<https://mapapps2.bgs.ac.uk/coalauthority/home.html>) (last accessed June 2020);
- Ordnance Survey maps (current and historical) as supplied by Groundsure Report GS-6777657, June 2020.

2. Background

2.1 Geology

The geology of the Site has been assessed from the British Geological Survey (BGS) Solid and Drift map of Runcorn 1:50,000 Sheet 97. A BGS 1:10,000 sheet is not available for the Site.

2.1.1 Made Ground

Made Ground is not recorded within the boundaries of the sites on BGS geological mapping. However, Made Ground is anticipated in Site area B associated with the buildings in disrepair within the south-eastern section.

2.1.2 Superficial Deposits

The Site is anticipated to be underlain by superficial deposits of Devensian Till (Diamicton).

2.1.3 Bedrock Geology

Underlying the superficial deposits is the anticipated solid geology of the Pennine Middle Coal Measures described by the BGS as *interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams, with a bed of mudstone containing marine fossils at the base, and several such marine fossil-bearing mudstones in the upper half of the unit.*

Directly to the east of Site area A, the solid geology is comprised of Kinnerton Sandstone Formation, described by the BGS as *sandstone, red-brown to yellow, generally pebble-free, fine- to medium-grained, cross-stratified. Dominantly aeolian*, which may encroach on Site area A.

With reference to the 1:50,000 map for Runcorn, the inferred dip of the bedrock is approximately 12° to the south-west.

2.1.4 Linear Features

With reference to the BGS 1:50,000 scale map for Runcorn, the Eccleston West Fault runs north-south along the eastern edge of Site area A, with a downthrow to the east.

There is an unnamed fault that runs north-south between Site area A and Site area B with a downthrow to the east.

There are a number of inferred coal seam outcrops across the Site running parallel to each other north-west to south-east.

2.1.5 BGS Boreholes

There are no BGS boreholes recorded on Site or within 250m of the Site.

2.2 Hydrogeology

The superficial deposits of Devensian Till (Diamicton) is classified by the Environment Agency (EA) as a Secondary Undifferentiated Aquifer, *which is assigned where it is not possible to attribute either category a or B to a rock/soil 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/soil type.*

The bedrock geology of the Pennine Middle Coal Measures is classified as a Secondary A aquifer; which is defined as *an aquifer containing permeable strata capable of supporting water supplies at a local rather than strategic scale, and in some cases, forming an important source of base flow to rivers.*

The Kinnerton Sandstone Formation is classified as a Principal aquifer, which is defined as *geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.*

The superficial deposits at the Site have been classed as Low Vulnerability. These are soils 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.

The aquifer at the Site has been classed as Medium Vulnerability due to the overlying soils present. *These are soils that are between high and low vulnerability.*

The Groundsure Report indicates that the Site is not within a groundwater source protection zone. However, the bedrock of the Kinnerton Sandstone Formation, to the east of Site area A, is classified as a Source Protection Zone 3 Total Catchment. This zone is defined as the total area needed to support the abstraction or discharge from the protected groundwater source.

2.3 Hydrology

The Site is noted to be within the Water Framework Directive (WFD) River Water Body Catchment of Prescott Brook (Logwood Mill brook).

There are two (2) surface water features located within 50m of the Site, and five (5) surface water features located between 50m and 250m of the Site. There are no WFD Surface Water Bodies located within 2000m of the Site.

There are no surface water abstraction licences within 500m of the Site. There are four (4) surface water abstraction licences between 500m and 2000m south of the Site.

The Site is located in Flood Zone 1 (low risk of flooding) and there are no significant flood risk effects anticipated on the proposed development.

2.4 Site History

Historical mapping has been reviewed to assess the potential for past activities, both on and adjacent to the Site to have impacted upon the Site's environmental and land quality. Historical Ordnance Survey (OS) maps of the Site were obtained as part of the Groundsure Report (GS-6777657).

A summary of the historical land uses is presented in Table 2.1 for Site area A and Table 2.2 for Site area B. These tables describe significant changes in industry and land development within the Site boundaries from 1850 (first available mapping date) to the present day and significant off-site development within 500m of the Site boundaries. This overview of historical land uses has an emphasis on land use which could have contributed to land contamination. The tables describe the main features present on the Sites and the nearby surroundings. Where dates are given, these refer to the dates on the maps which the features appear and do not necessarily refer to the exact date of the operations at any particular facility.

Table 2-1 Review of the Historical Ordnance Survey Maps for Site area A

Date	Scale	On-site	Off-site (<500m)
1850	1:10,560	The site is comprised of woodlands and open fields.	Halsnead is denoted to the south of the site. Woodlands, tracks and open fields surround the majority of the site. Whiston is denoted to the north of the site. Stone Quarry Plantation is present some 250m north of the site. A Coal Pit is present immediately south-west of the site. Hig Hey Colliery and a Coal Pit is denoted some 400m to the west of the site. Houghton's Hey Colliery and a Coal Pit are denoted some 500m to the west. Halsnead Colliery is located approximately 400m to the southwest. The site is bound to the north by Lickers Lane. A Railway is denoted some 500m north of the site.
1891	1:10,560	No significant change.	The Coal Pit is no longer denoted the Stone Quarry Plantation is now denoted as Old Quarry. Houghton's Hey Colliery is renamed Halsnead Colliery and the former Halsnead Colliery is shown as "Old Colliery".
1892 - 1937	1:2,500 1:10,560	No significant change.	Fox clump is denoted some 250m south-east. An Old Quarry is denoted immediately north of the site. Sandfield Cottage is present some 150m north-east of the site. Rimmers Covert is present approximately 50m north of the site. Halsnead Colliery is now disused. Old shafts are shown on the Old Colliery site. A mineral railway is present south of the disused

			Halsnead Colliery running south east to Cronton Colliery 750m south of the Site.
1958	1:2,500	No significant change.	A Disused Well is located come 200m south-west.
1974 - 1976	1:1,250	No significant change.	A number of residential properties are present to the north-east, including St Leos School and Southmead Primary School. All traces of Halsnead colliery have been removed
1977 -1978	1:10,000	No significant change.	The M62 and M57 motorways are present, the M62 running in a east to west direction approximately 500m south of the site and the M57 running in a north south direction approximately 750m west of the site, . the motorways meet at a junction approximately 750m south west of the site.
1980 - 1990	1:2,500 1:10,000	No significant change.	A Caravan Park is located some 110m south-west of the site. The earlier mineral railway is labelled as disused.
1994	1:1,250	No significant change.	Halsnead Park is denoted to the east of the site.
2020	1:10,000	No significant change.	No significant change.

Table 2-2 Review of the Historical Ordnance Survey Maps for Site area B

Date	Scale	Onsite	Off-site (<500m)
1850	1:10,560	The site is comprised of an open field in the centre and woodland to the east and west. A Ruin is denoted on site.	Open fields and woodland surround the site along the southern boundary. Hig hey Colliery and Coal Pits are located some 250m west of the site. Houghton's Hey Colliery and Coal Pit is denoted some 300m west. Halsnead colliery is located approximately 300m southwest of the site. A Coal Pit is located adjacent to the east of the site.
1891 - 1892	1:2,500 1:10,560	No significant change.	Ice House and associated buildings are located to the north-east of the site. Houghton's colliery is renamed as Halsnead Colliery and the former Halsnead Colliery is referred to as "Old Colliery" The site is bound to the west by a road and St Nicolas Church. A Well is denoted to the north. Cock Glades is denoted to the north-east. Halsnead Colliery is now disused. Old shafts are shown on the Old Colliery site. A mineral railway is present south of the disused Halsnead Colliery running south east to Cronton Colliery 750m south of the Site.
1907 - 1927	1:2,500	North-east corner of site is now open fields.	No significant change.
1937	1:2,500	Western part of site is now a field. Lynch Gate is denoted on site.	Buildings to the west now denoted as Prince's House.
1958	1:2,500	The site now comprises a number of buildings within the centre. A Pond is denoted in centre of the northern boundary. A Drain runs north south through the west edge of the site.	A number of Tanks are directly to the north east. Halsnead Villa is denoted. A number of residential houses are present to the south-west. A Pond is denoted to the north of the site. A Recreation Ground is now present to the north adjacent to the site.
1973 - 1984	1:1,250	A Nursery Garden Centre and Oaklee is denoted on site.	Church Lodge is denoted immediately north of the site. All traces of former collieries have now been removed The M62 and M57 motorways are present, the M62 running in an east to west direction approximately 500m south of the site and the M57 running in a north south direction approximately 750m west of the site . the motorways meet at a junction approximately 750m south west of the site.
2020	1:10,000	Nursery is no longer denoted.	No significant change.

2.5 Previous Ground Investigations

2.5.1 Brownfield Solutions Ltd, Halsnead Park, Whiston, Geo-environmental Assessment Report, August 2017.

An intrusive ground investigation was undertaken at the Site between 18th May and 16th June 2017 by Brownfield Solutions Ltd. The investigation comprised window sample boreholes, trial pits, rotary open holes, gas and groundwater monitoring and geotechnical and geo-environmental laboratory testing.

Topsoil was encountered to depths of up to 0.50m bgl in both Site area A and B. Coal fragments were observed locally as well as localised anthropogenic gravel such as brick, terram, glass, plastic and pottery.

Made Ground was encountered within thirteen (13) locations in Site area A to depths of between 0.35m bgl and 2.80m bgl. Made Ground was encountered within all the exploratory hole locations in Site area B and was encountered to depths of between 0.30m bgl and to depths in excess of 1.50m bgl.

The dominant superficial strata within Site area A was slightly sandy to sandy clay with varying amounts of gravel. This stratum was encountered at depths of between 0.75m bgl and 3.30m bgl. The natural strata underlying the Made Ground in Site area B was generally sandy clay with localised lenses and stringers of coal encountered to depths of between 1.20m bgl and 2.85m bgl.

Bedrock was encountered at depths of between 0.75m and 3.30m across Site area A and consisted of Siltstone or Mudstone. Within the smaller field sandstone bedrock was encountered generally at shallow depths of between 0.50m bgl and 1.30m bgl. Coal sub-crops were recorded at rockhead within three (3) exploratory holes (WS07, TP01 and TP03).

Coal seams were encountered in ten (10) of the rotary boreholes, four (4) trial pits and one (1) window sample boreholes across Site area A. Table 2.3 summarises the coal measures encountered during the site investigation. Losses of flush were noted during the borehole drilling.

Table 2-3 Summary of coal seams encountered in Site area A.

Location	Depth (m bgl)	Thickness (m)	Interpreted Coal Seam
WS07	1.75 – 2.34 (refusal)	0.59+	Yard
TP01	2.30 – 3.20	0.90	Lower Florida
TP03	1.20 – 3.70	2.50	Earthy Delph
TP08	3.10 – 3.30 (refusal)	0.20+	Yard
TP09	2.70 – 3.80 (refusal)	1.10	Yard
RO01	7.50 – 8.70	1.20	Higher Florida
RO01	18.70 – 19.90	1.20	Lower Florida
RO02	15.70 – 16.90	1.20	Discovery
RO02	18.20 – 19.20	1.00	Discovery
RO03	20.90 – 21.90	1.00	Lower Florida
RO03	32.00 – 32.50	0.50	Unknown
RO04	16.10 – 17.20	1.10	Lower Florida
RO05	15.60 – 16.90	1.30	Lower Florida

RO06	4.50 – 5.20	0.70	Yard
TO08	1.50 – 3.00	1.50	Higher Florida
RO12	4.00 – 10.50	5.50	Interbedded very weak siltstone/mudstone coal
RO12	18.30 – 19.50	1.20	Yard
RO13	10.40 – 11.60	1.20	Weak interbedded siltstone and coal
RO13	21.70 – 22.80	1.10	Lower Florida
RO13	31.70 – 32.40	0.70	Unknown
RO14	20.50 – 21.70	1.20	Earthy Delph
RO14	23.30 – 24.30	1.00	Higher Florida

Bedrock was encountered between depths of 1.20m bgl and 3.50m bgl across Site area B and consisted of Siltstone or Mudstone. An inferior coal band 50mm thick was noted within the siltstone in WS03 between a depth of 1.50m bgl and 1.55m bgl. Within TP25 a completely weathered band of siltstone, recovered sandy clay was encountered between depths of 1.90m bgl and 2.60m bgl. Within the deeper rotary boreholes drilled within Site area B (RO17 – RO19) the bedrock encountered was interbedded mudstone and siltstone with occasional sandstone bands. Within RO19 coal was present between depths of 10.50m bgl and 11.50m bgl and recorded as a siltstone with coal bands.

Groundwater was generally absent across exploratory holes drilled within Site area A with localised strikes encountered in the north east and north west of the Site. No groundwater was recorded within any of the exploratory holes drilled within Site area B.

Two gas monitoring rounds were carried out at the site by Brownfield Solutions Ltd. on 23rd May and 5th June 2017. Within Site area A peak carbon dioxide was recorded at concentrations of between 0.1%v/v and 9.3%v/v with steady state concentrations ranging between 0.0%v/v and 9.0%v/v. Concentrations of carbon dioxide in excess of 5%v/v were recorded within WS04 only. Oxygen concentrations of between 12.2%v/v and 21.2%v/v were recorded. Steady state concentrations ranged between 12.3%v/v and 21.4%v/v. Methane was recorded at a maximum concentration of 0.1%v/v. Atmospheric pressure ranged between 1008mb and 1015mb. A maximum positive gas flow of 0.2 l/hr was detected. Groundwater levels of between 0.84m bgl and 2.66m bgl were recorded. No groundwater was detected in the east of Site area A. The only well screened in a coal seam was WS07 which recorded peak concentrations of 4.2%v/v of carbon dioxide.

Within Site area B peak carbon dioxide was recorded at concentrations of between 6.5%v/v and 18.5%v/v with steady state concentrations ranging between 6.0%v/v and 17.7%v/v. Oxygen concentrations of between 0.8%v/v and 17.1%v/v were recorded. The maximum concentration of methane in Site area B was recorded at <0.1%v/v. Steady state concentrations ranged between 0.8%v/v and 17.2%v/v. Atmospheric pressure has ranged between 1008mb and 1015mb. A maximum positive gas flow of 0.2 l/hr was detected. No groundwater was recorded in the boreholes monitored at Site area B.

2.6 Coal Mining Report

A Coal Authority Coal Mining Consultants Report (Ref. 51002285427001) was obtained for the Site.

This report provides a general overview of the coal mining history of the whole site, the presence of current and potential for future coal mining, and comments on other associated risks such as reported ground stability hazards and mine gas. The report is presented in Appendix C and the findings are summarised below.

The Site is within a surface area that could be affected by underground mining of 7 coal seams from 78m bgl and 392m bgl last worked in 1903. These coal seams are: St Helens Yard, Rams, Higher Florida, Wigan Four Feet, Wigan Two Feet, Plodder and Rushy Park.

The Site is within an area of probable unrecorded shallow workings.

There are a number of disused mine entries on Site and within 100m of the Site. There are three mine entries within Site area A: 347390-002; 34790-004 and 347390-005 there are no treatment details for these shafts. Within Site area B, there are two recorded disused mine shafts: 346390-029 and 346390-026, there are no treatment details for these shafts.

There are 8 coal outcrops within the Site:

- Crombouke;
- Higher Florida;
- Higher Pigeon House;
- London Delph;
- Lower Florida;
- Rams;
- Roger; and
- St Helens Yard.

There is an unlicensed opencast site directly north-west of Site area B.

There are no recorded remediated sites within 50m of the Site.

The Coal Authority has not received a damage notice of claim for the subject property, or any property within 50m of the enquiry boundary, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

There are no records of mine gas, within 500m of the enquiry boundary.

There are no licenses recorded for future underground mining.

There are no coal mining licenses recorded within 200m of the enquiry boundary.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

The property is not within an area where a notice to withdraw support has been given.

The property is not within an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

2.7 Mine Abandonment Plans

2.7.1 Deep Coal Mining

Mine Abandonment Plans were obtained from the Coal Authority and are presented in Appendix C. A search of the Coal Mining Abandonment Records indicated that underground mining was carried out at Preston Colliery and Carrs Colliery. However, it should be noted that the depositing of mine abandonment plans was only required by law after the passing of The Metalliferous Mines Regulation Act 1872, and mines abandoned before this date may not be recorded.

Table 2-4 Summary of Coal Mine Abandonment Plans

Colliery	Coal Seam	Approx. Depth to Seam (m bgl)	Approx. Seam Thickness (m)	Approx. date of last mining activity
Preston	Tenlands	68	2.7	1897
	Bastian	91	0.8	1903

Colliery	Coal Seam	Approx. Depth to Seam (m bgl)	Approx. Seam Thickness (m)	Approx. date of last mining activity
Carrs	Main Delf	-	4.2	1889
Preston and Whiston Colliery	Rushy Park	-	-	1897

The BGS website holds a record for the Whiston Colliery No 1. Location 750m to the north-west of the Site. The Whiston Colliery Shaft indicates that the following coal seams are present: Pasture (5.4m bgl); Discovery (14.6m bgl); Yard (30.7m bgl); Earthy Delf (45.7m bgl); Higher Bugg (63.7m bgl); Lower Bugg (66.14m bgl); Little End (81m bgl); Tenlands (160m bgl); Bastian (184m bgl) and Whiston Little Delf (230m bgl).

The Coal Mining Report states that the Site has been subject to past underground mining from seven coal seams; the details of which are summarised in Table 2.4.

Table 2-5 Summary of Coal Mine seams worked at the Site

Colliery	Seam	Depth (m bgl)	Dip (degrees)	Extraction Thickness (cm)	Year Last Mined
Unnamed	St Helens Yard	78	11.3	90	1867
Unnamed	RAMS	89	11.3	180	1866
Unnamed	Higher Florida	95	11.3	180	1869
Unnamed	Wigan Four Feet	127	11.2	160	1902
Unnamed	Plodder	226	9.5	240	1880
Unnamed	Rushy Park	339	13.4	130	1895
Unnamed	Rushy Park	376	9.5	130	1895

2.7.2 Shallow Coal Workings

The Coal Mining Report states that the Site is within an area of probable unrecorded shallow workings and that there are 8 coal seam outcrops at the Site. These are:

- Crombouke;
- Higher Florida;
- Higher Pigeon House;
- London Delph;
- Lower Florida;
- Rams;
- Roger; and
- St Helens Yard.

The Coal Authority do not hold any records for shallow workings (<30m deep) at the Site. Adjacent to Site area B to the north west is an unlicensed opencast site.

2.7.3 Shafts

The Coal Mining Report details there are a number of disused shafts on Site.

There are three mine entries within Site area A; 347390-002; 34790-004 and 347390-005 there are no treatment details for these shafts. Within Site area B there are two recorded disused mine shafts: 346390-029 and 346390-026, there are no treatment details for these shafts.

Guidance is offered in CIRIA Abandoned Mine Workings Manual C758D (September 2019) which supersedes the CIRIA SP32 Construction Over Abandoned Mines Working Manual (1984, reprinted 2002) for devising a minimum safe distance for structures from open or poorly filled shafts based on thickness of superficial / made ground deposits and shaft diameter obtained from ground investigation. If the proposed development is to be located close to known mine shafts, then these guidelines should be followed.

2.7.4 Subsidence of Deep Coal Mine Workings

The Coal Mining Report states that the Site is within the likely zone of influence from workings of 7 seams of coal from 78m bgl and 392m bgl last worked in 1903.

However, since there was only a statutory requirement to maintain abandoned mine plans from 1872, it is possible that unrecorded mining may have taken place before this time and cannot be ruled out.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

3. Risks Posed by Coal Mining

3.1 Introduction

The Coal Authority requires that several questions are considered for a Coal Mining Risk Assessment. The following sections address each question and provide answers based on the coal mining information that has been reviewed. Potential risks posed by coal mining are shown on Drawing 60634607.004.

3.2 Are there recorded coal mine entries within the site or within 20m of the site boundary?

The Coal Mining Report has recorded 6 mine entries within the Site or within 20m of the Site. These are summarised in Table 3.1.

Table 3-1 Summary of mine entries within 20m of the Site

Entry Type	Onsite/Offsite	Reference	Grid Reference	Treatment Description
Shaft	Onsite (Site area B)	346390-026	346945 390181	No details
Shaft	Onsite (Site area B)	346390-029	346945 390228	No details
Shaft	Onsite (Site area A)	347390-002	347304 390332	No details
Shaft	Onsite (Site area A)	347390-004	347378 390178	No details
Shaft	Onsite (Site area A)	347390-005	347413 390184	No details
Shaft	Offsite	347390-006	347004 390243	this shaft has been proved to be filled and may have been capped to an unknown specification at some time in the past

3.3 Is the proposed development in the likely zone of influence of past underground coal mining?

The proposed development Site is within the likely zone of influence of past underground coal mining from 7 coal seams from 78m bgl and 392m bgl last worked in 1903. These coal seams are: St Helens Yard, Rams, Higher Florida, Wigan Four Feet, Wigan Two Feet, Plodder and Rushy Park. The depths of these seams are summarised in Table 2.4.

3.4 Is the proposed development in the likely zone of influence of any present underground coal workings?

The Site is not considered to be within the likely zone of influence of any present underground coal workings.

3.5 Is the proposed development within the likely zone of influence of underground coal workings at shallow depths (depths of less than 30m bgl)?

The Coal Mining Report states that the Site is within an area of probable unrecorded shallow workings.

3.6 Is there a possibility of unrecorded shallow mine workings and/or mine entries?

The Coal Mining Report states that the Site is within an area of probable unrecorded shallow workings.

3.7 Is there a record of mine gas emissions within the site boundary?

There are no records of mine gas, within 500m of the enquiry boundary.

3.8 Is the proposed development in an area for which the Coal Authority is determining or has granted a license to remove coal by underground methods?

The Coal Mining Report states that there are no records of licensing and future mining activity by underground methods at the Site.

3.9 Are there known faults or other lines of weakness due to coal mining at the site?

With reference to the BGS 1:50,000 scale map for Runcorn, the Eccleston West Fault runs north-south along the eastern edge of Site area A, with a downthrow to the east.

There is an unnamed fault that runs north-south between Site area A and Site area B with a downthrow to the east.

There are a number of inferred coal seam outcrops across the Site running parallel to each other north-west to south-east.

3.10 Has the site been subject to remedial works by, or on behalf of, the Coal Authority under its surface hazard call out procedures?

There are no recorded remediated sites within 50m of the Site.

3.11 Is the proposed development within the boundary of a surface mining / opencast site from which coal has been removed by surface mining / opencast methods?

There are no records of surface/opencast mining at the Site. However, there is an unlicensed opencast site adjacent to the north-west of Site area B.

3.12 Is the proposed development within 200m of a surface mining / opencast site from which coal is being removed?

The Site is not within 200m of a Site where coal is currently being removed.

4. Assessment of Site-Specific Coal Mining Risks

A summary of the potential risks associated with the coal mining legacy for the Site, is presented in Table 4.1, identified from the information sources as listed above. Coal mining issues identified as 'No' are considered not to pose plausible risk to the development at the Site. A more detailed assessment of coal mining issues identified as 'Yes' in Table 4.1 is presented in Section 4.1 to 4.3.

Table 4-1 Summary of Potential Risks Associated with Underground Coal Mining

Coal Mining Hazards	Yes	No	Potential Risks
Underground coal mining (recorded at shallow depths)	-	No	-
Underground coal mining (probable at shallow depths)	Yes	-	Settlement of the ground surface; and Collapse of shallow mine workings causing ground instability.
Recorded mine shafts (shafts and adits)	Yes	-	Settlement of the ground surface above and / or adjacent to the mine entry; Collapse of mine entry causing instability; and Mine gas emissions.
Coal mining geology (fissures)	-	No	Not applicable
Record of past mine gas emissions	-	No	Not applicable
Recorded coal mining surface hazard	-	No	Not applicable
Surface mining (opencast workings)	-	No	Not applicable

4.1 Underground Coal Mining (probable at shallow depths)

Shallow coal workings are those working at less than 30m bgl. There are no recorded shallow coal workings at the Site however, the Coal Mining Report indicates that the Site could be within an area of probable unrecorded shallow workings.

There are 8 coal seams outcropping across the Site:

- Crombouke (Younger);
- Higher Florida;
- Higher Pigeon House;
- London Delph;
- Lower Florida;
- Rams;
- Roger; and
- St Helens Yard (Older).also

Fellcroft cropping between sites A and B and underlying site B only.

If shallow workings are present at the Site, and these predate the requirement for completion of mine abandonment plans, records are unlikely to be available to demonstrate the nature and extent of any such

workings. In order to determine the presence or otherwise of shallow workings a programme of intrusive ground investigation would be required.

The Brownfield Associates investigation in 2017 identified shallow coal seams (see Table 2.3) between 1.20m bgl and 32.50m bgl.

4.2 Recorded Mine Entries (shafts and adits)

The Coal Mining Report details there are a number of disused shafts on Site.

There are three mine entries within Site area A: 347390-002; 34790-004 and 347390-005 there are no treatment details for these shafts. There are two recorded disused mine shafts within Site area B: 346390-029 and 346390-026, there are no treatment details for these shafts.

The risk associated with the mine entries include injury, settlement of the ground surface above and/or adjacent to the mine entry, the collapse of mine entries causing ground instability and mine gas emissions. It is not known whether the mine entries have been treated, capped or removed, therefore the risks associated with mine entries cannot be discounted.

5. Mitigation Measures

5.1 Underground Coal Mining (probable at shallow depths)

Whilst the Barton Willmore (2017) geo-environmental report revealed no evidence of mining of shallow coal seams was encountered and the abandonment plans provided no indication of mining of any shallow seams; further investigation would have to be undertaken to ascertain the stability of the ground at the Site. The investigation would be to determine whether the shallow coal seams are present.

If shallow underground mine workings are proven by intrusive investigations to be present beneath the Site, an assessment of the ground stability risk for the proposed development will be undertaken to determine the requirement for mitigation measures. If mitigation measures are required, these may include a programme of consolidation drilling and grouting. This method of infilling the mining voids mitigates the risk of future ground collapse, although there is a small risk from some residual settlement.

5.2 Recorded Mine Entries (shafts and adits)

There are a total of five mine shafts across the Site as identified in the Coal Mining Report. There are no treatment details for these mine shafts. It should be assumed that these mine shafts have been left untreated.

Therefore, there is a risk from potential recorded mine entries at the Site. It is considered that an investigation of the mineshafts is required. It is recommended that a mineshaft investigation should be undertaken at the known location of the mineshafts as recorded by The Coal Authority. The investigation would be undertaken on a grid of probe holes at 1.5m centres following guidance in CIRIA (2019) Abandoned mine workings manual (C758D). Consideration could be given to carrying out excavation using a long reach excavator to strip the overburden (typically <3m thick) to locate each mine shaft. If this is successful, this would be a safer as it avoids the need for any plant to access the area of the shaft. Detailed investigation of the depth and nature of infill would need to be carried out using a rig on a safety platform and grouting and/or capping will then be carried out in agreement with The Coal Authority.

Where an abandoned mine entry is identified, it should be treated (capped or filled as appropriate) to ensure stability of the ground and safety of the construction workers and future users.

A permit will be required from The Coal Authority before any intrusive investigation is undertaken at the Site, as the investigation will disturb Coal Authority property: disused mine shafts and coal seams or worked coal seams.

6. Conclusions

A Coal Authority Site Specific Coal Mining Risk Assessment has been undertaken via a desk-based review of available geological and historical mapping, BGS borehole records, a Coal Authority Mining Report and a review of the Coal Mining Abandonment Plans.

The Site is anticipated to be underlain by Made Ground, Devensian Till and solid geology of the Pennine Middle Coal Measures. There are coal outcrops at the Site including Crombouke; Higher Florida, Higher Pidgeon House, London Delph, Lower Florida, Rams, Roger and St Helens Yard.

The Coal Mining Report identified that the Site is within a surface area that could be affected by underground mining of 7 coal seams from 78m bgl and 392m bgl last worked in 1903. These coal seams are; St Helens Yard, Rams, Higher Florida, Wigan Four Feet, Wigan Two Feet, Plodder and Rushy Park. The Site is within an area of probable unrecorded shallow workings.

There are a number of disused mine entries on Site and within 100m of the Site. There are three mine entries within Site area A: 347390-002; 34790-004 and 347390-005 there are no treatment details for these shafts. Within Site area B there are two recorded disused mine shafts: 346390-029 and 346390-026, there are no treatment details for these shafts. There is an unlicensed opencast site directly north-west of Site area B.

A review of the Coal Authority Mine Abandonment Plans indicated that coal seams beneath the Site have been worked from several collieries.

An assessment of the site-specific coal mining risks identified probable unrecorded shallow workings and mine entries as risks. Further investigation would have to be undertaken to ascertain the stability of the ground at the Site. The investigation would be to determine whether the shallow coal seams and /or worked coal seams are present.

If shallow underground mine workings are proven, by intrusive investigations, to be present beneath the Site, an assessment of the ground stability risk for the proposed development will be undertaken to determine the requirement for mitigation measures. If mitigation measures are required, these may include a programme of consolidation drilling and grouting

There are a total of five mine shafts across the Site as identified in the Coal Mining Report. There are no treatment details for these mine shafts. It should be assumed that these mine shafts have been left untreated.

Therefore, there is a risk from potential recorded mine entries at the Site. It is considered that an investigation of the mineshafts is required. It is recommended that a mineshaft investigation should be undertaken at the known location of the mineshafts as recorded by The Coal Authority. The investigation would be undertaken on a grid of probe holes at 1.5m centres following guidance in CIRIA (2019) Abandoned mine workings manual (C758D). Given the shallow nature of the bedrock trenching could also be an option.

A permit will be required from The Coal Authority before any intrusive investigation is undertaken at the Site, as the investigation will disturb Coal Authority property: disused mine shafts and coal seams and/or worked coal seams.

Where an abandoned mine entry is identified, it should be treated (capped or filled as appropriate) to ensure stability of the ground and safety of the construction workers and future users. The proposed method of stabilisation and design of the works must be agreed with the Coal Authority.

If it is not possible to determine the location of any recorded mine shafts, consideration should be given to carrying out geophysical surveys to locate the shaft.. If the shafts still cannot be located, then the area around the shaft within the zone of potential collapse or settlement, including the possible departure of the indicative location to the true location will need to be determined and the area should not be subject to built development. Consideration should be given to utilising such areas for gardens or public open space within the development.

7. Recommendations

It is recommended that an intrusive investigation is undertaken to further investigate the mining risk at the sites.

To establish the risk from shallow mine workings:

It is recommended that trial trenches (approximately 3 nr) should be undertaken, aligned east to west, within the eastern part of the site, to expose bedrock across the line of the fault which forms the eastern boundary of the exposed coal measures. This will define the eastern limit of the area with the potential for shallow mine workings, the indicative depth to bedrock from previous investigation is only 1.5m in this area making trial trenching a practicable option.

In Site A it is recommended that a grid of rotary drill holes should be carried out at approximately 80m centres across the northern roughly rectangular part of the site. Lines of holes should be aligned NE to SW and holes in the south eastern section of the site giving a total of approximately 20 holes. It is recommended that approximately 1 in 4 of these boreholes should be carried out by rotary core drilling enable a more detailed inspection of areas in which previous investigations indicated the possibility of former workings, these are mostly in the northeast of the site.

In Site B it is recommended that a line of rotary open holes at approximately 100m centres (3 No holes), running south west to northeast, to locate the Fellcroft coal seam in the northwest of the site and any unnamed coal seams.

It is recommended that all rotary holes should be taken at least 30m into the bedrock, and that provision is made for a reduction of borehole diameter to enable drilling to continue beyond workings or broken ground where there is loss of flush. This depth will allow for some overlap between strata at a dip of 12 degrees and will cover the maximum likely depth at which workings will cause settlement at the surface.

To investigate the presence of recorded mine shafts:

An interpretative report should be obtained from the Coal Authority for each of the mineshafts on the site, which should include the coordinates and the departure (maximum off-set from the stated coordinates). The departure will vary depending on the quality of the information used to define the coordinates.

It is recommended that in order to determine the exact location of recorded mine shafts that an initial attempt should be made to locate each shaft by carrying out a strip of any made ground present using a long reach excavator located at a safe distance from the shaft. If the thickness of made ground is such that this is not practicable (say more than approximately 3m), then probing should be carried out on a grid with a maximum spacing of 1.5m to locate the shaft, with the rig located on a suitable working platform, spanning any potential collapse zone. The extent of the investigation should commence at the shaft coordinate and should then be extended until the shaft is located up to the limits of the area covered by the "departure" from the stated coordinates. If a shaft still be located, then consideration should be given to using geophysical techniques to locate it.

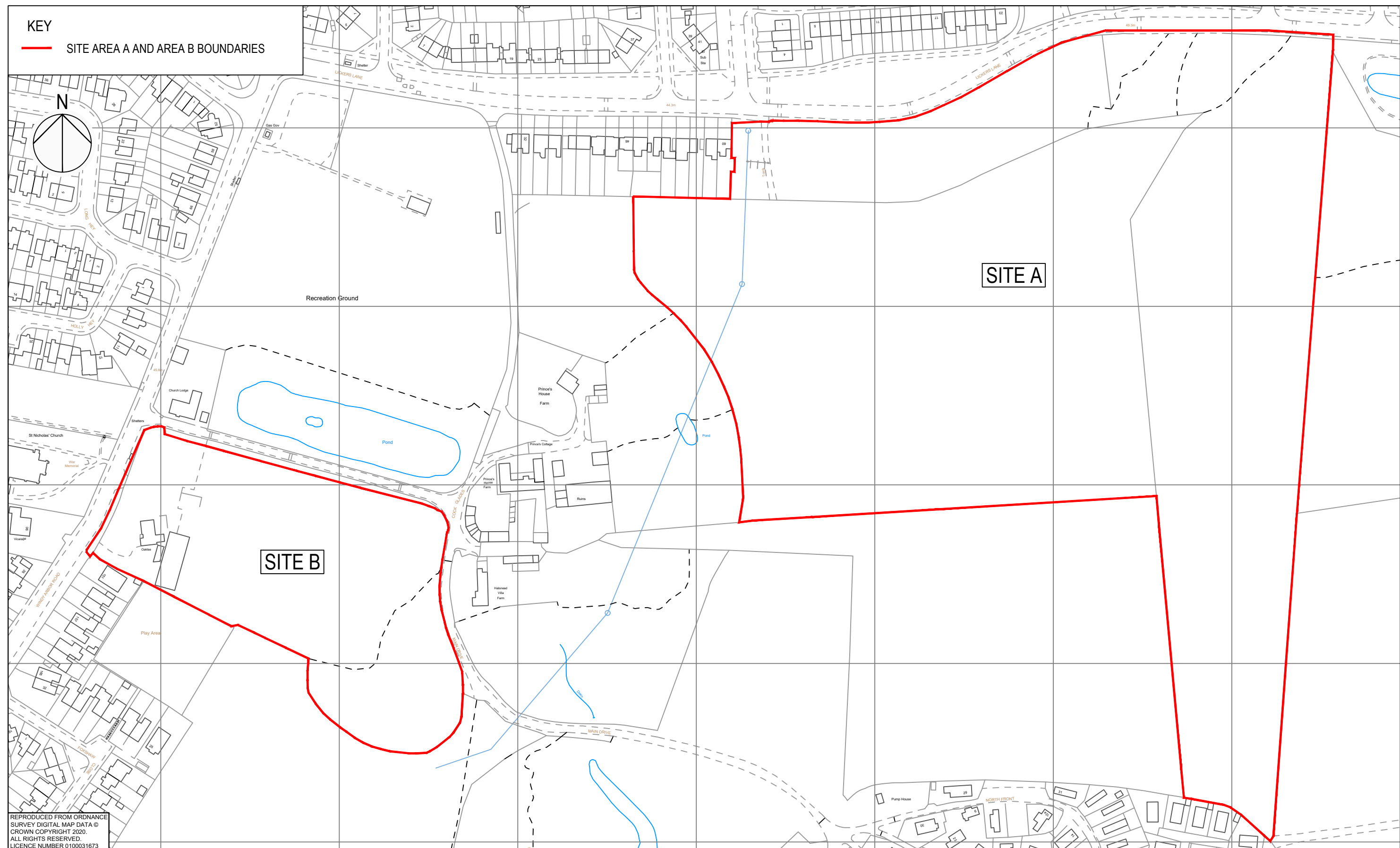
The method of stabilisation of the mine shaft shall then be agreed with the Coal Authority.

Drawings

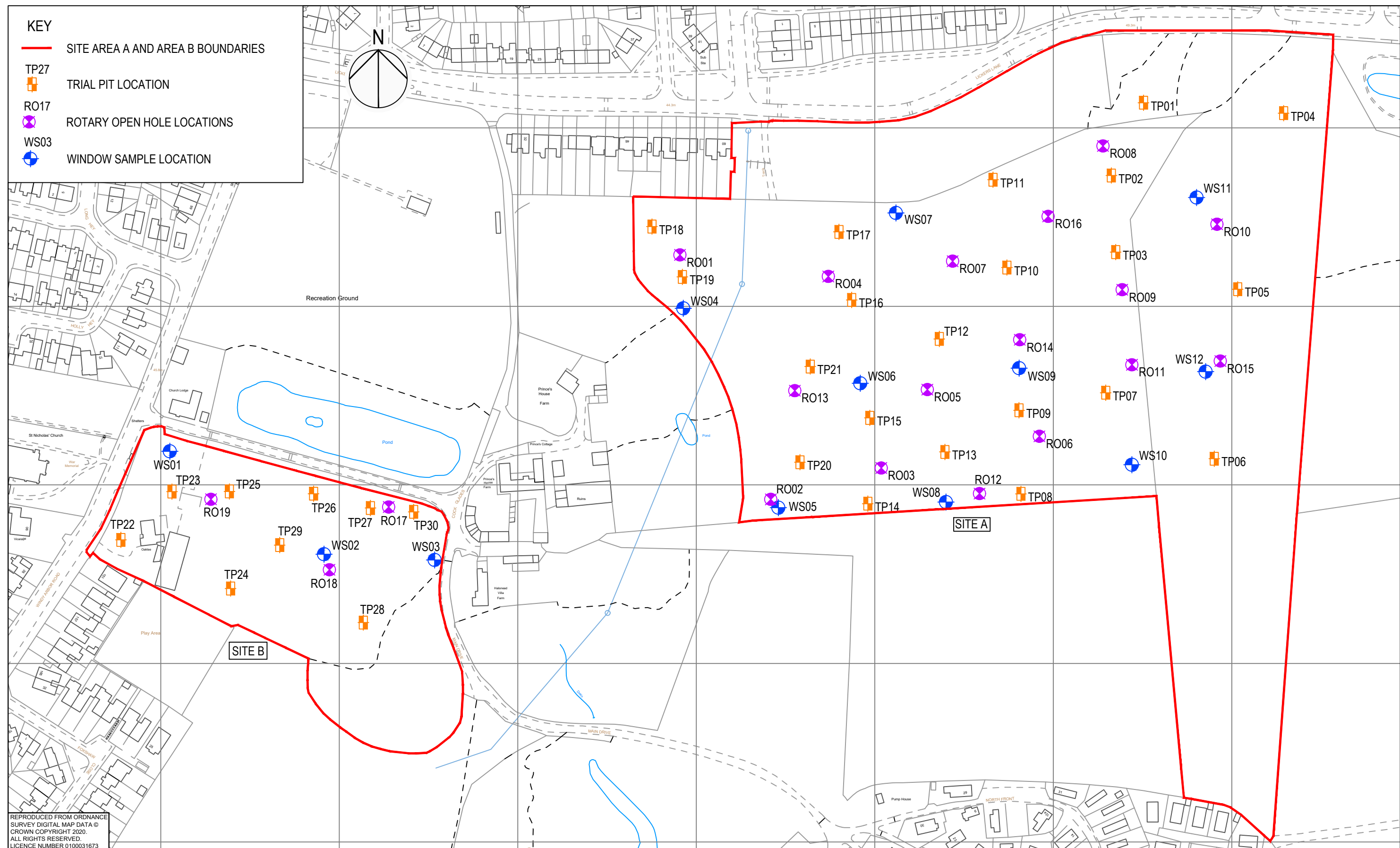


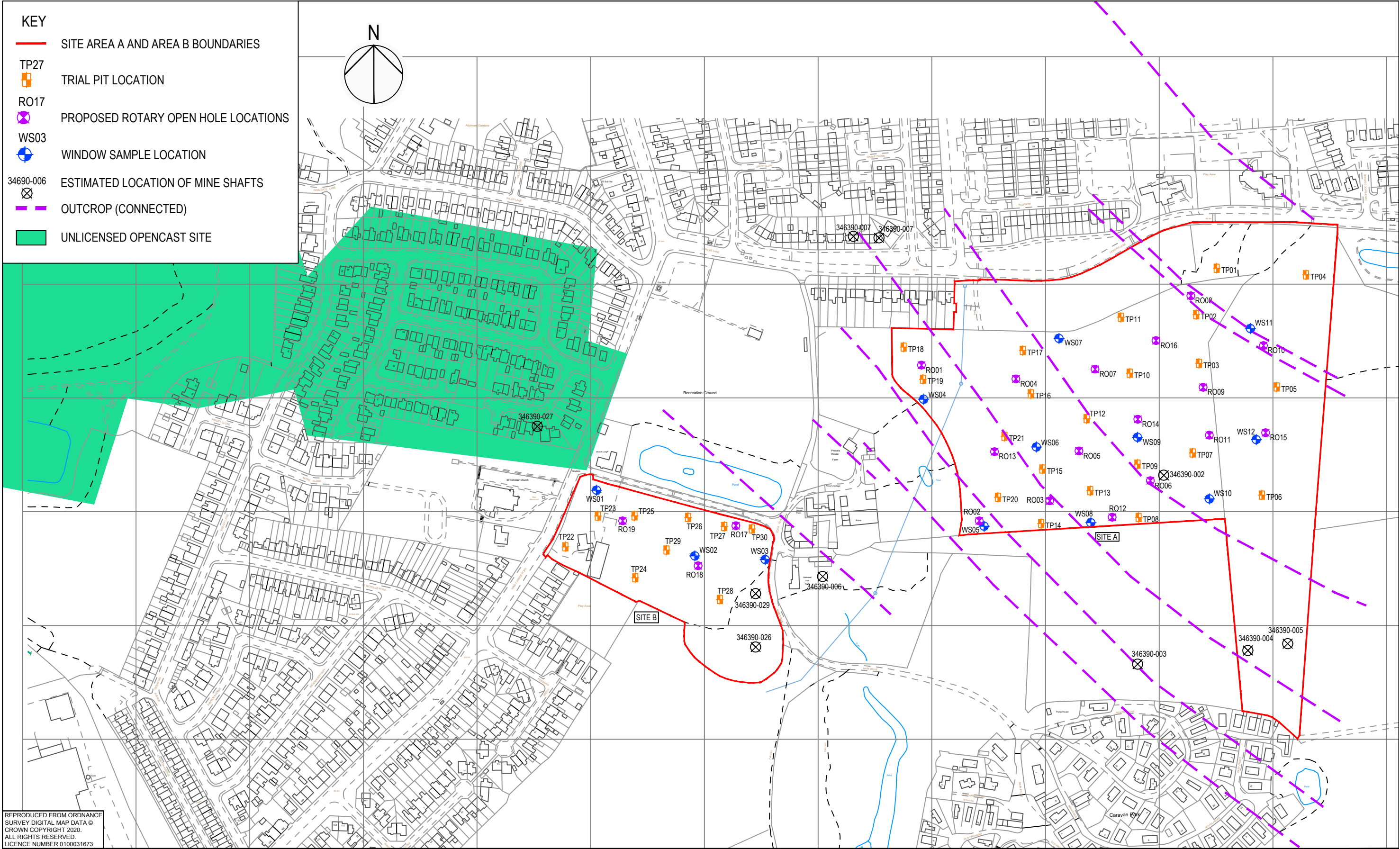
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	AAO	LF	LF
	Date	Scale @ A4	Rev
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	Drawing Number		
	60634607.01		

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-		AAO	LF	LF	06/20					
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Scale @ A3 1:200				Zone / Mileage -						
Client	FRP ADVISORY						Drawing Number	60634607/002	Rev	-

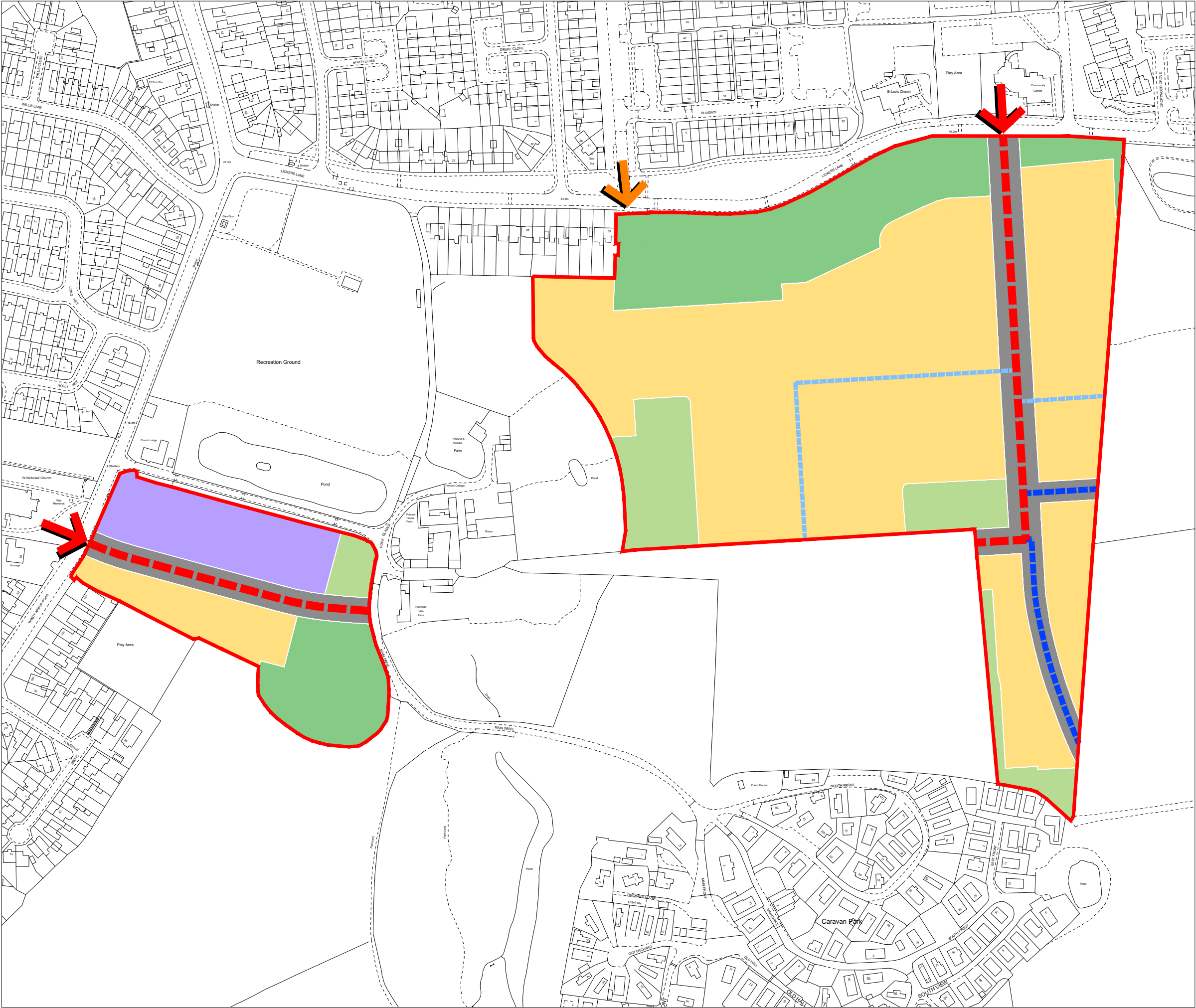




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				-	AAO	LF	LF	06/20				
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Appendix A - Proposed Development Layout & Illustrative Masterplan



The scaling of this drawing cannot be assured

Revision	Date	Drm	Ckd
A	Residential, POS & green space areas and key updated	17.06.20	SM LH
B	Proposed road alignment outside site boundary removed and Job Title updated	22.06.20	SM LH

- Site boundary
- Proposed Vehicle Access
- Indicative Alignment of the Main Street
- Indicative Alignment of the Residential Avenue
- Indicative Alignment of the Access Street
- Proposed Pedestrian and Cycle Access Point
- Residential - Including residential streets
- Green Infrastructure (2.08ha) - Including retained woodland, pedestrian and cycle routes and existing and proposed planting.
- Indicative Extents of Public Open Space (0.97ha) - Including drainage features, pedestrian and cycle routes and existing and proposed planting
- Care Home or Residential Development

Project
Halsnead Garden Village North

Drawing Title
**Parameter Plan
Land Use and Access**

Date 03.06.20	Scale 1:2,500 @ A3	Drawn by SM	Check by CDB
Project No 31631	Drawing No BM-M-01	Revision B	

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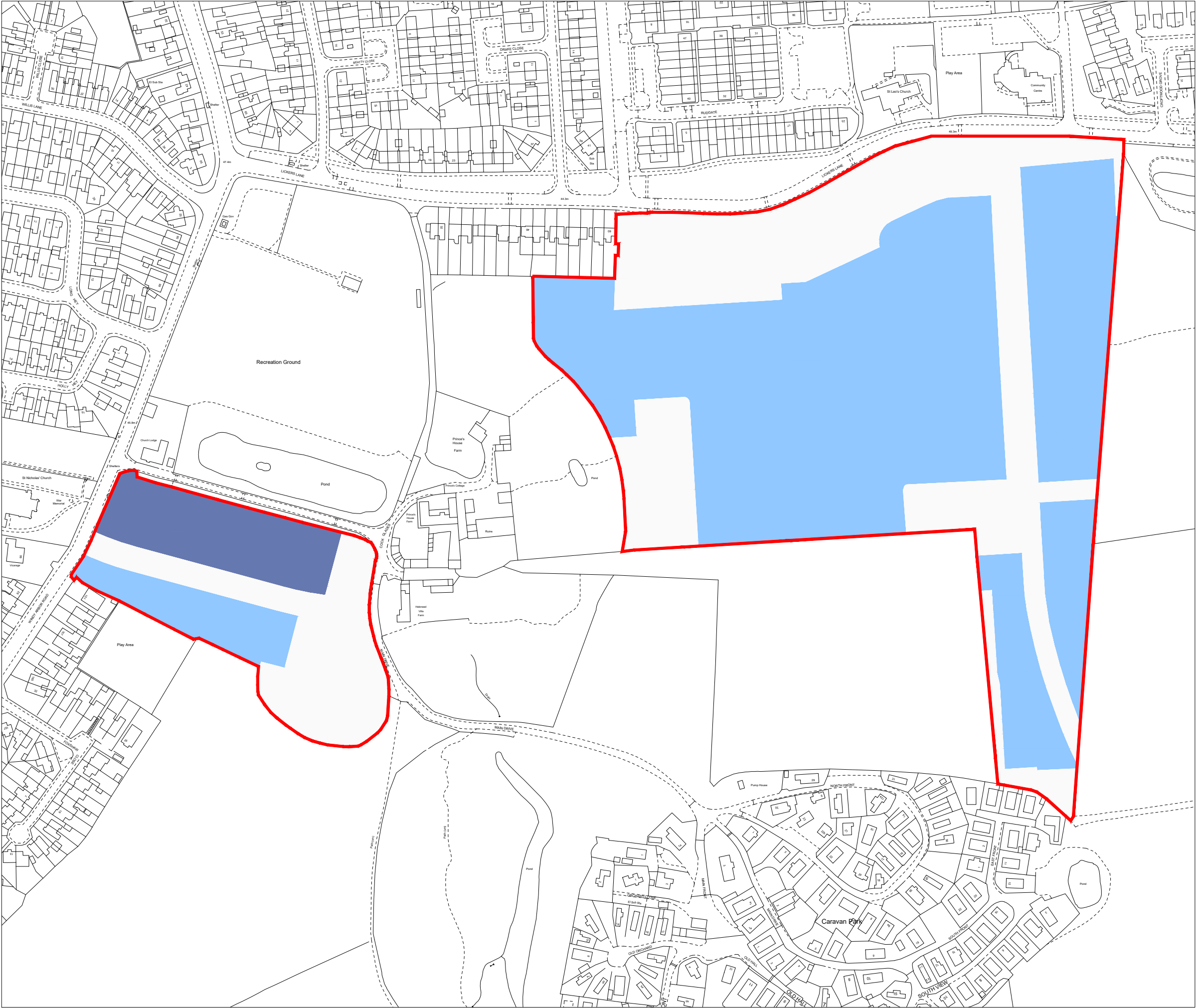
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Revision		Date	Dwn	Ckd
A	Area updated and 4 storey added	17.06.20	SM	LH
B	Key updated and job title updated	22.06.20	SM	LH

- Site boundary
- Predominantly 2-2.5 Storey With Occasional Localised Increase to 3-4 Storey at key nodal points
- Up to 4 Storey (Area includes Attenuation Pond)

Project
Halsnead Garden Village North

Drawing Title
Parameter Plan

Scale

Date
03.06.20

Scale
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Project No
31631

Drawn by
SM

Check by
CDB

Revision
B

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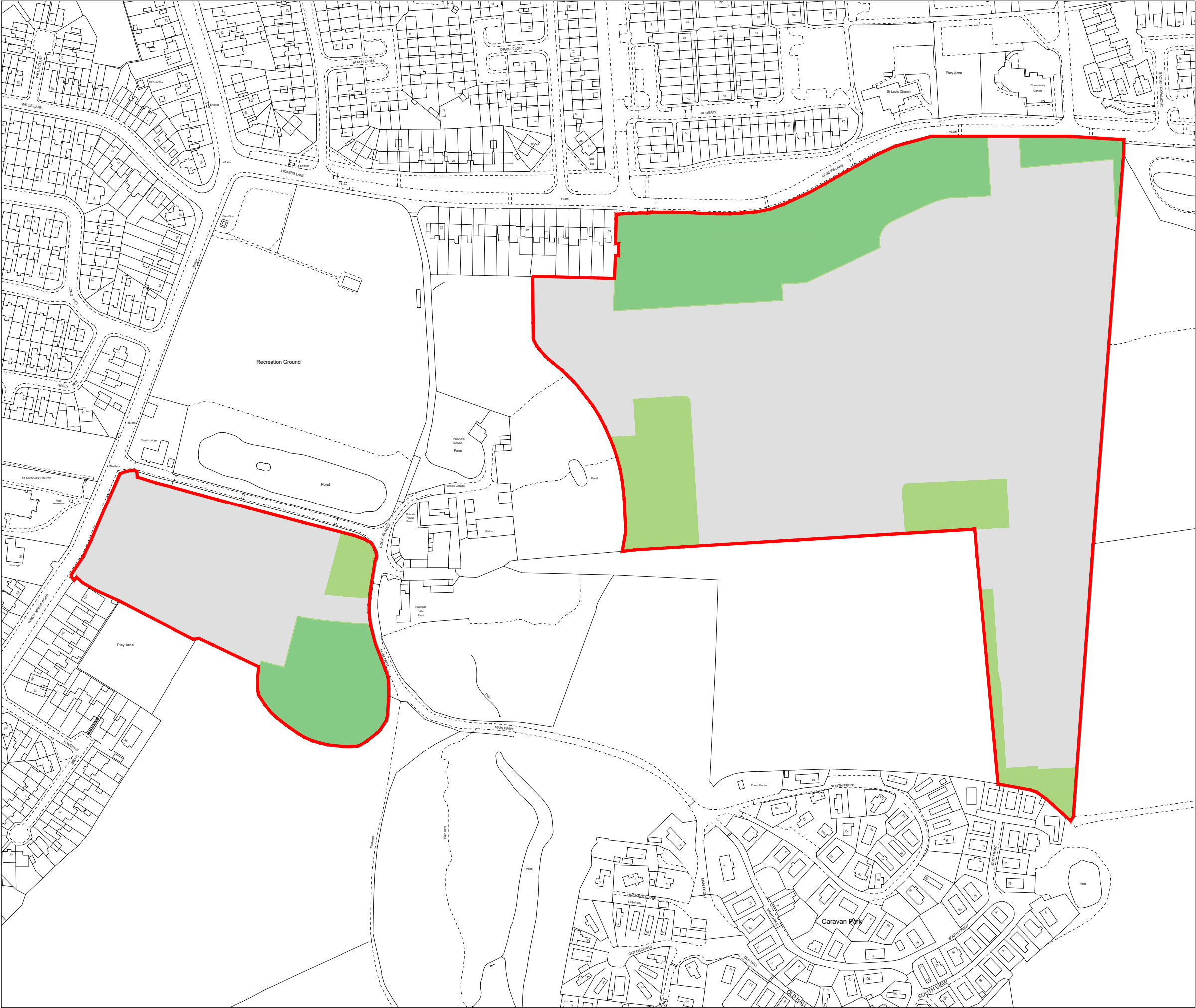
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Revision		Date	Dwn	Ckd
A	Areas and key updated	17.06.20	SM	LH
B	Job title updated	22.06.20	SM	LH

Site boundary

Green Infrastructure (2.08ha) -
Including retained woodland, pedestrian
and cycle routes, and existing and
proposed planting

Indicative Extents of Public Open
Space (0.97ha) -
Including drainage features, pedestrian and
cycle routes and existing and proposed
planting

Development Area and
Infrastructure

Project

Halsnead Garden Village
North

Drawing Title

Parameter Plan
Green Infrastructure Plan

Date

03.06.20

Scale

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Drawn by

SM

Check by

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Project No

31631

Drawing No

BM-M-03

Revision

B

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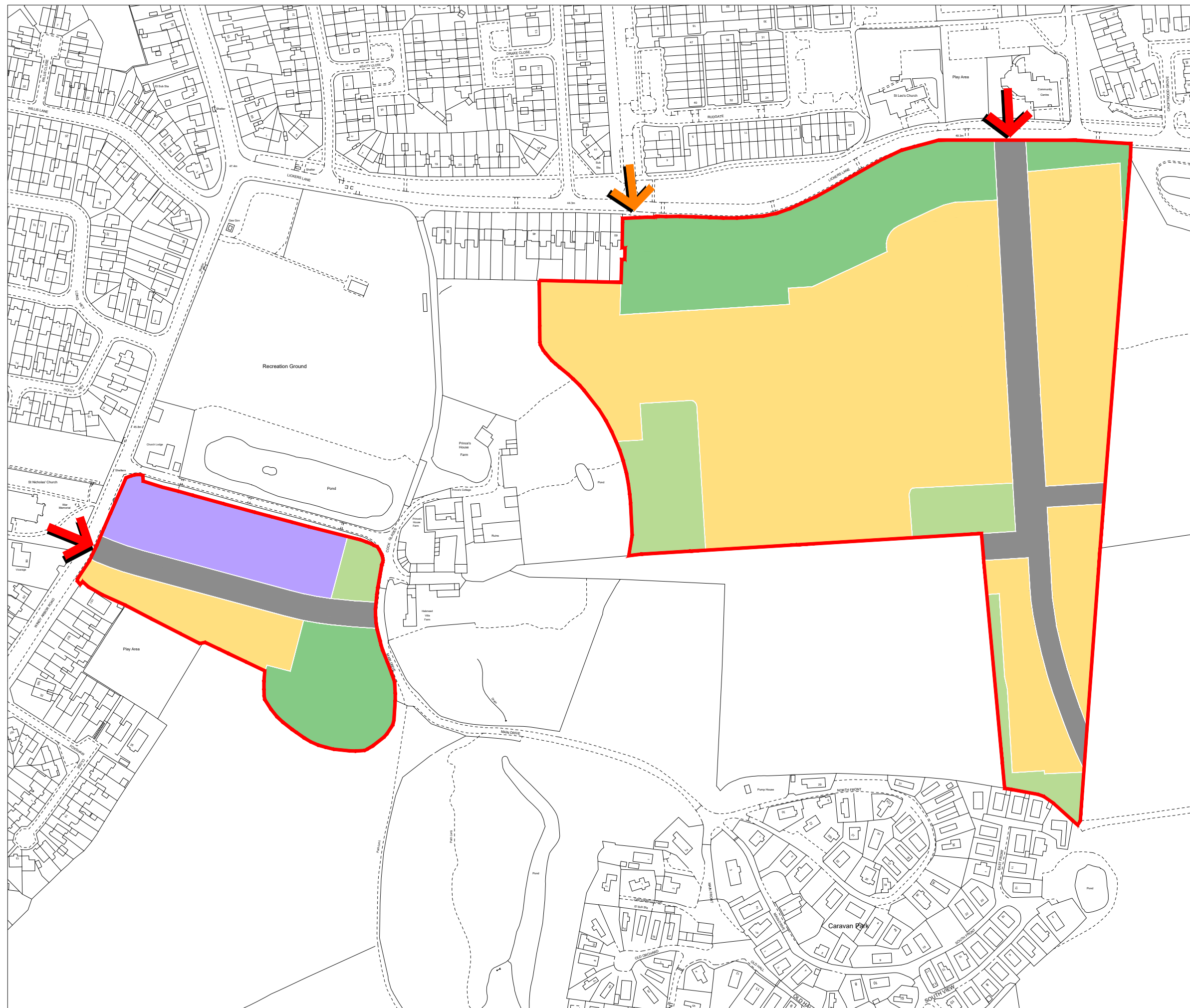
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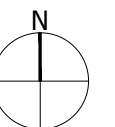
-  Site boundary
-  Proposed Vehicle Access
-  Proposed Pedestrian and Cycle Access Point
-  Proposed Infrastructure
-  Proposed Development Area
-  Proposed Green Infrastructure
-  Proposed Public Open Space
-  Proposed Care Home or Residential Development

Overall Boundary	Ha	Ac
Site Boundary	11.57	28.59
Proposed Infrastructure	1.21	2.98
Proposed Development Area	6.62	16.36
Proposed Green Infrastructure	2.08	5.14
Proposed Public Open Space	0.98	2.42
Proposed Care Home or Residential Development	0.68	1.69
Total	11.57	28.59

Western Parcel	Ha	Ac
Site Boundary	2.10	5.19
Proposed Infrastructure	0.33	0.82
Proposed Development Area	0.42	1.04
Proposed Green Infrastructure	0.56	1.38
Proposed Public Open Space	0.11	0.27
Proposed Care Home or Residential Development	0.68	1.69
Total	2.10	5.19

Eastern Parcel	Ha	Ac
Site Boundary	9.47	23.40
Proposed Infrastructure	0.88	2.16
Proposed Development Area	6.20	15.32
Proposed Green Infrastructure	1.52	3.76
Proposed Public Open Space	0.87	2.15
Total	9.47	23.40

Project
Halsnead Garden Village
North



Drawing Title

Parameter Plan

Land Use Budget Plan

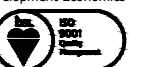
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Project No	Drawing No	Revision	
31631	BM-M-04	A	



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Appendix B - Groundsure Report



HALSNEAD COMMUNITY PRIMARY SCHOOL, L35 3TX

Order Details

Date: 01/06/2020
Your ref: Halsnead_1417005
Our Ref: GS-6777657
Client: Aecom Infrastructure and Environment UK Ltd

Site Details

Location: 347228 390404
Area: 11.82 ha
Authority: [Knowsley Metropolitan Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

N/A: >10ha

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	2	7	19	104	-
18	1.2	Historical tanks	0	4	2	6	-
19	1.3	Historical energy features	0	2	7	15	-
20	1.4	Historical petrol stations	0	0	0	0	-
21	1.5	Historical garages	0	0	0	0	-
21	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
22	2.1	Historical industrial land uses	3	9	20	130	-
28	2.2	Historical tanks	0	5	8	9	-
29	2.3	Historical energy features	0	5	15	36	-
32	2.4	Historical petrol stations	0	0	0	0	-
32	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
33	3.1	Active or recent landfill	0	0	0	0	-
33	3.2	Historical landfill (BGS records)	0	0	0	1	-
34	3.3	Historical landfill (LA/mapping records)	0	0	0	2	-
34	3.4	Historical landfill (EA/NRW records)	0	0	0	4	-
35	3.5	Historical waste sites	0	0	0	0	-
35	3.6	Licensed waste sites	0	0	0	0	-
36	3.7	Waste exemptions	1	0	2	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
37	4.1	Recent industrial land uses	0	1	7	-	-
38	4.2	Current or recent petrol stations	0	0	0	0	-
38	4.3	Electricity cables	0	0	0	0	-
38	4.4	Gas pipelines	0	0	0	0	-
39	4.5	Sites determined as Contaminated Land	0	0	0	0	-



39	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
39	4.7	Regulated explosive sites	0	0	0	0	-
39	4.8	Hazardous substance storage/usage	0	0	0	0	-
39	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
40	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
40	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
40	4.12	Radioactive Substance Authorisations	0	0	0	0	-
40	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
40	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
41	4.15	Pollutant release to public sewer	0	0	0	0	-
41	4.16	List 1 Dangerous Substances	0	0	0	0	-
41	4.17	List 2 Dangerous Substances	0	0	0	0	-
41	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	2	0	0	-
42	4.19	Pollution inventory substances	0	0	0	0	-
42	4.20	Pollution inventory waste transfers	0	0	0	0	-
42	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
43	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
45	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
47	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
48	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
49	5.5	Groundwater vulnerability- local information	None (within 0m)				
50	5.6	<u>Groundwater abstractions</u>	0	0	0	0	11
53	5.7	<u>Surface water abstractions</u>	0	0	0	0	4
55	5.8	<u>Potable abstractions</u>	0	0	0	0	5
56	5.9	<u>Source Protection Zones</u>	1	0	0	0	-
56	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
57	6.1	<u>Water Network (OS MasterMap)</u>	0	0	11	-	-



58	<u>6.2</u>	<u>Surface water features</u>	0	2	5	-	-
59	<u>6.3</u>	<u>WFD Surface water body catchments</u>	1	-	-	-	-
59	<u>6.4</u>	<u>WFD Surface water bodies</u>	0	0	0	-	-
60	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
61	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
61	7.2	Historical Flood Events	0	0	0	-	-
61	7.3	Flood Defences	0	0	0	-	-
61	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
62	7.5	Flood Storage Areas	0	0	0	-	-
63	7.6	Flood Zone 2	None (within 50m)				
63	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
64	<u>8.1</u>	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
66	<u>9.1</u>	<u>Groundwater flooding</u>	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
67	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
68	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
68	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
68	10.4	Special Protection Areas (SPA)	0	0	0	0	0
68	10.5	National Nature Reserves (NNR)	0	0	0	0	0
69	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
69	<u>10.7</u>	<u>Designated Ancient Woodland</u>	0	0	0	1	1
69	10.8	Biosphere Reserves	0	0	0	0	0
69	10.9	Forest Parks	0	0	0	0	0
70	10.10	Marine Conservation Zones	0	0	0	0	0
70	<u>10.11</u>	<u>Green Belt</u>	0	0	0	2	1
70	10.12	Proposed Ramsar sites	0	0	0	0	0



70	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
71	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
71	10.15	Nitrate Sensitive Areas	0	0	0	0	0
71	10.16	<u>Nitrate Vulnerable Zones</u>	1	0	0	0	2
72	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
73	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
74	11.1	World Heritage Sites	0	0	0	-	-
75	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
75	11.3	National Parks	0	0	0	-	-
75	11.4	<u>Listed Buildings</u>	0	0	2	-	-
76	11.5	Conservation Areas	0	0	0	-	-
76	11.6	Scheduled Ancient Monuments	0	0	0	-	-
76	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
77	12.1	<u>Agricultural Land Classification</u>	Grade 3b (within 250m)				
78	12.2	Open Access Land	0	0	0	-	-
78	12.3	<u>Tree Felling Licences</u>	1	0	0	-	-
79	12.4	Environmental Stewardship Schemes	0	0	0	-	-
79	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
80	13.1	<u>Priority Habitat Inventory</u>	3	8	10	-	-
81	13.2	Habitat Networks	0	0	0	-	-
82	13.3	Open Mosaic Habitat	0	0	0	-	-
82	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
83	14.1	<u>10k Availability</u>	Identified (within 500m)				
84	14.2	Artificial and made ground (10k)	0	0	0	0	-
85	14.3	<u>Superficial geology (10k)</u>	0	0	1	4	-

86	14.4	Landslip (10k)	0	0	0	0	-
87	14.5	<u>Bedrock geology (10k)</u>	0	0	4	2	-
88	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	5	2	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
89	15.1	<u>50k Availability</u>	Identified (within 500m)				
90	15.2	Artificial and made ground (50k)	0	0	0	0	-
90	15.3	Artificial ground permeability (50k)	0	0	-	-	-
91	15.4	<u>Superficial geology (50k)</u>	1	0	0	2	-
92	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
92	15.6	Landslip (50k)	0	0	0	0	-
92	15.7	Landslip permeability (50k)	None (within 50m)				
93	15.8	<u>Bedrock geology (50k)</u>	4	1	1	8	-
94	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
95	15.10	<u>Bedrock faults and other linear features (50k)</u>	10	4	8	9	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
97	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
98	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
99	17.2	<u>Running sands</u>	Very low (within 50m)				
101	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
102	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
103	17.5	<u>Landslides</u>	Very low (within 50m)				
104	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
106	18.1	Natural cavities	0	0	0	0	-
107	18.2	<u>BritPits</u>	0	0	2	14	-
110	18.3	<u>Surface ground workings</u>	0	27	35	-	-
112	18.4	<u>Underground workings</u>	0	0	8	24	45
115	18.5	<u>Historical Mineral Planning Areas</u>	0	1	0	1	-



116	18.6	<u>Non-coal mining</u>	0	0	0	1	2
116	18.7	Mining cavities	0	0	0	0	0
117	18.8	JPB mining areas	None (within 0m)				
117	18.9	<u>Coal mining</u>	Identified (within 0m)				
117	18.10	Brine areas	None (within 0m)				
117	18.11	Gypsum areas	None (within 0m)				
117	18.12	Tin mining	None (within 0m)				
118	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
119	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
120	20.1	<u>BGS Estimated Background Soil Chemistry</u>	9	7	-	-	-
121	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
121	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
122	21.1	Underground railways (London)	0	0	0	-	-
122	21.2	Underground railways (Non-London)	0	0	0	-	-
123	21.3	Railway tunnels	0	0	0	-	-
123	21.4	<u>Historical railway and tunnel features</u>	0	0	1	-	-
123	21.5	Royal Mail tunnels	0	0	0	-	-
123	21.6	Historical railways	0	0	0	-	-
124	21.7	Railways	0	0	0	-	-
124	21.8	Crossrail 1	0	0	0	0	-
124	21.9	Crossrail 2	0	0	0	0	-
124	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 11.82ha



Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 11.82ha



Recent site history - 2009 aerial photograph



Capture Date: 24/06/2009

Site Area: 11.82ha



Recent site history - 2005 aerial photograph



Capture Date: 02/09/2005

Site Area: 11.82ha



Recent site history - 2000 aerial photograph



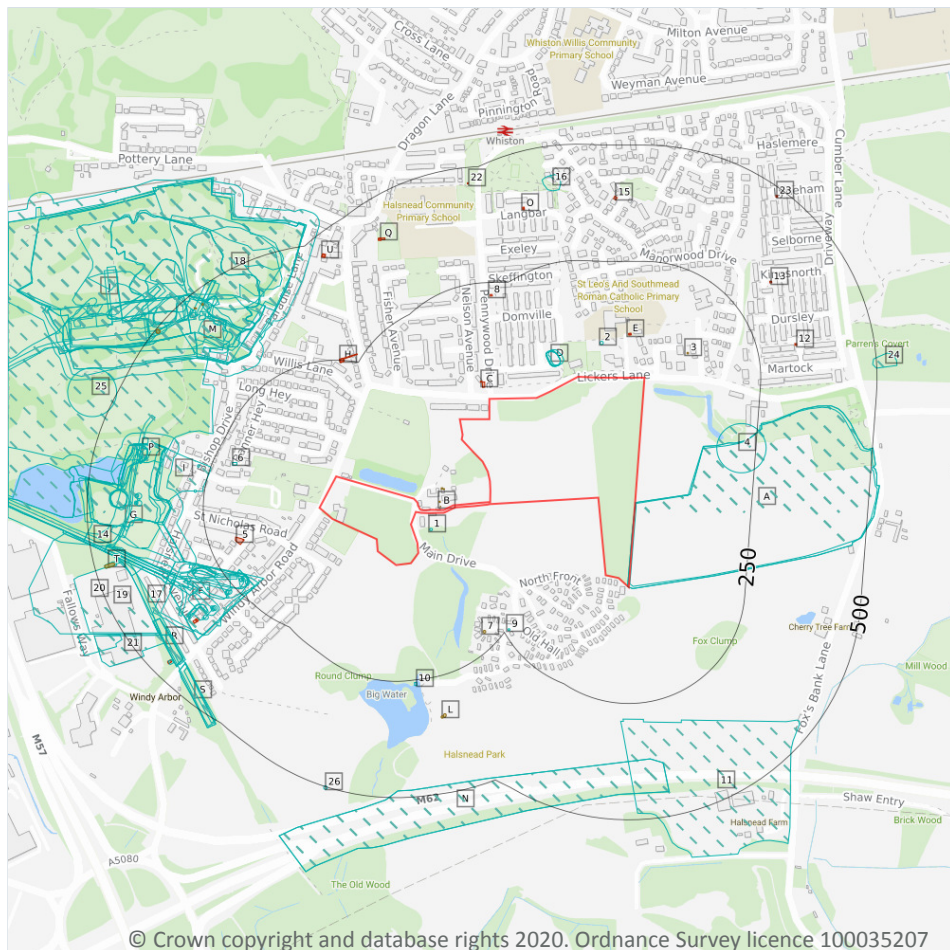
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2020. All Rights Reserved

Capture Date: 21/07/2000

Site Area: 11.82ha



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

132

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 13**

ID	Location	Land use	Dates present	Group ID
A	On site	Nursery	1955	868111



ID	Location	Land use	Dates present	Group ID
A	On site	Nursery	1966 - 1975	992132
A	2m E	Nursery	1947	877117
1	33m S	Coal Pit	1851	808449
D	41m NW	Unspecified Old Quarry	1891	832928
D	41m NW	Unspecified Pit	1906 - 1925	863063
D	41m NW	Unspecified Pit	1947	873586
D	41m NW	Unspecified Pit	1955	857515
D	43m NW	Unspecified Pit	1938	912597
2	71m N	Sandstone Quarry	1851	837894
4	166m E	Unspecified Tank	1966	824612
F	194m SW	Old Colliery	1891 - 1906	943828
6	200m NW	Weighing Machine	1851	810041
F	208m SW	Colliery	1851	798249
F	214m SW	Unspecified Ground Workings	1906	971379
F	214m SW	Unspecified Heap	1955	886581
F	214m SW	Unspecified Ground Workings	1925	920783
F	216m SW	Unspecified Disused Shafts	1966	835394
F	217m SW	Unspecified Ground Workings	1947 - 1955	918600
G	217m SW	Disused Colliery	1925	879683
G	217m SW	Disused Colliery	1947	956965
F	222m SW	Unspecified Old Shaft	1955	806152
F	224m SW	Unspecified Heap	1891	865998
F	225m SW	Unspecified Old Shafts	1947	951254
F	225m SW	Unspecified Old Shafts	1925	971251
G	231m SW	Railway Sidings	1851	959646
9	237m SW	Pump	1851	826843
I	248m W	Colliery	1851	798248
10	255m S	Boat House	1906	817455



ID	Location	Land use	Dates present	Group ID
F	259m SW	Unspecified Disused Shafts	1966	835393
F	261m SW	Unspecified Heap	1966	917620
F	262m SW	Unspecified Ground Workings	1925	961857
F	264m SW	Unspecified Old Shaft	1955	806147
F	265m SW	Unspecified Heap	1938	892612
F	266m SW	Unspecified Old Shafts	1925 - 1947	940194
I	267m W	Coal Pit	1851	808451
F	270m SW	Unspecified Heap	1891	867572
F	272m SW	Coal Pit	1851	808448
I	273m W	Coal Pit	1851	808450
J	277m NW	Refuse Heap	1990	962218
11	284m S	Nursery	1947 - 1950	959970
G	287m W	Disused Colliery	1955	946509
F	294m SW	Unspecified Old Shaft	1955	806148
J	294m NW	Brick Works	1955	850733
F	298m SW	Magazine	1891	827279
F	303m SW	Unspecified Ground Workings	1906	874058
F	307m SW	Unspecified Disused Shafts	1966	835391
F	310m SW	Unspecified Old Shaft	1955	806146
F	312m SW	Unspecified Old Shafts	1925 - 1947	875578
G	312m W	Disused Colliery	1906	921785
K	315m SW	Railway Sidings	1925	982477
F	315m SW	Unspecified Heaps	1891	831274
G	317m W	Unspecified Disused Mine	1966	810940
K	319m SW	Railway Sidings	1938	880766
J	321m NW	Brick Works	1947	857105
J	321m NW	Brick Works	1925	971266
G	321m W	Disused Colliery	1938	947601



ID	Location	Land use	Dates present	Group ID
G	321m W	Disused Colliery	1938	956293
J	323m NW	Metallic Brick Works	1938	802234
G	323m SW	Mineral Railway Sidings	1891	834013
J	323m NW	Unspecified Works	1966	938571
F	324m SW	Unspecified Ground Workings	1925	948987
F	324m SW	Unspecified Ground Workings	1938	865500
G	330m W	Colliery	1851 - 1891	873412
F	334m SW	Unspecified Disused Shafts	1966	835392
J	335m NW	Brick Works	1906	960091
14	340m SW	Railway Sidings	1906	936496
K	341m SW	Railway Sidings	1947	879950
M	342m NW	Unspecified Disused Works	1975	813349
F	343m SW	Coal Pit	1851	808447
G	343m W	Unspecified Ground Workings	1891	799829
J	350m NW	Mineral Railway Sidings	1925	834016
M	356m NW	Unspecified Pit	1906	895881
J	357m NW	Railway Sidings	1938	895504
J	364m NW	Unspecified Pit	1938	966306
J	364m NW	Unspecified Pits	1925	811211
J	367m NW	Unspecified Ground Workings	1947 - 1955	927003
J	368m NW	Railway Sidings	1906	972574
N	372m S	Cuttings	1975	883734
N	372m S	Cuttings	1989	910377
M	377m NW	Railway Sidings	1955	856324
G	382m W	Unspecified Disused Shaft	1966	812952
P	383m W	Unspecified Ground Workings	1966	917231
G	383m W	Unspecified Disused Shaft	1966	812951
G	387m W	Coal Pit	1851	808452



ID	Location	Land use	Dates present	Group ID
P	387m W	Unspecified Ground Workings	1925	951240
P	387m W	Unspecified Ground Workings	1947	966237
P	388m W	Unspecified Ground Workings	1955	946702
P	388m W	Unspecified Ground Workings	1906	900026
P	389m W	Unspecified Ground Workings	1938	976666
G	390m W	Unspecified Old Shaft	1955	806155
G	391m W	Unspecified Old Shaft	1955	806154
G	391m W	Unspecified Old Shafts	1925 - 1947	858661
G	392m W	Unspecified Old Shafts	1925 - 1947	919488
P	396m W	Unspecified Heap	1891	926719
16	403m N	Unspecified Old Quarry	1891	832927
G	404m W	Unspecified Shafts	1891	809129
G	409m W	Unspecified Heap	1966	949824
17	411m SW	Railway Sidings	1955	888193
18	412m NW	Unspecified Disused Pit	1975	822427
G	414m W	Unspecified Heap	1938	935360
G	414m W	Unspecified Old Shaft	1955	806153
G	415m W	Unspecified Heap	1891 - 1925	910606
G	415m W	Unspecified Heap	1947	922951
J	418m N	Unspecified Ground Workings	1966	907411
R	418m SW	Cuttings	1947	888216
R	418m SW	Cuttings	1925	949249
R	418m SW	Cuttings	1938	957884
19	418m W	Unspecified Works	1990	964460
R	419m SW	Cuttings	1989	936544
R	420m SW	Cuttings	1950	866420
20	426m SW	Unspecified Works	1975	976939
21	437m SW	Unspecified Works	1989	934284



ID	Location	Land use	Dates present	Group ID
J	439m NW	Colliery	1891	798243
J	439m NW	Railway Sidings	1891	853428
S	440m SW	Cuttings	1947 - 1950	889421
M	440m NW	Unspecified Kilns	1947 - 1955	933882
S	442m SW	Cuttings	1925	952881
S	446m SW	Cuttings	1989	906359
T	452m W	Unspecified Tanks	1975	815134
R	455m SW	Electric Substation	1975	834465
M	457m NW	Unspecified Kilns	1947 - 1955	891923
J	471m NW	Unspecified Ground Workings	1906	945029
J	482m NW	Gravel Pit	1906	807785
J	483m NW	Unspecified Heap	1891	909880
G	486m W	Unspecified Heap	1955	803338
J	491m NW	Unspecified Tank	1891	824610
24	492m E	Unspecified Pit	1966	839671
J	492m NW	Railway Sidings	1955	904167
J	494m NW	Railway Sidings	1947	868791
25	496m NW	Unspecified Disused Pit	1975	822428
26	498m S	Sandstone Delf	1851	812656

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

12

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

Features are displayed on the Past land use map on **page 13**



ID	Location	Land use	Dates present	Group ID
B	7m N	Unspecified Tank	1937	112552
B	16m N	Unspecified Tank	1958	112553
B	39m NW	Unspecified Tank	1927 - 1937	131758
B	41m NW	Unspecified Tank	1958	112551
3	105m NE	Unspecified Tank	1976 - 1997	127079
7	213m SE	Unspecified Tank	1892 - 1907	131327
L	332m S	Unspecified Tank	1980 - 1996	133024
L	335m S	Unspecified Tank	1958 - 1989	127381
T	457m W	Tanks	1973	105837
M	466m NW	Unspecified Tank	1927	113274
M	469m NW	Unspecified Tank	1937	113275
J	489m NW	Gasometer	1892	108456

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

24

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
C	27m N	Electricity Substation	1995 - 1999	84169
C	40m NW	Electricity Substation	1974	61504
E	92m N	Electricity Substation	1995 - 1999	69660
E	92m N	Electricity Substation	1974	78767
5	176m SW	Electricity Substation	1973 - 1997	73218
8	221m N	Electricity Substation	1995 - 1999	83008



ID	Location	Land use	Dates present	Group ID
H	245m N	Electricity Substation	1994	80937
H	245m N	Electricity Substation	1973	77181
H	246m N	Electricity Substation	1984	70864
12	331m E	Electricity Substation	1976 - 1997	71519
13	338m NE	Electricity Substation	1994 - 1997	67502
F	352m SW	Electricity Substation	1973 - 1994	67918
F	356m SW	Electricity Substation	1987	85158
O	377m N	Electricity Substation	1995 - 1999	67717
O	379m N	Electricity Substation	1974	70448
15	382m N	Electricity Substation	1999	61505
Q	410m NW	Electricity Substation	1973	84983
Q	413m NW	Electricity Substation	1984 - 1994	84347
U	453m NW	Electricity Substation	1973 - 1984	69587
U	453m NW	Electricity Substation	1994	80453
R	458m SW	Electricity Substation	1978 - 1984	66694
22	465m N	Gas Substation	1974	63701
23	480m NE	Electricity Substation	1976 - 1997	67202
J	489m NW	Gasometer	1892	59649

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



1.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

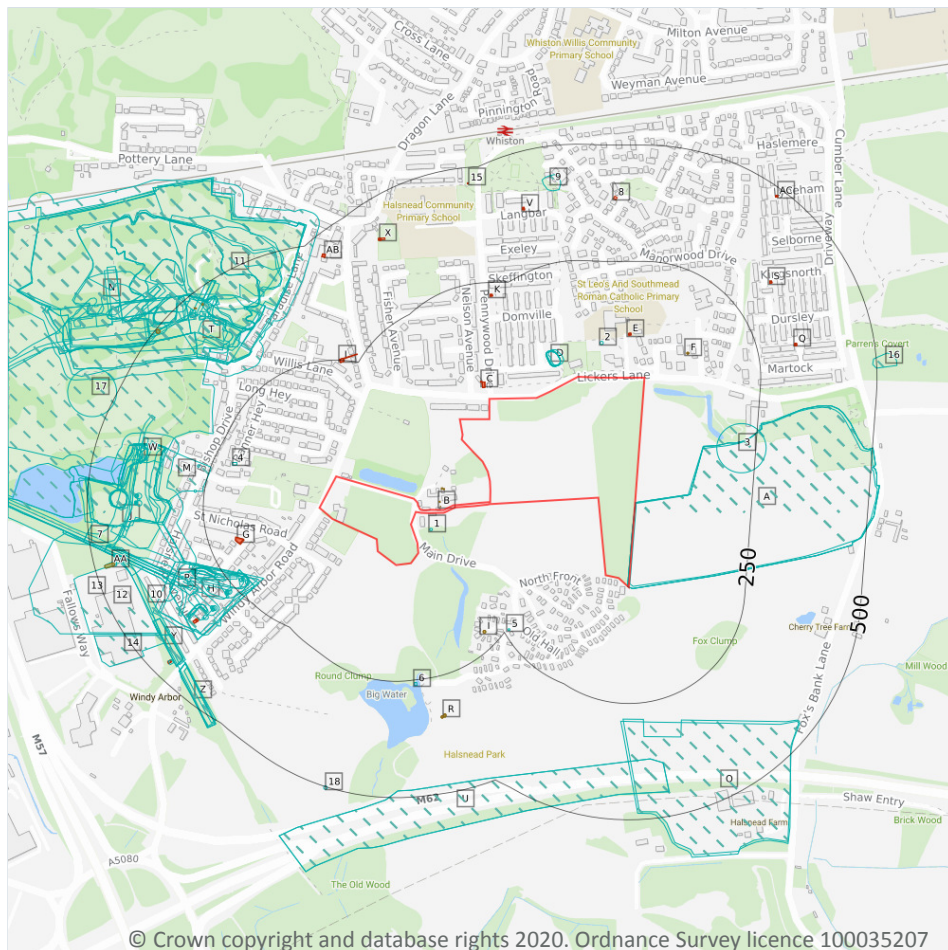
Records within 500m

0

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

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

2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features

2.1 Historical industrial land uses

Records within 500m

162

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 22**

ID	Location	Land Use	Date	Group ID
A	On site	Nursery	1955	868111
A	On site	Nursery	1975	992132
A	On site	Nursery	1966	992132



ID	Location	Land Use	Date	Group ID
A	2m E	Nursery	1947	877117
1	33m S	Coal Pit	1851	808449
D	41m NW	Unspecified Pit	1947	873586
D	41m NW	Unspecified Pit	1925	863063
D	41m NW	Unspecified Pit	1906	863063
D	41m NW	Unspecified Old Quarry	1891	832928
D	41m NW	Unspecified Pit	1955	857515
D	43m NW	Unspecified Pit	1938	912597
D	43m NW	Unspecified Pit	1938	912597
2	71m N	Sandstone Quarry	1851	837894
3	166m E	Unspecified Tank	1966	824612
H	194m SW	Old Colliery	1906	943828
4	200m NW	Weighing Machine	1851	810041
H	202m SW	Old Colliery	1891	943828
H	208m SW	Colliery	1851	798249
H	214m SW	Unspecified Ground Workings	1906	971379
H	214m SW	Unspecified Heap	1955	886581
H	214m SW	Unspecified Ground Workings	1925	920783
H	216m SW	Unspecified Disused Shafts	1966	835394
H	217m SW	Unspecified Ground Workings	1947	918600
J	217m SW	Disused Colliery	1947	956965
J	217m SW	Disused Colliery	1925	879683
H	222m SW	Unspecified Old Shaft	1955	806152
H	224m SW	Unspecified Heap	1891	865998
H	225m SW	Unspecified Old Shafts	1947	951254
H	225m SW	Unspecified Old Shafts	1925	971251
J	231m SW	Railway Sidings	1851	959646
5	237m SW	Pump	1851	826843



ID	Location	Land Use	Date	Group ID
M	248m W	Colliery	1851	798248
H	254m SW	Unspecified Ground Workings	1955	918600
6	255m S	Boat House	1906	817455
H	259m SW	Unspecified Disused Shafts	1966	835393
H	261m SW	Unspecified Heap	1966	917620
H	262m SW	Unspecified Ground Workings	1925	961857
H	264m SW	Unspecified Old Shaft	1955	806147
H	265m SW	Unspecified Heap	1938	892612
H	265m SW	Unspecified Heap	1938	892612
H	266m SW	Unspecified Old Shafts	1938	940194
H	266m SW	Unspecified Old Shafts	1938	940194
M	267m W	Coal Pit	1851	808451
H	268m SW	Unspecified Old Shafts	1947	940194
H	268m SW	Unspecified Old Shafts	1925	940194
H	270m SW	Unspecified Heap	1891	867572
H	272m SW	Coal Pit	1851	808448
M	273m W	Coal Pit	1851	808450
N	277m NW	Refuse Heap	1990	962218
O	284m S	Nursery	1950	959970
J	287m W	Disused Colliery	1955	946509
O	289m S	Nursery	1947	959970
H	294m SW	Unspecified Old Shaft	1955	806148
N	294m NW	Brick Works	1955	850733
H	298m SW	Magazine	1891	827279
H	303m SW	Unspecified Ground Workings	1906	874058
H	307m SW	Unspecified Disused Shafts	1966	835391
H	310m SW	Unspecified Old Shaft	1955	806146
H	312m SW	Unspecified Old Shafts	1938	875578

ID	Location	Land Use	Date	Group ID
H	312m SW	Unspecified Old Shafts	1938	875578
J	312m W	Disused Colliery	1906	921785
H	314m SW	Unspecified Old Shafts	1947	875578
H	314m SW	Unspecified Old Shafts	1925	875578
P	315m SW	Railway Sidings	1925	982477
H	315m SW	Unspecified Heaps	1891	831274
J	317m W	Unspecified Disused Mine	1966	810940
P	319m SW	Railway Sidings	1938	880766
N	321m NW	Brick Works	1947	857105
N	321m NW	Brick Works	1925	971266
J	321m W	Disused Colliery	1938	947601
J	321m W	Disused Colliery	1938	956293
N	323m NW	Metallic Brick Works	1938	802234
J	323m SW	Mineral Railway Sidings	1891	834013
N	323m NW	Unspecified Works	1966	938571
H	324m SW	Unspecified Ground Workings	1925	948987
H	324m SW	Unspecified Ground Workings	1938	865500
H	324m SW	Unspecified Ground Workings	1938	865500
J	330m W	Colliery	1891	873412
H	334m SW	Unspecified Disused Shafts	1966	835392
N	335m NW	Brick Works	1906	960091
7	340m SW	Railway Sidings	1906	936496
P	341m SW	Railway Sidings	1947	879950
T	342m NW	Unspecified Disused Works	1975	813349
H	343m SW	Coal Pit	1851	808447
J	343m W	Unspecified Ground Workings	1891	799829
J	346m W	Colliery	1851	873412
N	350m NW	Mineral Railway Sidings	1925	834016



ID	Location	Land Use	Date	Group ID
T	356m NW	Unspecified Pit	1906	895881
N	357m NW	Railway Sidings	1938	895504
N	364m NW	Unspecified Pit	1938	966306
N	364m NW	Unspecified Pit	1938	966306
N	364m NW	Unspecified Pits	1925	811211
N	367m NW	Unspecified Ground Workings	1947	927003
N	368m NW	Railway Sidings	1906	972574
N	368m NW	Unspecified Ground Workings	1955	927003
U	372m S	Cuttings	1975	883734
U	372m S	Cuttings	1989	910377
T	377m NW	Railway Sidings	1955	856324
J	382m W	Unspecified Disused Shaft	1966	812952
W	383m W	Unspecified Ground Workings	1966	917231
J	383m W	Unspecified Disused Shaft	1966	812951
J	387m W	Coal Pit	1851	808452
W	387m W	Unspecified Ground Workings	1947	966237
W	387m W	Unspecified Ground Workings	1925	951240
W	388m W	Unspecified Ground Workings	1955	946702
W	388m W	Unspecified Ground Workings	1906	900026
W	389m W	Unspecified Ground Workings	1938	976666
W	389m W	Unspecified Ground Workings	1938	976666
J	390m W	Unspecified Old Shaft	1955	806155
J	391m W	Unspecified Old Shaft	1955	806154
J	391m W	Unspecified Old Shafts	1947	858661
J	391m W	Unspecified Old Shafts	1925	858661
J	391m W	Unspecified Old Shafts	1938	858661
J	391m W	Unspecified Old Shafts	1938	858661
J	392m W	Unspecified Old Shafts	1947	919488



ID	Location	Land Use	Date	Group ID
J	392m W	Unspecified Old Shafts	1925	919488
J	392m W	Unspecified Old Shafts	1938	919488
J	392m W	Unspecified Old Shafts	1938	919488
W	396m W	Unspecified Heap	1891	926719
9	403m N	Unspecified Old Quarry	1891	832927
J	404m W	Unspecified Shafts	1891	809129
J	409m W	Unspecified Heap	1966	949824
10	411m SW	Railway Sidings	1955	888193
11	412m NW	Unspecified Disused Pit	1975	822427
J	414m W	Unspecified Heap	1938	935360
J	414m W	Unspecified Heap	1938	935360
J	414m W	Unspecified Old Shaft	1955	806153
J	415m W	Unspecified Heap	1947	922951
J	415m W	Unspecified Heap	1925	910606
J	415m W	Unspecified Heap	1906	910606
J	415m W	Unspecified Heap	1891	910606
N	418m N	Unspecified Ground Workings	1966	907411
Y	418m SW	Cuttings	1947	888216
Y	418m SW	Cuttings	1925	949249
Y	418m SW	Cuttings	1938	957884
12	418m W	Unspecified Works	1990	964460
Y	419m SW	Cuttings	1989	936544
Y	420m SW	Cuttings	1950	866420
13	426m SW	Unspecified Works	1975	976939
14	437m SW	Unspecified Works	1989	934284
N	439m NW	Colliery	1891	798243
N	439m NW	Railway Sidings	1891	853428
Z	440m SW	Cuttings	1950	889421



ID	Location	Land Use	Date	Group ID
T	440m NW	Unspecified Kilns	1955	933882
T	441m NW	Unspecified Kilns	1947	933882
Z	442m SW	Cuttings	1947	889421
Z	442m SW	Cuttings	1925	952881
Z	446m SW	Cuttings	1989	906359
AA	452m W	Unspecified Tanks	1975	815134
Y	455m SW	Electric Substation	1975	834465
T	457m NW	Unspecified Kilns	1955	891923
T	457m NW	Unspecified Kilns	1947	891923
N	471m NW	Unspecified Ground Workings	1906	945029
N	482m NW	Gravel Pit	1906	807785
N	483m NW	Unspecified Heap	1891	909880
J	486m W	Unspecified Heap	1955	803338
N	491m NW	Unspecified Tank	1891	824610
16	492m E	Unspecified Pit	1966	839671
N	492m NW	Railway Sidings	1955	904167
N	494m NW	Railway Sidings	1947	868791
17	496m NW	Unspecified Disused Pit	1975	822428
18	498m S	Sandstone Delf	1851	812656

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

22

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 22**

ID	Location	Land Use	Date	Group ID
B	7m N	Unspecified Tank	1937	112552



ID	Location	Land Use	Date	Group ID
B	16m N	Unspecified Tank	1958	112553
B	39m NW	Unspecified Tank	1927	131758
B	39m NW	Unspecified Tank	1937	131758
B	41m NW	Unspecified Tank	1958	112551
F	105m NE	Unspecified Tank	1997	127079
F	105m NE	Unspecified Tank	1996	127079
F	105m NE	Unspecified Tank	1994	127079
F	105m NE	Unspecified Tank	1994	127079
F	105m NE	Unspecified Tank	1995	127079
F	105m NE	Unspecified Tank	1976	127079
I	213m SE	Unspecified Tank	1892	131327
I	213m SE	Unspecified Tank	1907	131327
R	332m S	Unspecified Tank	1996	133024
R	333m S	Unspecified Tank	1980	133024
R	335m S	Unspecified Tank	1980	127381
R	335m S	Unspecified Tank	1989	127381
R	335m S	Unspecified Tank	1958	127381
AA	457m W	Tanks	1973	105837
T	466m NW	Unspecified Tank	1927	113274
T	469m NW	Unspecified Tank	1937	113275
N	489m NW	Gasometer	1892	108456

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

56

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 22**



ID	Location	Land Use	Date	Group ID
C	27m N	Electricity Substation	1996	84169
C	27m N	Electricity Substation	1995	84169
C	27m N	Electricity Substation	1996	84169
C	27m N	Electricity Substation	1999	84169
C	40m NW	Electricity Substation	1974	61504
E	92m N	Electricity Substation	1996	69660
E	92m N	Electricity Substation	1995	69660
E	92m N	Electricity Substation	1996	69660
E	92m N	Electricity Substation	1999	69660
E	92m N	Electricity Substation	1974	78767
G	176m SW	Electricity Substation	1973	73218
G	177m SW	Electricity Substation	1997	73218
G	177m W	Electricity Substation	1984	73218
K	221m N	Electricity Substation	1996	83008
K	221m N	Electricity Substation	1995	83008
K	221m N	Electricity Substation	1996	83008
K	221m N	Electricity Substation	1999	83008
L	245m N	Electricity Substation	1994	80937
L	245m N	Electricity Substation	1973	77181
L	246m N	Electricity Substation	1984	70864
Q	331m E	Electricity Substation	1997	71519
Q	331m E	Electricity Substation	1996	71519
Q	331m E	Electricity Substation	1994	71519
Q	331m E	Electricity Substation	1994	71519
Q	331m E	Electricity Substation	1995	71519
Q	332m E	Electricity Substation	1976	71519
S	338m NE	Electricity Substation	1997	67502
S	338m NE	Electricity Substation	1996	67502



ID	Location	Land Use	Date	Group ID
S	338m NE	Electricity Substation	1994	67502
S	338m NE	Electricity Substation	1994	67502
S	338m NE	Electricity Substation	1995	67502
H	352m SW	Electricity Substation	1994	67918
H	352m SW	Electricity Substation	1973	67918
H	356m SW	Electricity Substation	1987	85158
V	377m N	Electricity Substation	1996	67717
V	377m N	Electricity Substation	1995	67717
V	377m N	Electricity Substation	1996	67717
V	377m N	Electricity Substation	1999	67717
V	379m N	Electricity Substation	1974	70448
8	382m N	Electricity Substation	1999	61505
X	410m NW	Electricity Substation	1973	84983
X	413m NW	Electricity Substation	1994	84347
X	414m NW	Electricity Substation	1984	84347
AB	453m NW	Electricity Substation	1994	80453
AB	453m NW	Electricity Substation	1984	69587
AB	454m NW	Electricity Substation	1973	69587
Y	458m SW	Electricity Substation	1984	66694
Y	459m SW	Electricity Substation	1978	66694
15	465m N	Gas Substation	1974	63701
AC	480m NE	Electricity Substation	1997	67202
AC	480m NE	Electricity Substation	1996	67202
AC	480m NE	Electricity Substation	1994	67202
AC	480m NE	Electricity Substation	1994	67202
AC	480m NE	Electricity Substation	1995	67202
AC	480m NE	Electricity Substation	1976	67202
N	489m NW	Gasometer	1892	59649

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

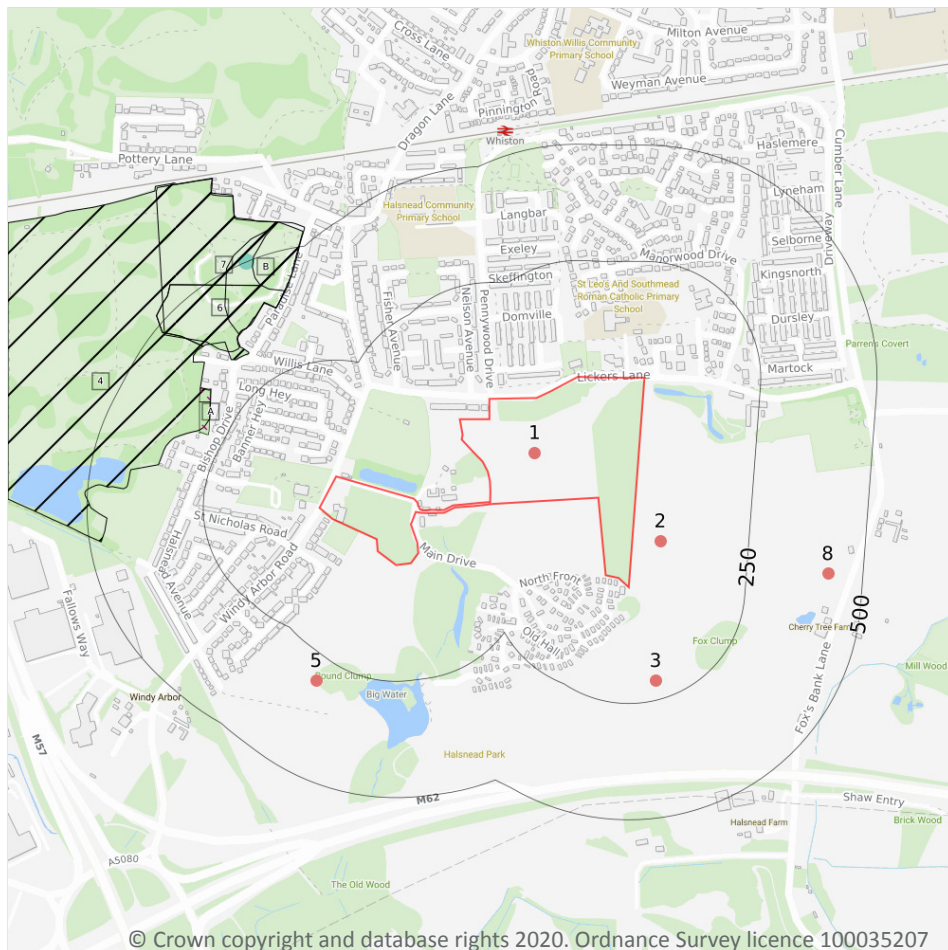
0

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)
- Historical landfill (BGS)
- Historical landfill (LA/OS)
- 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

1

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.

Features are displayed on the Waste and landfill map on **page 33**

ID	Location	Address	BGS Number	Risk	Waste Type
B	499m NW	Whiston Tip, St Helens, Lancs	2786	No risk to aquifer	N/A

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	2
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Landfill sites identified from Local Authority records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 33**

ID	Location	Site address	Source	Data type
A	285m NW	Refuse Tip	1997 mapping	Polygon
A	315m NW	Refuse Tip	1994 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	4
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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 33**

ID	Location	Details		
4	298m NW	Site Address: Coalgate Lane Landfill Site, Ellis Ashton Street, Huyton, Knowsley, Merseyside Licence Holder Address: -	Waste Licence: - Site Reference: R13/01, GDO 017, GDO M019, GDO 020 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Huyton Urban District Council and Merseyside County Council Licence Holder: Huyton Urban District Council and Merseyside County Council First Recorded 01/01/1972 Last Recorded: 01/01/1983

ID	Location	Details		
6	324m NW	Site Address: Coalgate Lane Wimpeym, Tushingham's Quarry, Paradise Lane, Stadt-Moers Park, Knowsley, Merseyside Licence Holder Address: Bridle Road, Bootle	Waste Licence: - Site Reference: GDO M017, 026/01 Waste Type: Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: G Wimpey and Company Limited Licence Holder: G Wimpey and Company Limited First Recorded 31/12/1976 Last Recorded: 01/01/1979
7	345m NW	Site Address: Whiston Tip, St Helens, Lancashire Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Central Electricity Generating Board - North Western Region Licence Holder: - First Recorded 07/01/1967 Last Recorded: -
B	370m NW	Site Address: Tushingham's Quarry, Coalgate Lane, Paradise Lane, Stadt-Moers Park, Whiston, Merseyside, Knowsley Licence Holder Address: Bridle Road, Bootle, Merseyside	Waste Licence: Yes Site Reference: 026/01,GDO 020 Waste Type: Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 27/05/1977 Licence Surrender: -	Operator: W F Doyle and Company Limited Licence Holder: George Wimpey and Company Limited First Recorded 01/04/1976 Last Recorded: 31/12/1979

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

3.5 Historical waste sites

Records within 500m	0
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Waste site records derived from Local Authority planning records and high detail historical mapping.

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

3.6 Licensed waste sites

Records within 500m	0
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

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

3.7 Waste exemptions

Records within 500m

5

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 33**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	On site	Norlands Farm Norlands Lane Widnes WA8 5AT	EPR/FE5748CS/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
2	60m E	Cherry Tree Farm Foxs Bank Lane PRESCOT Merseyside L35 3SS	EPR/GE5052WJ/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
3	210m S	Cherry Tree Farm Foxs Bank Lane PRESCOT Merseyside L35 3SS	EPR/KE5352WK/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
5	303m SW	Norlands Farm Norlands Lane Widnes WA8 5AT	EPR/CE5048CT/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
8	424m E	Cherry Tree Farm Foxs Bank Lane PRESCOT Merseyside L35 3SS	EPR/SE5844ZK/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

8

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 37**

ID	Location	Company	Address	Activity	Category
2	41m NW	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities
4	103m N	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
5	122m SW	Underwater Vision R O V Services	112, Windy Arbor Road, Whiston, Prescot, Merseyside, L35 3SQ	Marine Engineers and Services	Engineering Services
6	161m S	Pump House	Merseyside, L35	Water Pumping Stations	Industrial Features
7	172m N	Gas Governor	Merseyside, L35	Gas Features	Infrastructure and Facilities
8	187m W	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities
9	224m SE	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities
10	224m N	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.



4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

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

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

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

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m**0**

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m**0**

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

2

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 37**

ID	Location	Details	
1	5m N	Incident Date: 15/07/2002 Incident Identification: 91608 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3	43m W	Incident Date: 20/05/2002 Incident Identification: 79877 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m**0**

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

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

4.20 Pollution inventory waste transfers

Records within 500m**0**

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

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

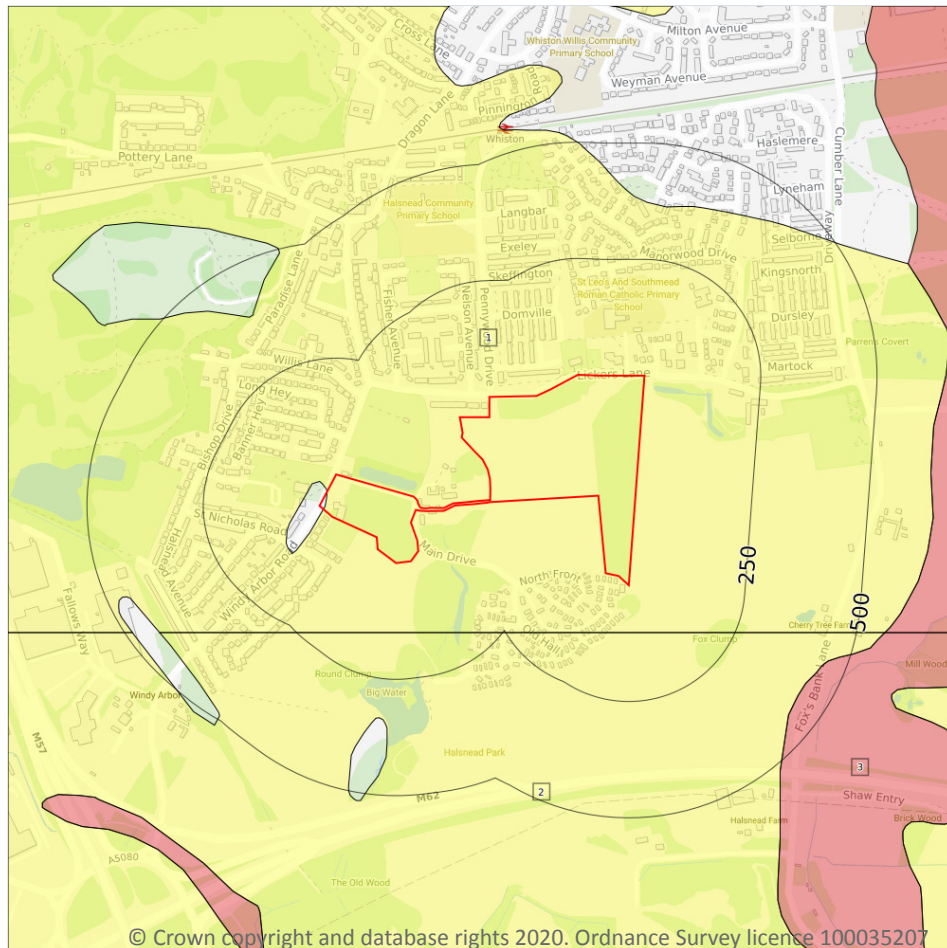
4.21 Pollution inventory radioactive waste

Records within 500m**0**

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

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

5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 43**

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	102m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

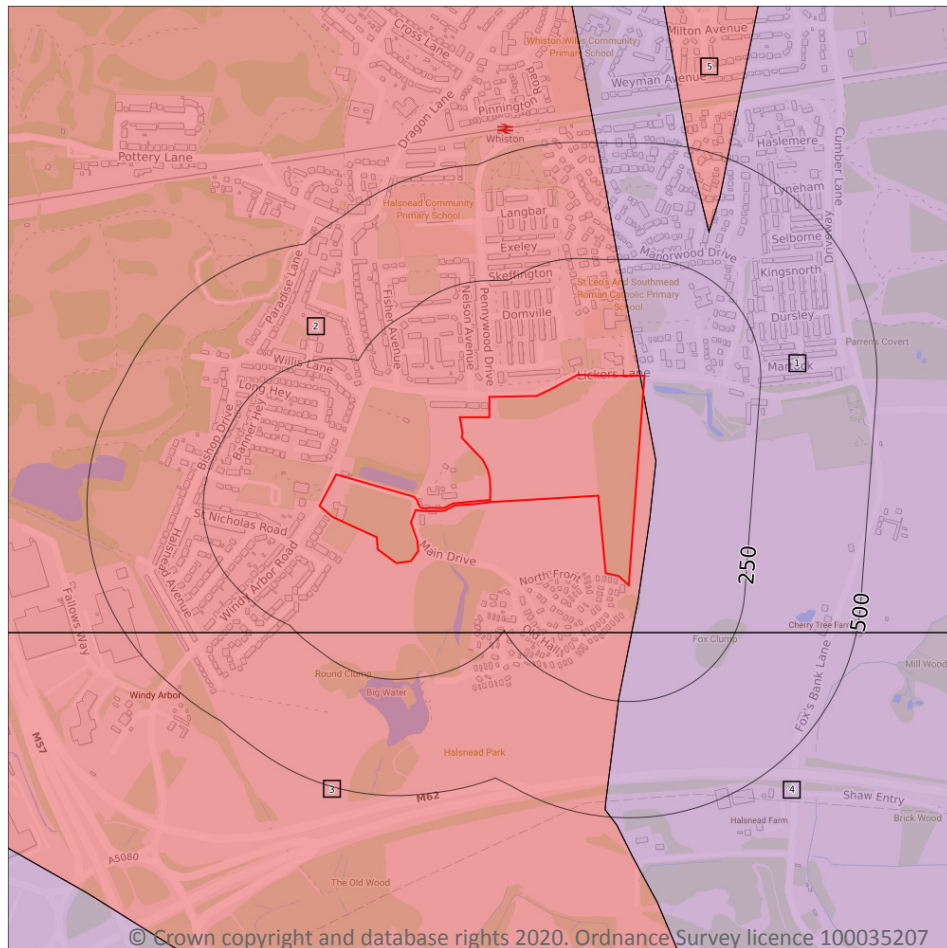


ID	Location	Designation	Description
3	434m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

5

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 45**

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

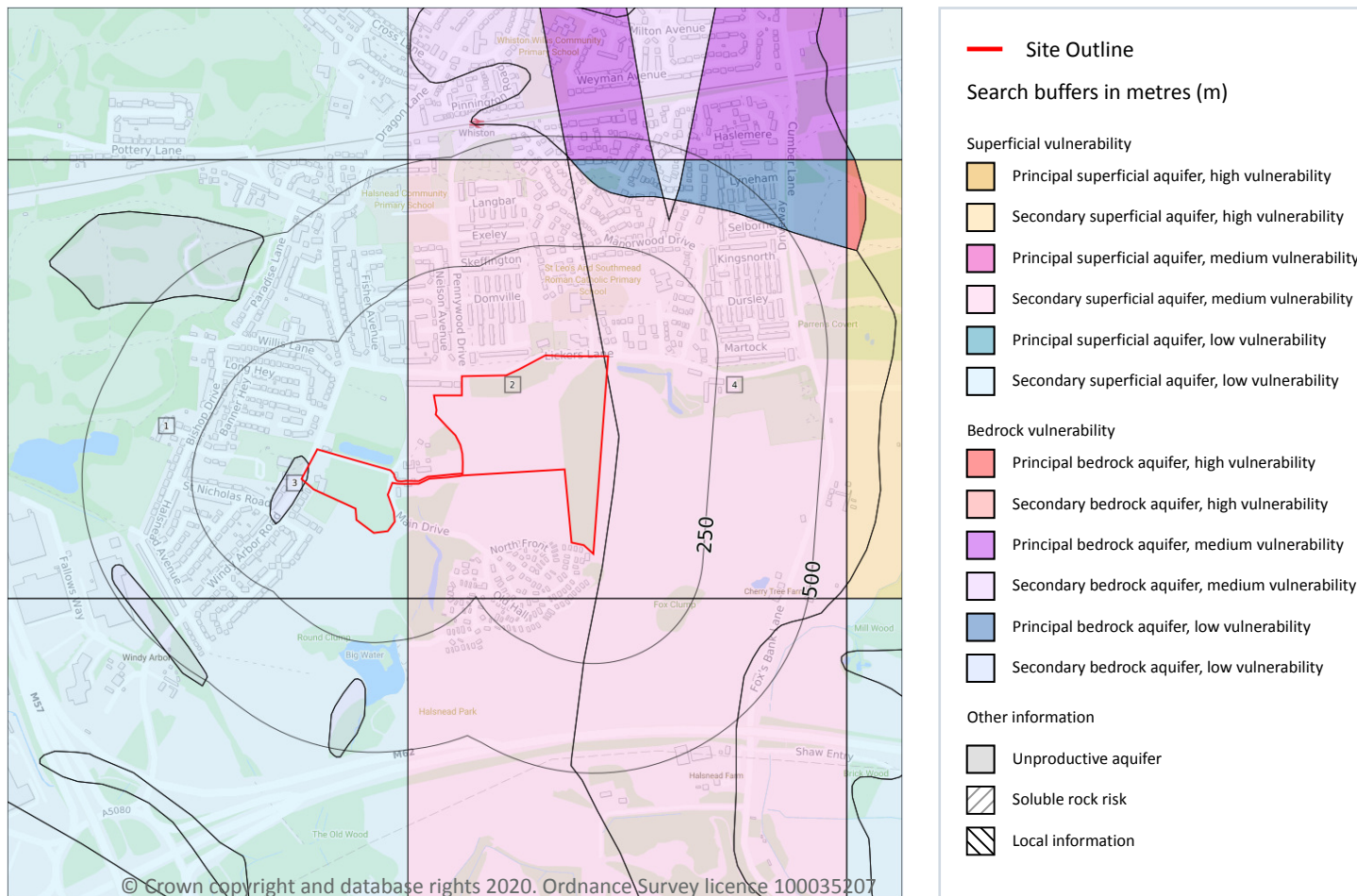


ID	Location	Designation	Description
3	102m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	102m S	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
5	339m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

4

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 47**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300- 550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300- 550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures

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

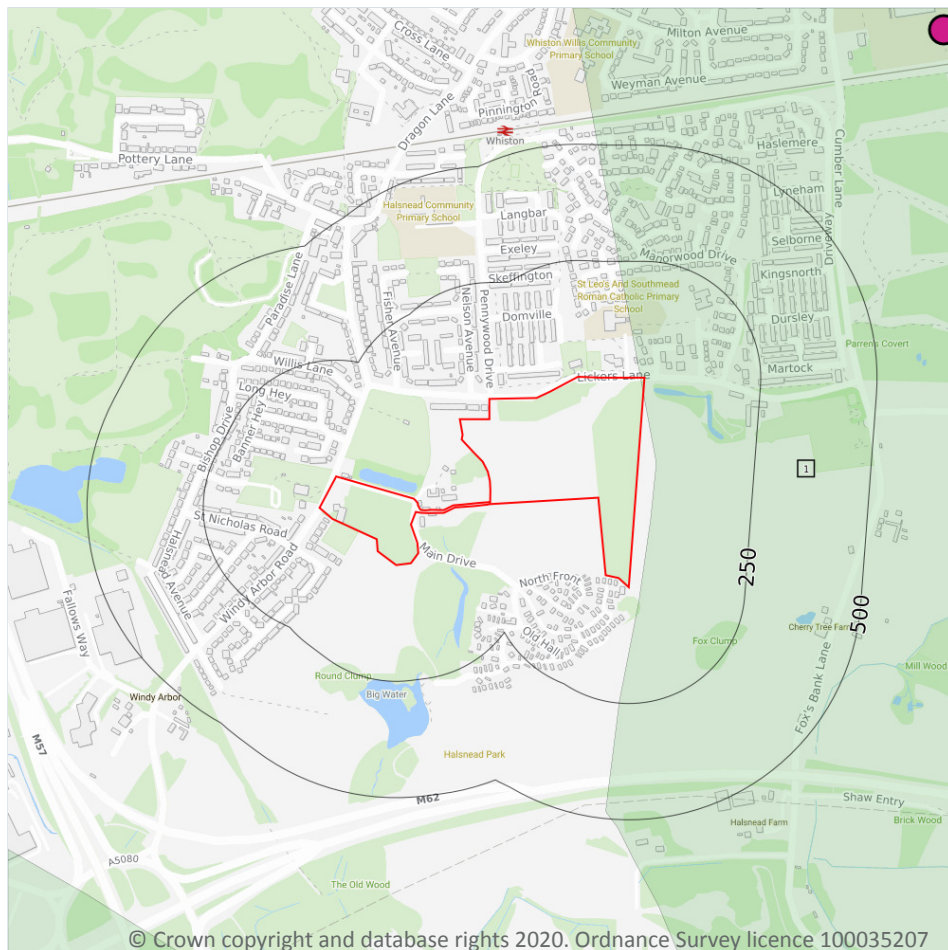
0

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
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

11

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 50**

ID	Location	Details	
A	986m NE	Status: Historical Licence No: 2569028008 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: 2 WELLS + CONNECTING B/HOLES, CUMBER LA, WHISTON, MERSEYSIDE Data Type: Point Name: NORTH WEST WATER LTD Easting: 348100 Northing: 391300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 16/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/03/1966 Version End Date: -
-	1064m NE	Status: Historical Licence No: 2569028020 Details: Laundry Use Direct Source: Ground Water - North West Region Point: "BOREHOLE AT STONEY LANE, RAINHILL" Data Type: Point Name: THE SUNLIGHT SERVICES GROUP LTD Easting: 348100 Northing: 391400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/06/1993 Expiry Date: - Issue No: 101 Version Start Date: 24/10/1996 Version End Date: -
-	1064m NE	Status: Active Licence No: 2569028020 Details: Laundry Use Direct Source: Ground Water - North West Region Point: BOREHOLE AT STONEY LANE, RAINHILL Data Type: Point Name: Berendsen UK Limited Easting: 348100 Northing: 391400	Annual Volume (m ³): 118,181.82 Max Daily Volume (m ³): 545.46 Original Application No: - Original Start Date: 01/06/1993 Expiry Date: - Issue No: 102 Version Start Date: 22/07/2013 Version End Date: -
-	1106m E	Status: Historical Licence No: 2569028021 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "B/HOLE AT BLUNDELLS HILL GOLF CLUB, BLUNDELLS LANE, RAINHILL" Data Type: Point Name: BLUNDELLS HILL GOLF CLUB LTD Easting: 348550 Northing: 390340	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 06/09/1994 Expiry Date: - Issue No: 101 Version Start Date: 19/02/2001 Version End Date: -



ID	Location	Details	
-	1106m E	Status: Historical Licence No: 2569028021 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "B/HOLE AT BLUNDELLS HILL GOLF CLUB, BLUNDELLS LANE, RAINHILL" Data Type: Point Name: BLUNDELLS HILL GOLF CLUB LTD Easting: 348550 Northing: 390340	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 06/09/1994 Expiry Date: - Issue No: 101 Version Start Date: 19/02/2001 Version End Date: -
-	1106m E	Status: Active Licence No: 2569028021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: B/HOLE AT BLUNDELLS HILL GOLF CLUB, BLUNDELLS LANE, RAINHILL Data Type: Point Name: BLUNDELLS HILL GOLF CLUB LTD Easting: 348550 Northing: 390340	Annual Volume (m ³): 21,966.87 Max Daily Volume (m ³): 191.81 Original Application No: - Original Start Date: 06/09/1994 Expiry Date: - Issue No: 103 Version Start Date: 07/11/2018 Version End Date: -
-	1106m E	Status: Active Licence No: 2569028021 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: B/HOLE AT BLUNDELLS HILL GOLF CLUB, BLUNDELLS LANE, RAINHILL Data Type: Point Name: BLUNDELLS HILL GOLF CLUB LTD Easting: 348550 Northing: 390340	Annual Volume (m ³): 21,966.87 Max Daily Volume (m ³): 191.81 Original Application No: - Original Start Date: 06/09/1994 Expiry Date: - Issue No: 103 Version Start Date: 07/11/2018 Version End Date: -
-	1640m N	Status: Historical Licence No: 2569025072 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "TWO BOREHOLES AT WHISTON HOSPITAL, PRESCOT, MERSEYSIDE" Data Type: Point Name: ST HELENS AND KNOWSLEY HOSPITALS Easting: 348000 Northing: 392100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/08/1992 Expiry Date: - Issue No: 100 Version Start Date: 13/08/1992 Version End Date: -



ID	Location	Details	
-	1640m N	Status: Historical Licence No: 2569025072 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "TWO BOREHOLES AT WHISTON HOSPITAL, PRESCOT, MERSEYSIDE" Data Type: Point Name: ST HELENS AND KNOWSLEY HOSPITALS Easting: 348000 Northing: 392100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/08/1992 Expiry Date: - Issue No: 100 Version Start Date: 13/08/1992 Version End Date: -
-	1640m N	Status: Historical Licence No: 2569025072 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: TWO BOREHOLES AT WHISTON HOSPITAL, PRESCOT, MERSEYSIDE Data Type: Point Name: ST HELENS AND KNOWSLEY HOSPITALS Easting: 348000 Northing: 392100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/08/1992 Expiry Date: - Issue No: 100 Version Start Date: 13/08/1992 Version End Date: -
-	1640m N	Status: Historical Licence No: 2569025072 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: TWO BOREHOLES AT WHISTON HOSPITAL, PRESCOT, MERSEYSIDE Data Type: Point Name: ST HELENS AND KNOWSLEY HOSPITALS Easting: 348000 Northing: 392100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/08/1992 Expiry Date: - Issue No: 100 Version Start Date: 13/08/1992 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

4

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 50**



ID	Location	Details	
-	1097m S	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "OCHRE & DOG CLOG BRKS, TARBOCK HALL FARM, TARBOCK, PRESCOT" Data Type: Line Name: T H CRITCHLEY & SON Easting: 346600 Northing: 389100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1097m S	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: OCHRE & DOG CLOG BRKS, TARBOCK HALL FARM, TARBOCK, PRESCOT Data Type: Line Name: T H CRITCHLEY & SON Easting: 346600 Northing: 389100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1097m S	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: OCHRE AND DOG CLOG BROOKS TARBOCK HALL FARM PRESCOT Data Type: Line Name: T H CRITCHLEY & SON Easting: 346600 Northing: 389100	Annual Volume (m ³): 2098 Max Daily Volume (m ³): 636 Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1635m S	Status: Active Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: OCHRE AND DOG CLOG BROOKS TARBOCK HALL FARM PRESCOT Data Type: Line Name: BELPOOL DEVELOPMENTS LTD Easting: 346400 Northing: 388600	Annual Volume (m ³): 2,098 Max Daily Volume (m ³): 636 Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 102 Version Start Date: 31/01/2011 Version End Date: -

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



5.8 Potable abstractions

Records within 2000m

5

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 50**

ID	Location	Details	
A	986m NE	Status: Historical Licence No: 2569028008 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: 2 WELLS + CONNECTING B/HOLES, CUMBER LA, WHISTON, MERSEYSIDE Data Type: Point Name: NORTH WEST WATER LTD Easting: 348100 Northing: 391300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 16/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/03/1966 Version End Date: -
-	1106m E	Status: Historical Licence No: 2569028021 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "B/HOLE AT BLUNDELLS HILL GOLF CLUB, BLUNDELLS LANE, RAINHILL" Data Type: Point Name: BLUNDELLS HILL GOLF CLUB LTD Easting: 348550 Northing: 390340	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 06/09/1994 Expiry Date: - Issue No: 101 Version Start Date: 19/02/2001 Version End Date: -
-	1106m E	Status: Active Licence No: 2569028021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: B/HOLE AT BLUNDELLS HILL GOLF CLUB, BLUNDELLS LANE, RAINHILL Data Type: Point Name: BLUNDELLS HILL GOLF CLUB LTD Easting: 348550 Northing: 390340	Annual Volume (m ³): 21,966.87 Max Daily Volume (m ³): 191.81 Original Application No: - Original Start Date: 06/09/1994 Expiry Date: - Issue No: 103 Version Start Date: 07/11/2018 Version End Date: -



ID	Location	Details	
-	1640m N	Status: Historical Licence No: 2569025072 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "TWO BOREHOLES AT WHISTON HOSPITAL, PRESCOT, MERSEYSIDE" Data Type: Point Name: ST HELENS AND KNOWSLEY HOSPITALS Easting: 348000 Northing: 392100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/08/1992 Expiry Date: - Issue No: 100 Version Start Date: 13/08/1992 Version End Date: -
-	1640m N	Status: Historical Licence No: 2569025072 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: TWO BOREHOLES AT WHISTON HOSPITAL, PRESCOT, MERSEYSIDE Data Type: Point Name: ST HELENS AND KNOWSLEY HOSPITALS Easting: 348000 Northing: 392100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/08/1992 Expiry Date: - Issue No: 100 Version Start Date: 13/08/1992 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	1
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Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on **page 50**

ID	Location	Type	Description
1	On site	3	Total catchment

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

5.10 Source Protection Zones (confined aquifer)

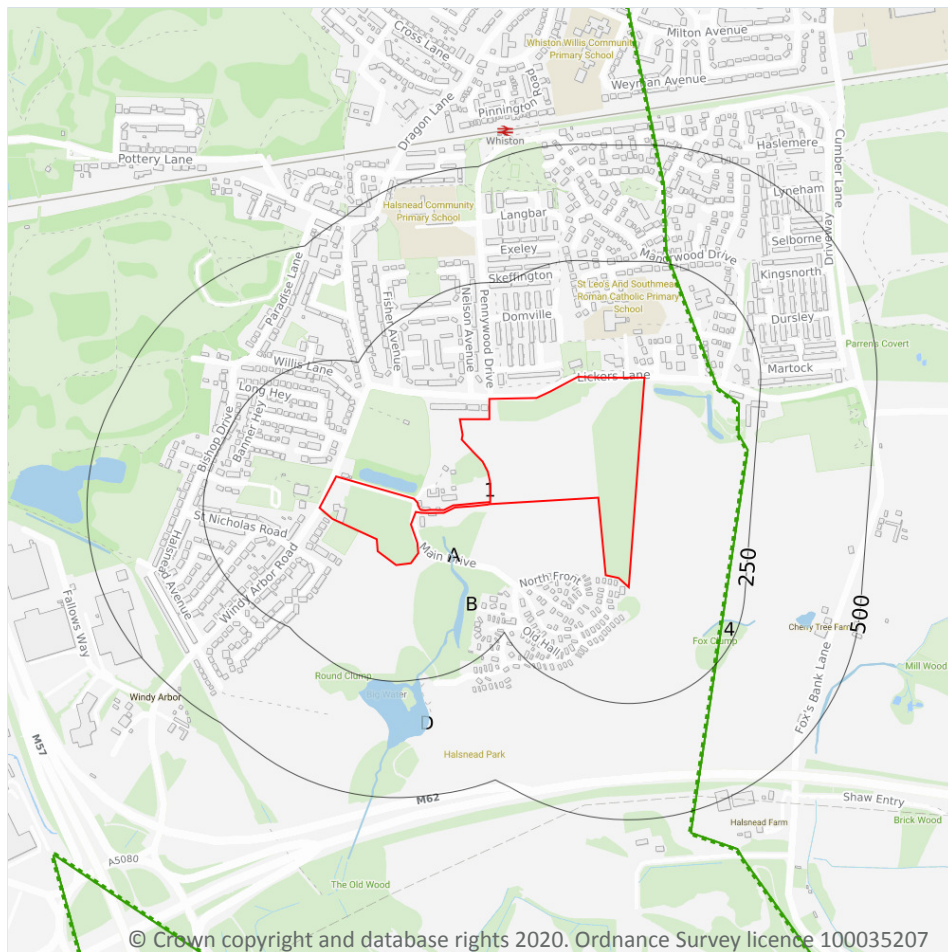
Records within 500m	0
----------------------------	----------

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

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



6 Hydrology



- 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

11

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 57**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	51m S	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
A	72m E	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	77m E	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	168m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	168m SE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	175m SE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	189m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
4	190m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	192m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	210m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	236m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Big Water

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

7

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 57**



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 57**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River WB catchment	Prescot Brook (Logwood Mill Brook)	GB112069060710	Ditton	Lower Mersey

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 57**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	781m SW	River	Prescot Brook (Logwood Mill Brook)	GB112069060710	Poor	Good	Poor	2016

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



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

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

0

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

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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



7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0
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Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

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

7.7 Flood Zone 3

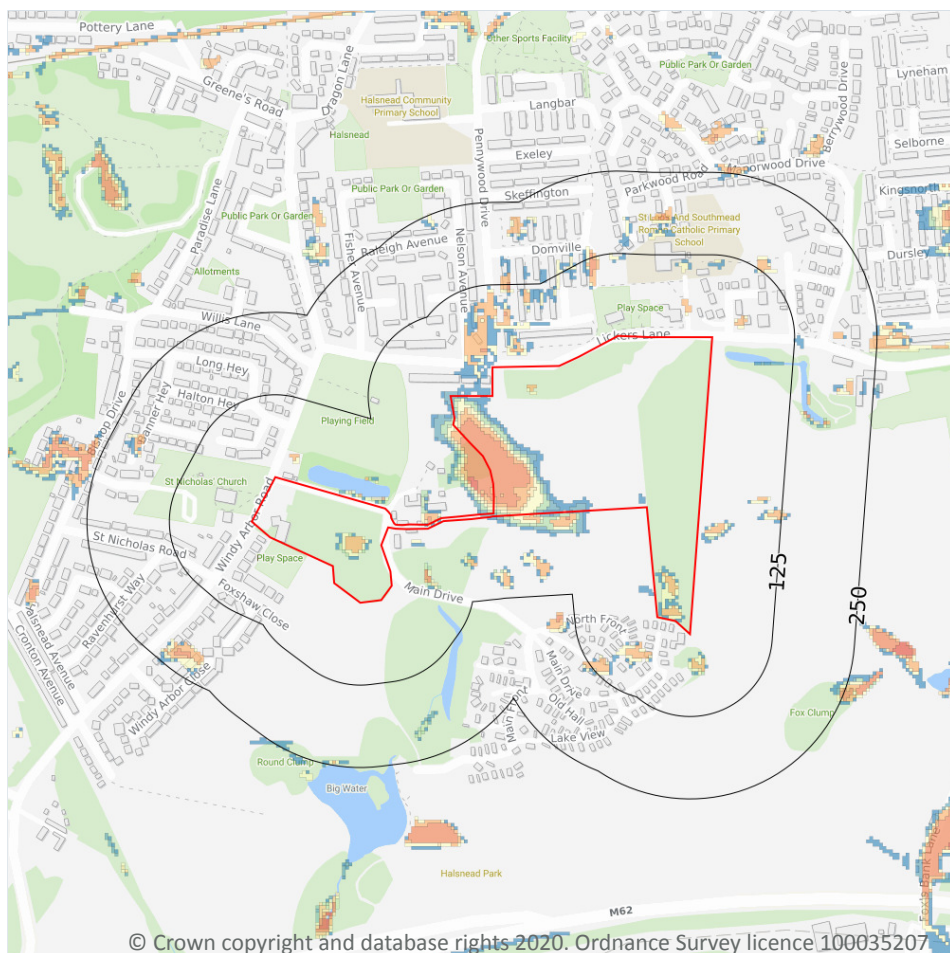
Records within 50m	0
--------------------	---

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

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



8 Surface water flooding



— 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 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, Greater than 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 64**

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	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Between 0.3m and 1.0m

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

Moderate

Highest risk within 50m

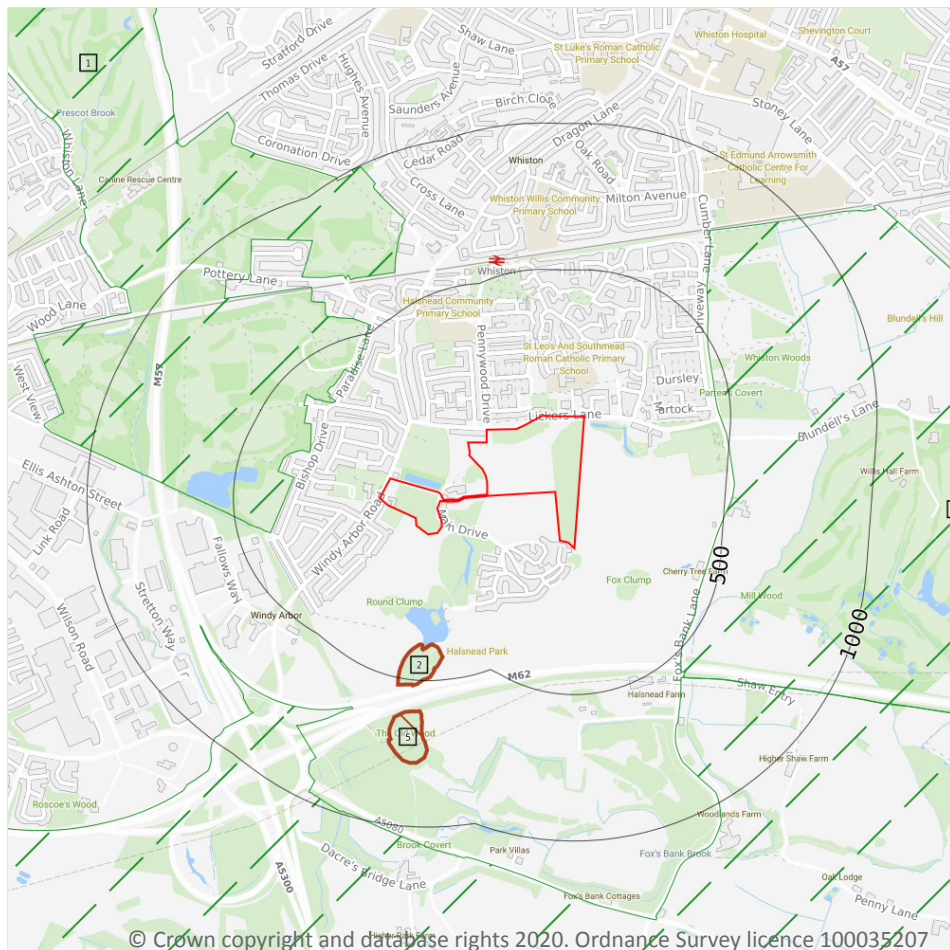
Moderate

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 66**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

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

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

10.7 Designated Ancient Woodland

Records within 2000m**2**

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 67**

ID	Location	Name	Woodland Type
2	376m S	The Old Wood	Ancient & Semi-Natural Woodland
5	604m S	The Old Wood	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

3

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

Features are displayed on the Environmental designations map on **page 67**

ID	Location	Name	Local Authority name
1	285m NW	Liverpool and Manchester	Knowsley
3	450m E	Liverpool and Manchester	St Helens
4	572m SE	Liverpool and Manchester	Knowsley

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

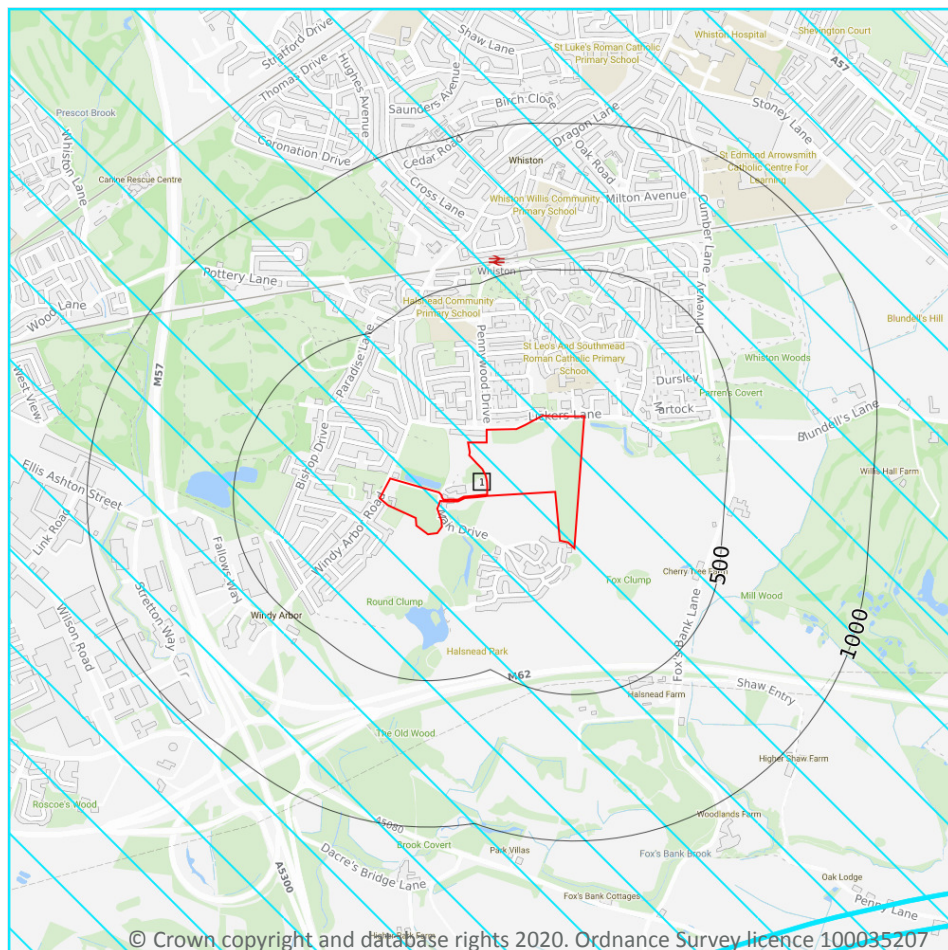
3

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	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	S640	Existing
1496m NW	ALT NVZ	Surface Water	S642	Existing
1556m NE	Sankey Brook (Black Bk to Mersey) NVZ	Surface Water	S639	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 72**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 4000m². Combustion - General combustion processes >50MW 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. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).

This data is sourced from Natural England.

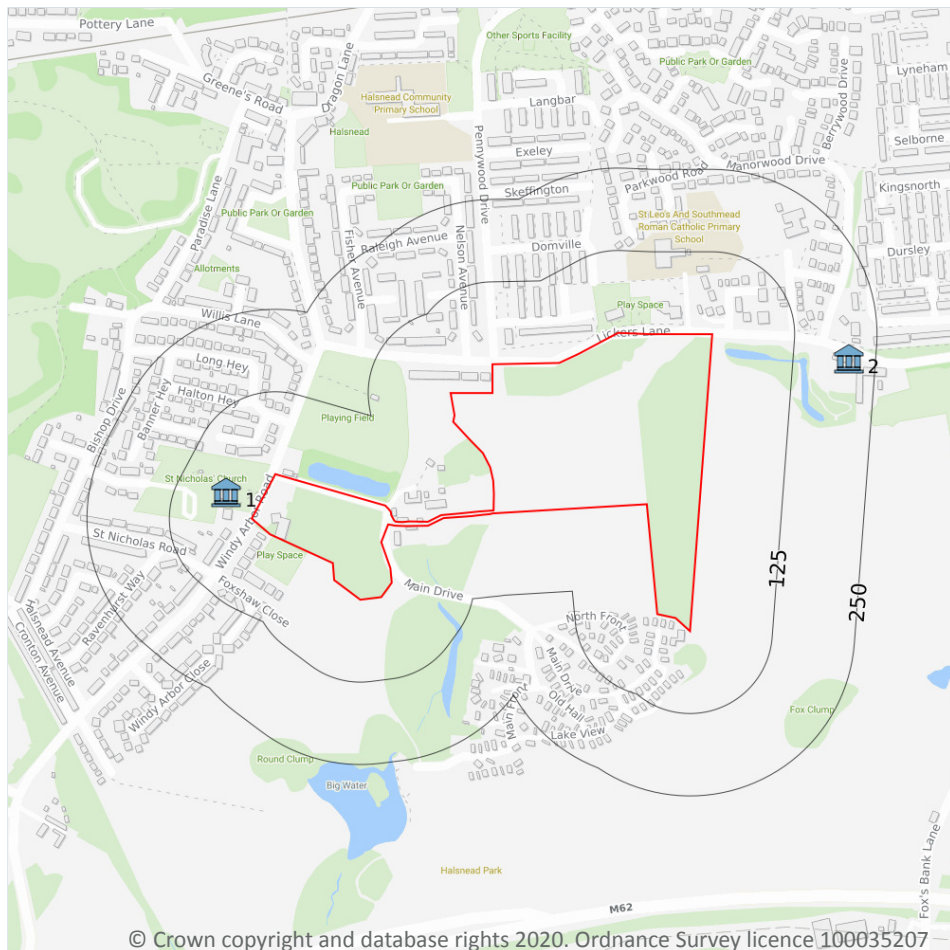
10.18 SSSI Units

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

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

11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

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

2

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

Features are displayed on the Visual and cultural designations map on **page 74**

ID	Location	Name	Grade	Reference Number	Listed date
1	54m NW	Church Of St Nicholas, Whiston, Knowsley, L35	II	1261894	28/01/1971
2	209m E	Sandfield House, Whiston, Knowsley, L35	II	1253251	28/01/1971

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

11.7 Registered Parks and Gardens

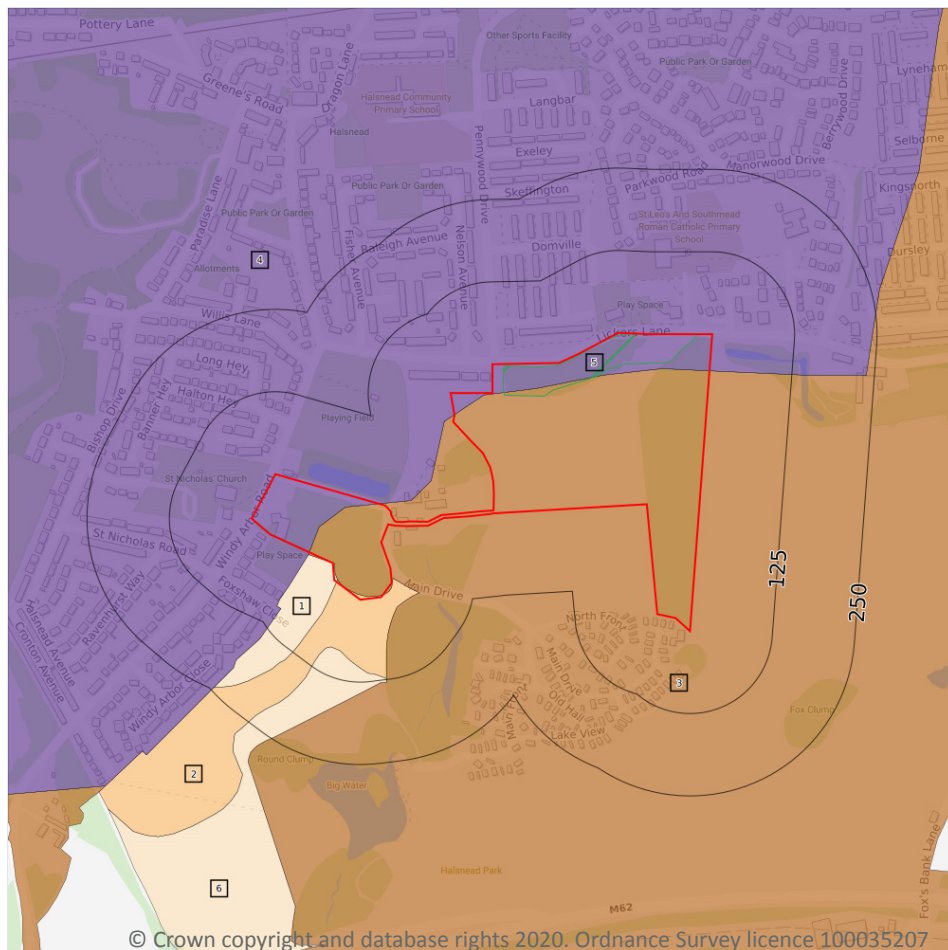
Records within 250m

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 English Heritage, 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

5

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 77**

ID	Location	Classification	Description
1	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.



ID	Location	Classification	Description
2	On site	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	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.
4	On site	Urban	-
6	83m SW	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

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

1

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.

Features are displayed on the Agricultural designations map on **page 77**

ID	Location	Description	Reference	Application date
5	On site	Selective Fell/Thin (Unconditional)	010/120/09-10	17/12/2009

This data is sourced from the Forestry Commission.



12.4 Environmental Stewardship Schemes

Records within 250m**0**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

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



- Site Outline**
- Search buffers in metres (m)**
- Priority Habitat Inventory
 - Open Mosaic Habitat
 - Limestone Pavement Orders
- Habitat Networks**
- Primary Habitat
 - Restorable Habitat
 - Associated Habitats
 - Habitat Restoration-Creation
 - Network Enhancement Zone 1
 - Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

21

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

Features are displayed on the Habitat designations map on **page 80**

ID	Location	Main Habitat	Other habitats
1	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	1m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
4	5m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	11m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	20m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	22m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	29m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	35m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	45m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	76m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	130m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	176m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	183m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
11	189m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
12	190m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
13	190m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
14	191m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
15	234m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
16	235m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.



13.3 Open Mosaic Habitat

Records within 250m**0**

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

This data is sourced from Natural England.

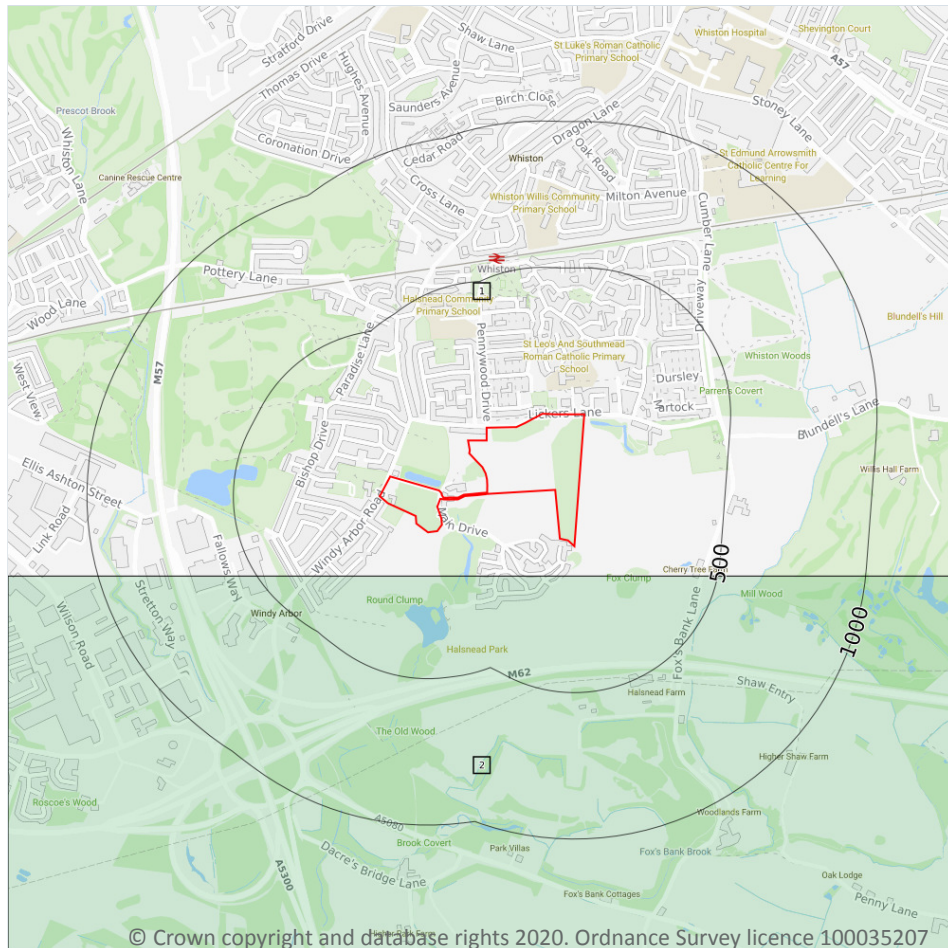
13.4 Limestone Pavement Orders

Records within 250m**0**

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

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 83**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	No coverage	No coverage	No coverage	NoCov
2	102m S	No coverage	Full	Full	No coverage	SJ48NE

This data is sourced from the British Geological Survey.



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

14.2 Artificial and made ground (10k)

Records within 500m

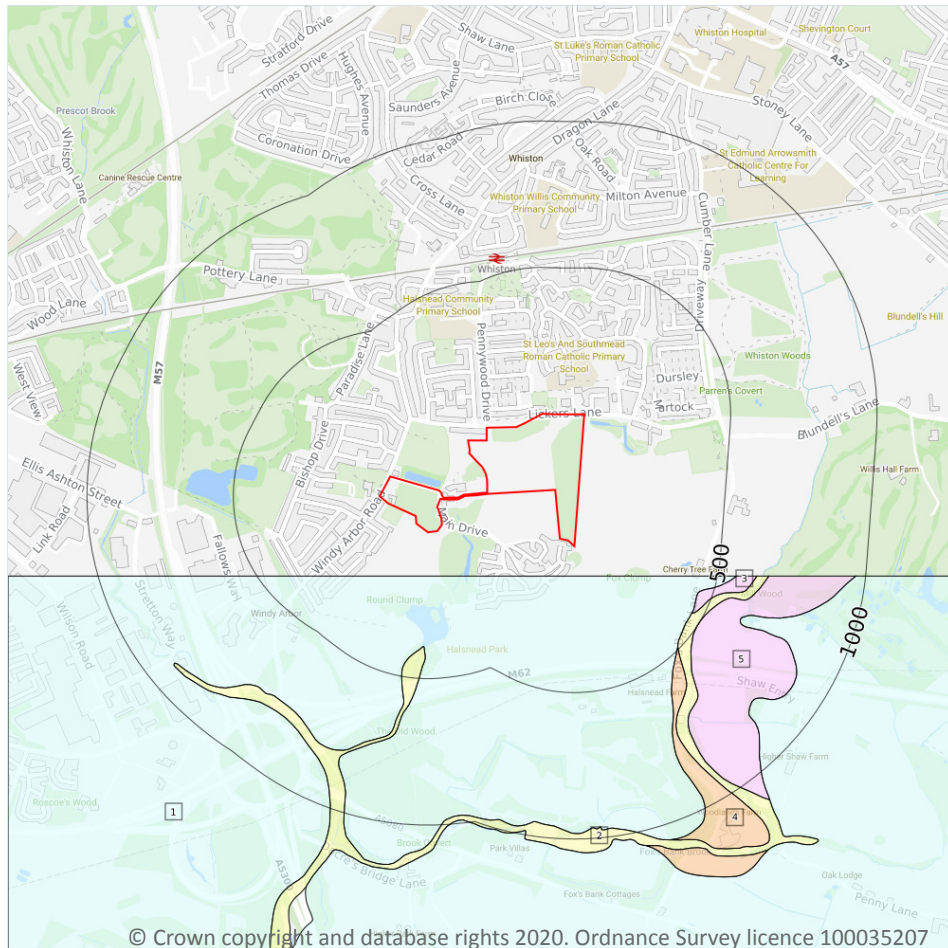
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



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

5

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 85**

ID	Location	LEX Code	Description	Rock description
1	102m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	390m S	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
3	451m E	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
4	493m SE	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
5	500m SE	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

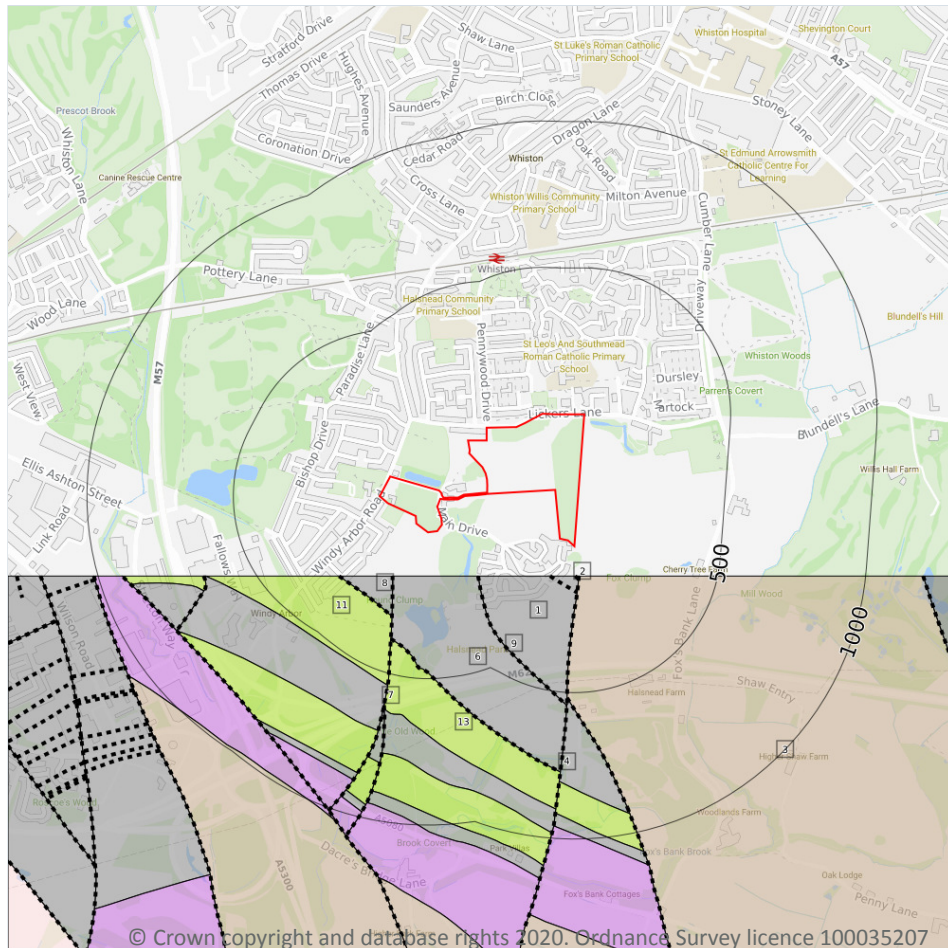
0

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

6

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 87**

ID	Location	LEX Code	Description	Rock age
1	102m S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
3	103m S	KNSF-SDST	Kinnerton Sandstone Formation - Sandstone	Early Triassic Epoch
6	150m S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age



ID	Location	LEX Code	Description	Rock age
8	192m SW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
11	298m SW	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
13	385m S	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

7

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.

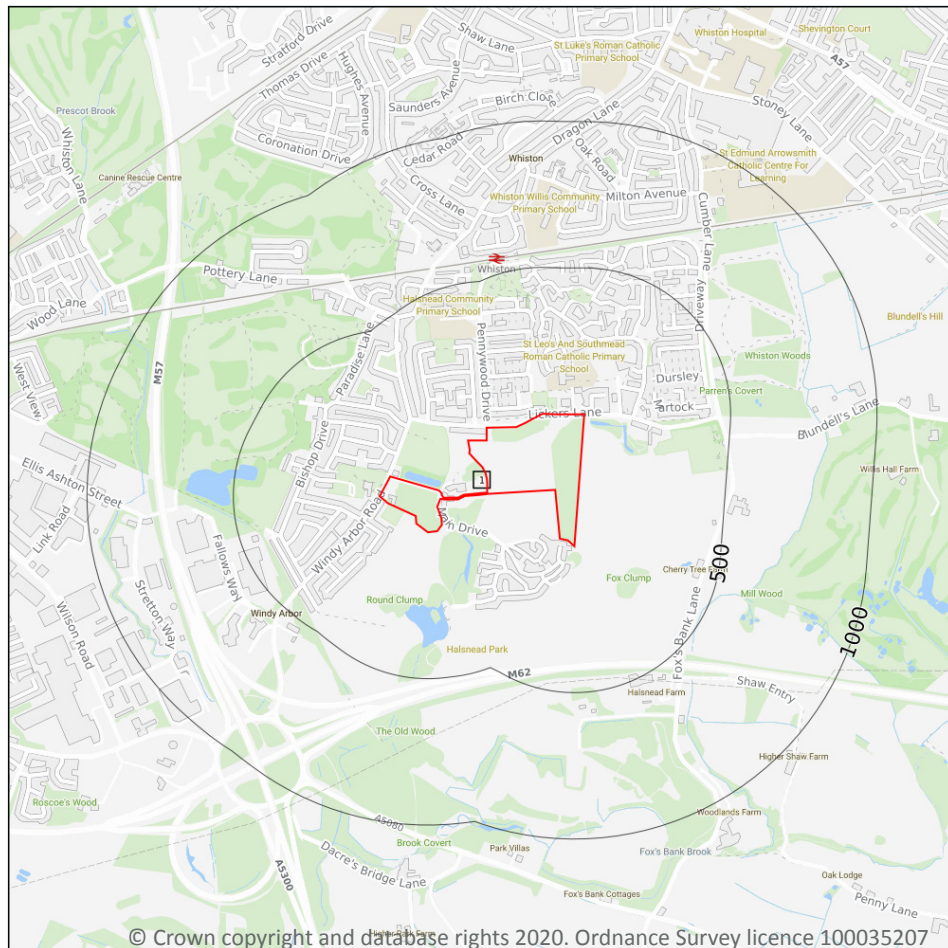
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 87**

ID	Location	Category	Description
2	102m S	ROCK	Coal seam, inferred (None)
4	103m S	FAULT	Normal fault, observed; crossmark on downthrow side
5	131m SW	ROCK	Coal seam, inferred (None)
7	192m SW	FAULT	Normal fault, observed; crossmark on downthrow side
9	207m SE	FAULT	Normal fault, observed; crossmark on downthrow side
10	298m SW	ROCK	Coal seam, inferred (Coal_Inf+BedRock)
12	385m S	ROCK	Coal seam, observed (Coal_Obs+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 89**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW097_runcorn_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

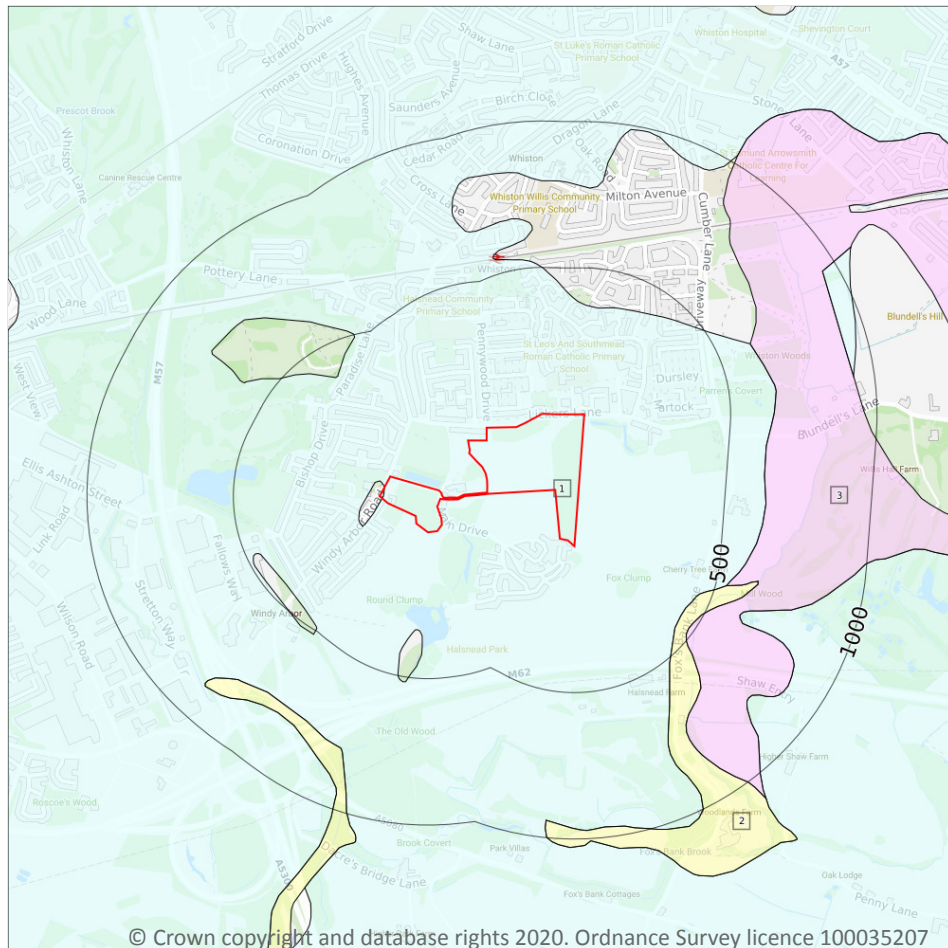
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

3

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 91**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	434m SE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	481m SE	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL



This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	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

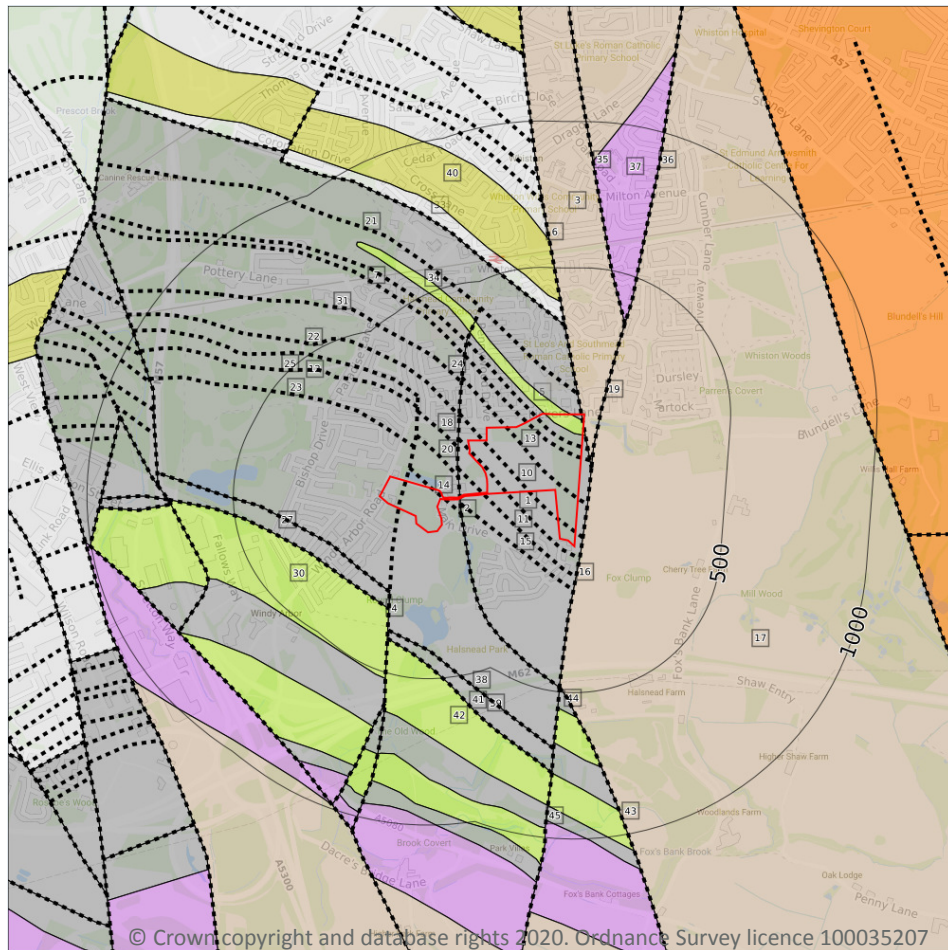
0

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



15.8 Bedrock geology (50k)

Records within 500m

14

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 93**

ID	Location	LEX Code	Description	Rock age
1	On site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	On site	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-
5	On site	PMR-SDST	PEMBERTON ROCK - SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
12	On site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
17	24m E	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-
27	232m SW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
30	291m SW	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
33	304m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
34	330m N	PMR-SDST	PEMBERTON ROCK - SANDSTONE	WESTPHALIAN
37	339m NE	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN
39	361m S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
40	385m N	RHR-SDST	RAVENHEAD ROCK - SANDSTONE	WESTPHALIAN
42	388m S	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
44	486m S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

3

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	Fracture	High	Moderate
On site	Fracture	Moderate	Low
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.



15.10 Bedrock faults and other linear features (50k)

Records within 500m

31

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 93**

ID	Location	Category	Description
2	On site	FAULT	Fault, observed
4	On site	FAULT	Fault, observed
6	On site	FAULT	Fault, observed
7	On site	ROCK	Coal seam, inferred
8	On site	ROCK	Coal seam, inferred
9	On site	ROCK	Coal seam, inferred
10	On site	ROCK	Coal seam, inferred
11	On site	ROCK	Coal seam, inferred
13	On site	ROCK	Coal seam, inferred
14	On site	ROCK	Coal seam, inferred
15	17m SE	ROCK	Coal seam, inferred
16	24m E	FAULT	Fault, observed
18	38m W	ROCK	Coal seam, inferred
19	38m E	FAULT	Fault, observed
20	62m N	ROCK	Coal seam, inferred
21	71m N	ROCK	Coal seam, inferred
22	89m N	ROCK	Coal seam, inferred
23	121m N	ROCK	Coal seam, inferred
24	178m NW	ROCK	Coal seam, inferred
25	207m NW	ROCK	Coal seam, inferred
26	229m NW	ROCK	Coal seam, inferred
28	232m SW	FOSSIL_HORIZON	Marine band
29	291m SW	ROCK	Coal seam, inferred



ID	Location	Category	Description
31	296m NW	ROCK	Coal seam, inferred
32	304m N	FOSSIL_HORIZON	Marine band
35	339m NE	FAULT	Fault, observed
36	339m NE	FAULT	Fault, observed
38	361m S	FOSSIL_HORIZON	Marine band
41	388m S	ROCK	Coal seam, inferred
43	486m S	FAULT	Fault, observed
45	486m S	FAULT	Fault, observed

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

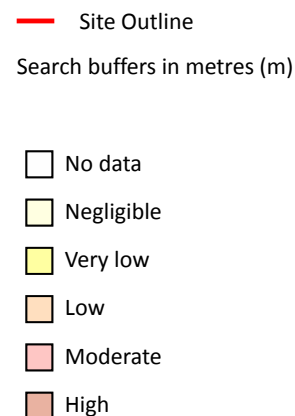
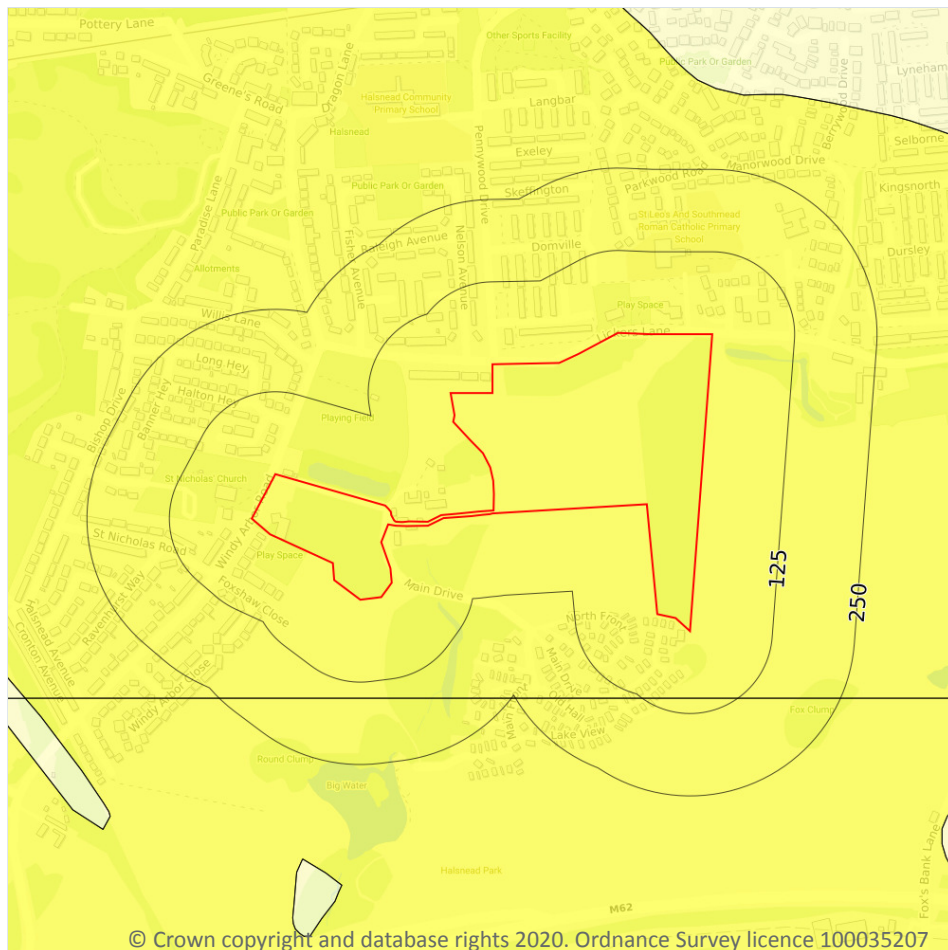
0

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.

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

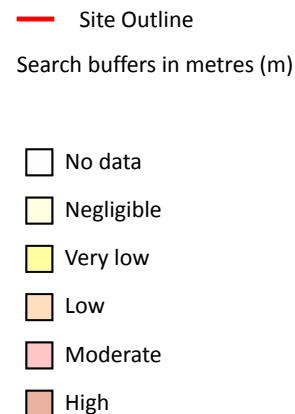
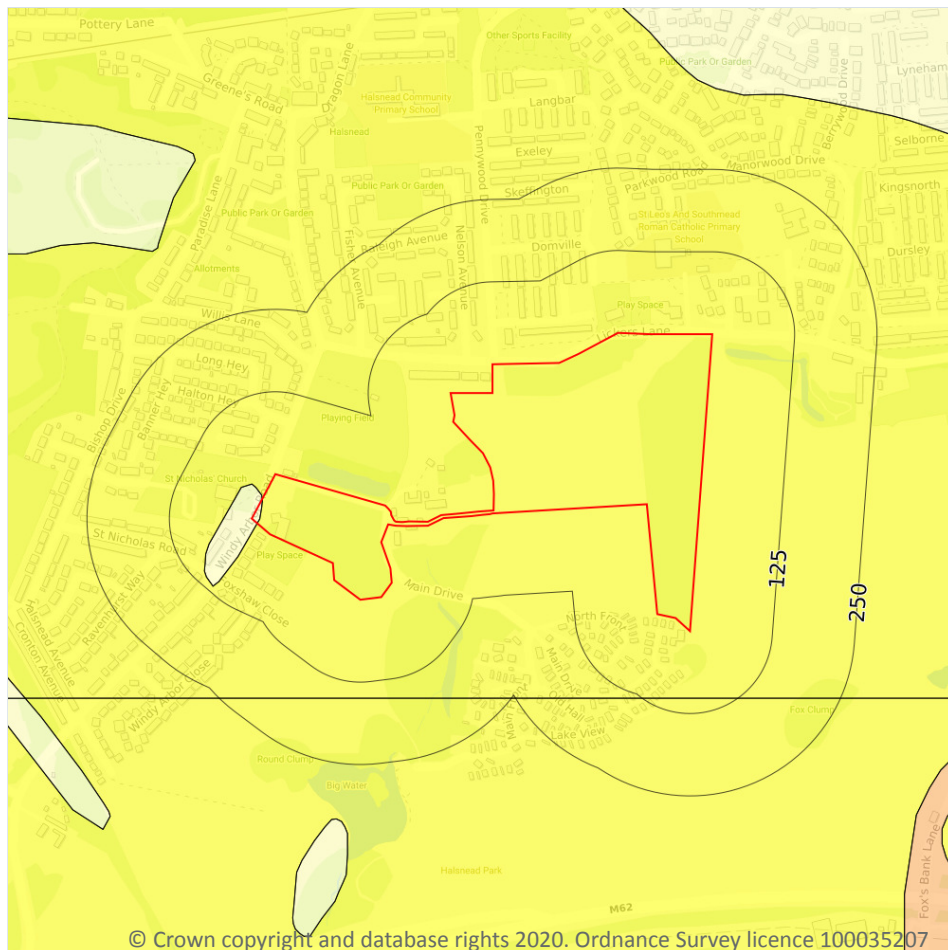
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 98**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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 99**

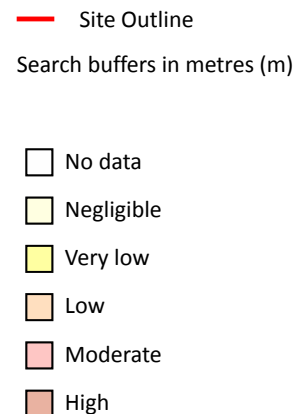
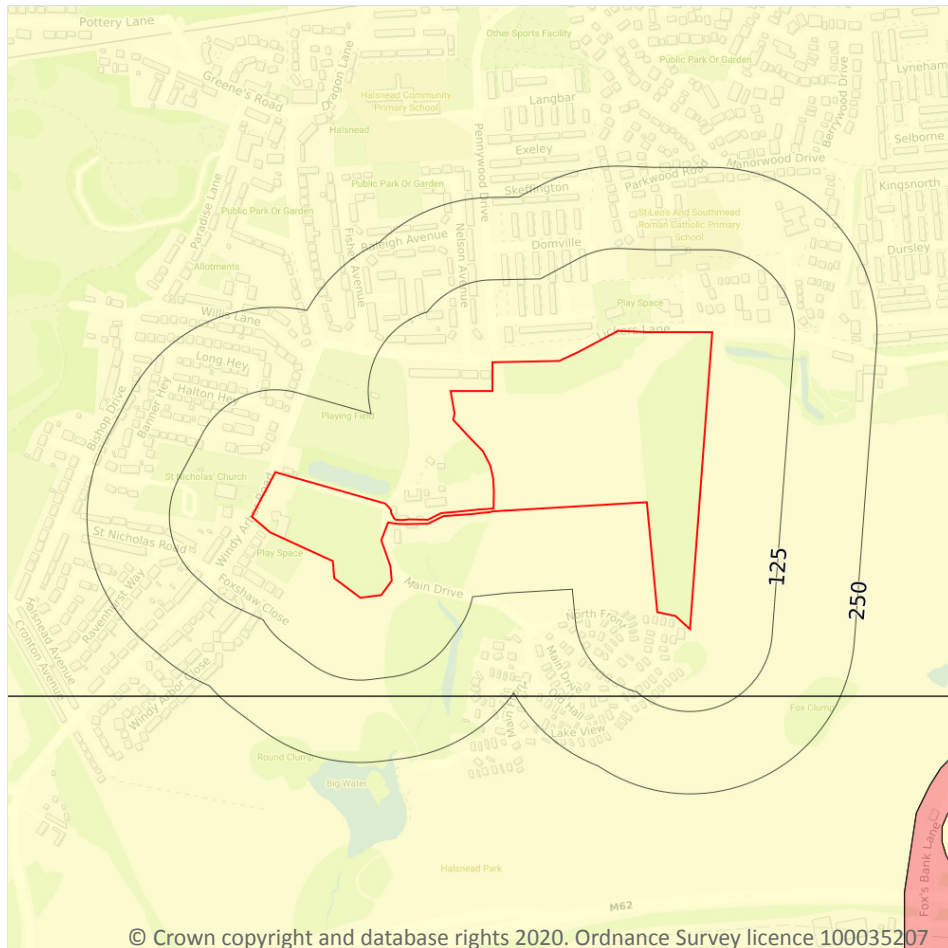
Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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.

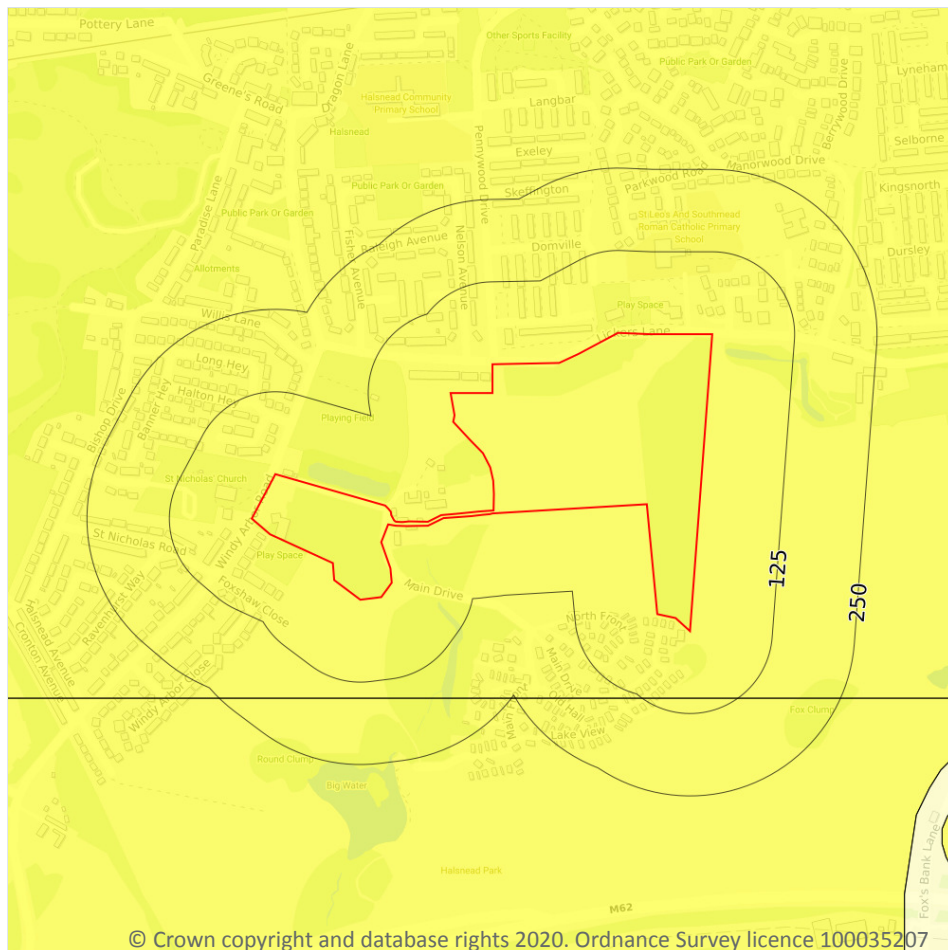
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 101**

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

1

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

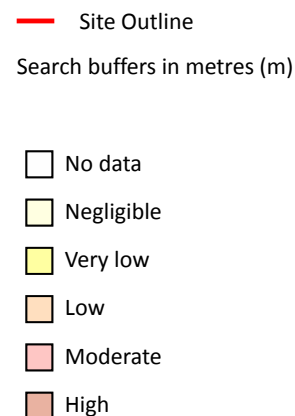
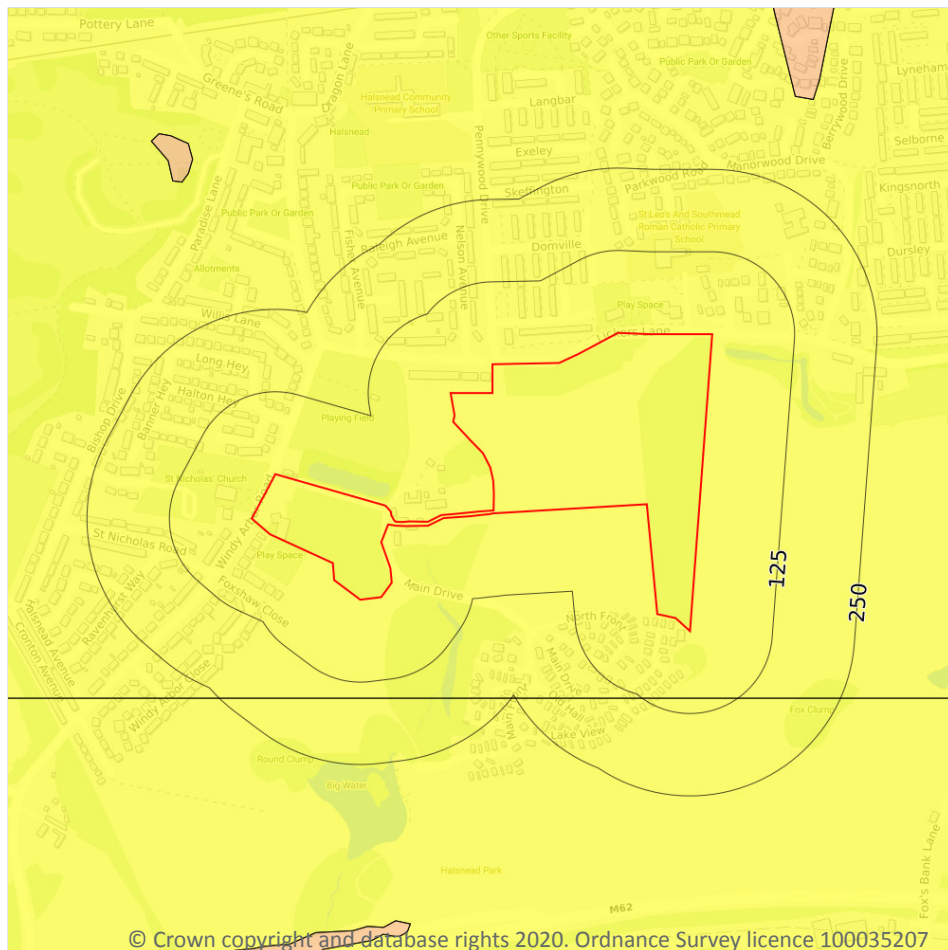
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 102**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

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

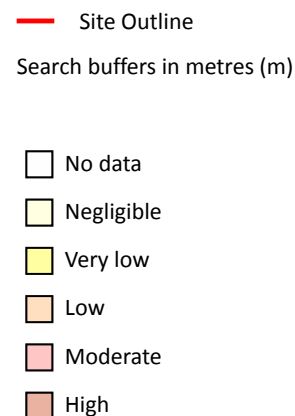
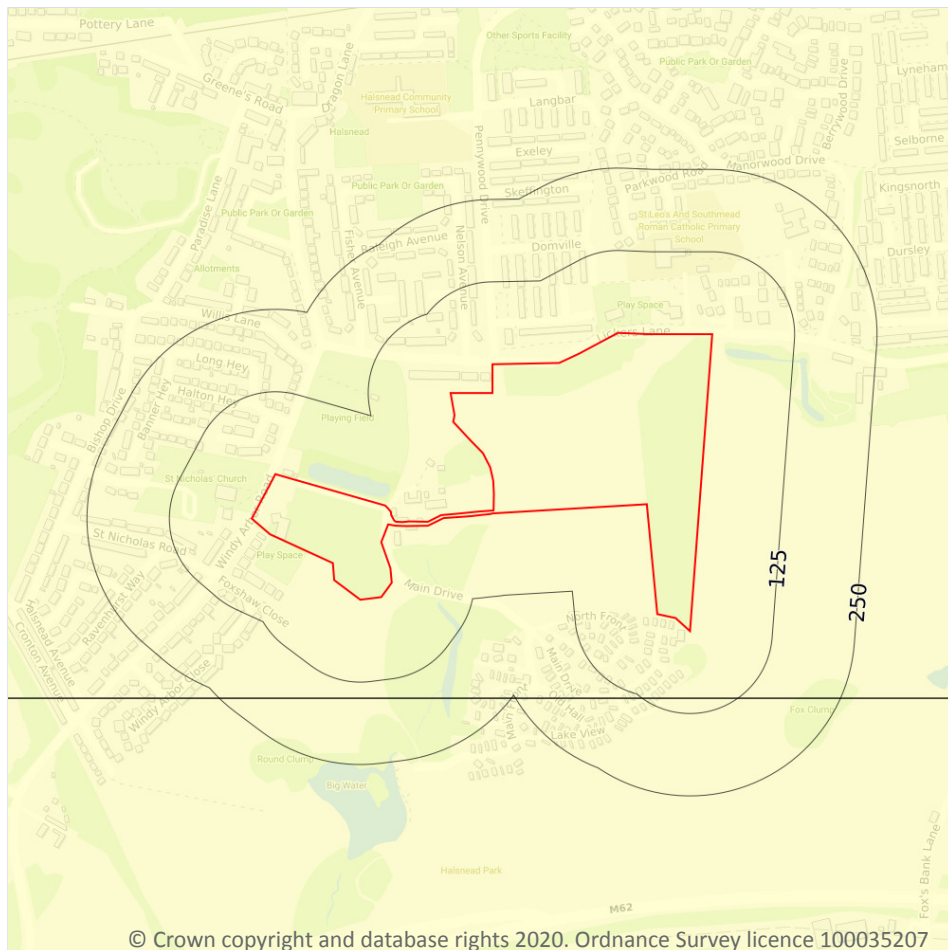
Features are displayed on the Natural ground subsidence - Landslides map on **page 103**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 104**

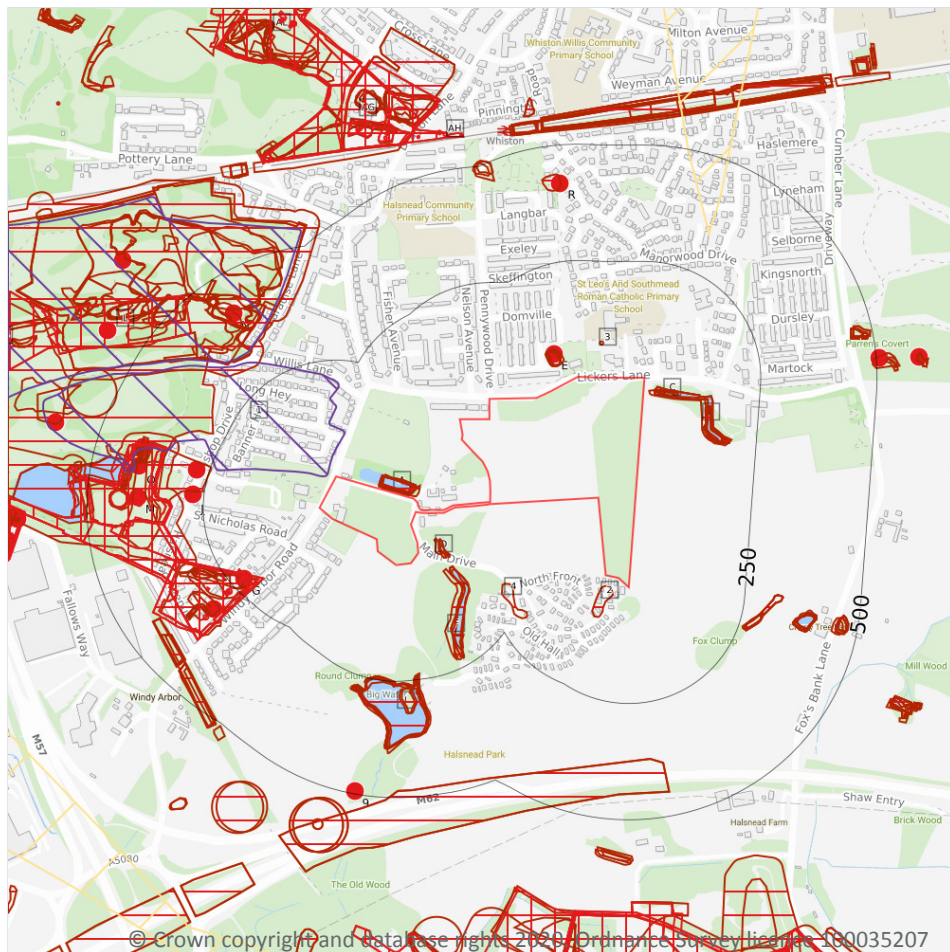
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



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 Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

16

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 106**

ID	Location	Details	Description
E	68m NW	Name: Stone Quarry Plantation Address: Whiston, PRESCOT, Merseyside Commodity: Sandstone Status: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Type: Ceased 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
G	221m SW	Name: Halsnead Colliery, No. 3 Pit Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
G	268m SW	Name: Halsnead Colliery, No. 2 Pit Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
J	273m W	Name: Hig Hey Colliery Coal Pit Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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



ID	Location	Details	Description
J	276m W	Name: Hig Hey Colliery Coal Pit Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
G	314m SW	Name: Halsnead Colliery, No. 1 Pit Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
G	338m SW	Name: Halsnead Colliery, Bye Pit Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
M	391m W	Name: Halsnead Colliery Shaft No 5 Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
M	393m W	Name: Houghton's Hey Colliery Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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



ID	Location	Details	Description
Q	398m W	Name: Hig Hey Colliery Shaft Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
Q	399m W	Name: Hig Hey Colliery Shaft Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
Q	402m W	Name: Hig Hey Colliery Shaft Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
N	413m NW	Name: Whiston Metallic Brick Works Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Clay & Shale Status: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Type: Ceased 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
R	418m N	Name: Whiston Cross Address: Whiston, PRESCOT, Merseyside Commodity: Sandstone Status: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Type: Ceased 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
M	431m W	Name: Houghton's Hey Colliery Shaft Address: Whiston Lane Ends, Whiston, PRESCOT, Merseyside Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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



ID	Location	Details	Description
9	493m S	Name: The Old Delf Address: Whiston, PRESCOT, Merseyside Commodity: Sandstone Status: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Type: Ceased 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	62
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Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 106**

ID	Location	Land Use	Year of mapping	Mapping scale
A	3m N	Pond	1851	1:10560
A	4m N	Pond	1947	1:10560
A	4m N	Pond	1925	1:10560
A	4m N	Pond	1891	1:10560
A	5m N	Pond	1938	1:10560
A	5m N	Pond	1906	1:10560
A	7m N	Pond	1955	1:10560
A	10m N	Pond	1975	1:10000
A	10m N	Pond	1990	1:10000
A	10m N	Pond	1966	1:10560
B	12m E	Ponds	1891	1:10560
2	22m S	Pond	1975	1:10000
C	23m E	Pond	1938	1:10560
C	24m E	Pond	1925	1:10560
B	27m E	Ponds	1975	1:10000
B	27m E	Ponds	1990	1:10000
B	27m E	Ponds	1966	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
D	36m E	Pond	1891	1:10560
E	41m NW	Unspecified Pit	1947	1:10560
E	41m NW	Unspecified Pit	1925	1:10560
E	41m NW	Unspecified Pit	1906	1:10560
E	41m NW	Unspecified Old Quarry	1891	1:10560
E	41m NW	Unspecified Pit	1955	1:10560
E	43m NW	Unspecified Pit	1938	1:10560
E	43m NW	Unspecified Pit	1938	1:10560
D	47m E	Pond	1925	1:10560
D	47m E	Pond	1938	1:10560
F	67m SE	Water Body	1891	1:10560
3	71m N	Sandstone Quarry	1851	1:10560
F	75m SE	Pond	1975	1:10000
F	75m SE	Pond	1990	1:10000
F	75m SE	Pond	1966	1:10560
F	82m SE	Water Body	1851	1:10560
B	133m E	Pond	1947	1:10560
B	136m E	Ponds	1938	1:10560
B	136m E	Pond	1906	1:10560
B	137m E	Pond	1955	1:10560
B	137m E	Pond	1925	1:10560
4	173m S	Ponds	1955	1:10560
F	180m SE	Pond	1989	1:10000
F	180m SE	Pond	1967	1:10560
F	181m SE	Pond	1975	1:10000
G	194m SW	Old Colliery	1906	1:10560
G	202m SW	Old Colliery	1891	1:10560
G	208m SW	Colliery	1851	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
G	214m SW	Unspecified Ground Workings	1906	1:10560
G	214m SW	Unspecified Heap	1955	1:10560
G	214m SW	Unspecified Ground Workings	1925	1:10560
G	217m SW	Unspecified Ground Workings	1947	1:10560
H	217m SW	Disused Colliery	1947	1:10560
H	217m SW	Disused Colliery	1925	1:10560
G	224m SW	Unspecified Heap	1891	1:10560
I	238m S	Water Body	1950	1:10560
I	238m S	Pond	1967	1:10560
I	240m S	Water Body	1947	1:10560
I	240m S	Water Body	1925	1:10560
I	240m S	Water Body	1906	1:10560
I	240m S	Water Body	1891	1:10560
I	240m S	Water Body	1938	1:10560
I	245m S	Water Body	1975	1:10000
J	248m W	Colliery	1851	1:10560
I	248m S	Water Body	1851	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

77

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 106**

ID	Location	Land Use	Year of mapping	Mapping scale
G	194m SW	Old Colliery	1906	1:10560
G	202m SW	Old Colliery	1891	1:10560
G	216m SW	Unspecified Disused Shafts	1966	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
H	217m SW	Disused Colliery	1947	1:10560
H	217m SW	Disused Colliery	1925	1:10560
G	222m SW	Unspecified Old Shaft	1947	1:10560
G	225m SW	Unspecified Old Shafts	1947	1:10560
G	225m SW	Unspecified Old Shafts	1925	1:10560
G	259m SW	Unspecified Disused Shafts	1966	1:10560
G	264m SW	Unspecified Old Shaft	1947	1:10560
G	268m SW	Unspecified Old Shafts	1947	1:10560
G	268m SW	Unspecified Old Shafts	1925	1:10560
G	294m SW	Unspecified Old Shaft	1947	1:10560
G	307m SW	Unspecified Disused Shafts	1966	1:10560
G	310m SW	Unspecified Old Shaft	1947	1:10560
M	312m W	Disused Colliery	1906	1:10560
G	314m SW	Unspecified Old Shafts	1947	1:10560
G	314m SW	Unspecified Old Shafts	1925	1:10560
M	317m W	Unspecified Disused Mine	1966	1:10560
M	330m W	Colliery	1891	1:10560
G	334m SW	Unspecified Disused Shafts	1966	1:10560
M	382m W	Unspecified Disused Shaft	1966	1:10560
M	383m W	Unspecified Disused Shaft	1966	1:10560
M	390m W	Unspecified Old Shaft	1947	1:10560
M	391m W	Unspecified Old Shaft	1947	1:10560
M	391m W	Unspecified Old Shafts	1947	1:10560
M	391m W	Unspecified Old Shafts	1925	1:10560
M	392m W	Unspecified Old Shafts	1947	1:10560
M	392m W	Unspecified Old Shafts	1925	1:10560
M	404m W	Unspecified Shafts	1891	1:10560
M	414m W	Unspecified Old Shaft	1947	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
L	439m NW	Colliery	1891	1:10560
AG	566m N	Colliery	1891	1:10560
AH	573m N	Unspecified Old Shafts	1947	1:10560
AG	577m N	Disused Colliery	1925	1:10560
AG	579m N	Disused Colliery	1906	1:10560
AH	579m N	Unspecified Old Shafts	1947	1:10560
AH	581m N	Unspecified Old Shafts	1947	1:10560
L	586m NW	Unspecified Old Shaft	1925	1:10560
AG	594m N	Unspecified Disused Shafts	1990	1:10000
AG	601m N	Unspecified Old Shafts	1925	1:10560
AG	608m N	Unspecified Old Shafts	1925	1:10560
AL	621m NW	Disused Colliery	1906	1:10560
AG	622m NW	Unspecified Disused Shafts	1990	1:10000
AO	633m W	Old Colliery	1947	1:10560
AO	636m W	Unspecified Disused Mine	1966	1:10560
AO	636m W	Old Colliery	1947	1:10560
AO	636m W	Old Colliery	1925	1:10560
AO	636m W	Old Colliery	1906	1:10560
AO	636m W	Old Colliery	1891	1:10560
AG	640m NW	Unspecified Old Shafts	1947	1:10560
AG	640m NW	Unspecified Old Shafts	1925	1:10560
AG	640m NW	Unspecified Old Shafts	1947	1:10560
14	652m NW	Disused Colliery	1906	1:10560
AO	658m W	Unspecified Disused Shaft	1966	1:10560
AO	661m W	Unspecified Old Shaft	1947	1:10560
AO	666m W	Unspecified Old Shaft	1947	1:10560
AO	666m W	Unspecified Old Shaft	1925	1:10560
16	677m S	Colliery	1925	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
18	686m S	Unspecified Mine	1967	1:10560
AX	699m S	Colliery	1949	1:10560
AX	706m S	Colliery	1947	1:10560
AL	744m NW	Colliery	1925	1:10560
AL	823m NW	Colliery	1891	1:10560
AL	905m NW	Unspecified Disused Shaft	1975	1:10000
AL	905m NW	Unspecified Disused Shaft	1990	1:10000
AL	905m NW	Unspecified Old Shafts	1947	1:10560
AL	905m NW	Unspecified Old Shafts	1925	1:10560
AL	907m NW	Unspecified Disused Shaft	1966	1:10560
AL	908m NW	Unspecified Old Shafts	1947	1:10560
AL	924m NW	Unspecified Old Shafts	1947	1:10560
AL	924m NW	Unspecified Old Shafts	1925	1:10560
AL	925m NW	Unspecified Disused Shaft	1966	1:10560
AL	927m NW	Unspecified Old Shafts	1947	1:10560
-	927m W	Unspecified Old Shaft	1891	1:10560
AL	948m NW	Unspecified Old Shafts	1947	1:10560
AL	969m NW	Unspecified Old Shafts	1947	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

2

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 106**



ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
1	19m NW	Whiston	Clay, shale, bricks	Surface mineral working	Valid	7/7/47,25/9/52
L	328m NW	Whiston	Clay, shale, bricks	Surface mineral working	Valid	7/7/47,25/9/52

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

3

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).

Features are displayed on the Mining, ground workings and natural cavities map on **page 106**

ID	Location	Name	Commodity	Class	Likelihood
5	339m NE	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
21	817m SW	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
-	914m W	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

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 Peter Brett Associates (PBA).



18.8 JPB mining areas

Records on site	0
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Areas which could be affected by former coal 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	1
-----------------	---

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

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.10 Brine areas

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

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

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

18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.



18.13 Clay mining

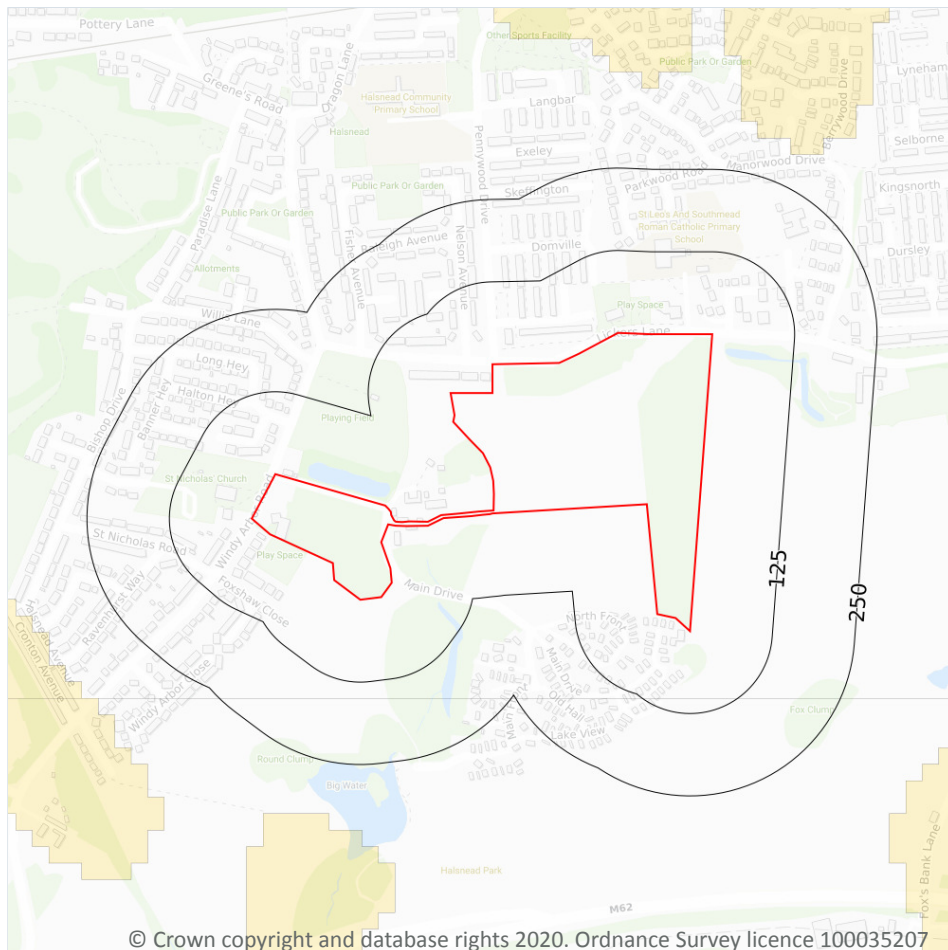
Records on site	0
-----------------	---

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

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



19 Radon



— 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 119**

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

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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

16

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
4m E	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
24m SE	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
44m NE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
47m NE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
48m E	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
48m NE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
49m NW	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 - 2.2 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

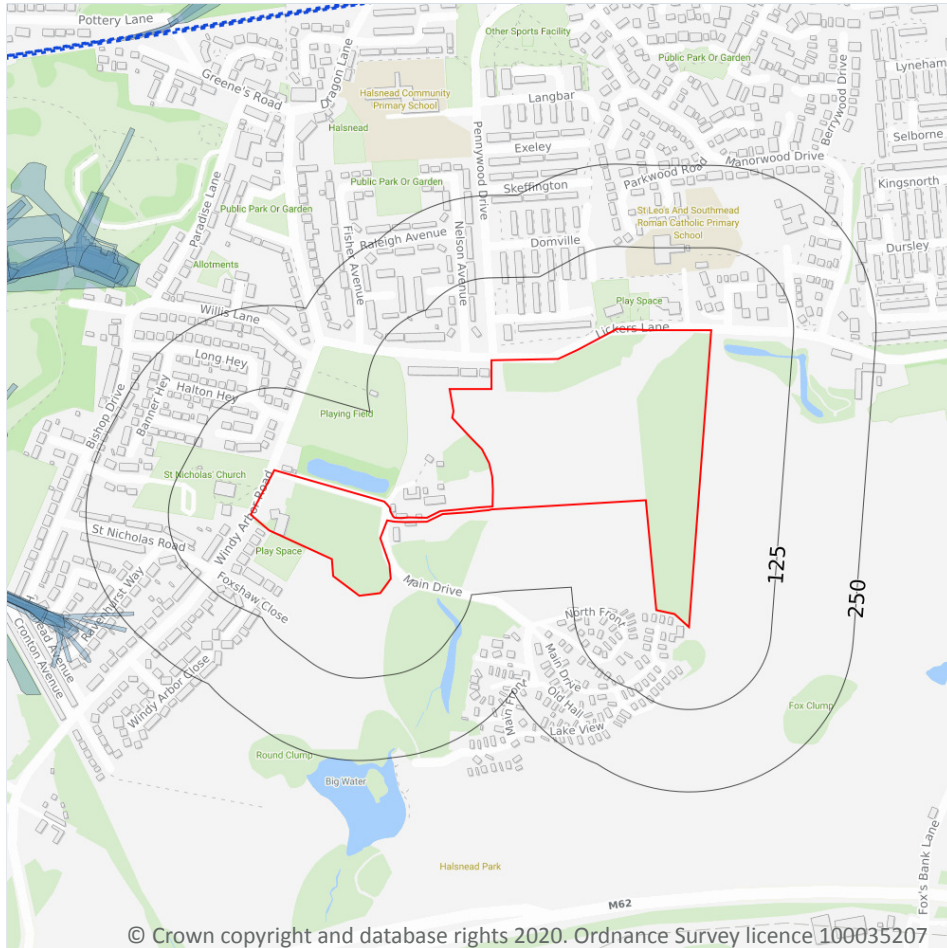
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The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)**
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

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

1

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.

Features are displayed on the Railway infrastructure and projects map on **page 122**

Location	Land Use	Year of mapping	Mapping scale
231m SW	Railway Sidings	1851	10560

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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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: County Series

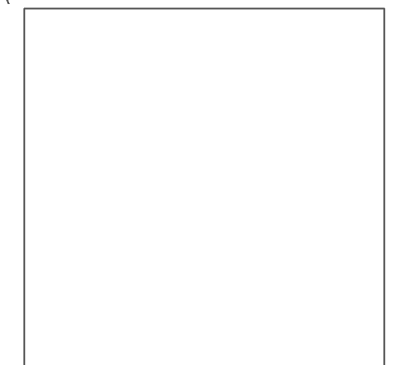
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Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

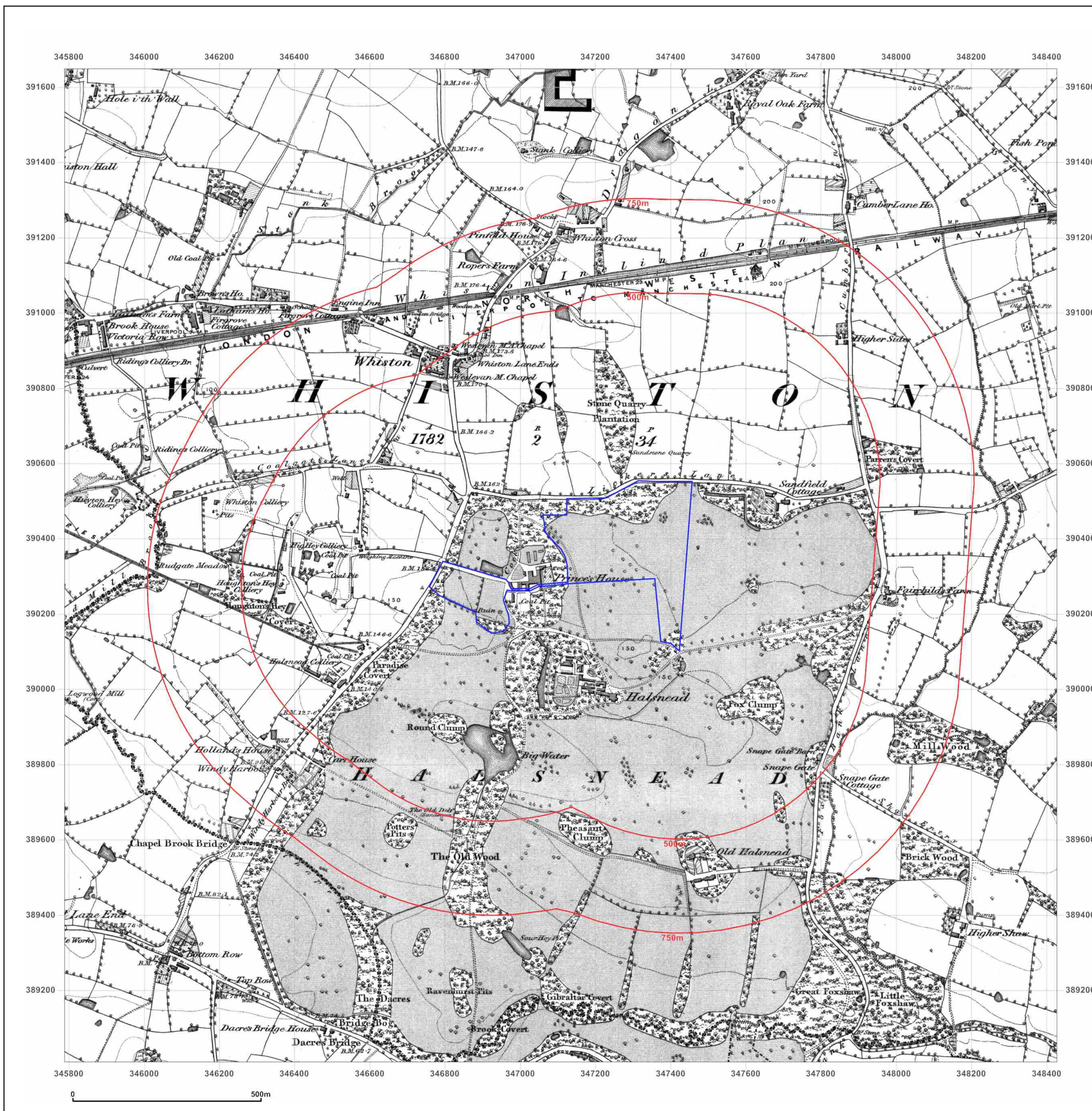


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: County Series

Map date: 1891

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

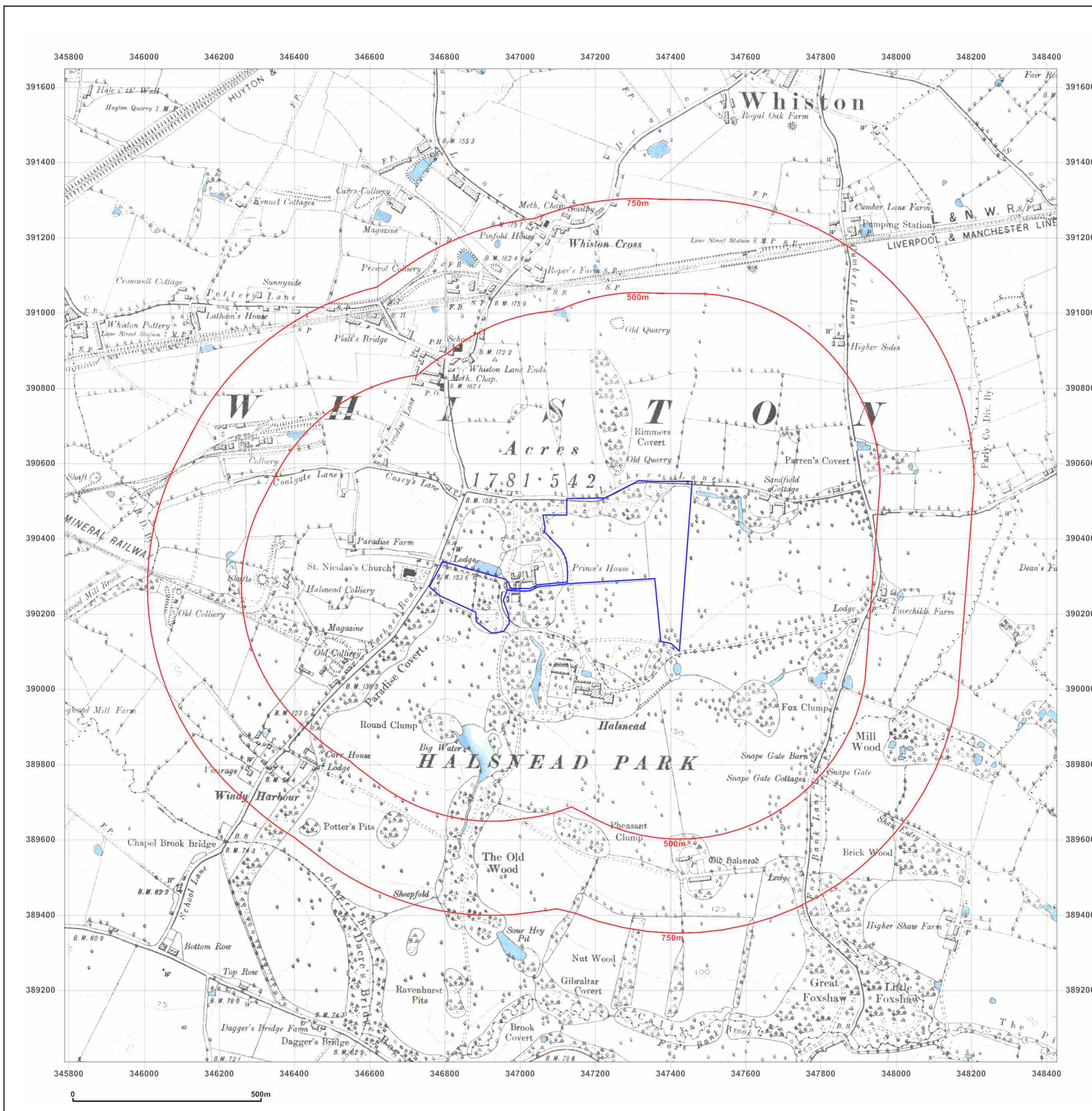


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Report Ref: GS-6777655
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Map Name: County Series

Map date: 1906

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1891
Revised 1906
Edition N/A
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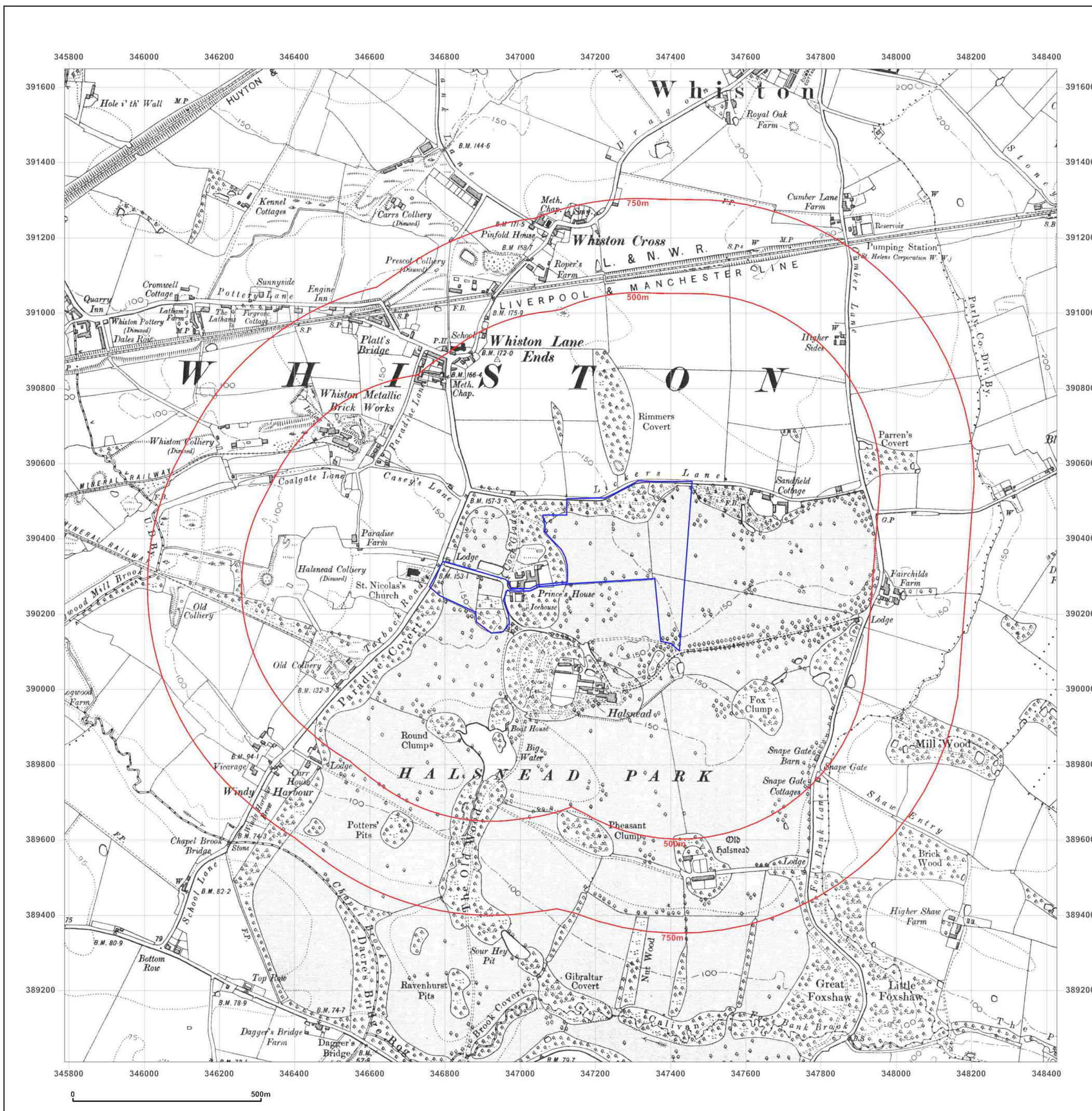


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Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: County Series

Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1846
Revised 1925
Edition N/A
Copyright N/A
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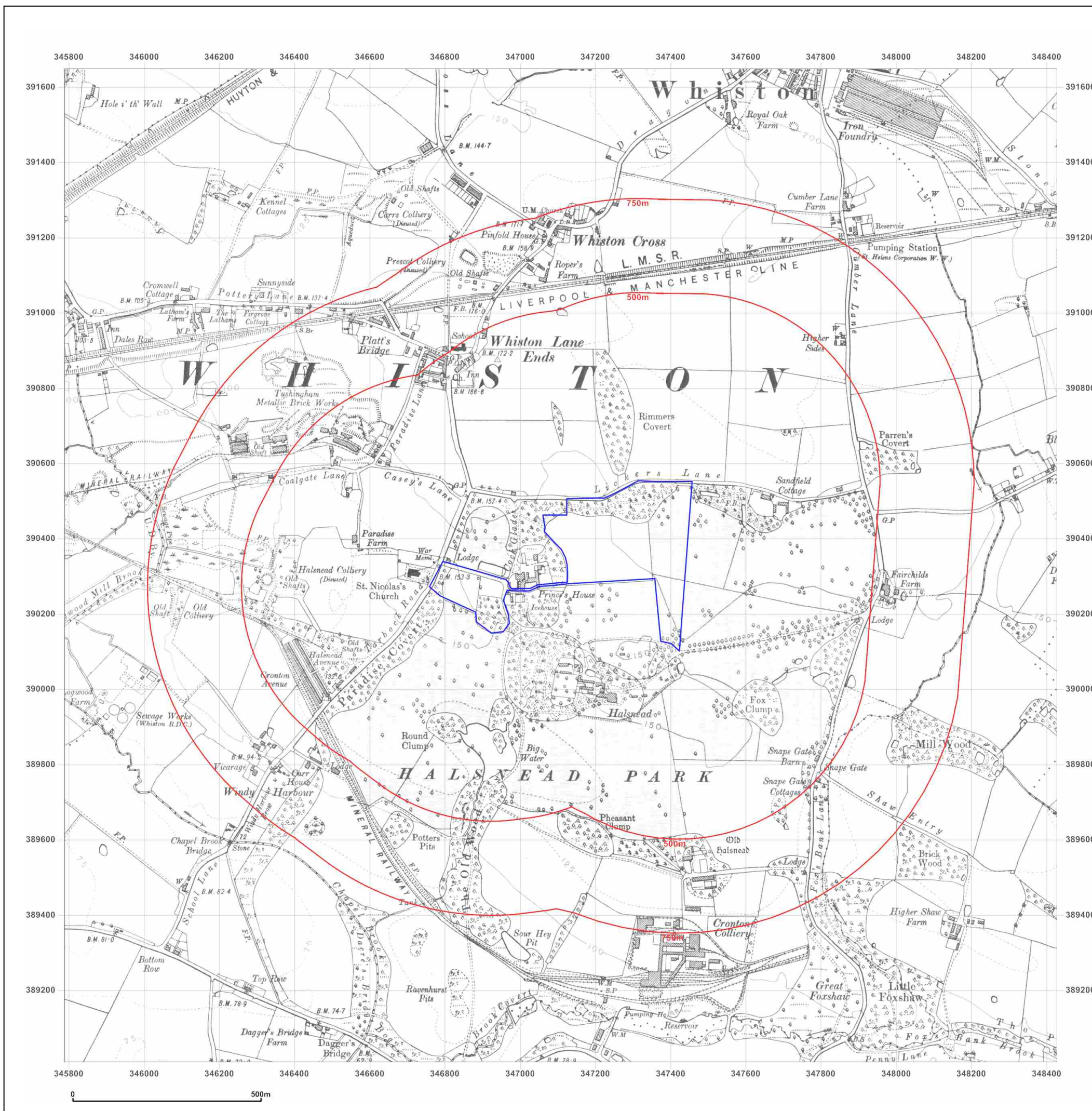


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Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1846
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

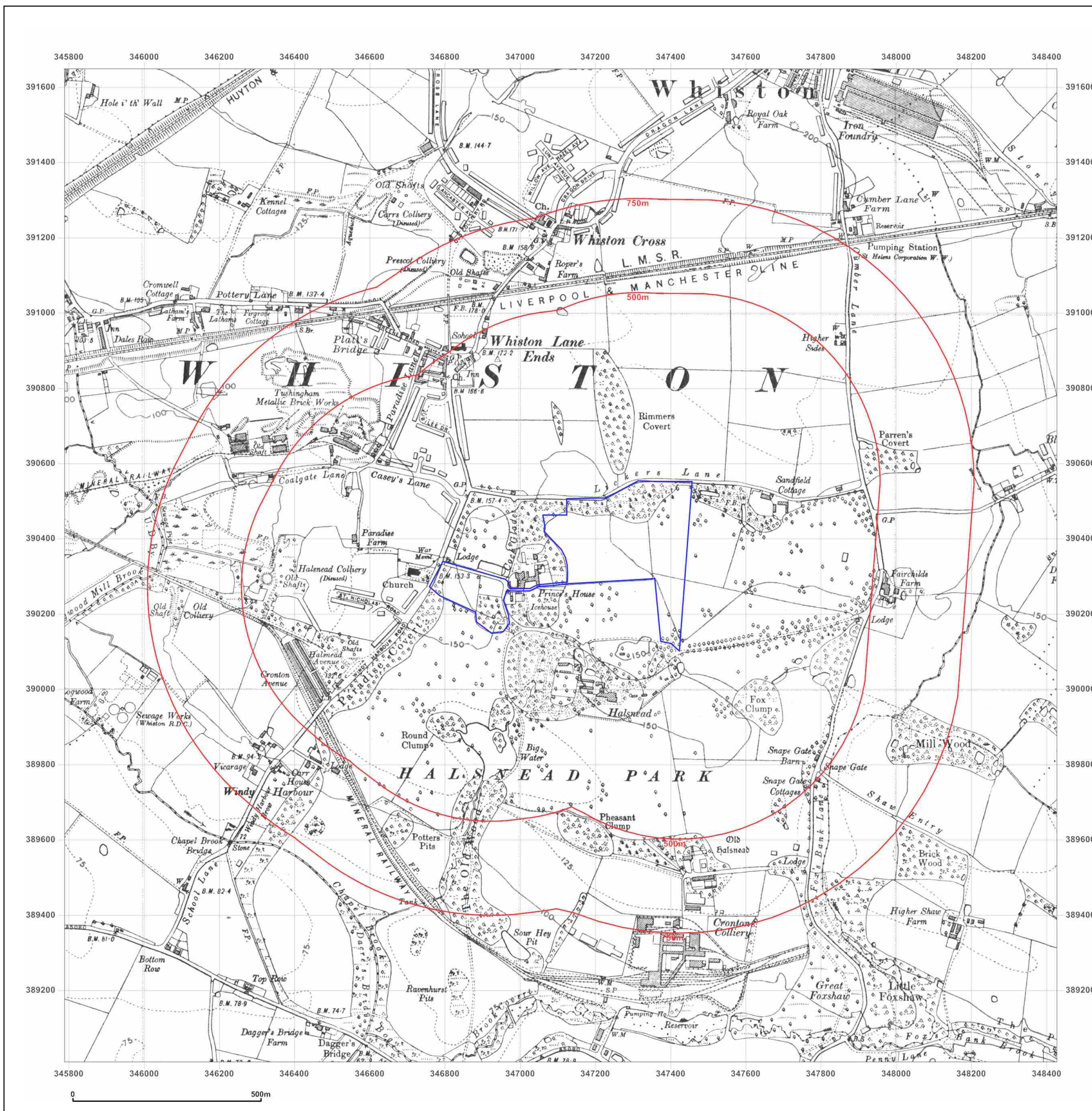


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: County Series

Map date: 1947

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1846
Revised 1947
Edition N/A
Copyright N/A
Levelled N/A

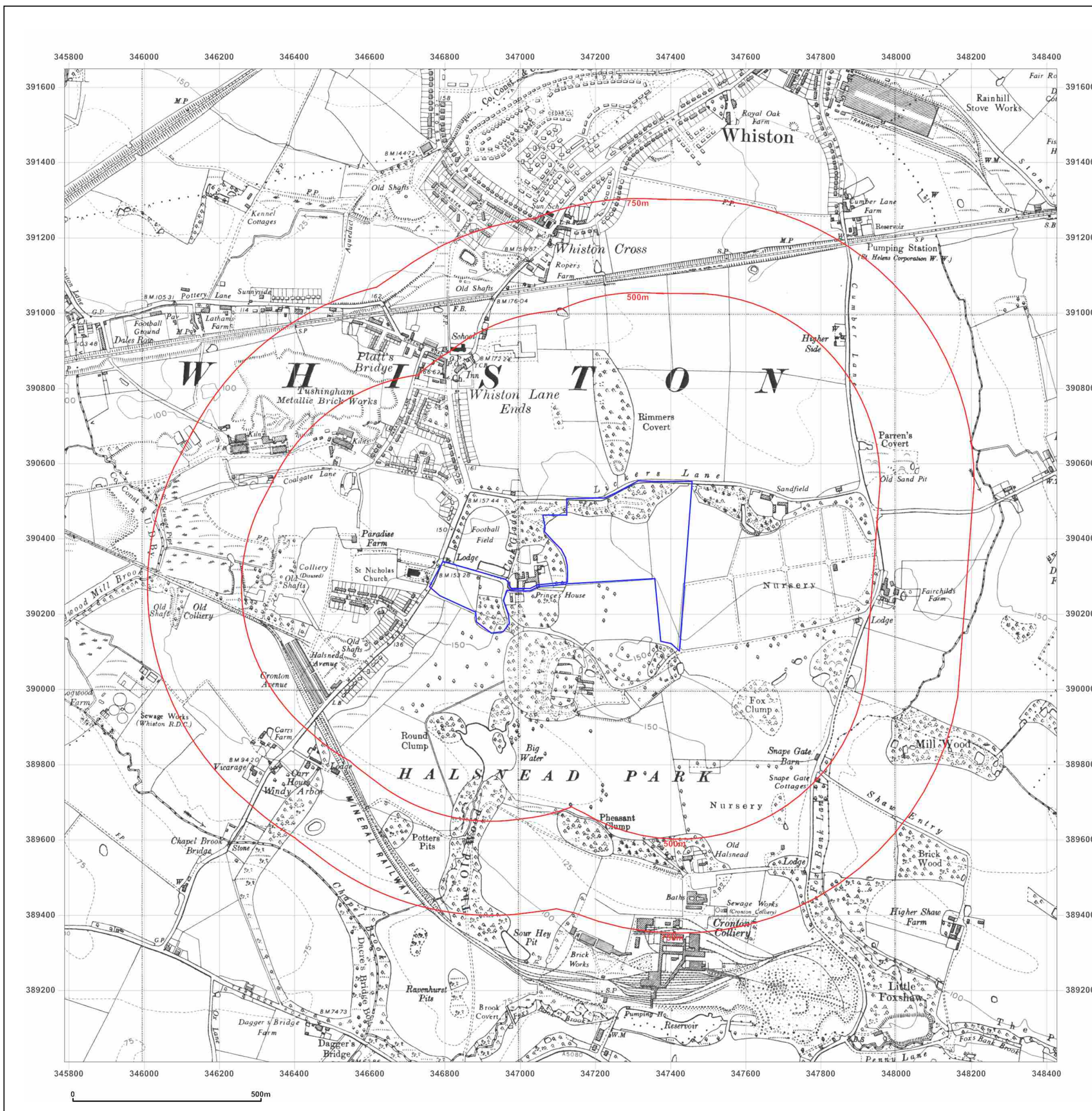


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: Provisional

Map date: 1966-1967

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

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

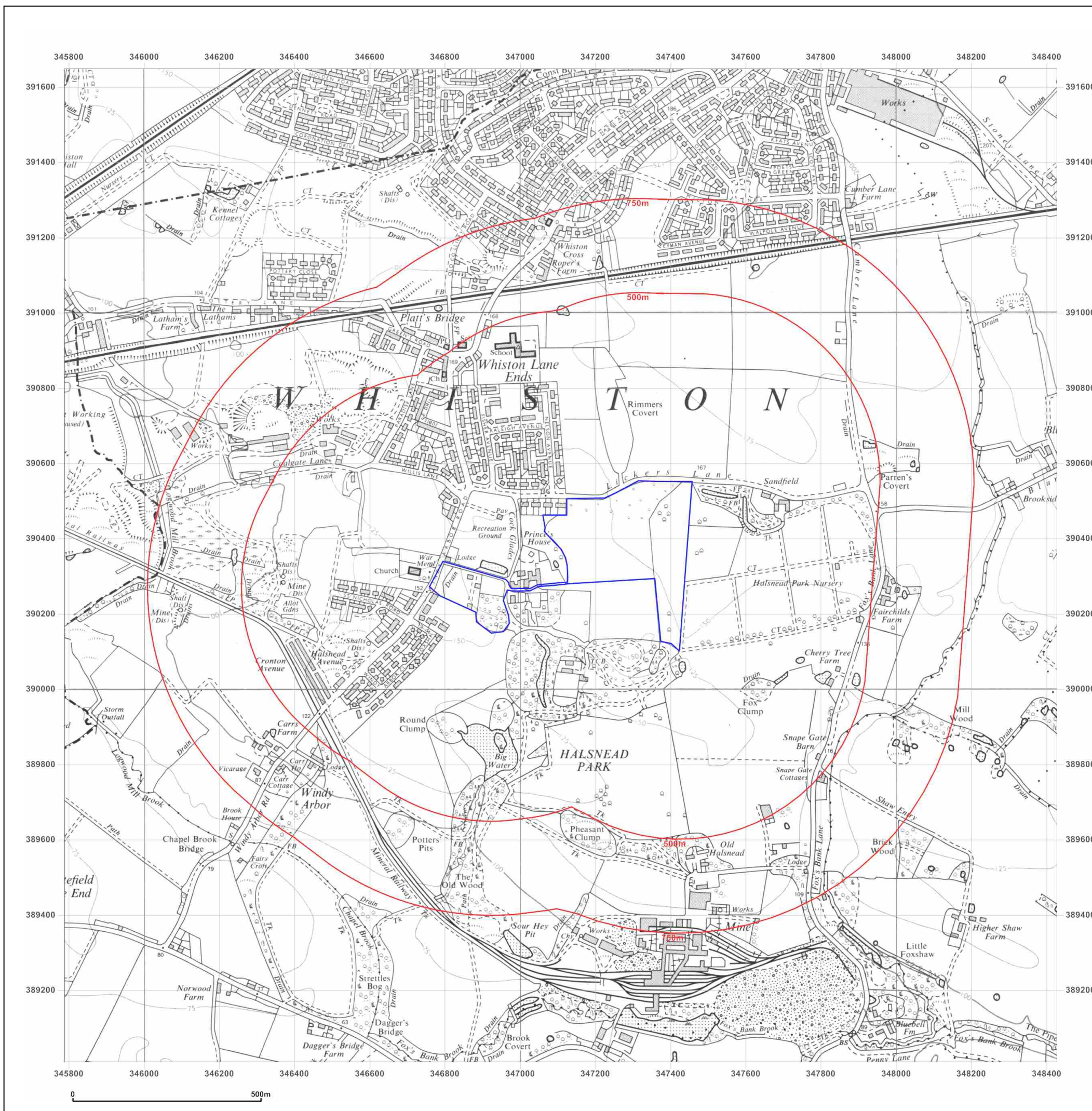


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: National Grid

Map date: 1989-1990

Scale: 1:10,000

Printed at: 1:10,000



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Surveyed 1986
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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



2001

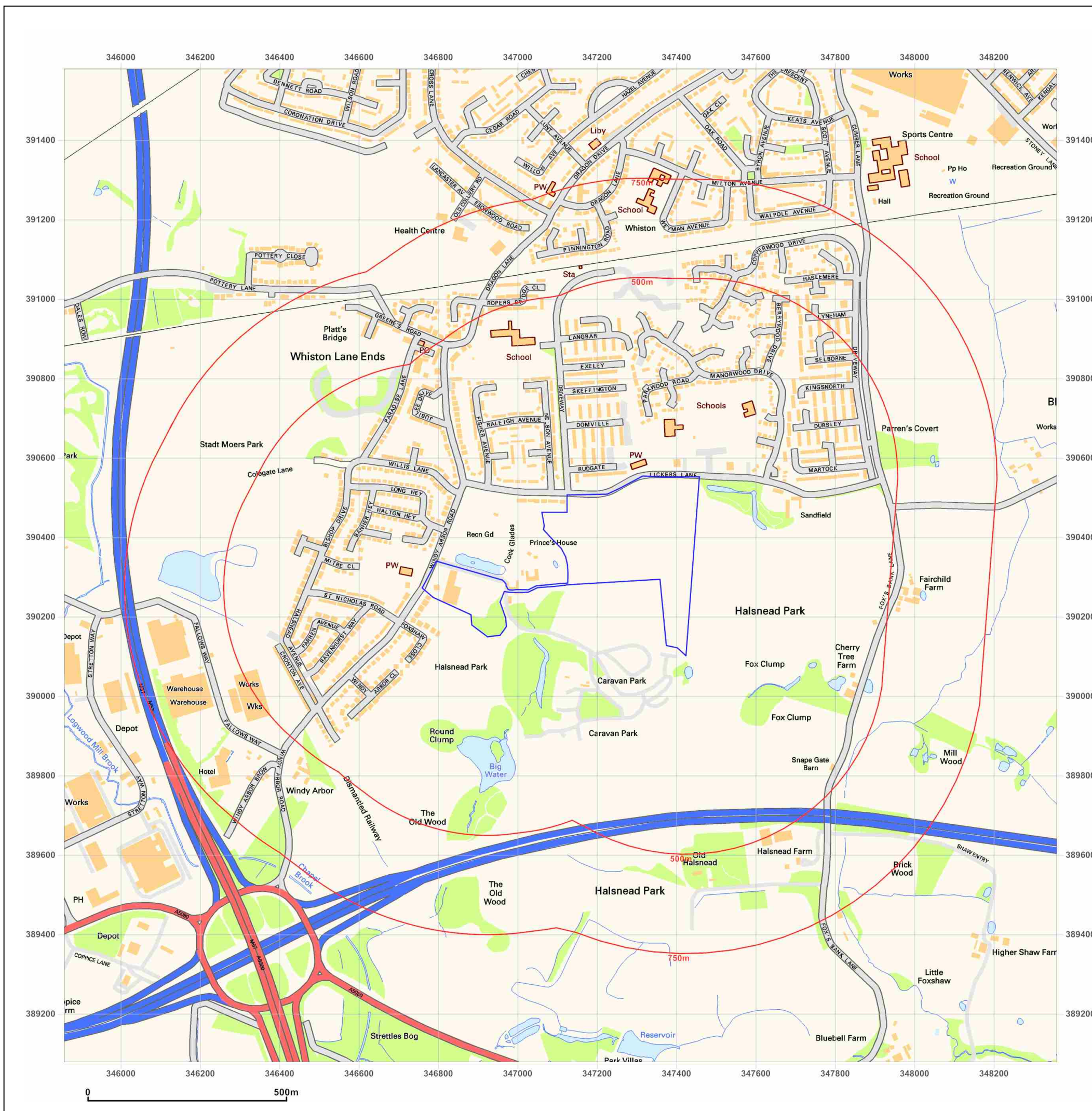


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655
Grid Ref: 347107, 390328

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010



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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_1
Grid Ref: 347107, 390078

Map Name: National Grid

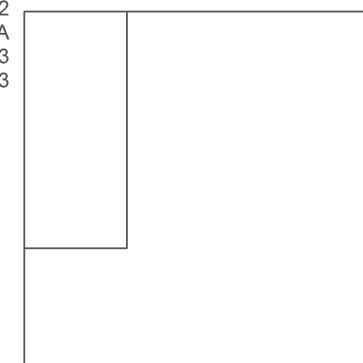
Map date: 1973

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1972
Revised 1972
Edition N/A
Copyright 1973
Levelled 1963

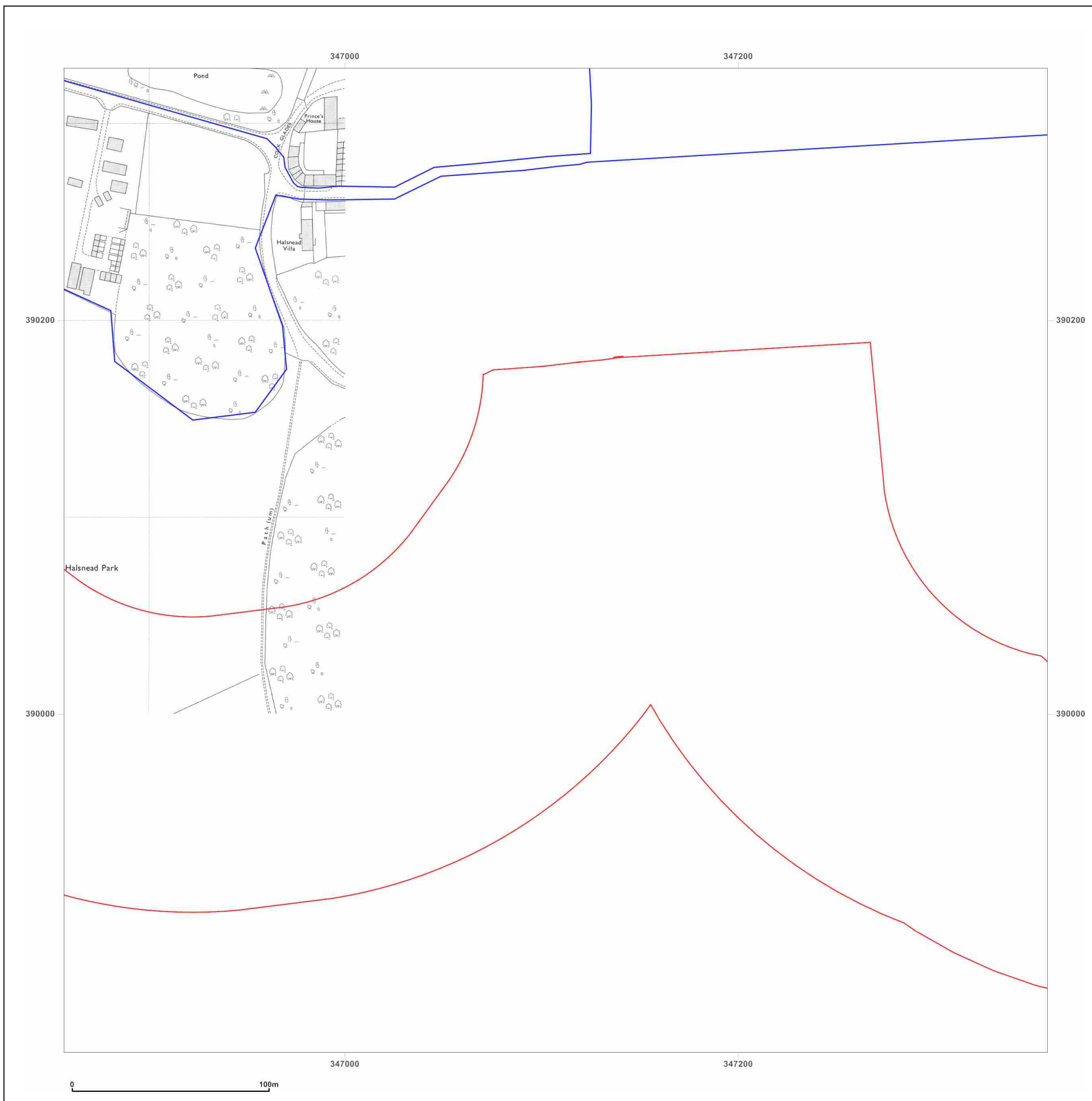


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_1
Grid Ref: 347107, 390078

Map Name: National Grid

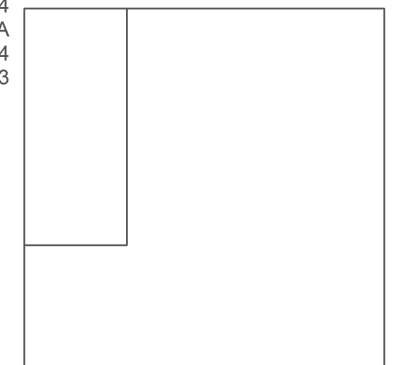
Map date: 1984

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1963
Revised 1984
Edition N/A
Copyright 1984
Levelled 1963

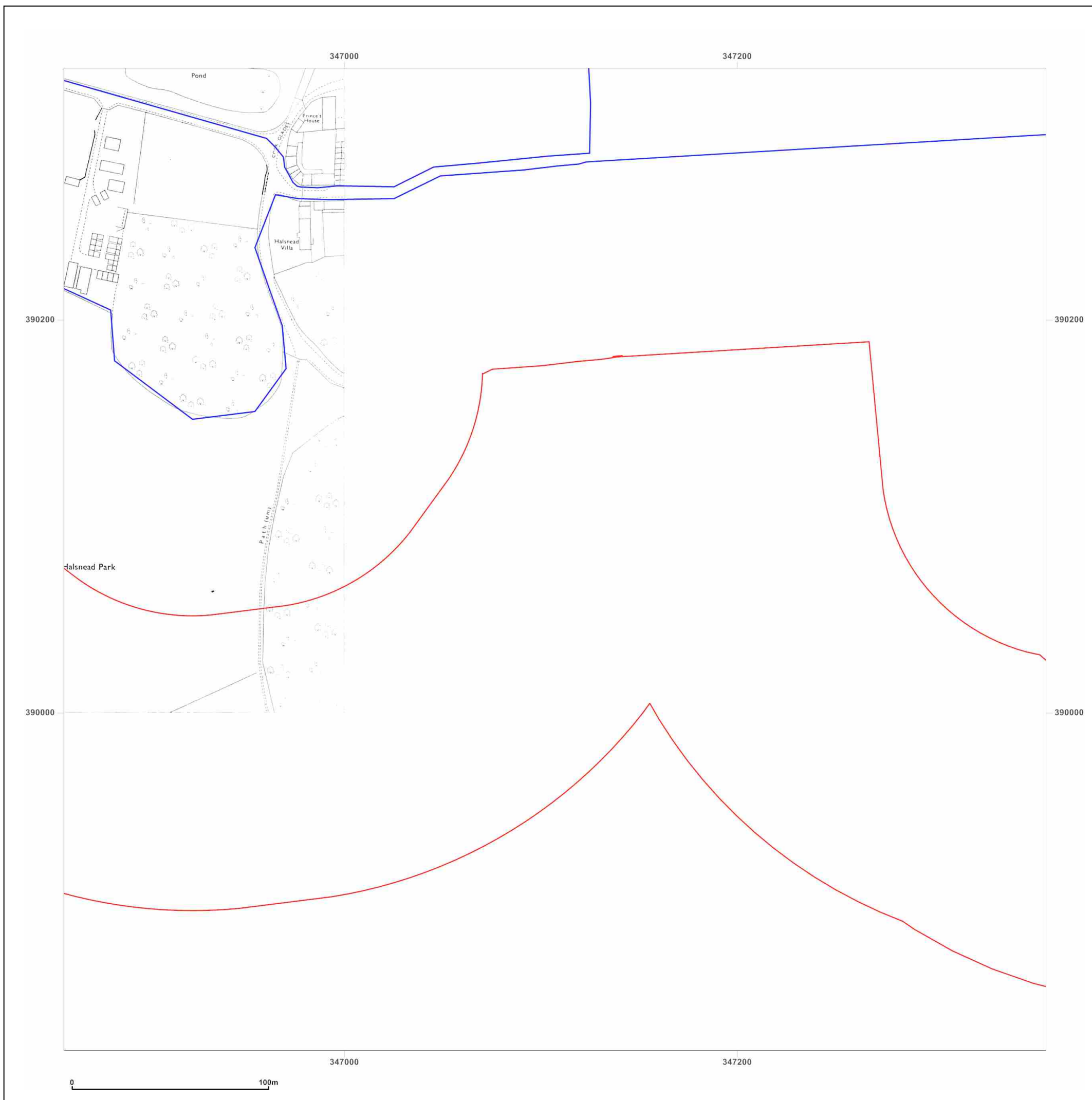


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_1
Grid Ref: 347107, 390078

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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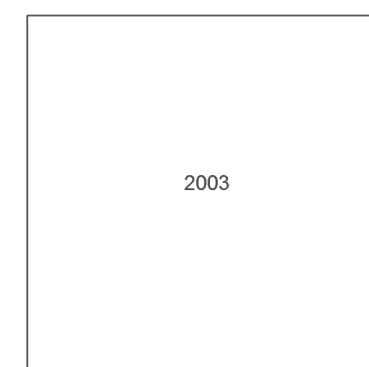
Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_1
Grid Ref: 347107, 390078

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250

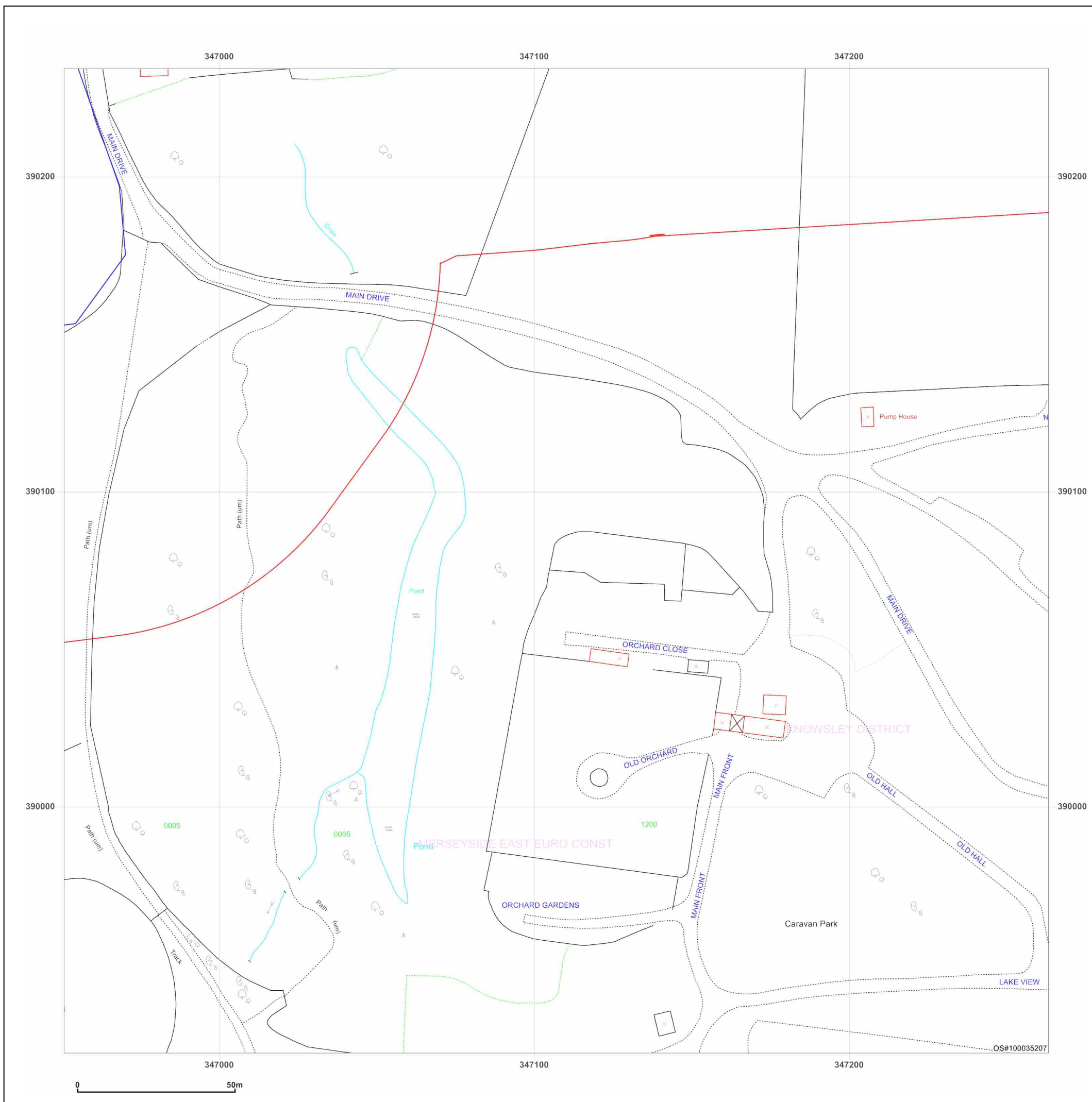


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: National Grid

Map date: 1973-1974

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: National Grid

Map date: 1974

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: National Grid

Map date: 1984

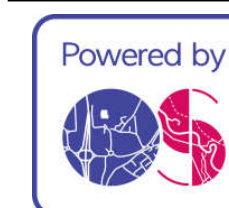
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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: National Grid

Map date: 1994-1995

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: National Grid

Map date: 1994-1995

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_2_2
Grid Ref: 347107, 390578

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

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2003



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_1
Grid Ref: 347607, 390078

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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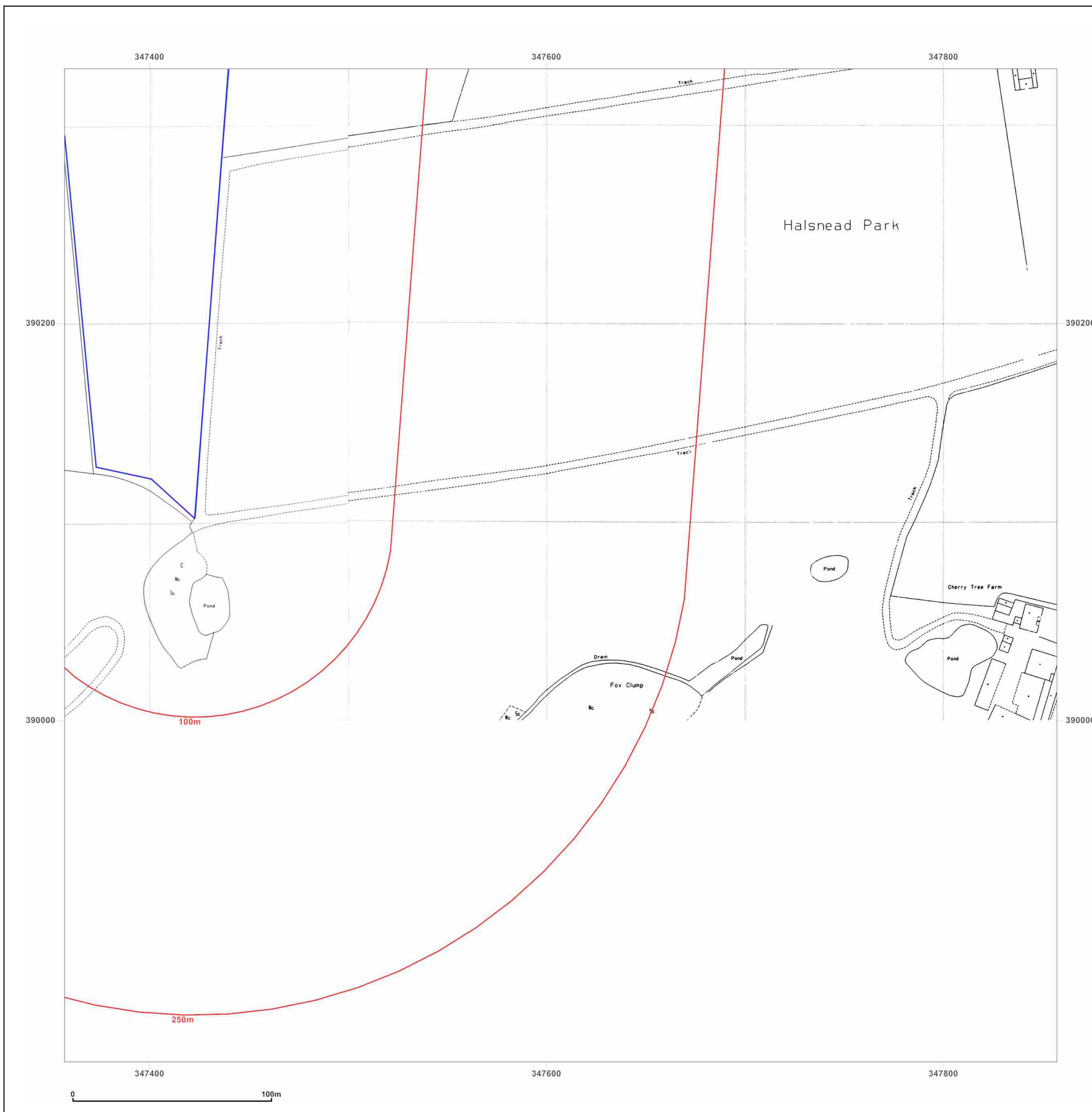


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_1
Grid Ref: 347607, 390078

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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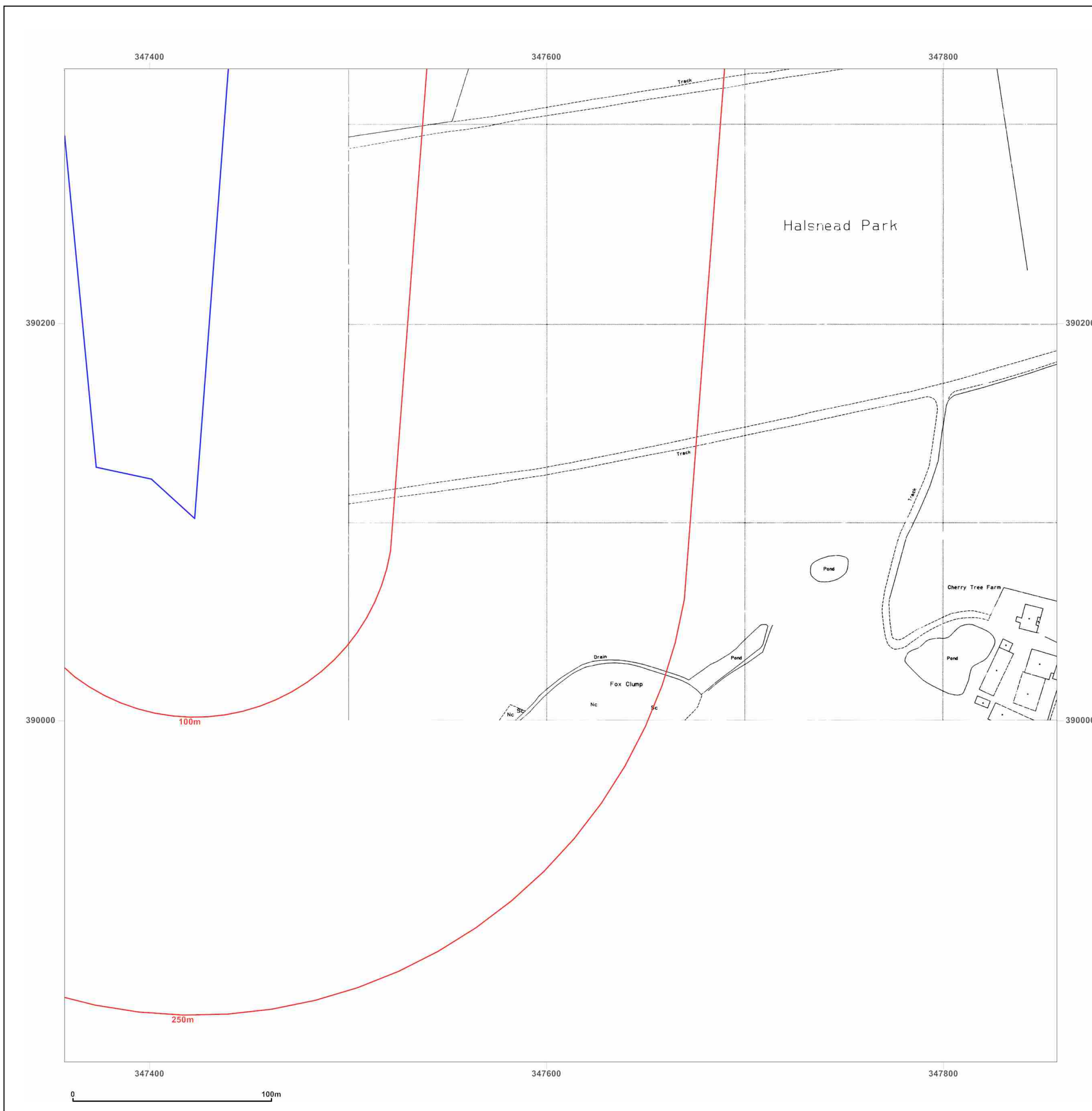


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_1
Grid Ref: 347607, 390078

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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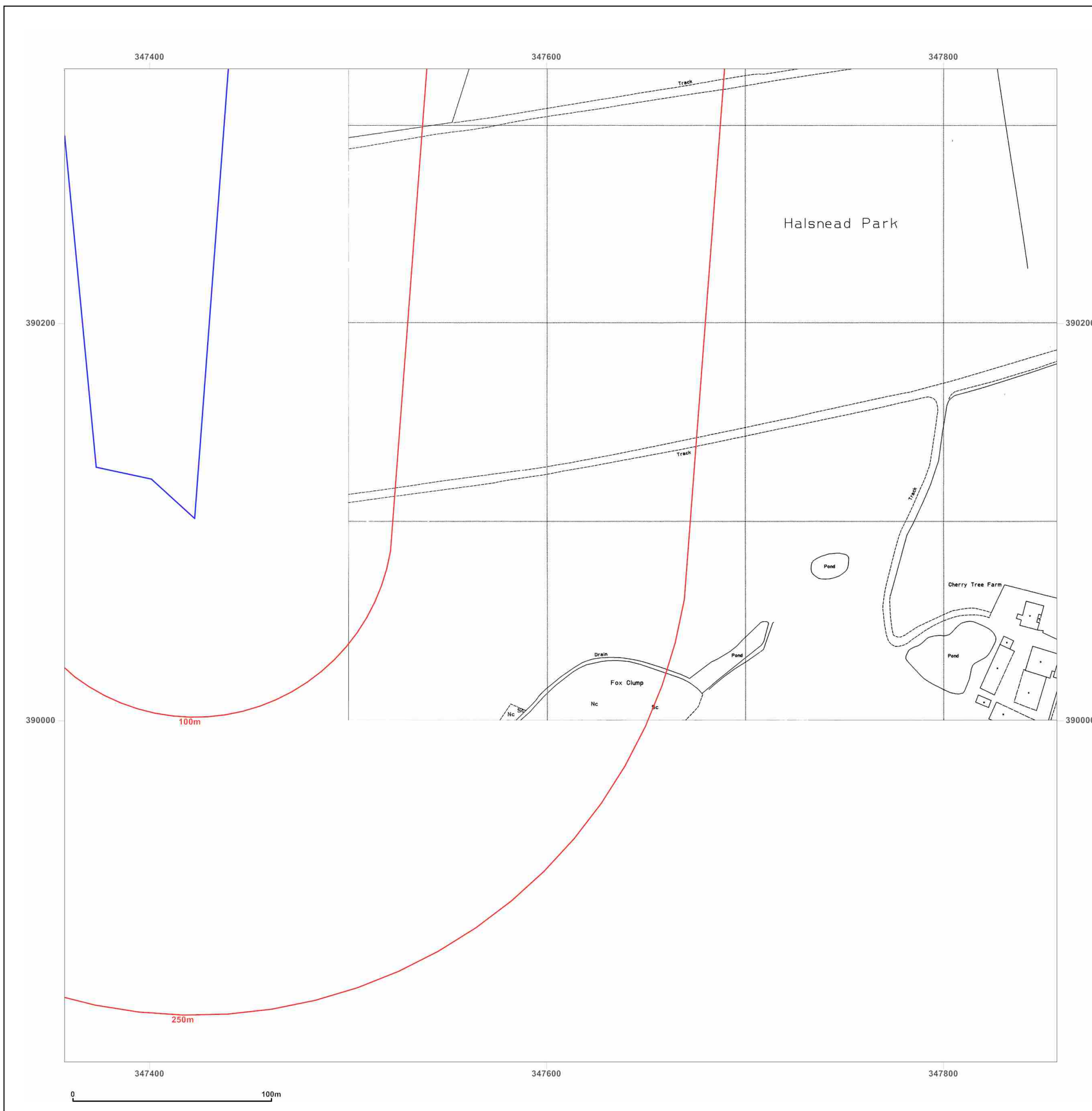


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

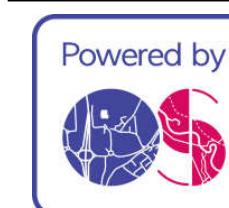
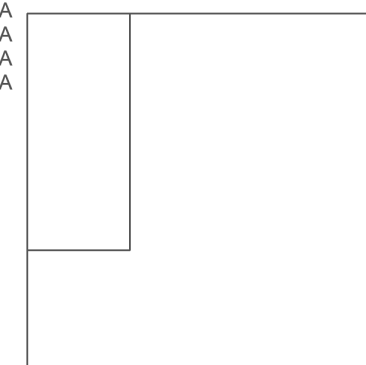
Map date: 1974

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Levelled N/A

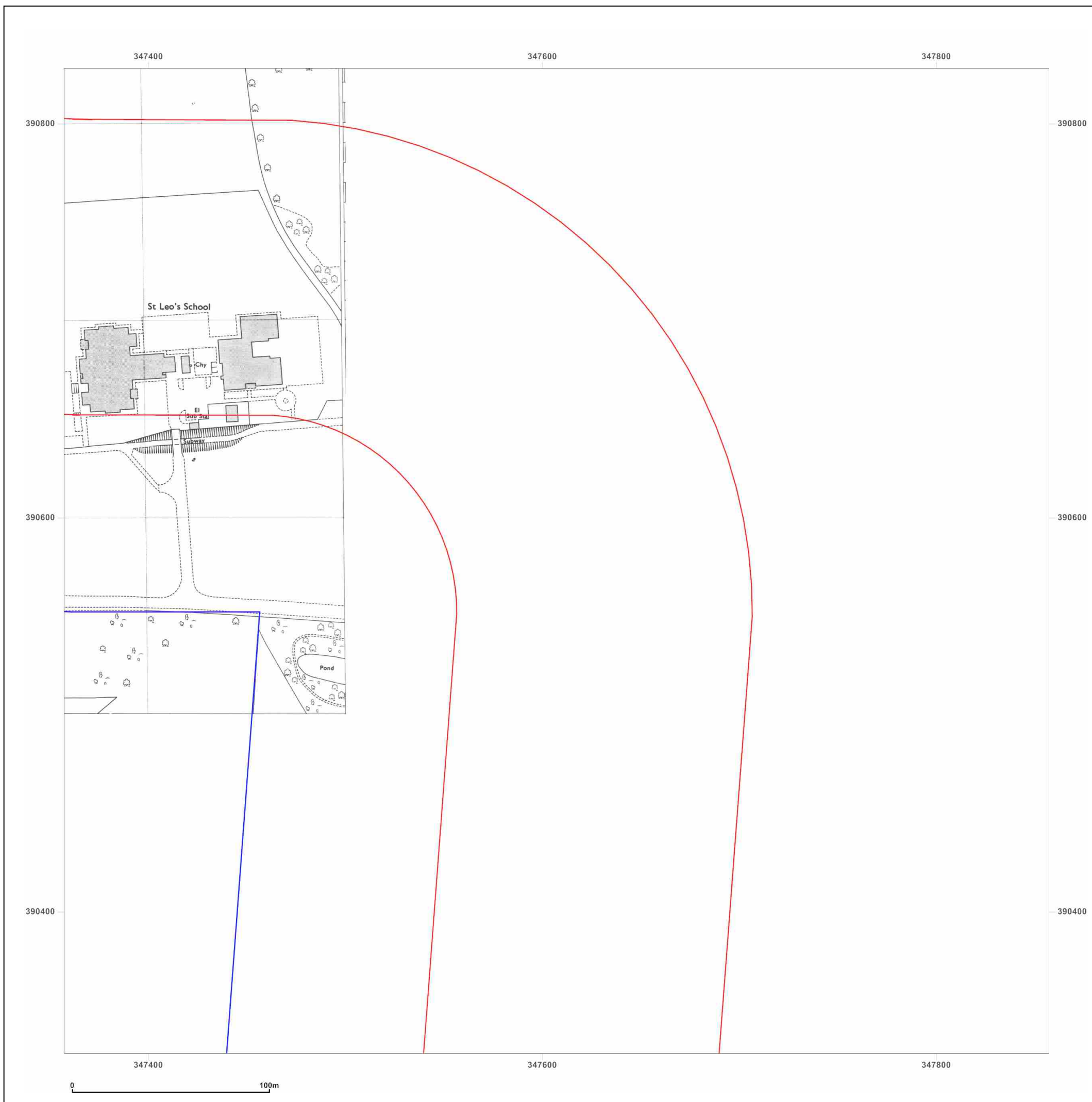


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1974-1976

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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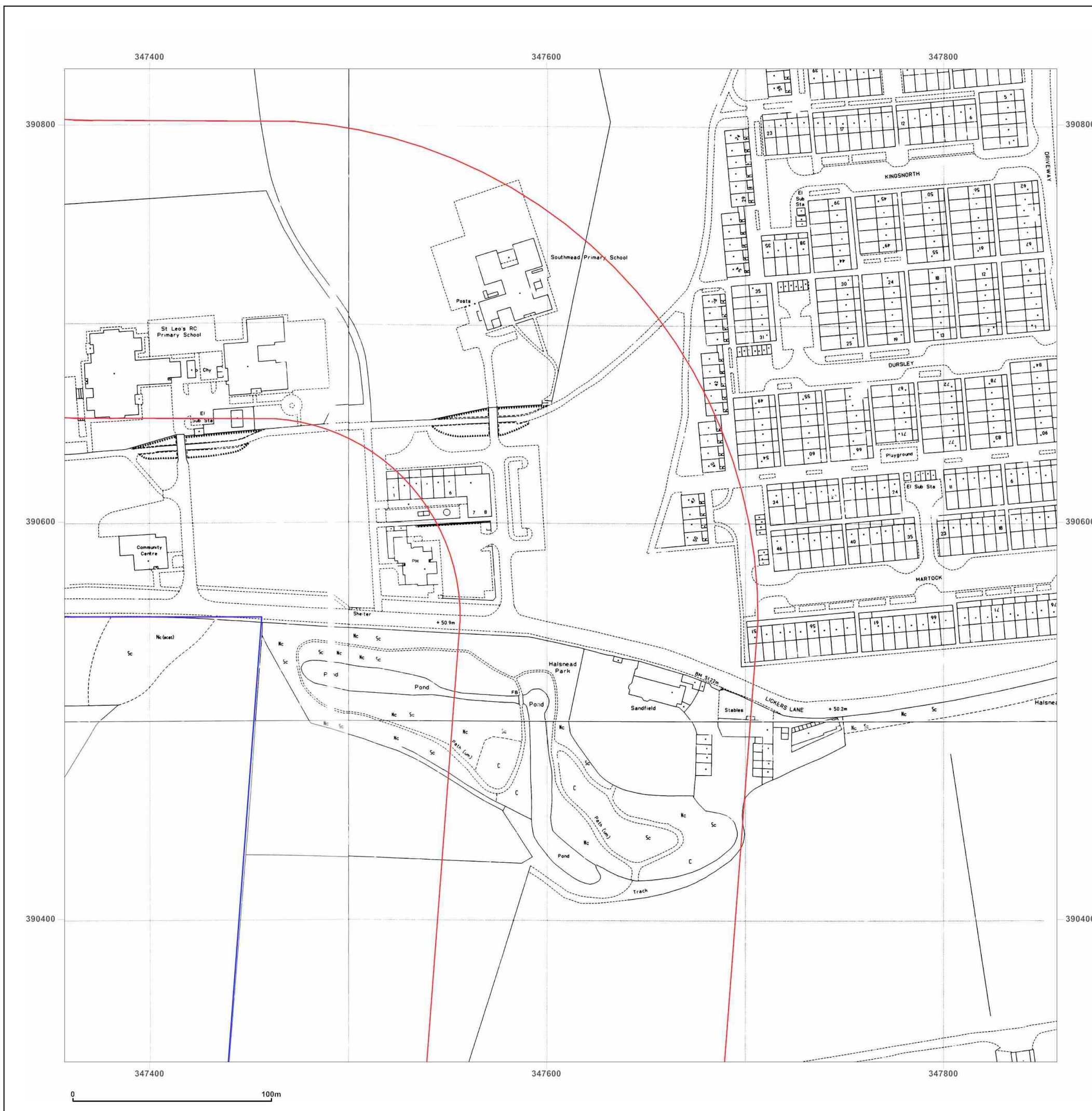


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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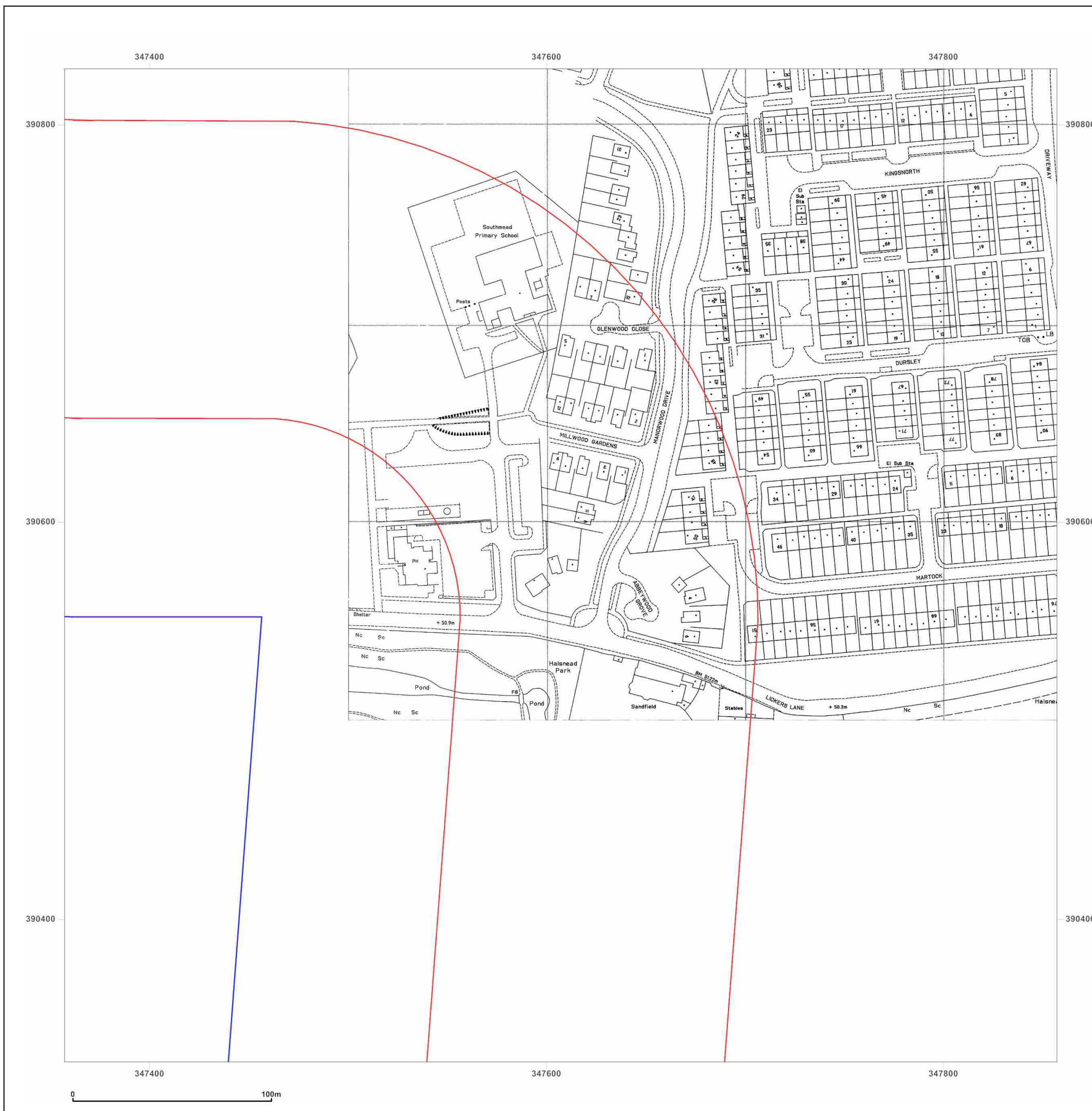


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1994-1995

Scale: 1:1,250

Printed at: 1:2,000



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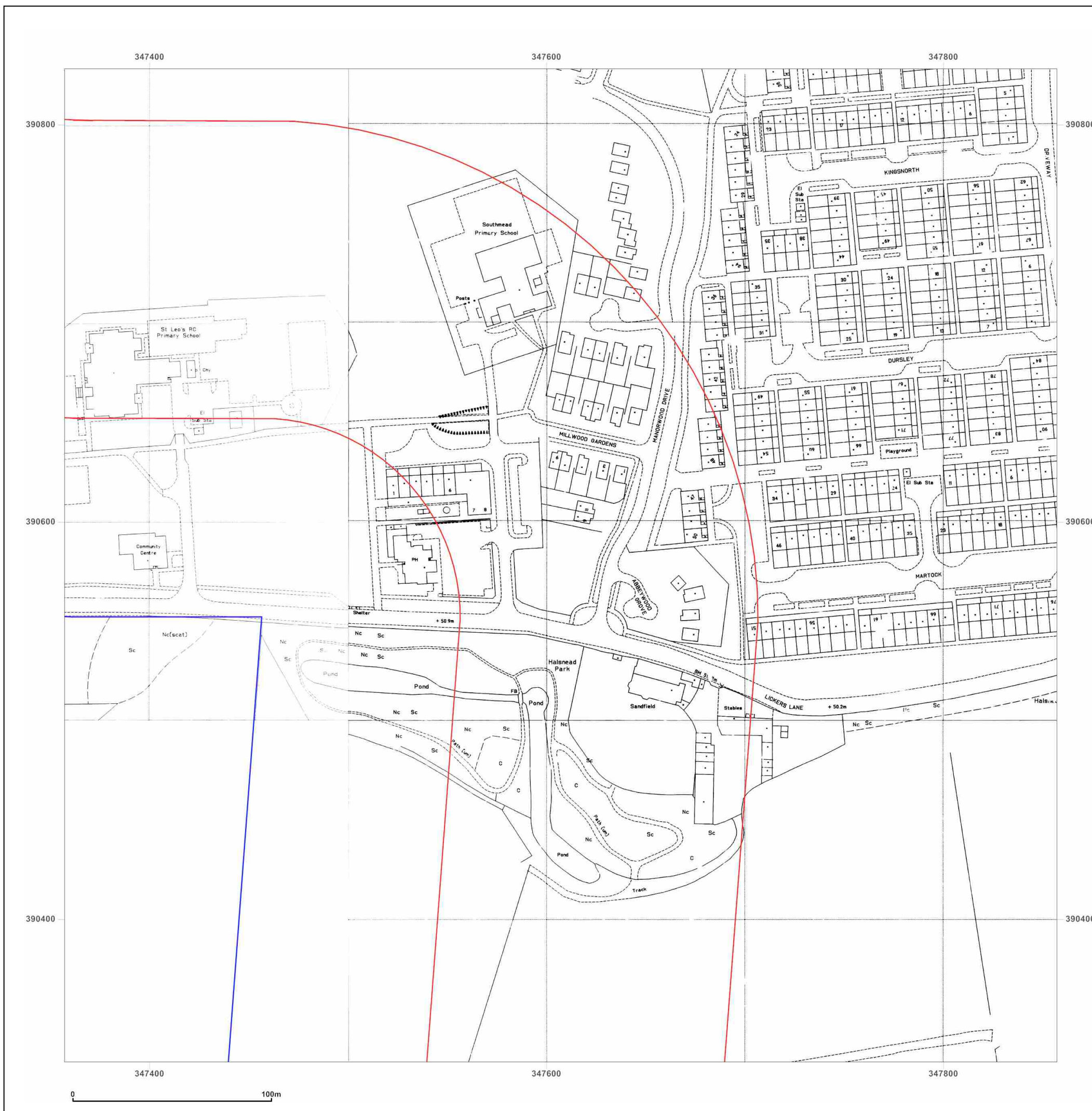


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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1994-1995

Scale: 1:1,250

Printed at: 1:2,000



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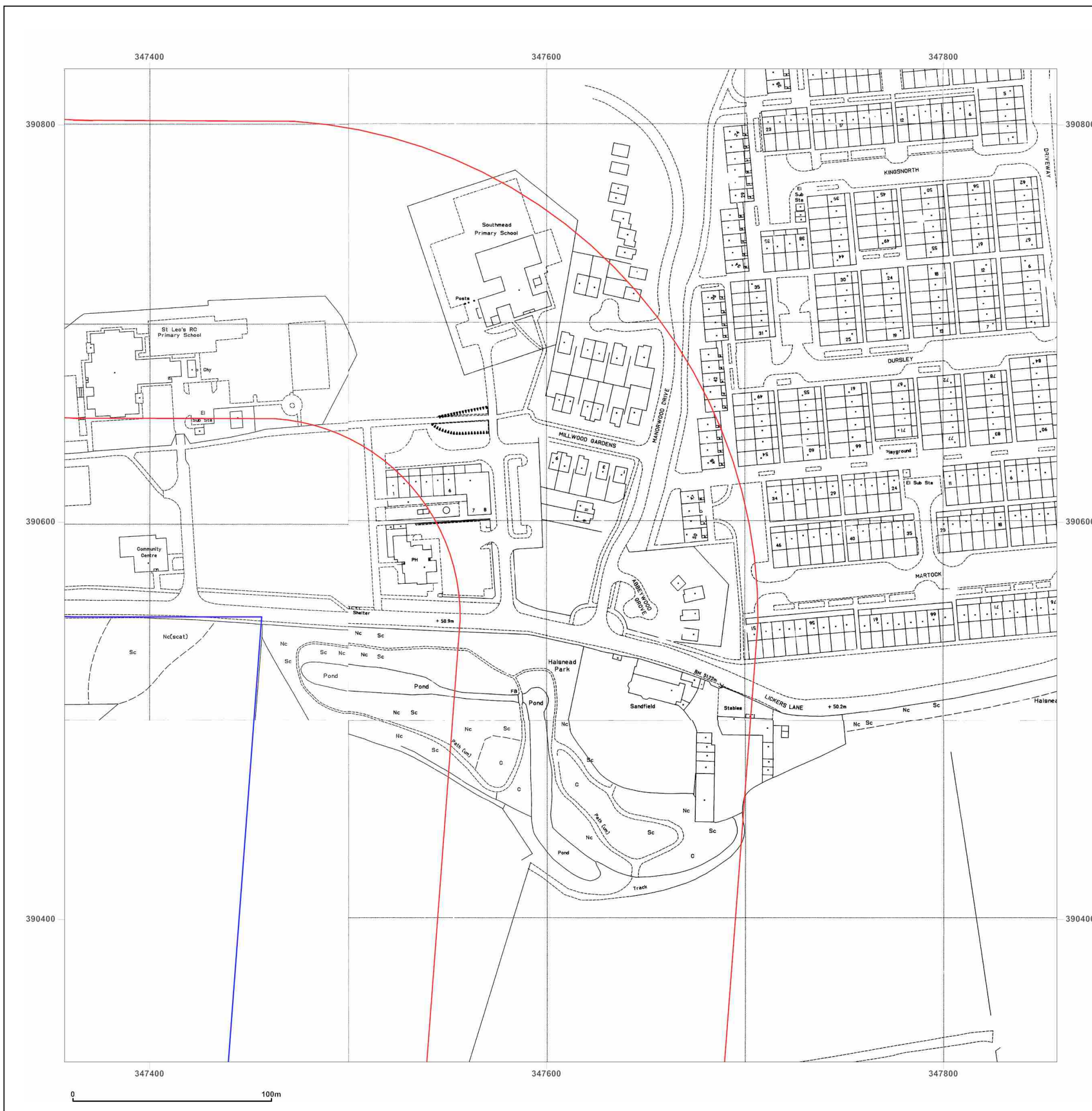


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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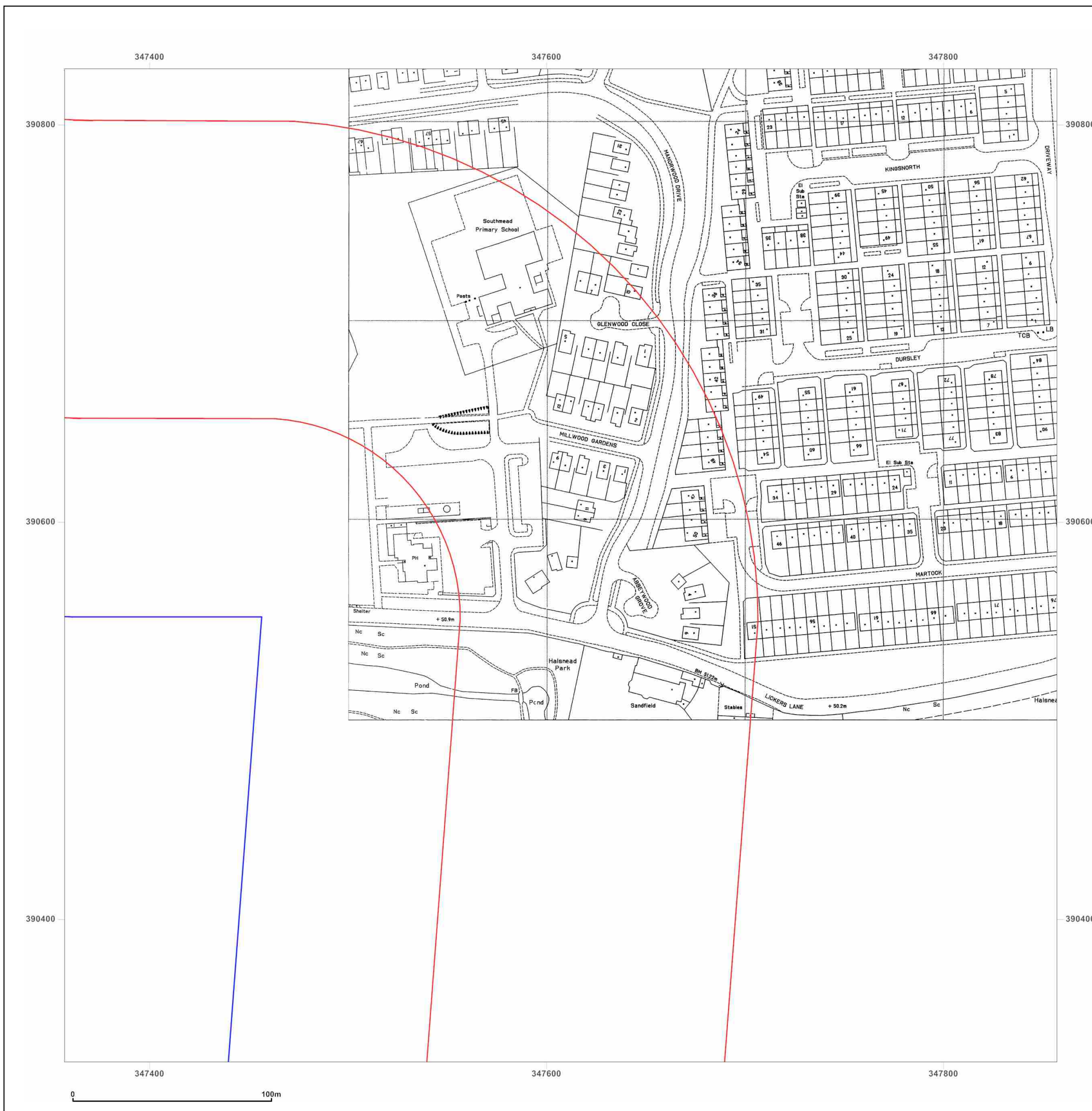


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_3_2
Grid Ref: 347607, 390578

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



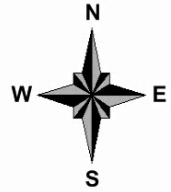
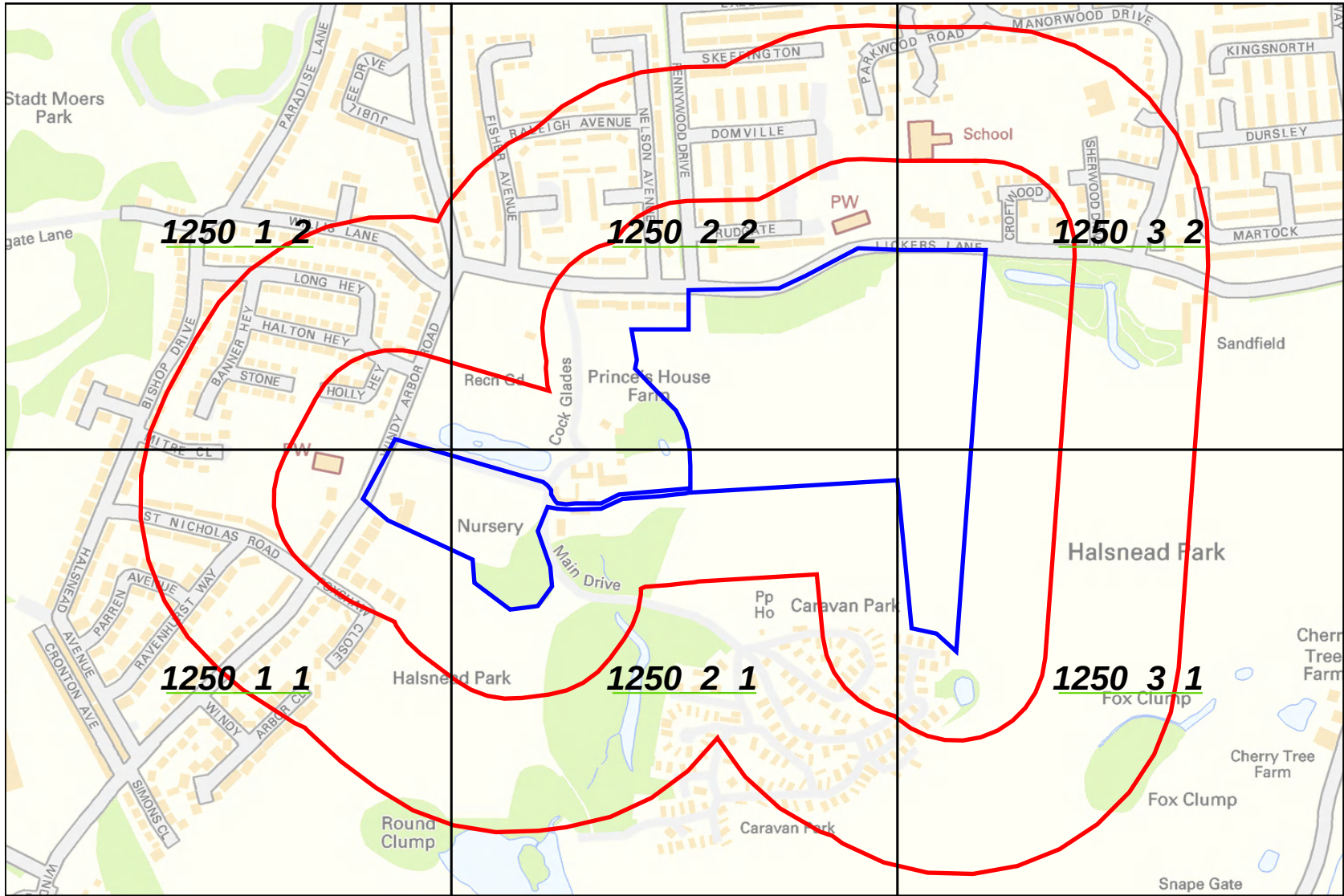
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1:1250 Scale Grid Index

Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: National Grid

Map date: 1973

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1972
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Edition N/A
Copyright 1973
Levelled 1963

Surveyed 1972
Revised 1972
Edition N/A
Copyright 1973
Levelled 1963



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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: National Grid

Map date: 1981-1984

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1963
Revised 1984
Edition N/A
Copyright 1984
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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: National Grid

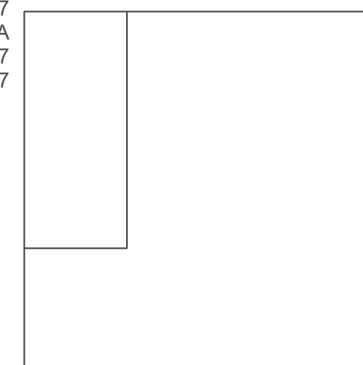
Map date: 1987

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957
Revised 1987
Edition N/A
Copyright 1987
Levelled 1957

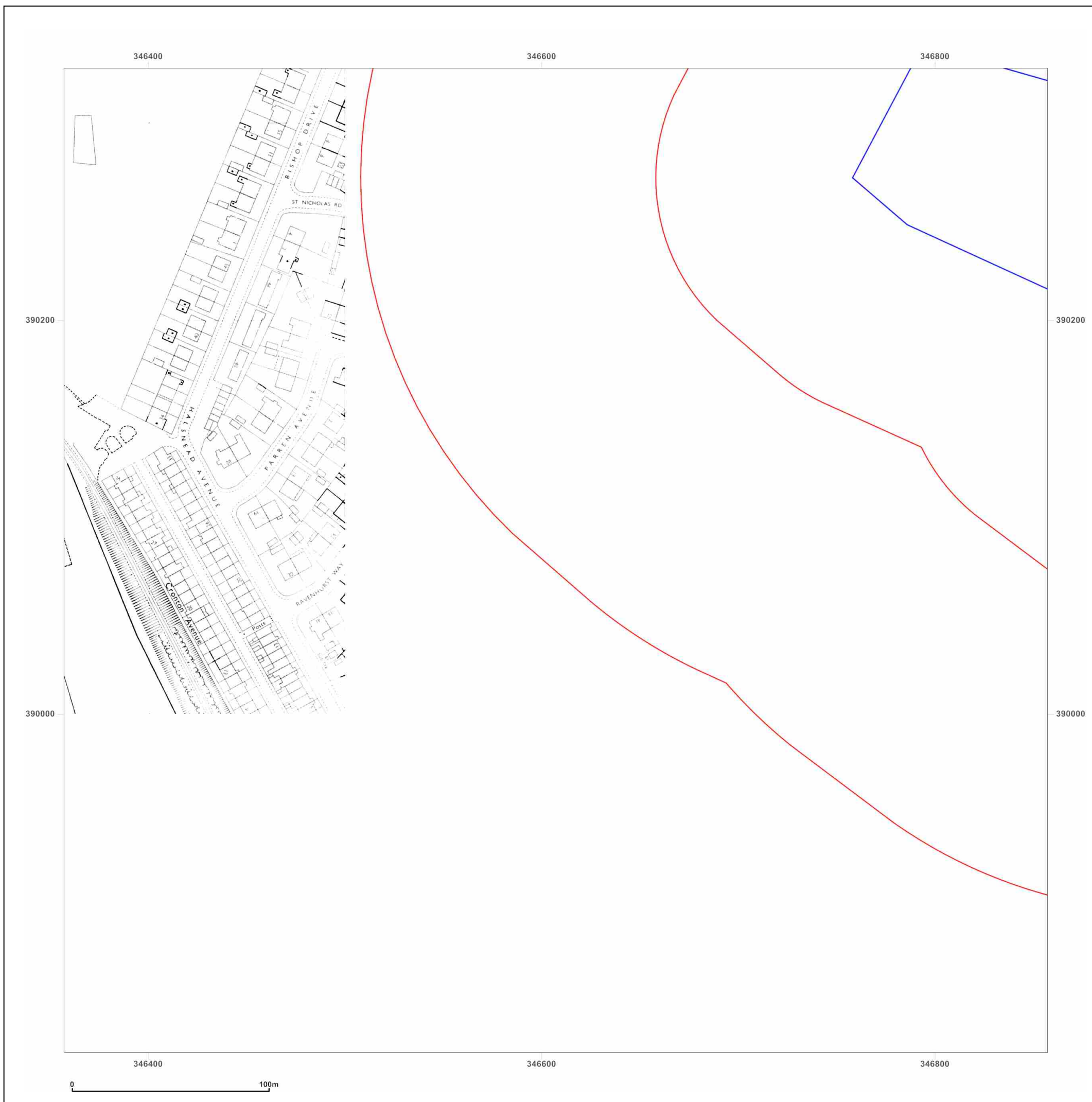


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed N/A
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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: National Grid

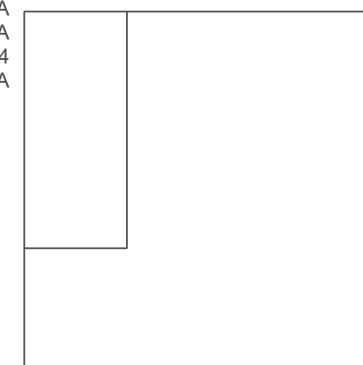
Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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

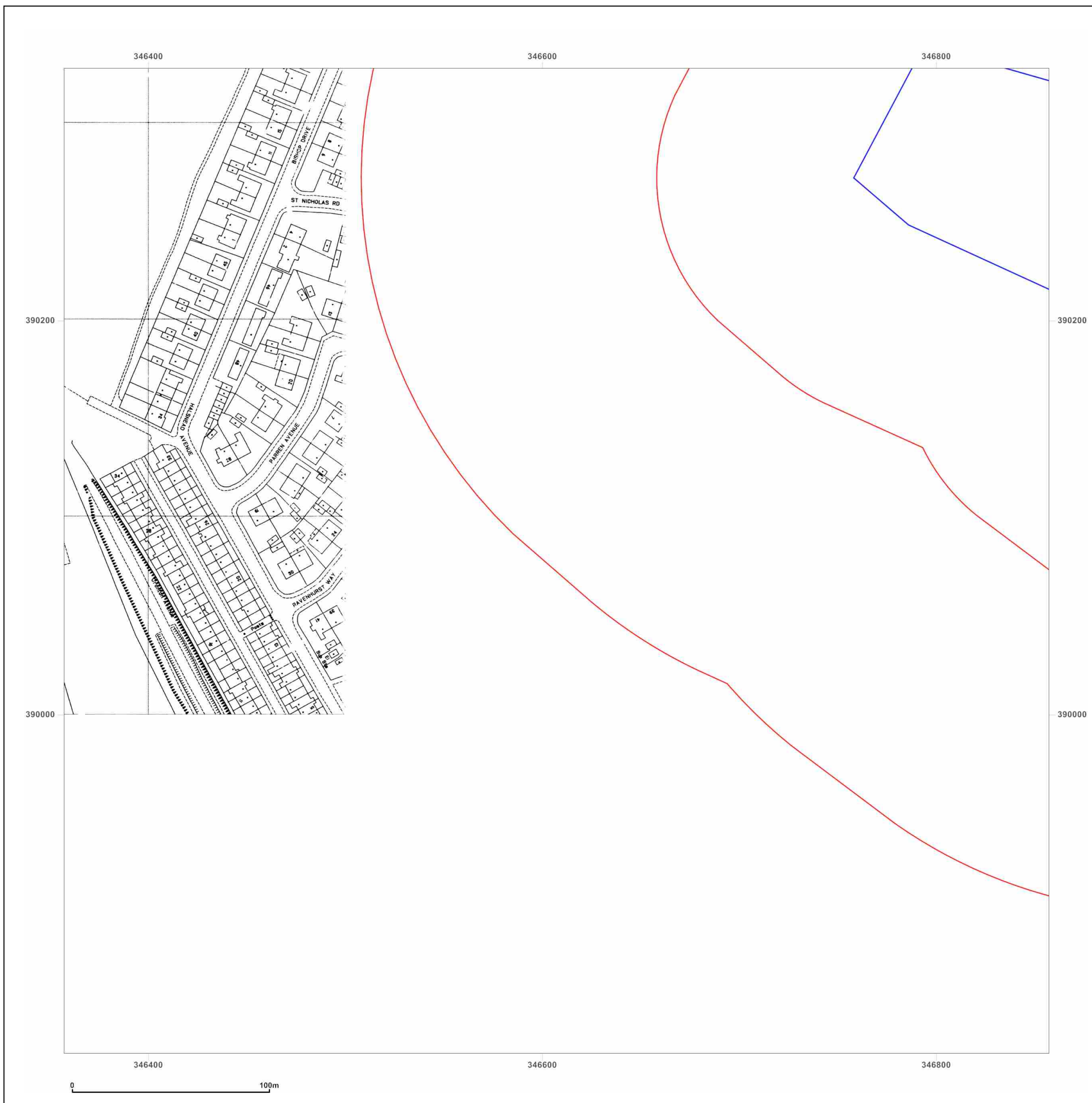


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: National Grid

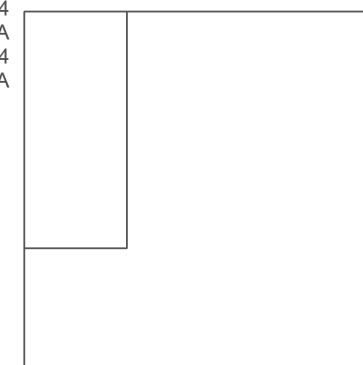
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Printed at: 1:2,000



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

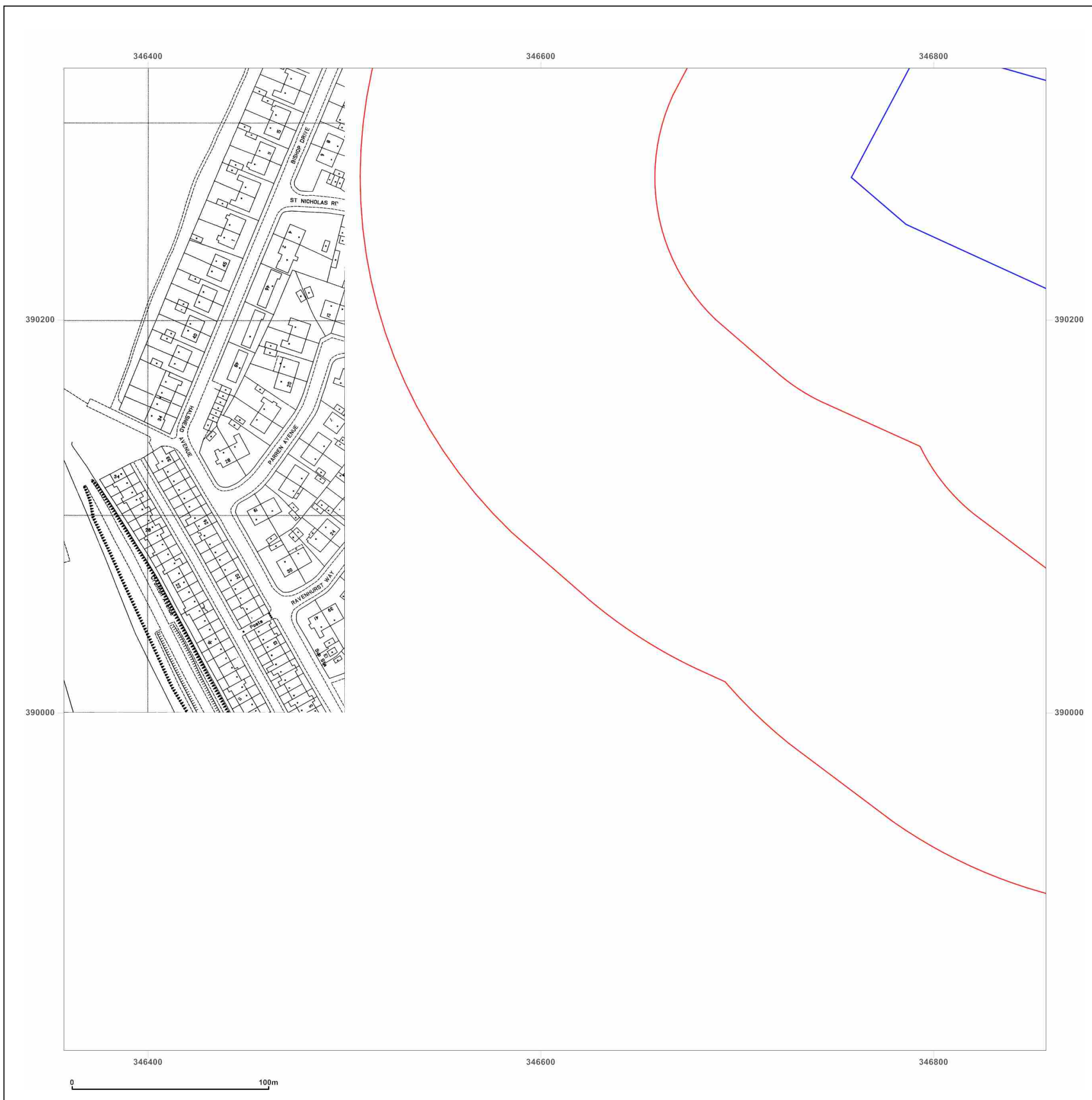


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_1
Grid Ref: 346607, 390078

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003

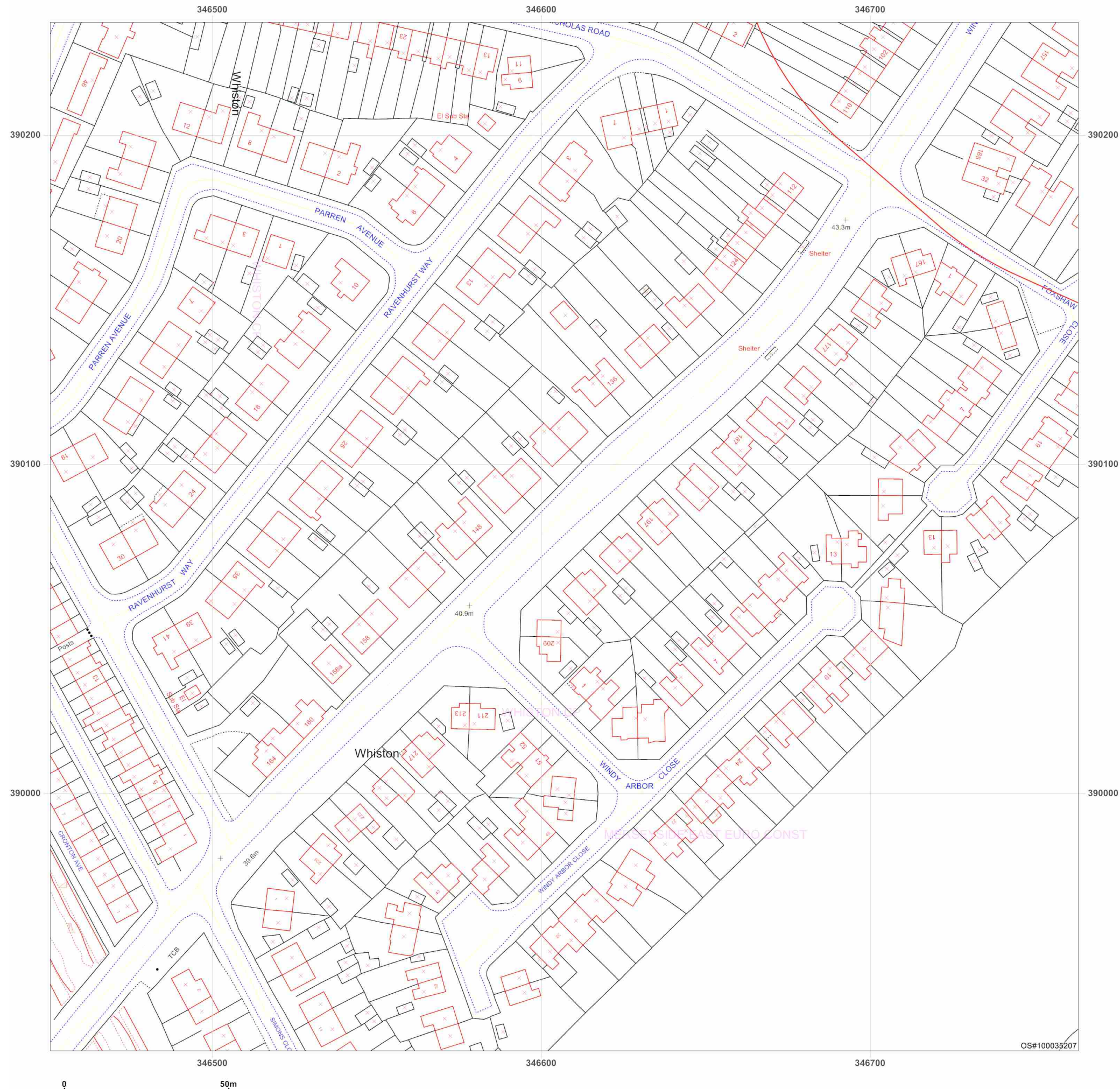


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: National Grid

Map date: 1973

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1972
Revised 1972
Edition N/A
Copyright 1973
Levelled 1957

Surveyed 1972
Revised 1972
Edition N/A
Copyright 1973
Levelled 1963

Surveyed 1972
Revised 1972
Edition N/A
Copyright 1973
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Surveyed 1972
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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: National Grid

Map date: 1981-1984

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1984
Levelled 1963

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

Surveyed 1963
Revised 1984
Edition N/A
Copyright 1984
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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: National Grid

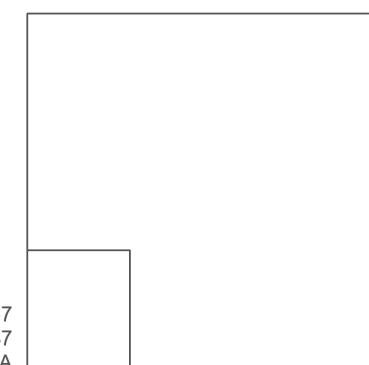
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Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957
Revised 1987
Edition N/A
Copyright 1987
Levelled 1957

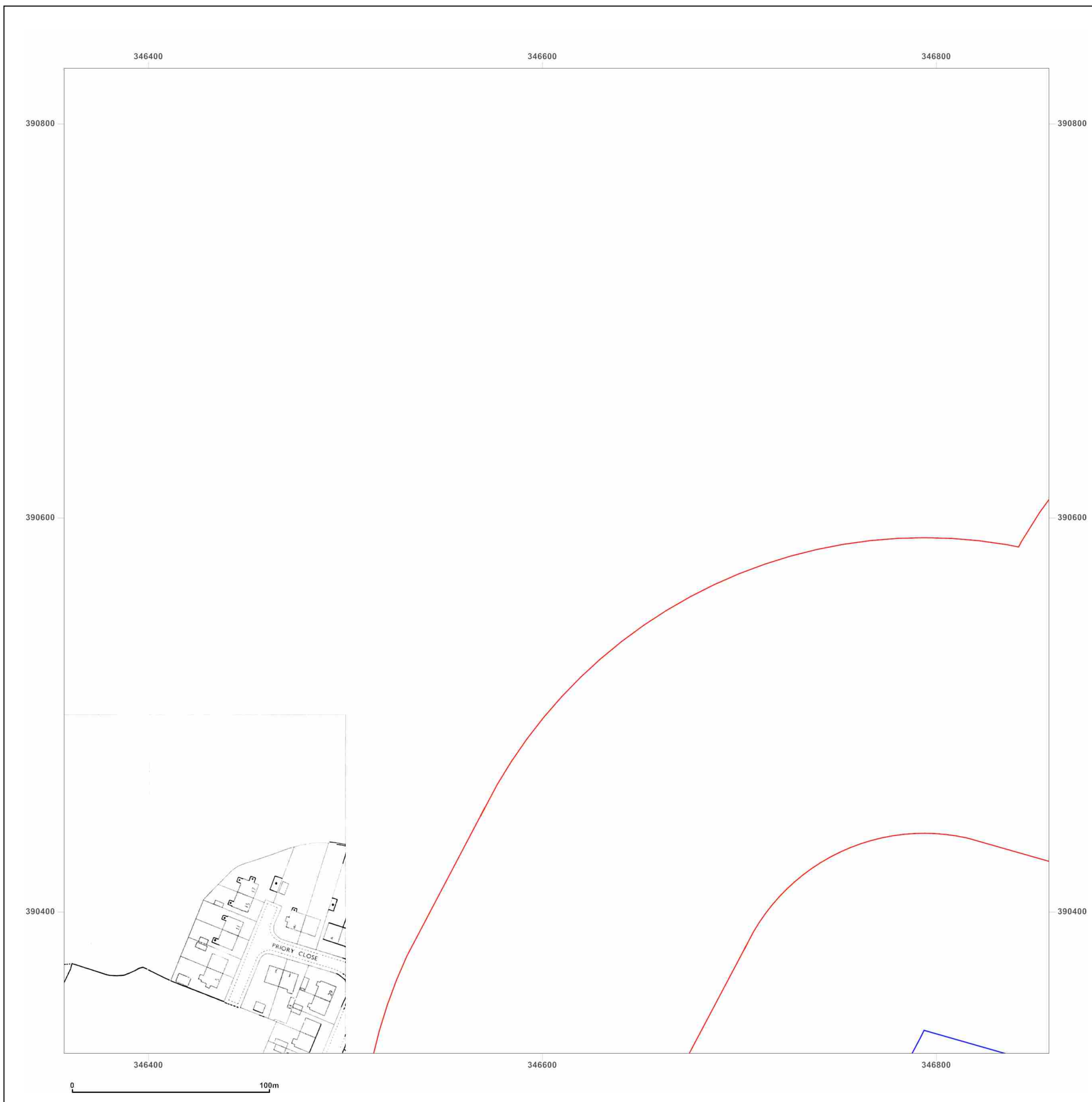


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HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1993
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Edition N/A
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Levelled N/A

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

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Revised N/A
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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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PRIMARY SCHOOL, L35 3TX

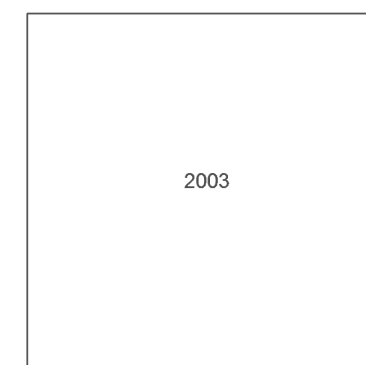
Client Ref: Halsnead_1417005
Report Ref: GS-6777655_1250scale_1_2
Grid Ref: 346607, 390578

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

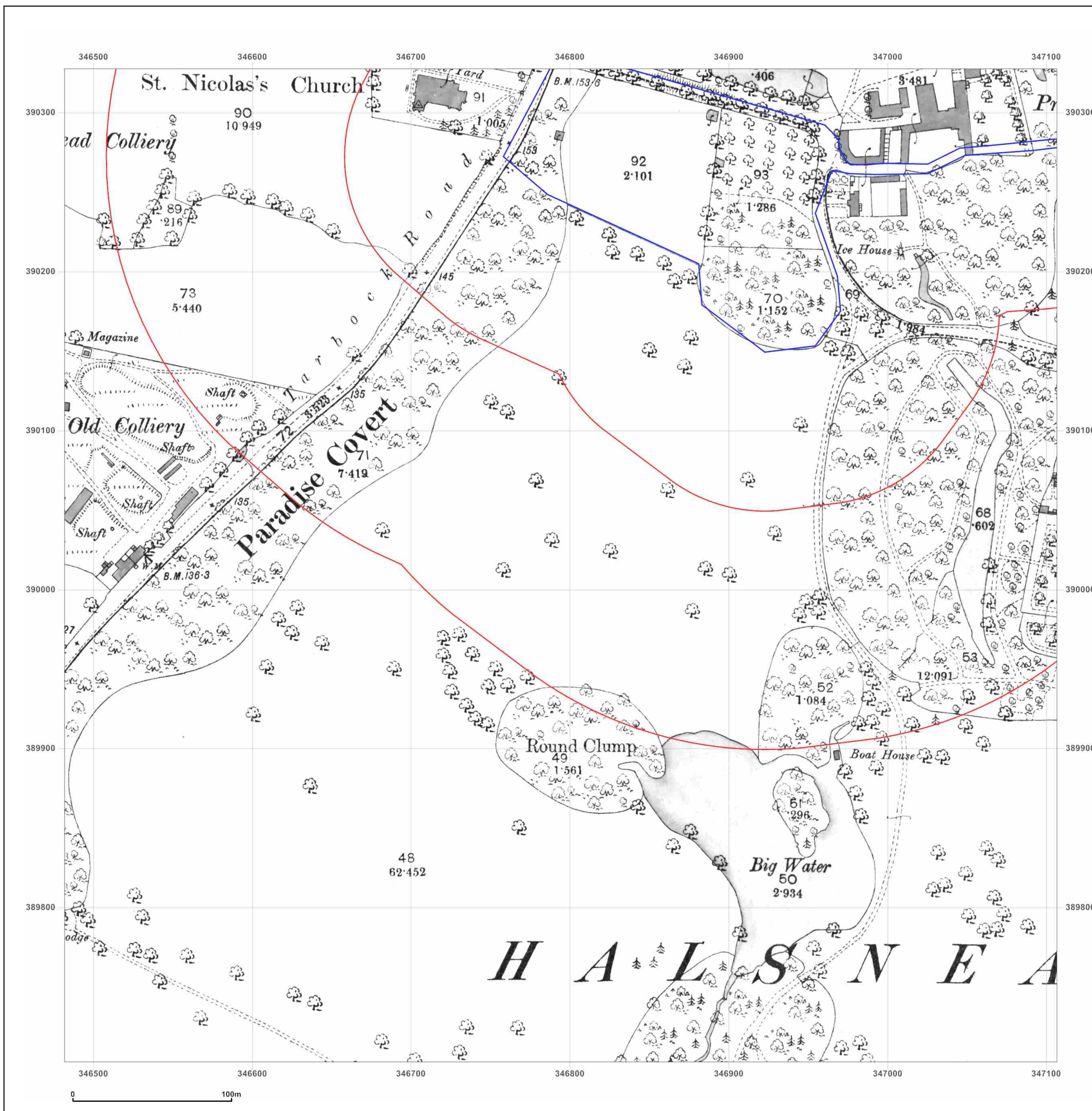


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1907
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

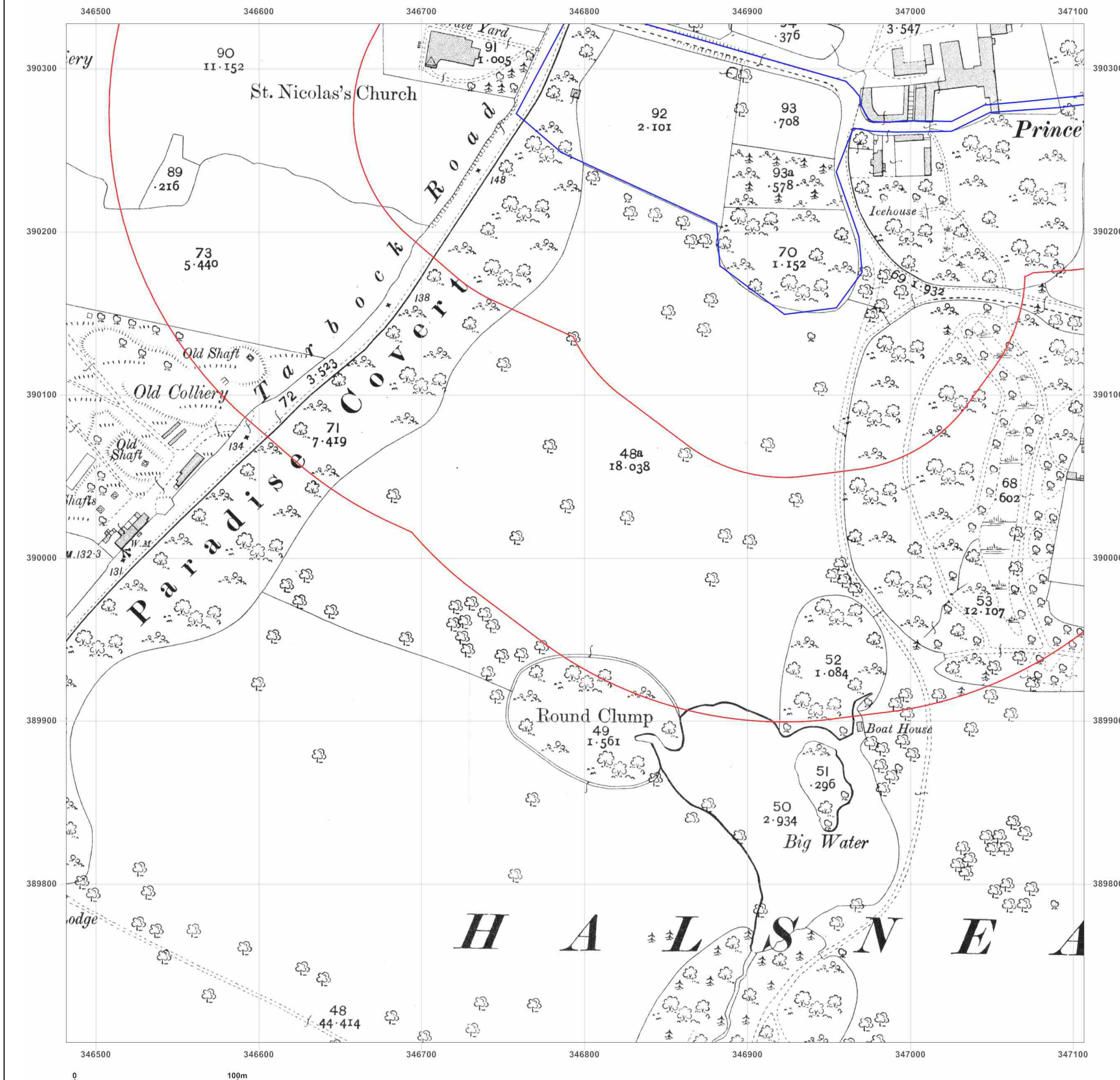


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HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

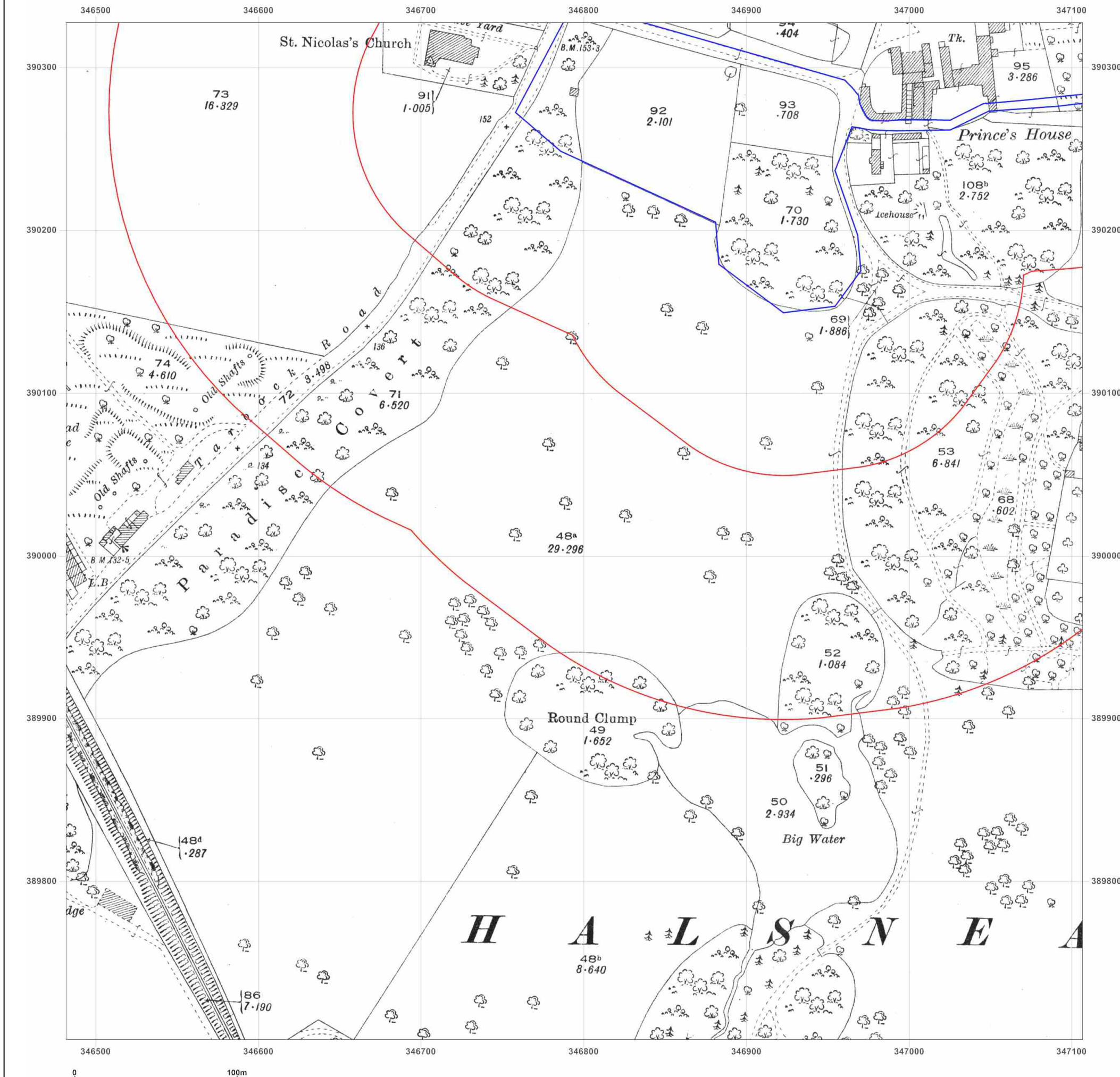


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HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: County Series

Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1937
Revised 1937
Edition N/A
Copyright N/A
Levelled N/A

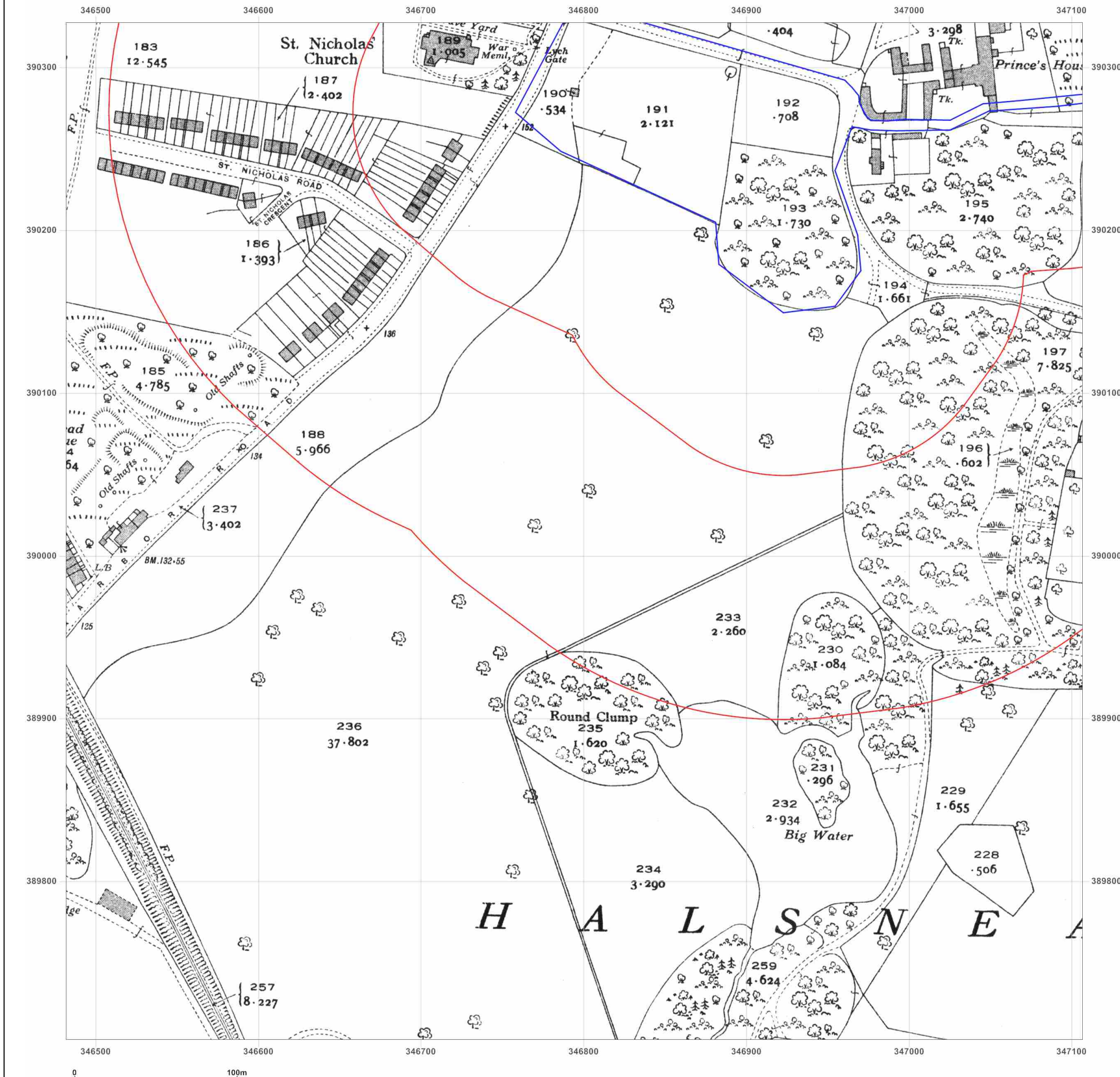


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
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Edition N/A
Copyright 1959
Levelled 1926

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1926

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1926

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1957

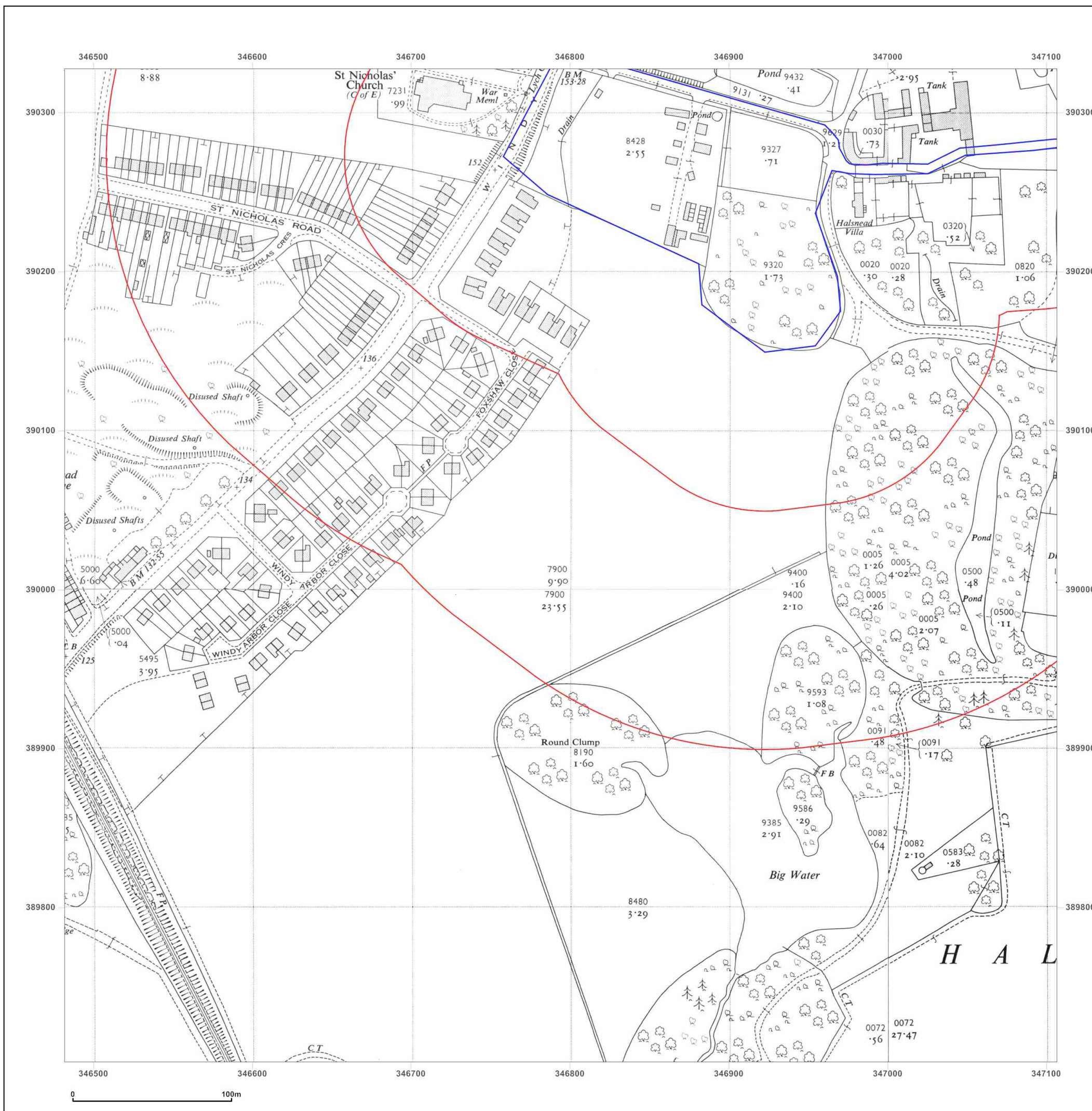


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: National Grid

Map date: 1975-1978

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1978
Revised 1978
Edition N/A
Copyright 1979
Levelled 1963

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

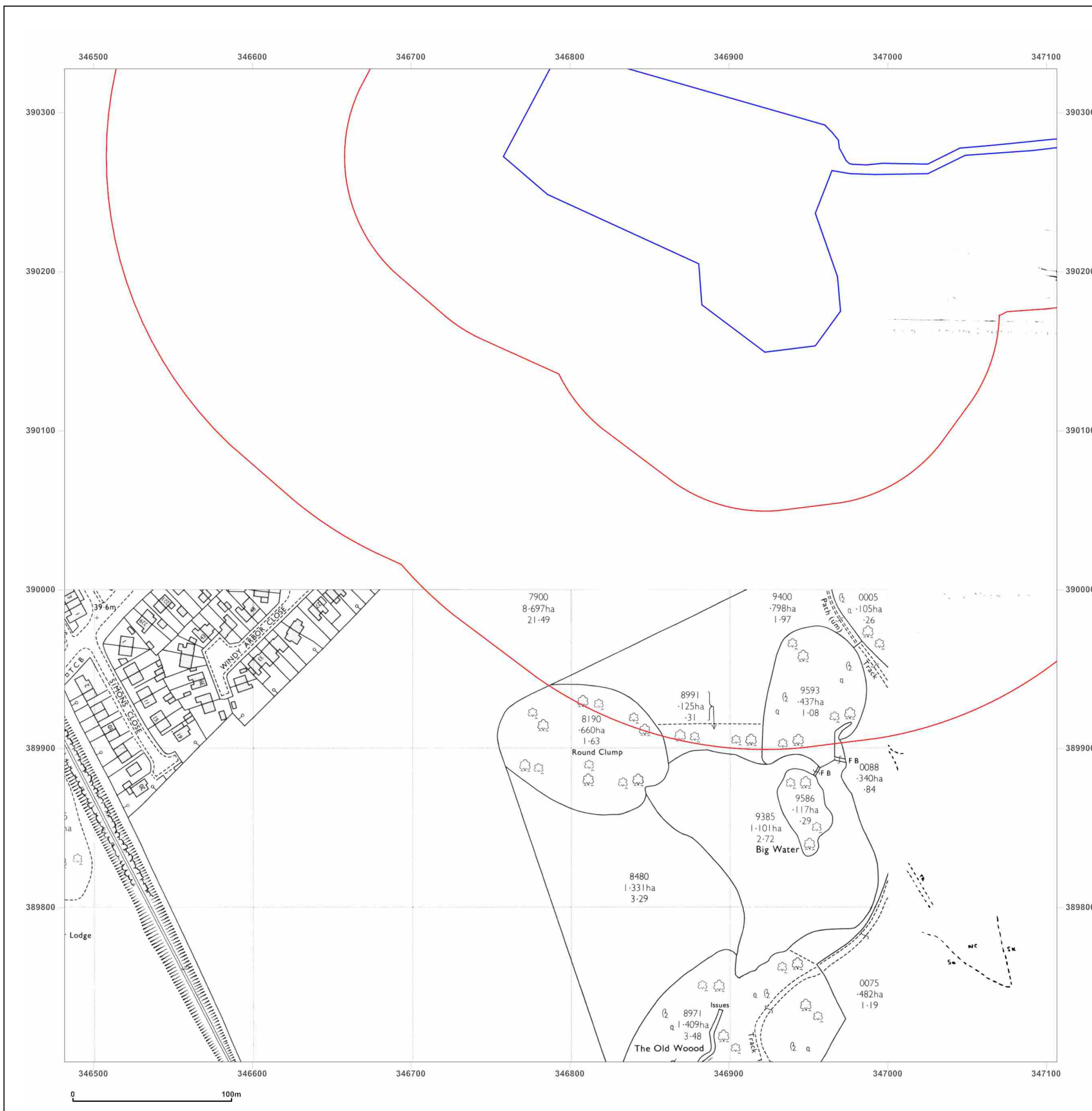


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: National Grid

Map date: 1980-1985

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
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Edition N/A
Copyright 1985
Levelled 1963

Surveyed 1963
Revised 1984
Edition N/A
Copyright 1984
Levelled 1963

Surveyed 1980
Revised 1980
Edition N/A
Copyright 1981
Levelled 1963

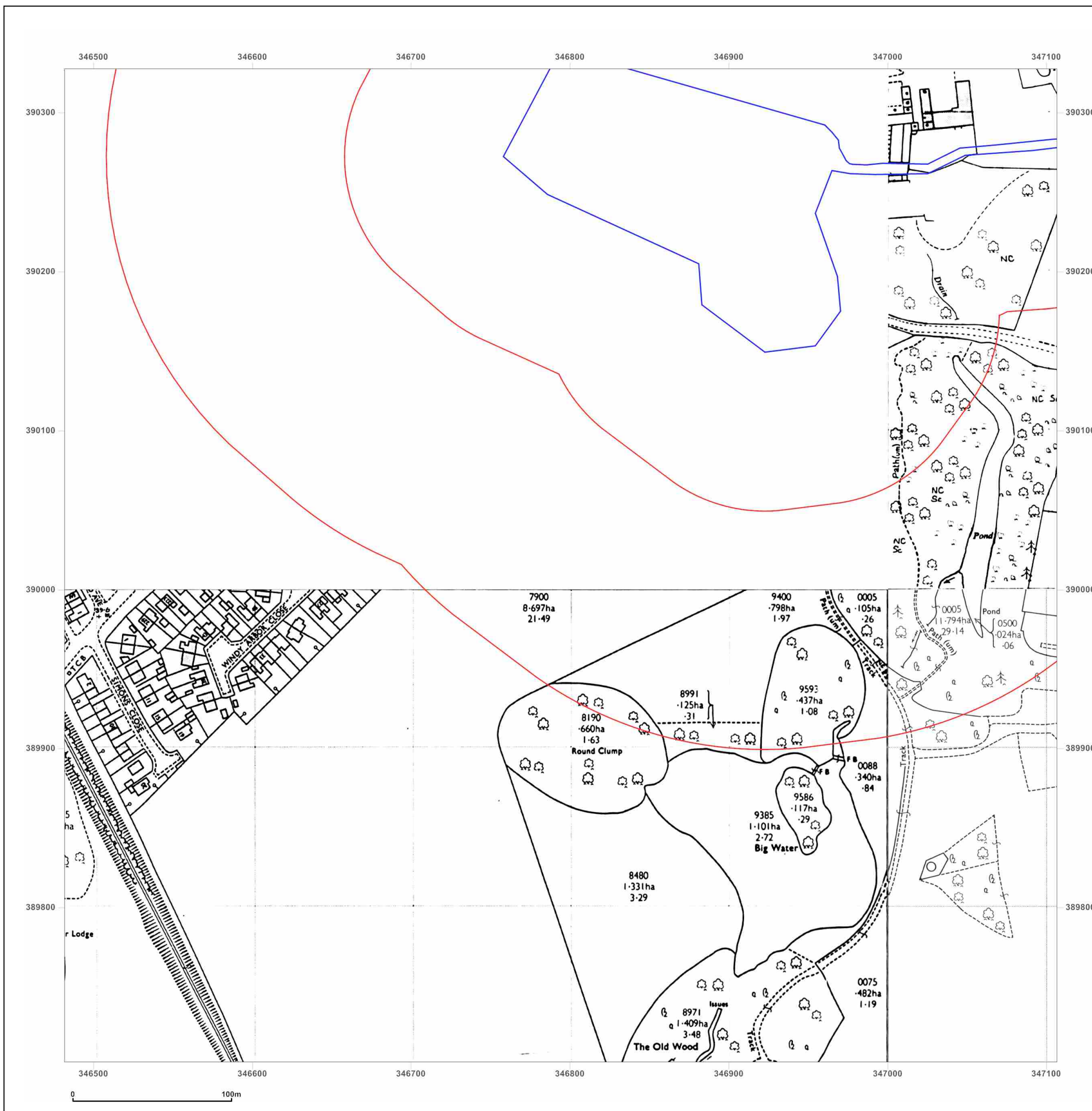


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: National Grid

Map date: 1986-1989

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
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Edition N/A
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Surveyed 1963
Revised 1989
Edition N/A
Copyright 1989
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Surveyed 1963
Revised 1989
Edition N/A
Copyright 1989
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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: National Grid

Map date: 1992-1993

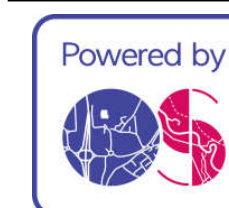
Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
Revised 1992
Edition N/A
Copyright 1992
Levelled 1963

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

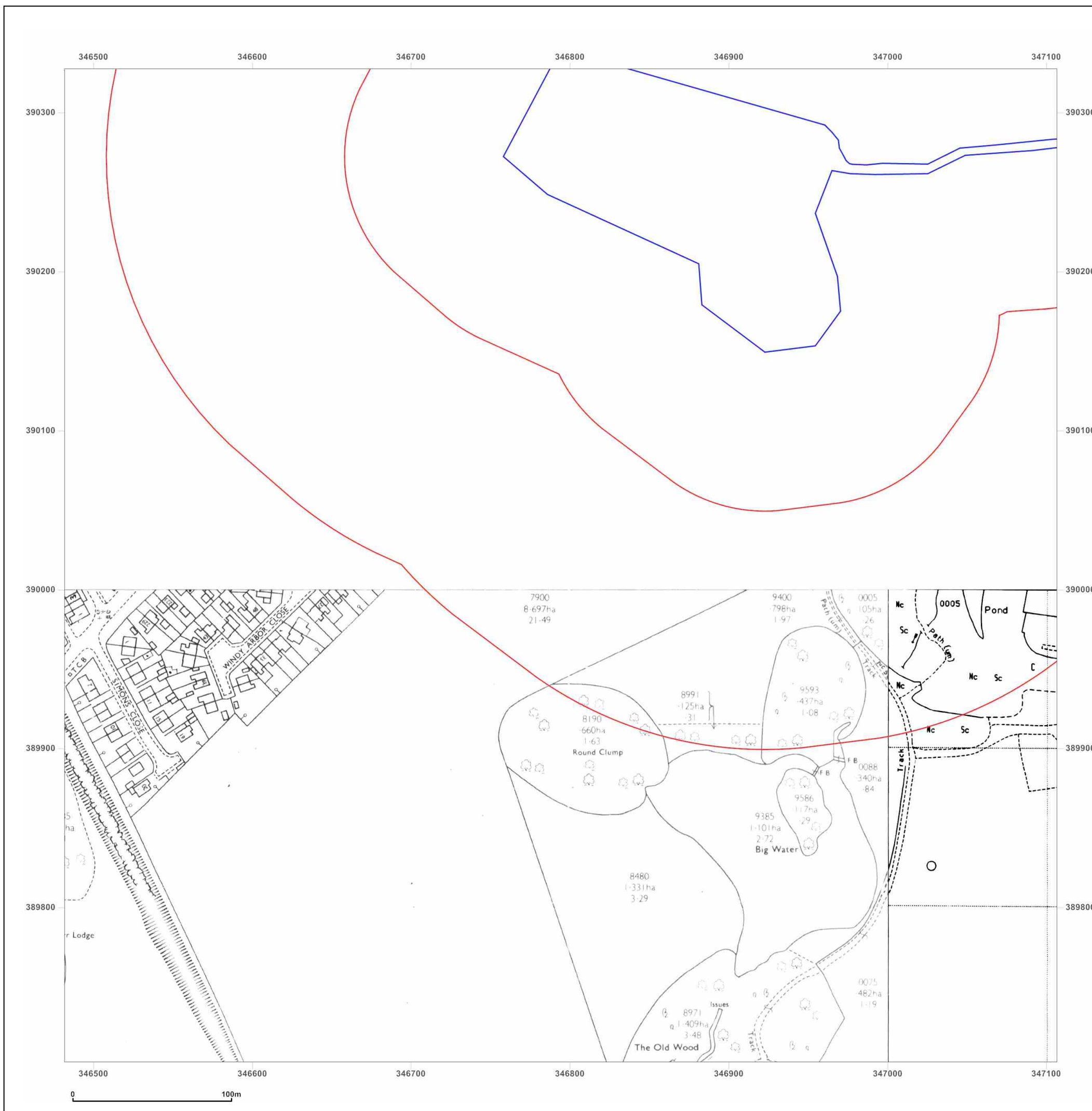


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_1
Grid Ref: 346794, 390015

Map Name: National Grid

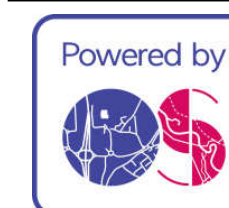
Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



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

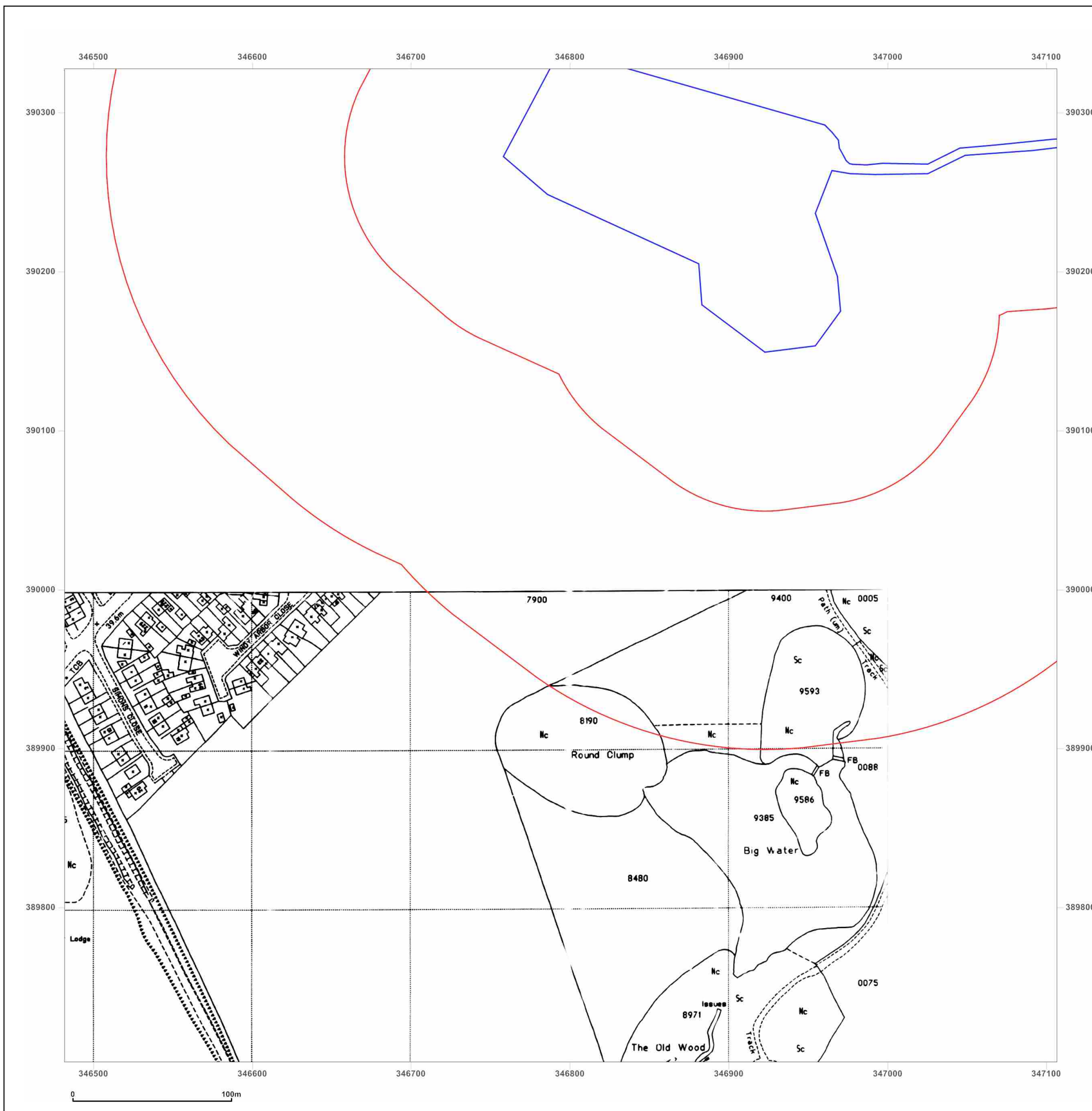


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_2
Grid Ref: 346794, 390640

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

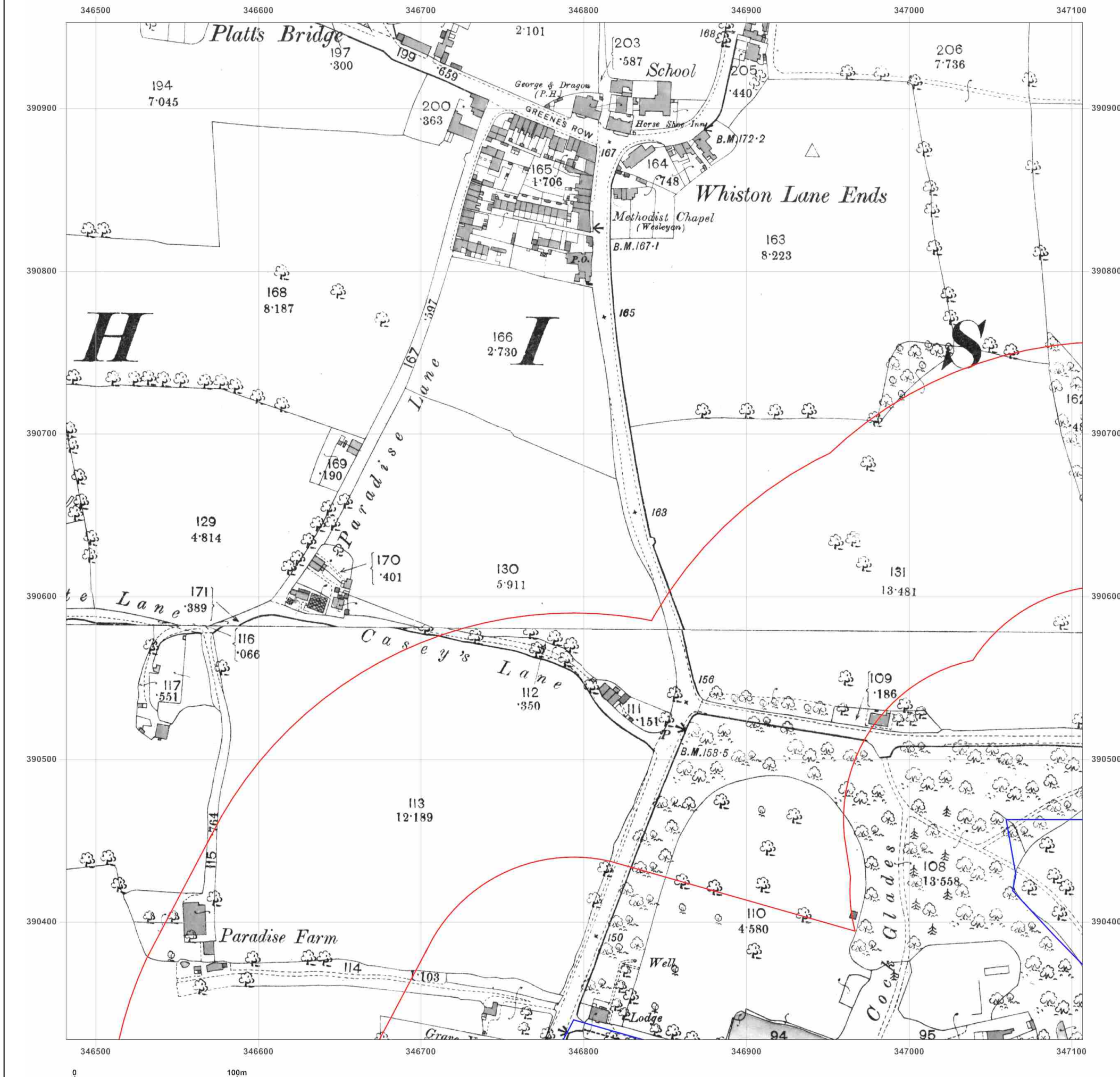


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_2
Grid Ref: 346794, 390640

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1907
Edition N/A
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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_2
Grid Ref: 346794, 390640

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Levelled N/A

Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

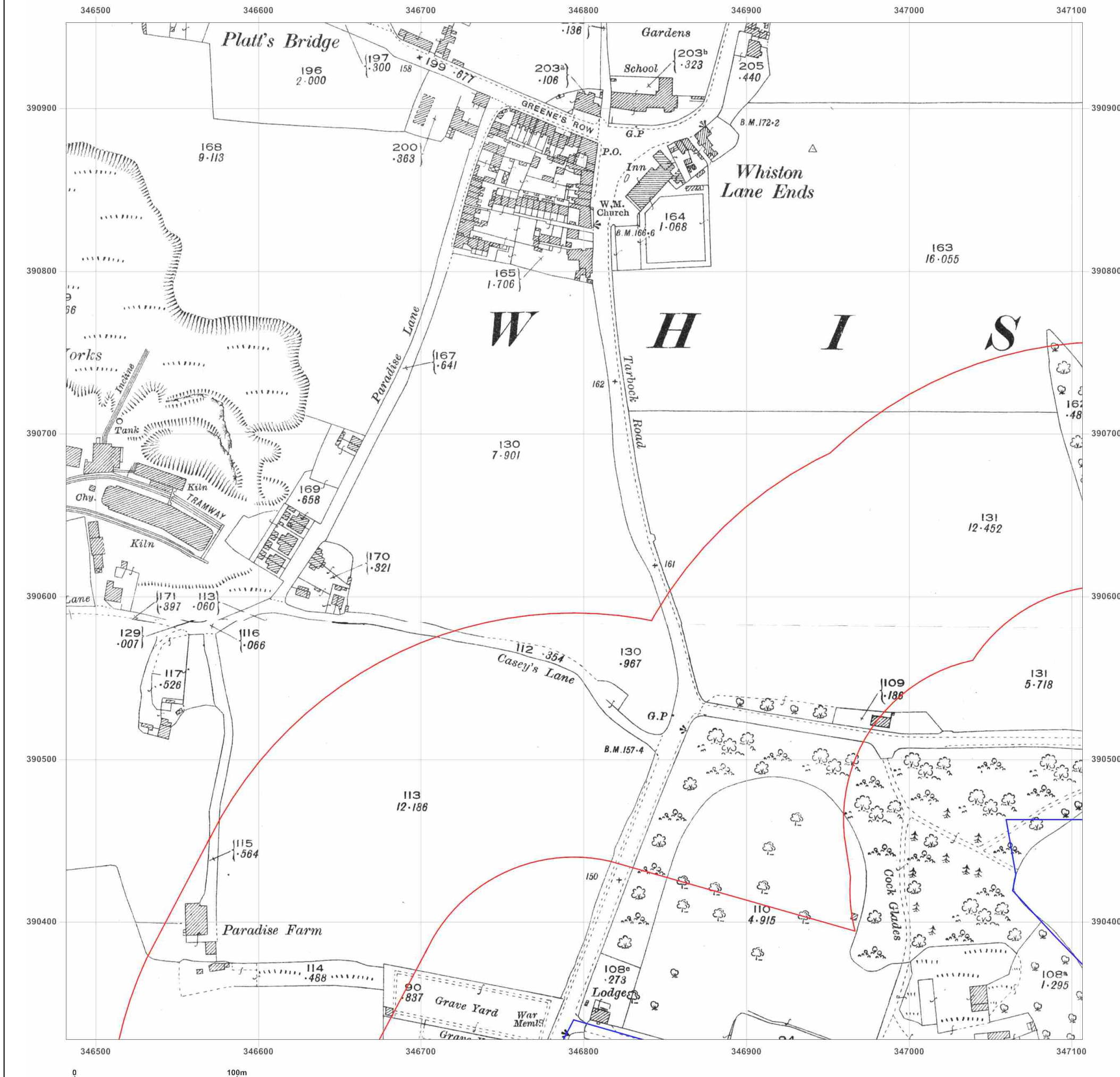


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_2
Grid Ref: 346794, 390640

Map Name: County Series

Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Levelled N/A

Surveyed 1937
Revised 1937
Edition N/A
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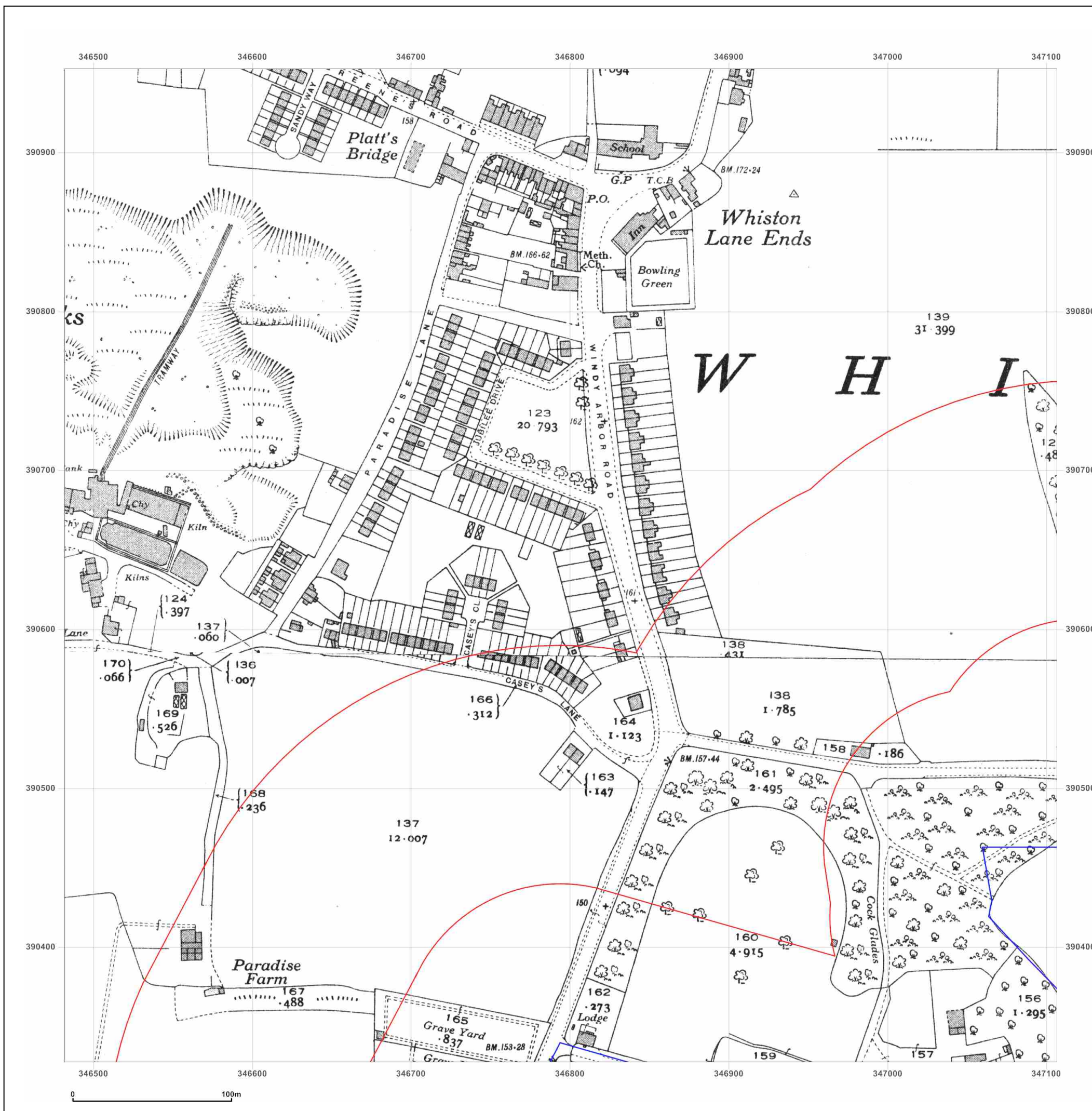


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_1_2
Grid Ref: 346794, 390640

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

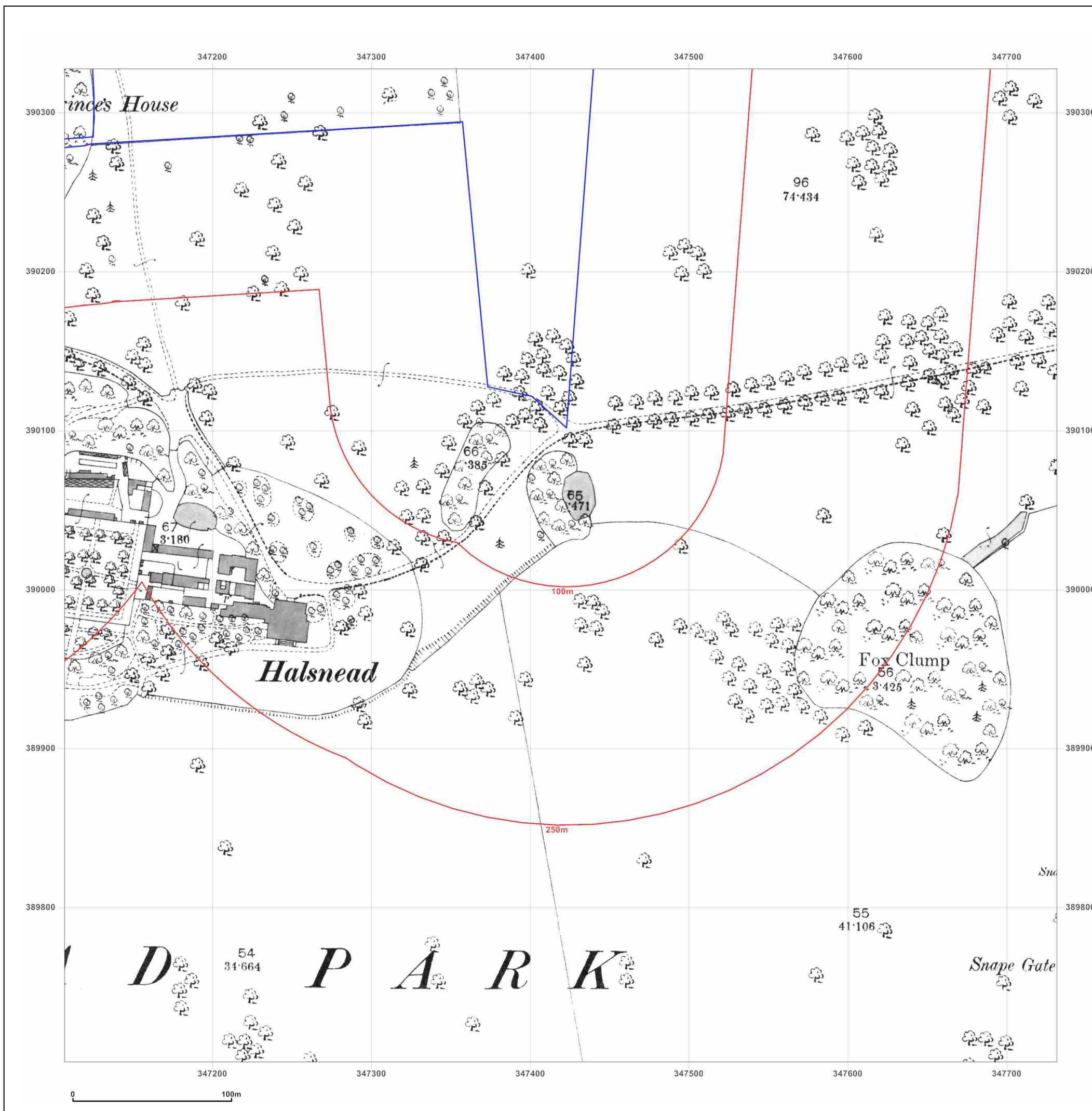


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1907
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

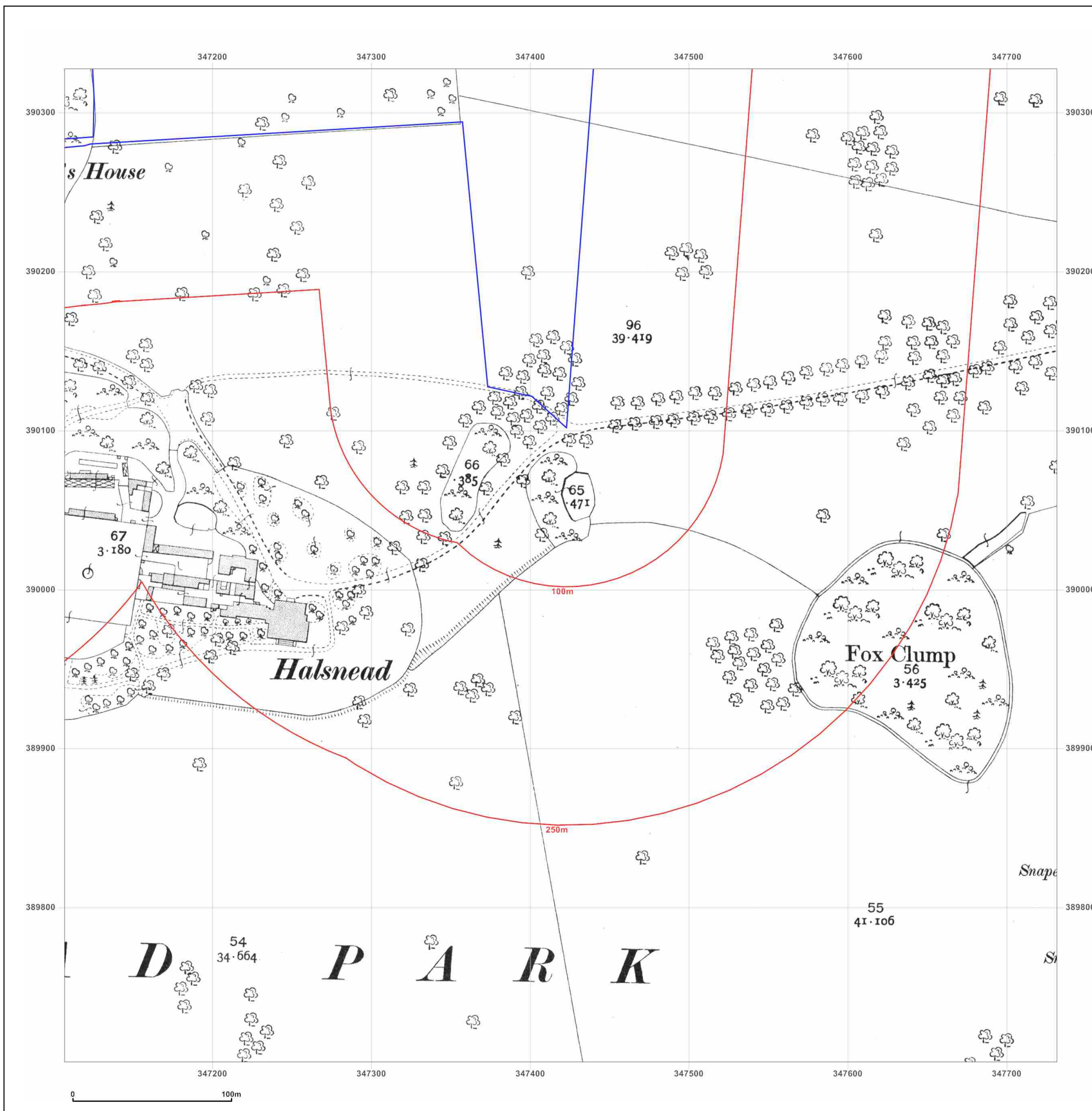


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

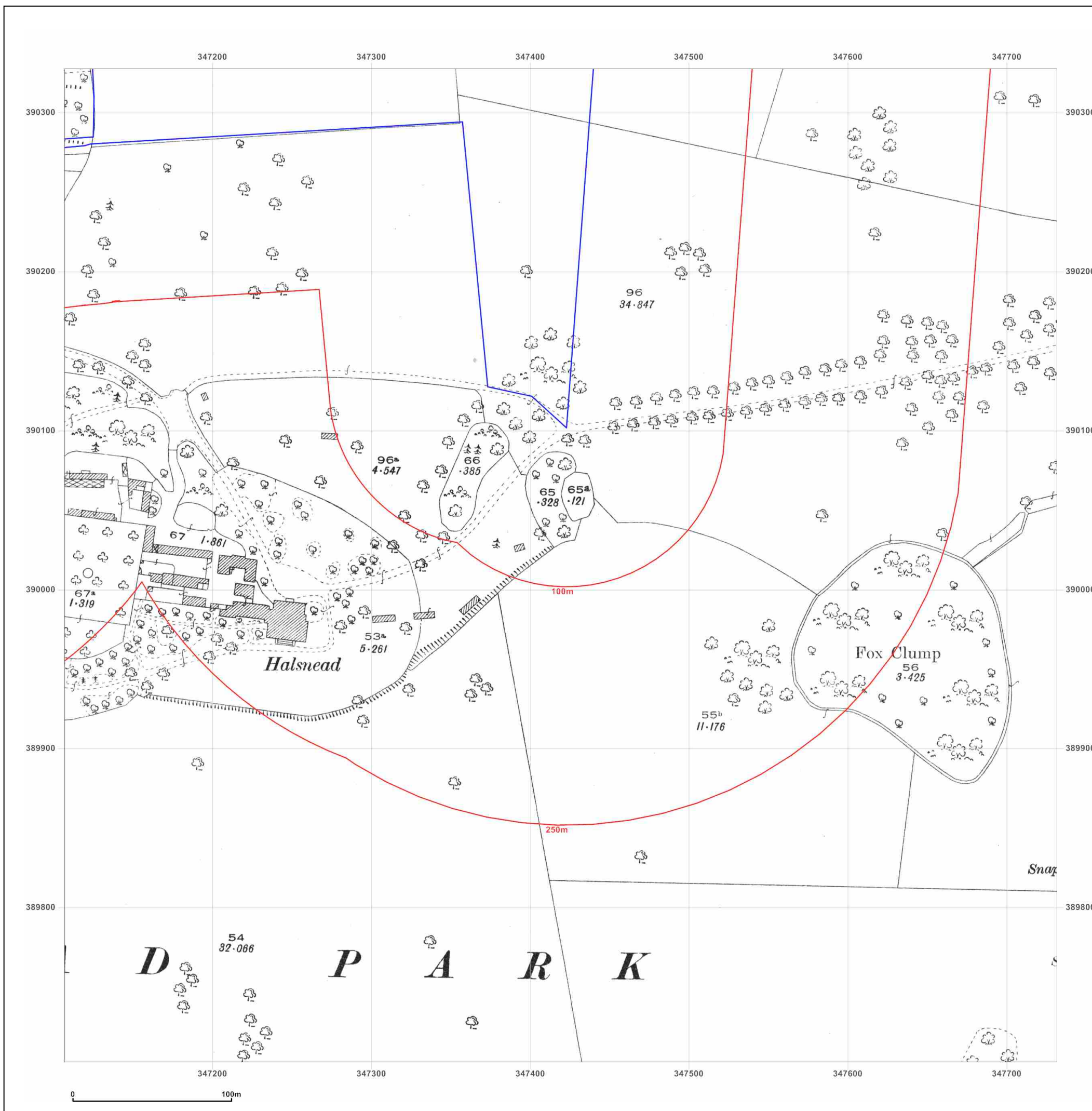


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: County Series

Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1937
Revised 1937
Edition N/A
Copyright N/A
Levelled N/A

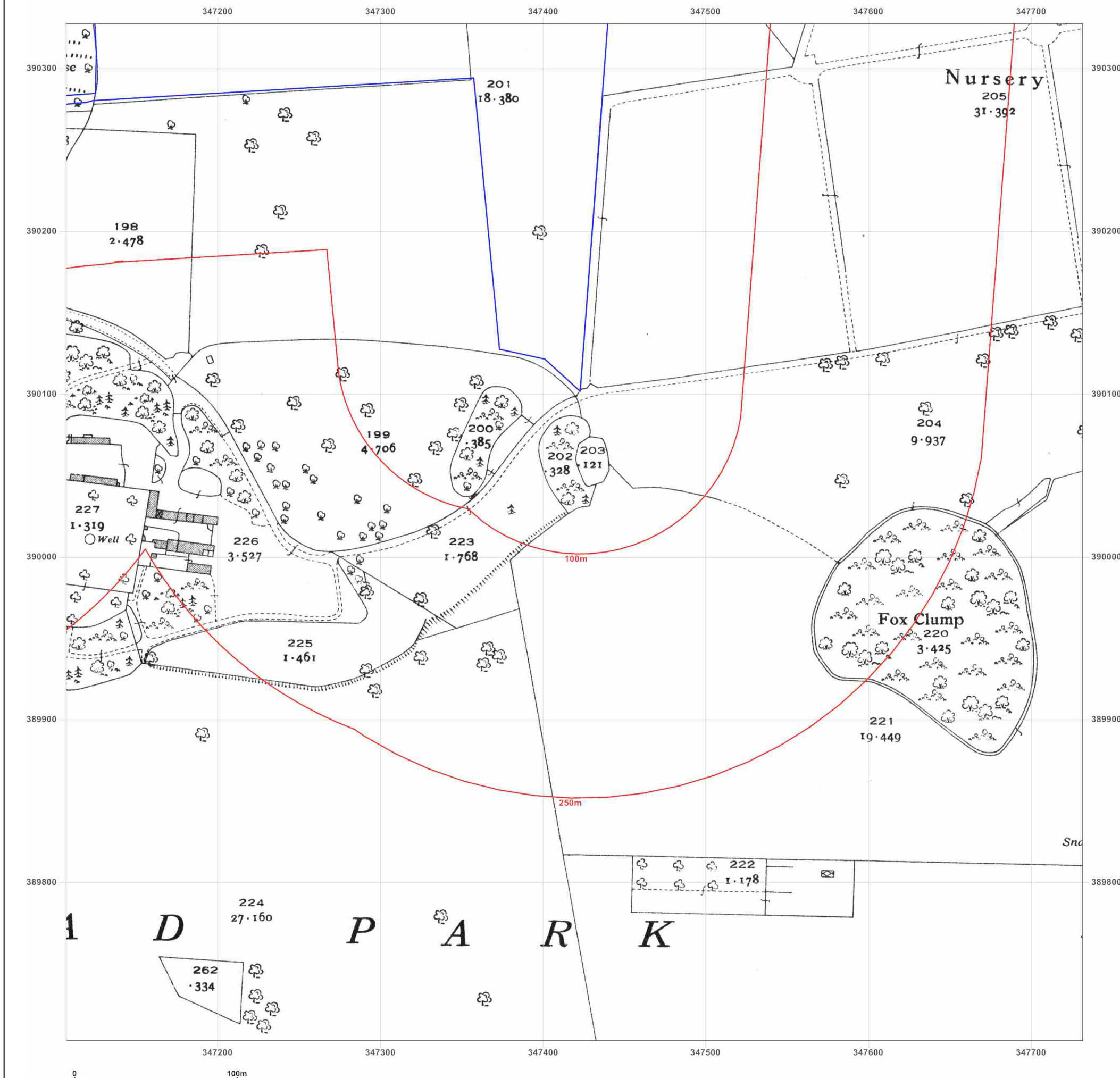


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1926

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1957

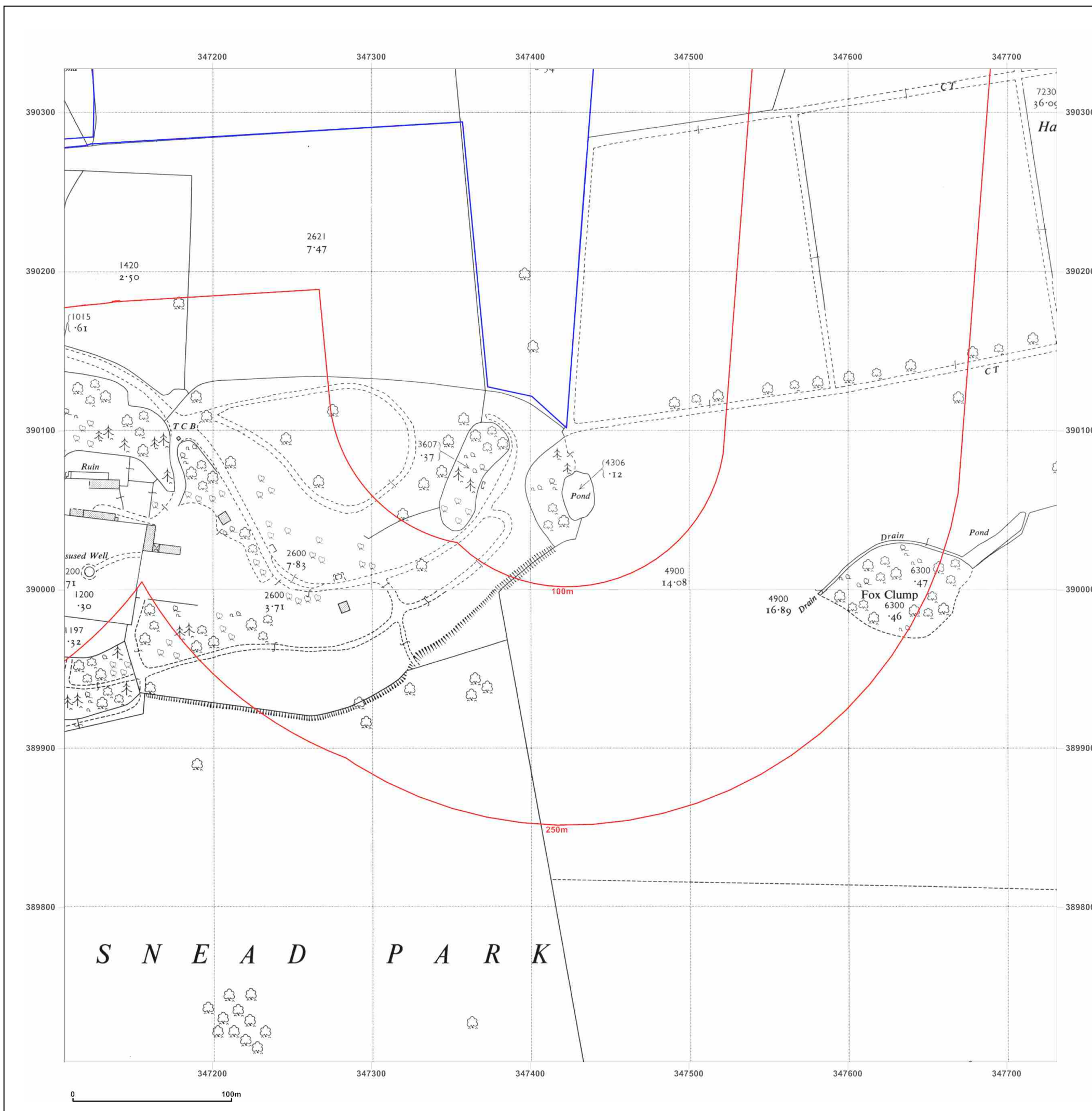


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: National Grid

Map date: 1975

Scale: 1:2,500

Printed at: 1:2,500



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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: National Grid

Map date: 1980

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1980
Levelled 1963

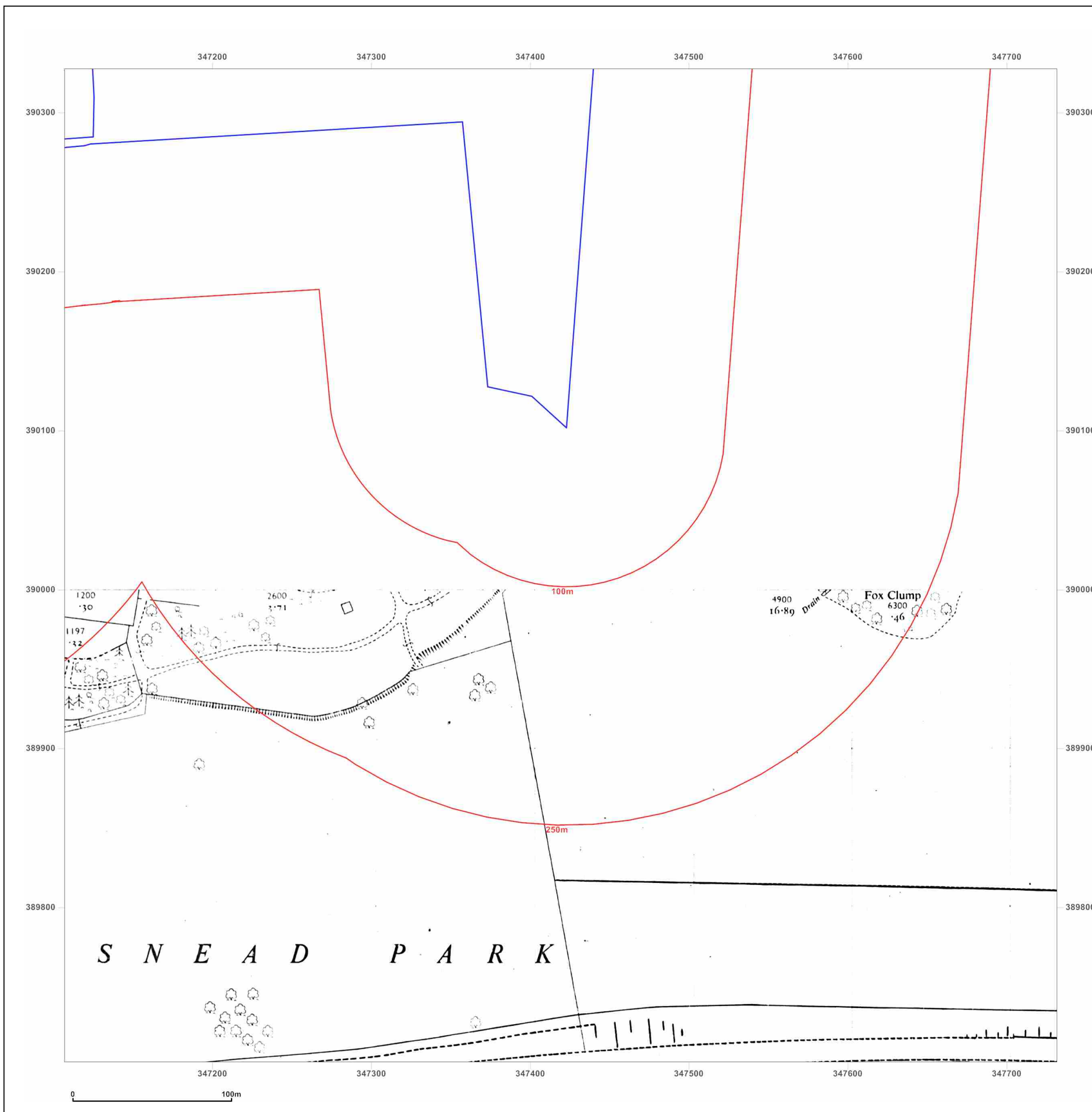


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: National Grid

Map date: 1980-1985

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
Revised 1985
Edition N/A
Copyright 1985
Levelled 1963

Surveyed 1980
Revised 1980
Edition N/A
Copyright 1981
Levelled 1963

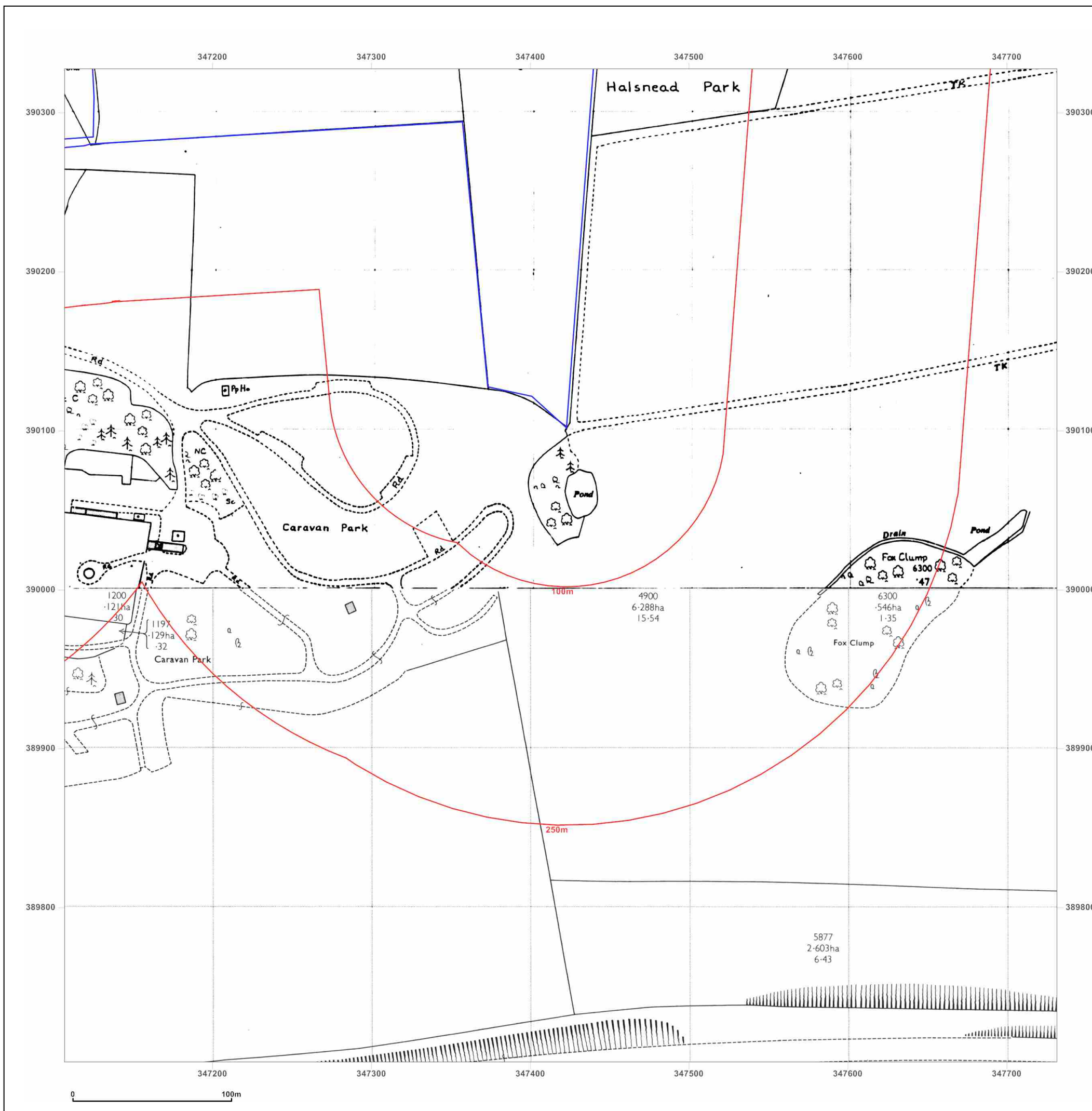


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Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: National Grid

Map date: 1986-1989

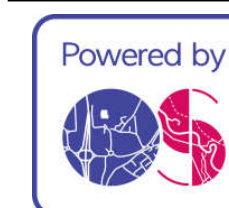
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Printed at: 1:2,500



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Revised 1986
Edition N/A
Copyright 1986
Levelled 1963

Surveyed 1963
Revised 1989
Edition N/A
Copyright 1989
Levelled 1963

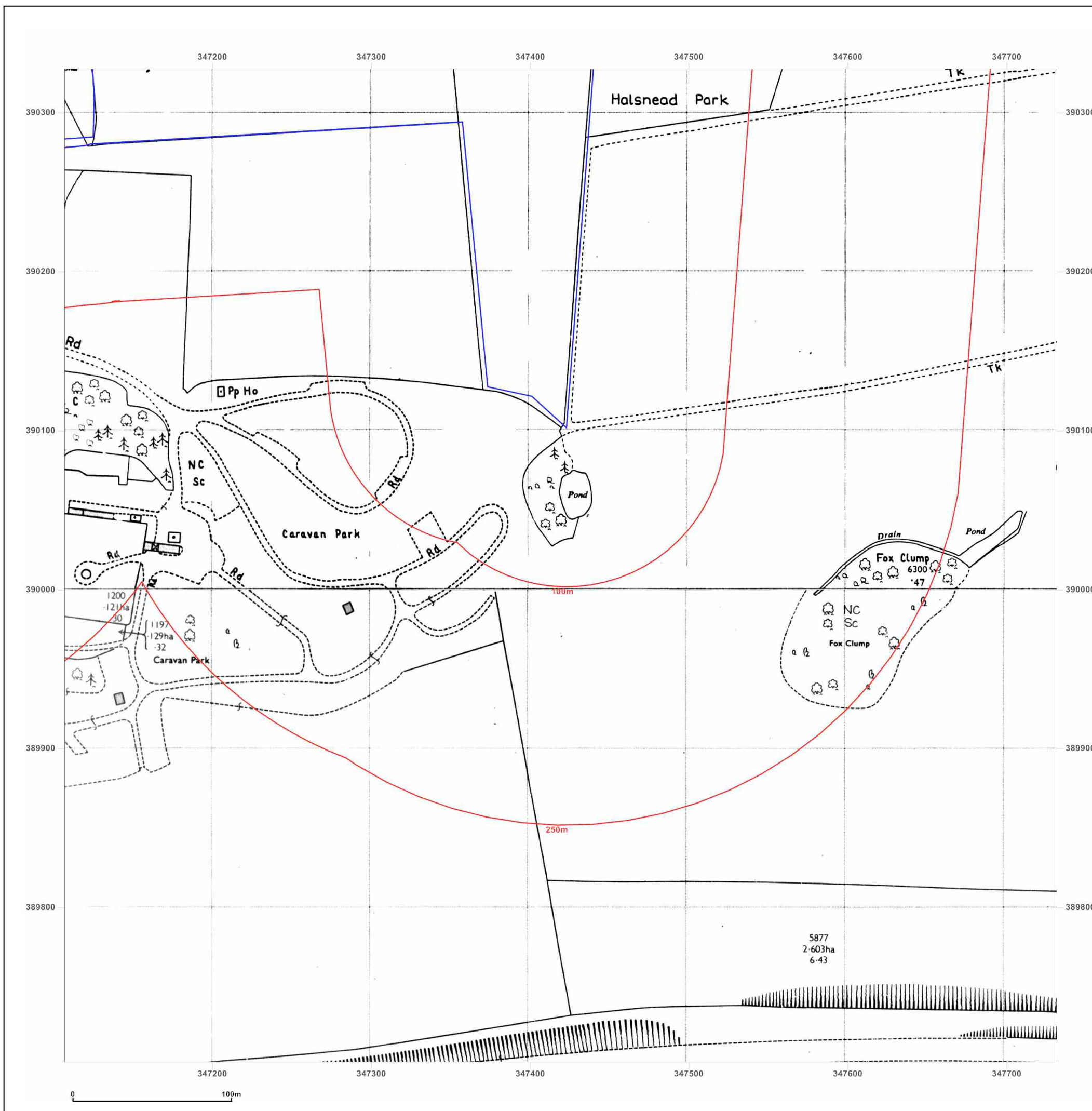


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HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_1
Grid Ref: 347419, 390015

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



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

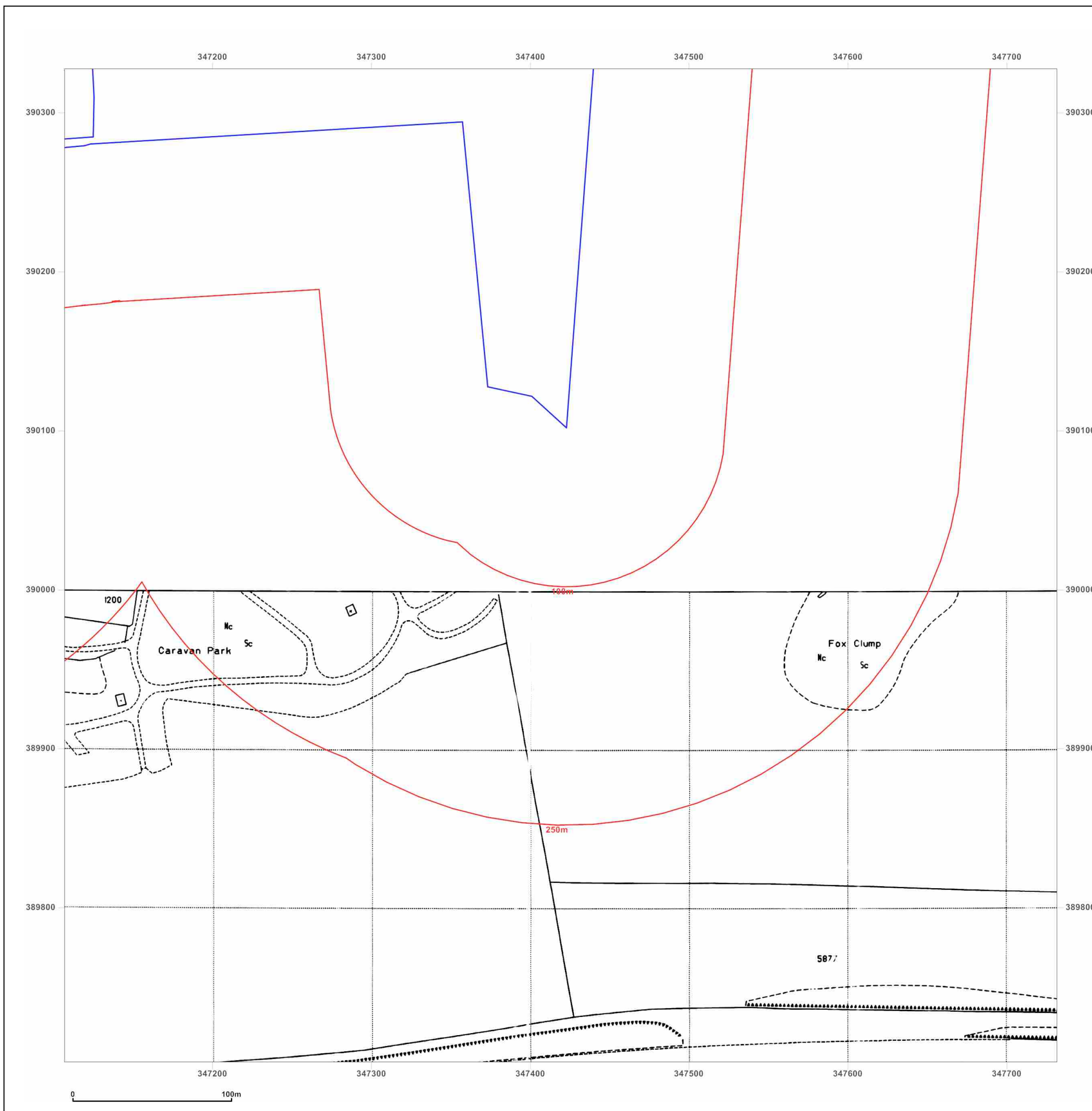


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

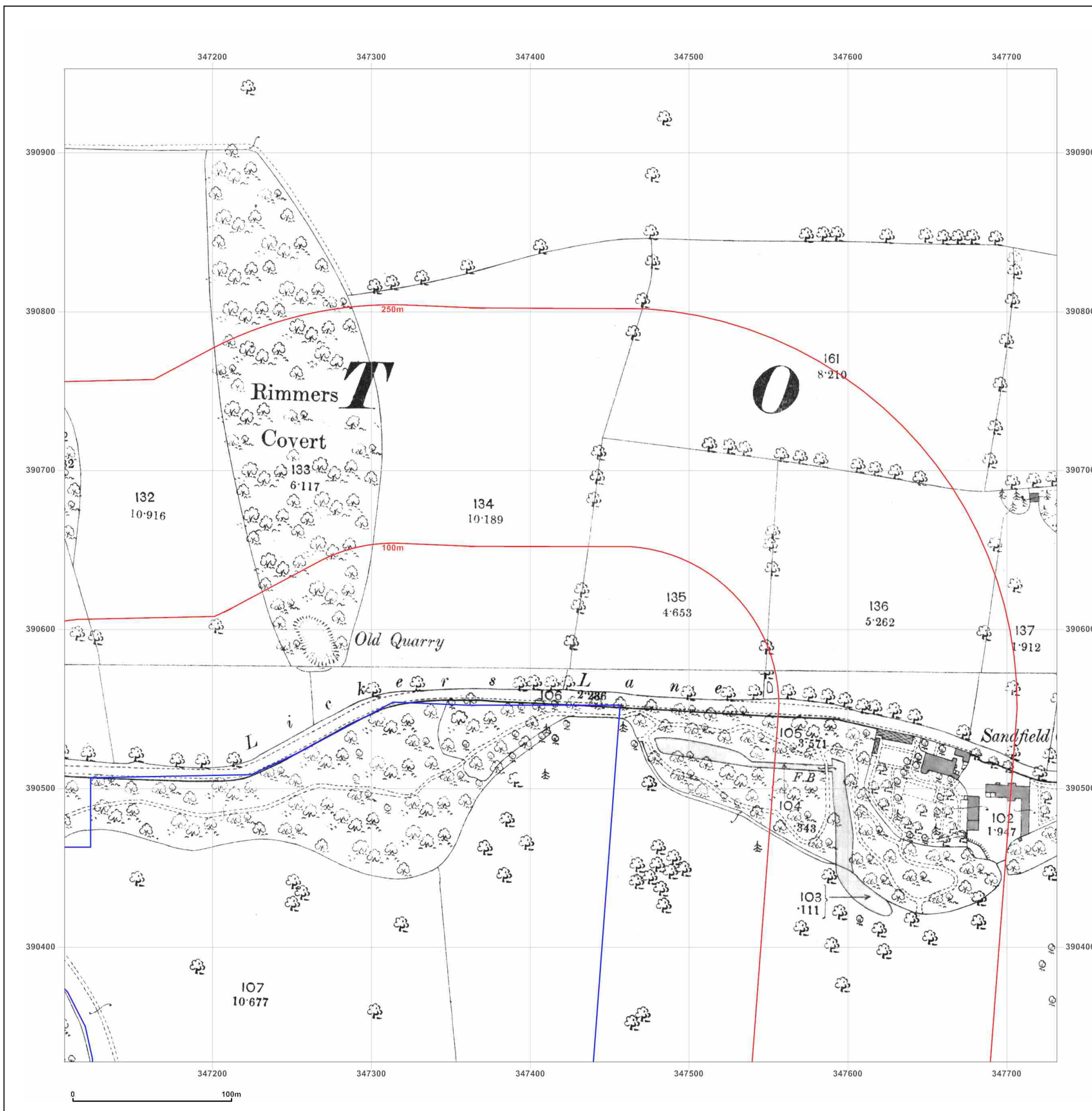


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Levelled N/A

Surveyed 1907
Revised 1907
Edition N/A
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Levelled N/A

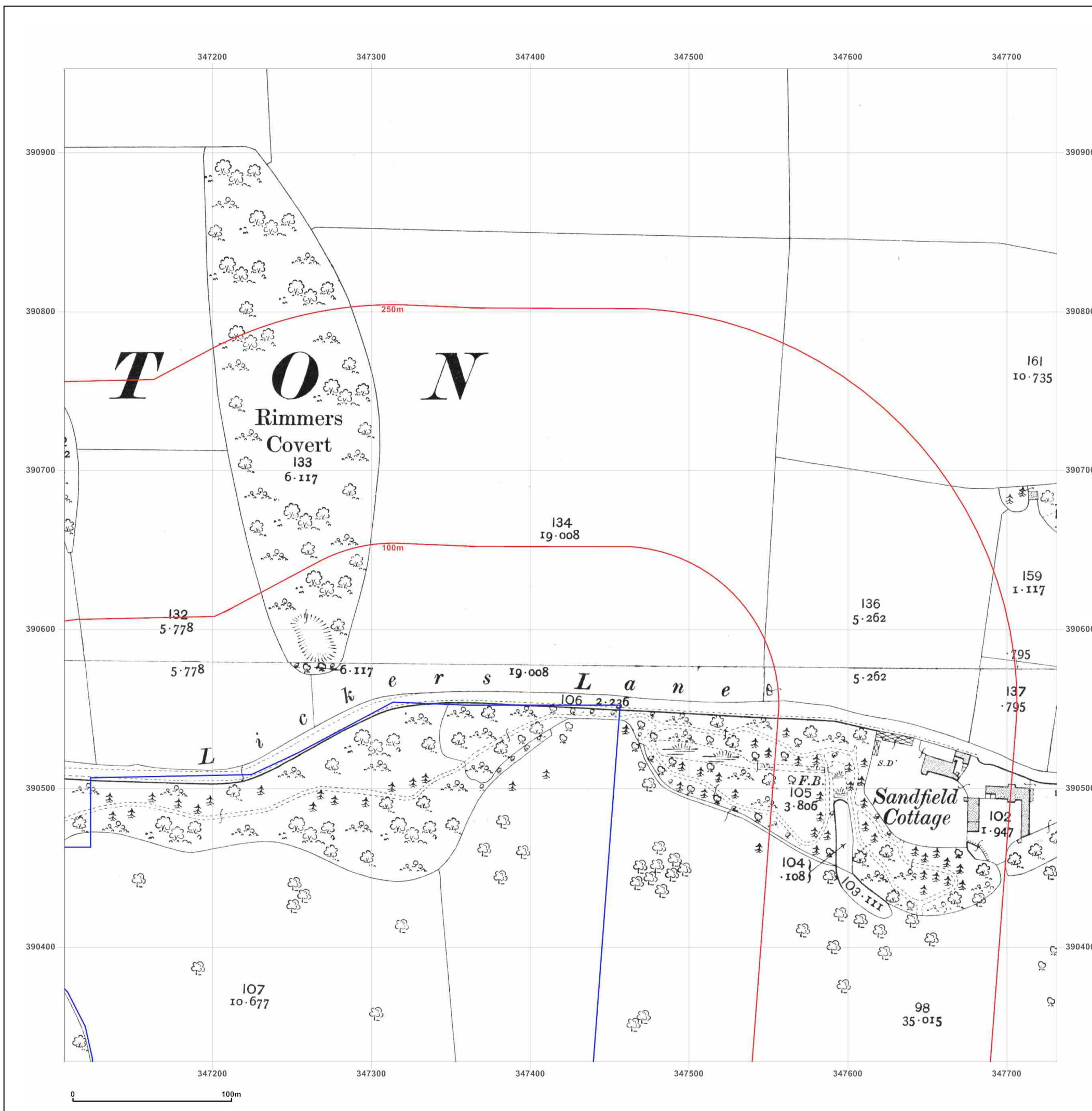


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1927
Revised 1927
Edition N/A
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Levelled N/A

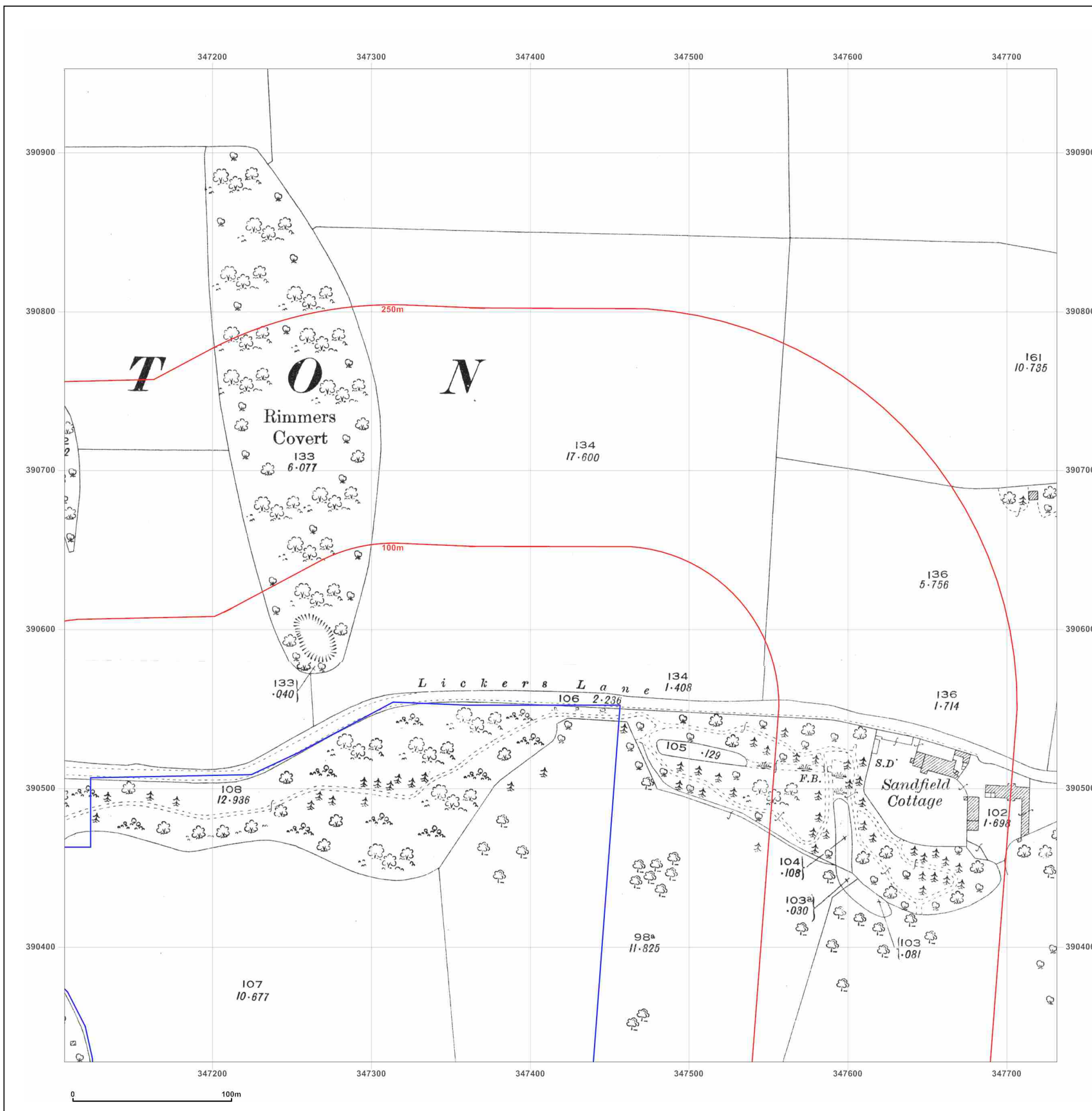


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: County Series

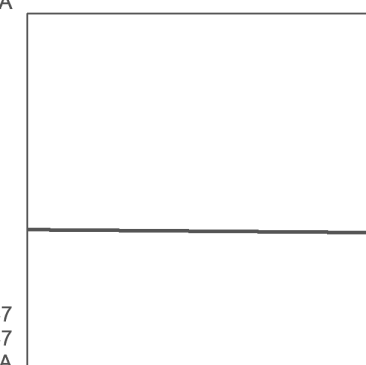
Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1937
Edition N/A
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Revised 1937
Edition N/A
Copyright N/A
Levelled N/A

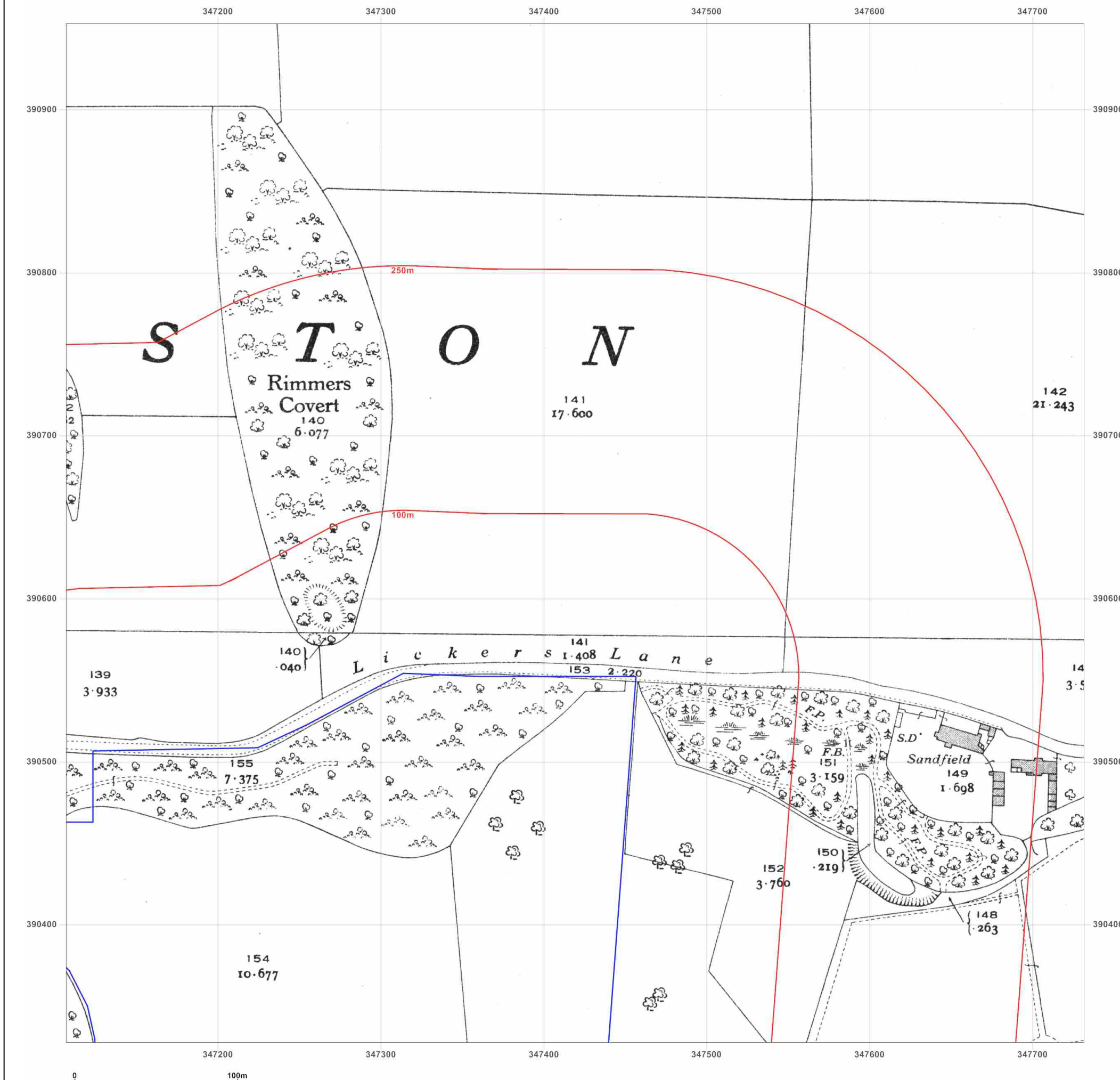


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: National Grid

Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1926

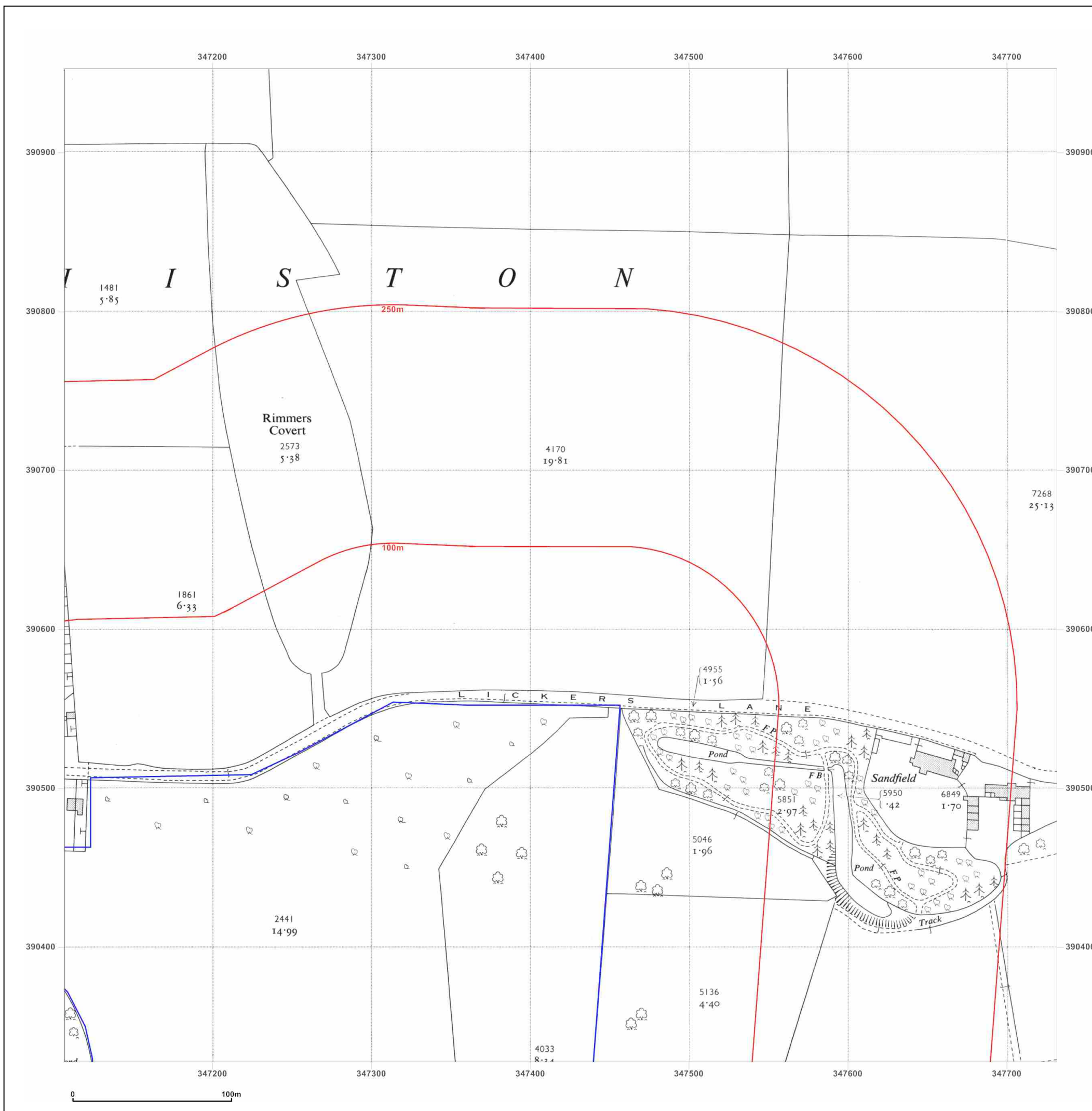


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Site Details:

HALSNEAD COMMUNITY
PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: National Grid

Map date: 1975

Scale: 1:2,500

Printed at: 1:2,500



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

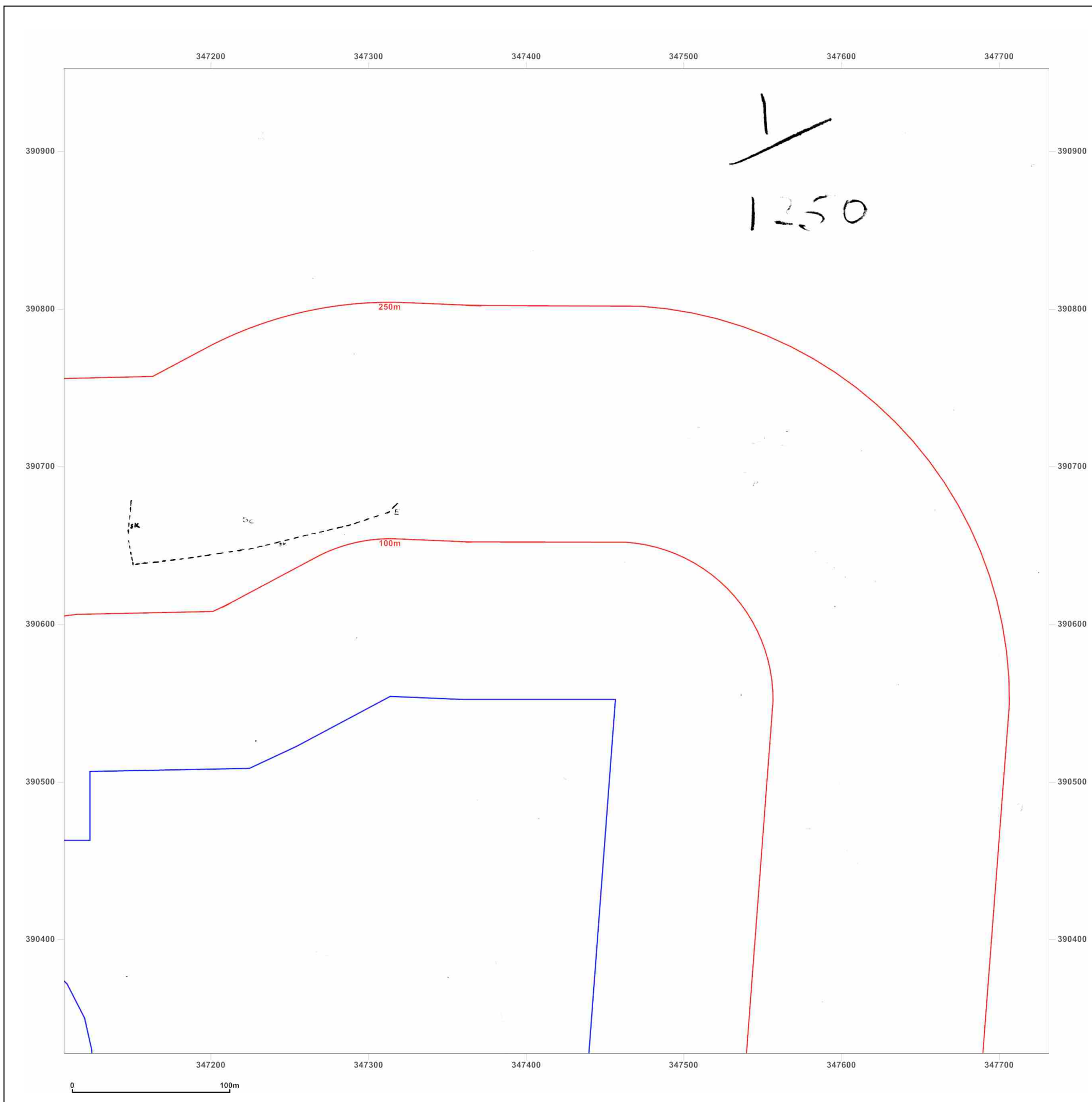


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: National Grid

Map date: 1985

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
Revised 1985
Edition N/A
Copyright 1985
Levelled 1963

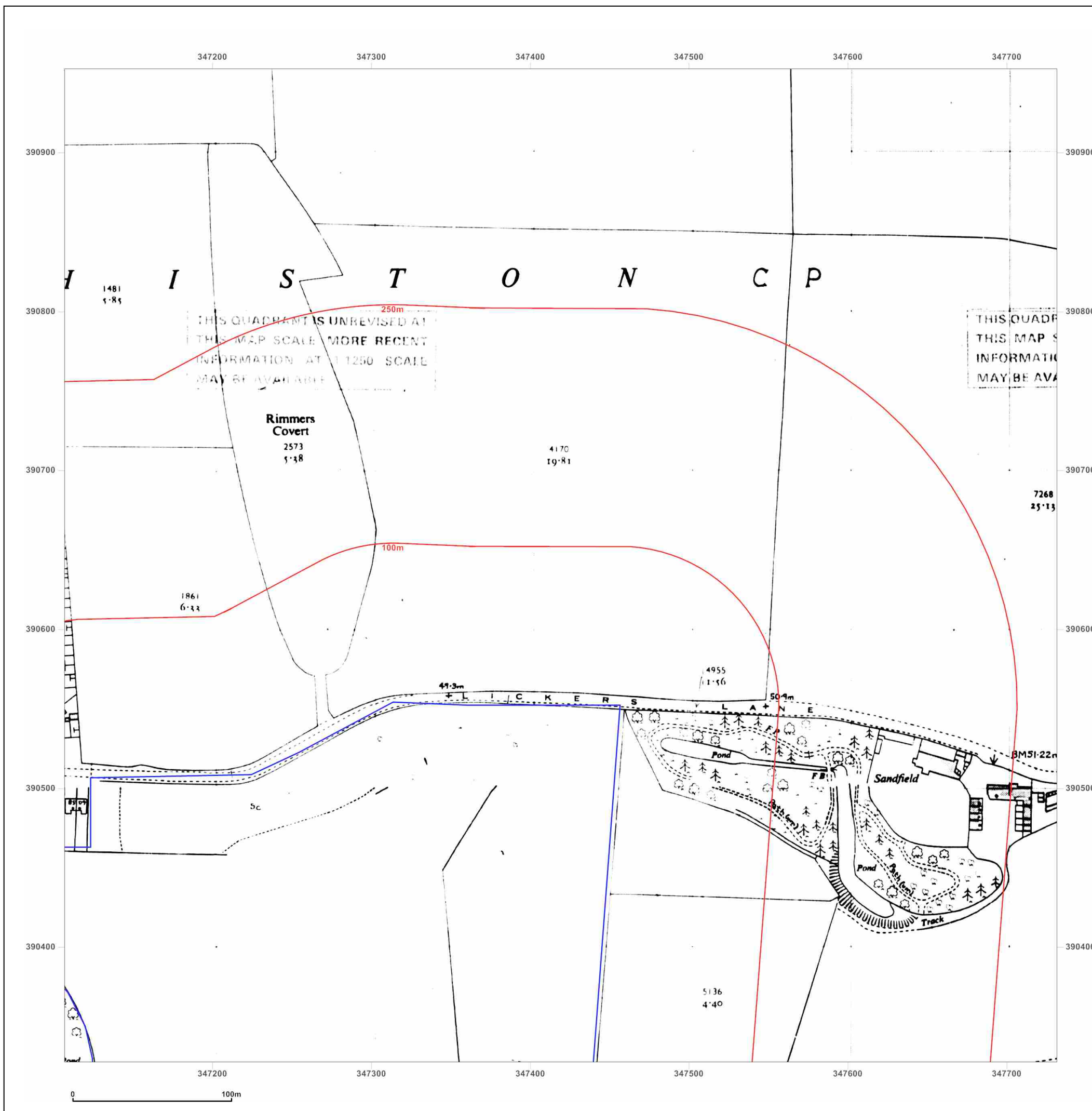


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Site Details:

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PRIMARY SCHOOL, L35 3TX

Client Ref: Halsnead_1417005
Report Ref: GS-6777655_LS_2_2
Grid Ref: 347419, 390640

Map Name: National Grid

Map date: 1986

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
Revised 1986
Edition N/A
Copyright 1986
Levelled 1963

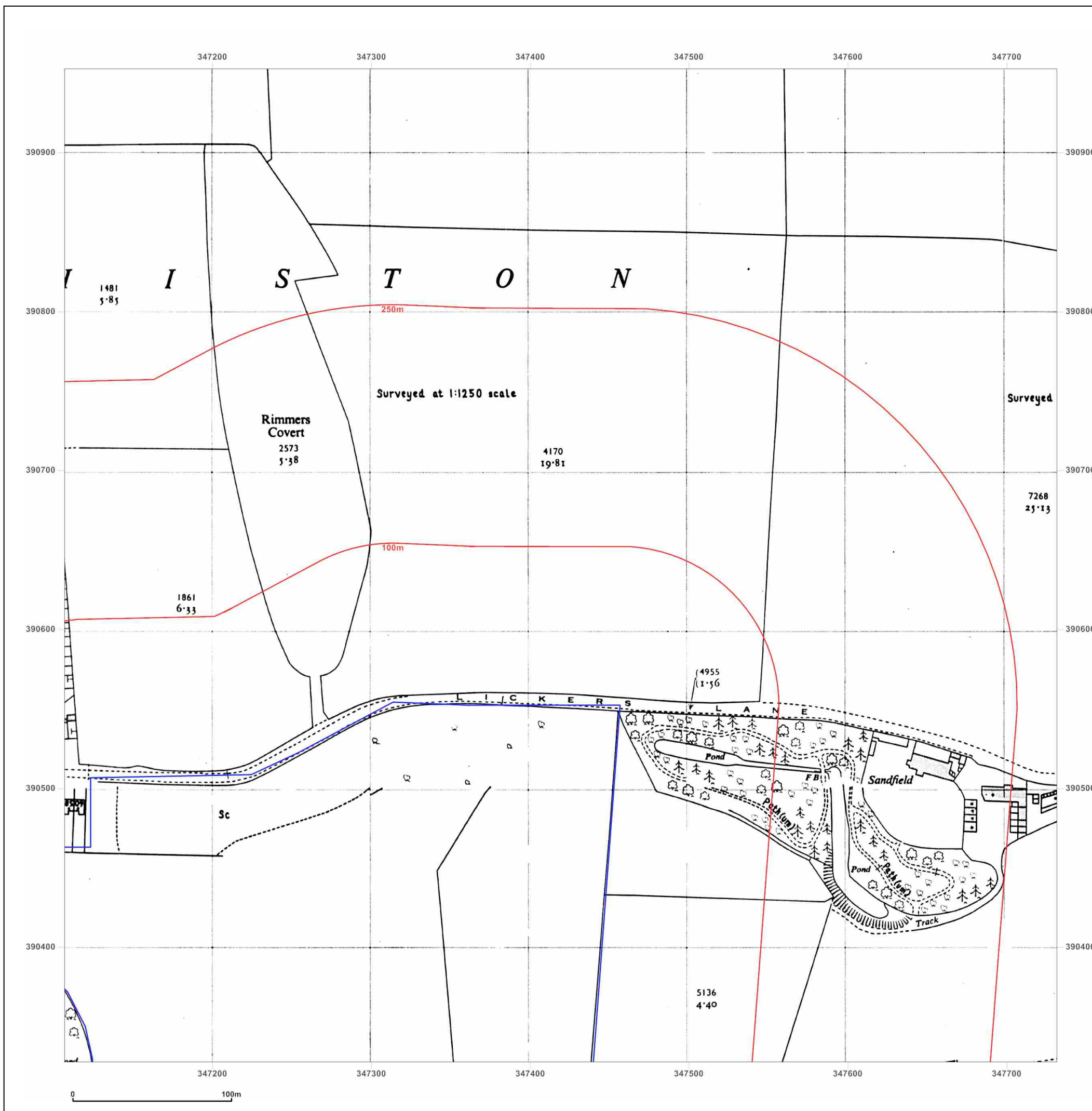


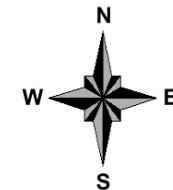
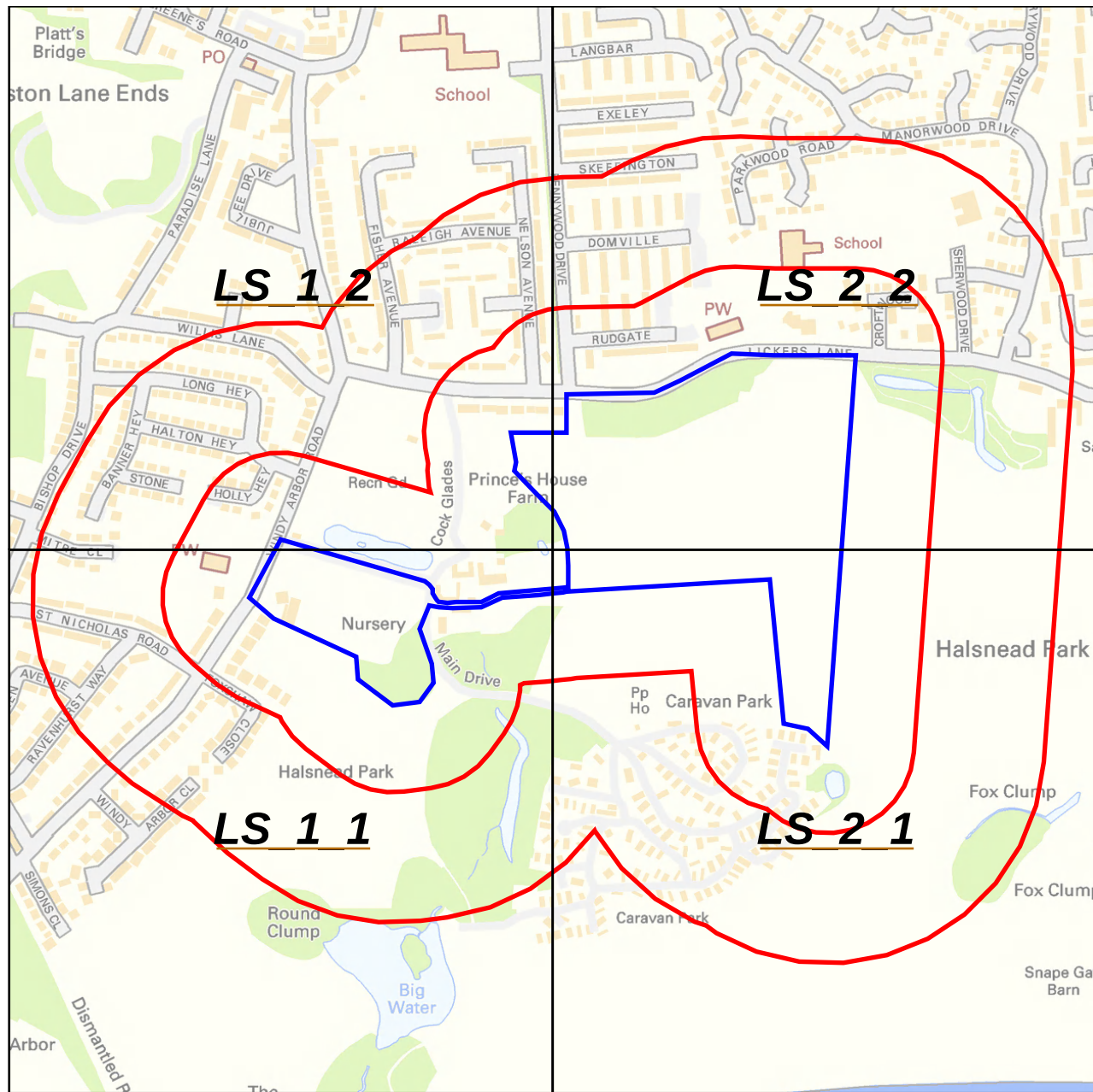
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1:2500 Scale Grid Index

Appendix C – Coal Authority Coal Mining Consultants Report



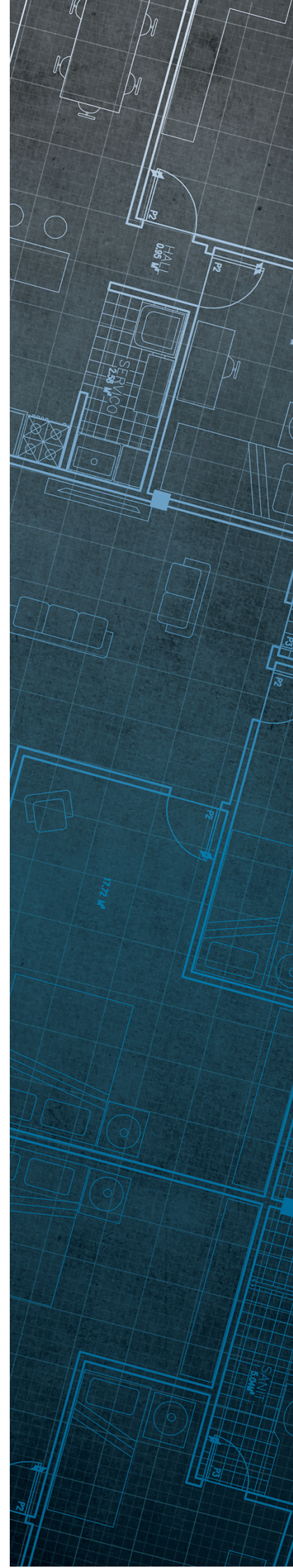
The Coal
Authority

Consultants Coal Mining Report

Halsnead Community Primary
School
Lancashire
L35 3TX

Date of enquiry:	1 June 2020
Date enquiry received:	1 June 2020
Issue date:	2 June 2020

Our reference:	51002285427001
Your reference:	GS-6777656



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

Halsnead Community Primary School
Lancashire
L35 3TX

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

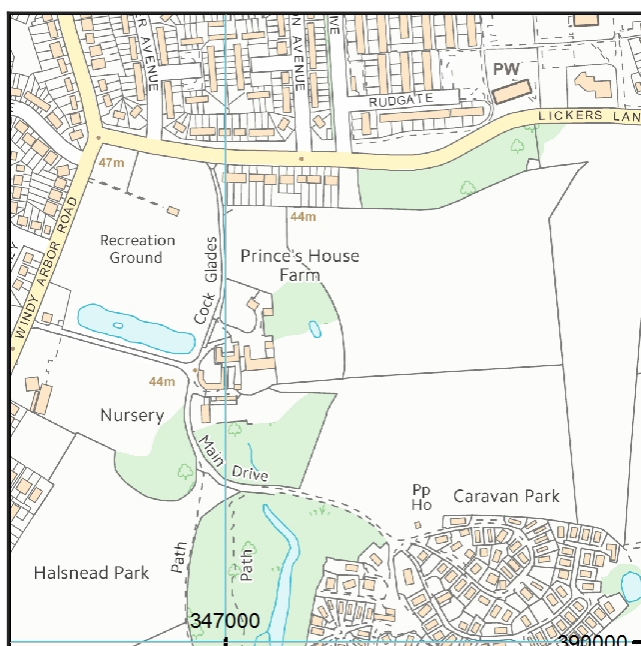
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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	ST. HELENS YARD	Coal	302U	78	Beneath Property	11.3	South-West	90	1867
unnamed	RAMS	Coal	3032	89	Beneath Property	11.3	South-West	180	1866
unnamed	HIGHER FLORIDA	Coal	3034	95	Beneath Property	11.3	South	180	1869
unnamed	RAMS	Coal	3030	99	South-West	11.3	South-West	180	1866
unnamed	WIGAN FOUR FEET	Coal	3002	127	North	11.2	South	160	1900
unnamed	WIGAN TWO FEET	Coal	3007	146	North-West	11.5	South	80	1903
unnamed	WIGAN FOUR FEET	Coal	3040	151	Beneath Property	11.2	South	160	1902
unnamed	WIGAN TWO FEET	Coal	3045	177	West	11.5	South-West	80	1903
unnamed	WIGAN FOUR FEET	Coal	3041	186	West	11.2	South	160	1900
unnamed	PLODDER	Coal	304B	226	Beneath Property	9.5	South-West	240	1880
unnamed	PLODDER	Coal	300B	226	North-West	9.5	South-West	240	1880
unnamed	WIGAN TWO FEET	Coal	3043	229	North-West	11.5	South	80	1903
unnamed	WIGAN FOUR FEET	Coal	303W	232	North-West	11.2	South	160	1900
unnamed	PLODDER	Coal	304A	243	North	9.5	South-West	240	1894
unnamed	RUSHY PARK	Coal	304L	339	Beneath Property	13.4	South-West	130	1896
unnamed	RUSHY PARK	Coal	300F	368	North	9.4	South	130	1890
unnamed	RUSHY PARK	Coal	304I	376	Beneath Property	9.5	South	130	1895
unnamed	RUSHY PARK	Coal	304J	392	South-East	12.0	South	130	1889

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	346390-026	346945 390181		Coal	
Shaft	346390-027	346753 390375	This shaft was investigated and treated by GCT Construction Ltd in 1972. The works were carried out to specifications set and monitored by the National Coal Board	Coal	
Shaft	346390-029	346945 390228		Coal	
Shaft	346390-034	346709 390379	This shaft was investigated and treated by GCT Construction Ltd in 1972. The works were carried out to specifications set and monitored by the National Coal Board	Coal	
Shaft	347390-002	347304 390332		Coal	
Shaft	347390-003	347281 390166		Coal	
Shaft	347390-004	347378 390178		Coal	
Shaft	347390-005	347413 390184		Coal	
Shaft	347390-006	347004 390243	this shaft has been proved to be filled and may have been capped to an unknown specification at some time in the past	Coal	
Shaft	347390-007	347031 390542		Coal	
Shaft	347390-008	347053 390541		Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW368	NW727	NW803
3671	NW638	NW849
4441	13866	NW822

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
CROMBOUKE	Coal	Yes	Within	N/A	135
CROMBOUKE	Coal	Yes	52.2	North	135
HIGHER FLORIDA	Coal	Yes	Within	N/A	118
HIGHER PIGEON HOUSE (PIGEON HOUSE)	Coal	Yes	Within	N/A	129
HIGHER PIGEON HOUSE (PIGEON HOUSE)	Coal	Yes	26.4	N/A	308
LONDON DELPH (BIN)	Coal	Yes	Within	N/A	129
LONDON DELPH (BIN)	Coal	Yes	Within	N/A	131
LOWER FLORIDA	Coal	Yes	Within	N/A	117
RAMS	Coal	Yes	Within	N/A	114
ROGER	Coal	Yes	Within	N/A	136
ST. HELENS YARD	Coal	Yes	Within	N/A	121

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
Within	N/A
Within	N/A
9.7	South

See Section 4 for further information.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

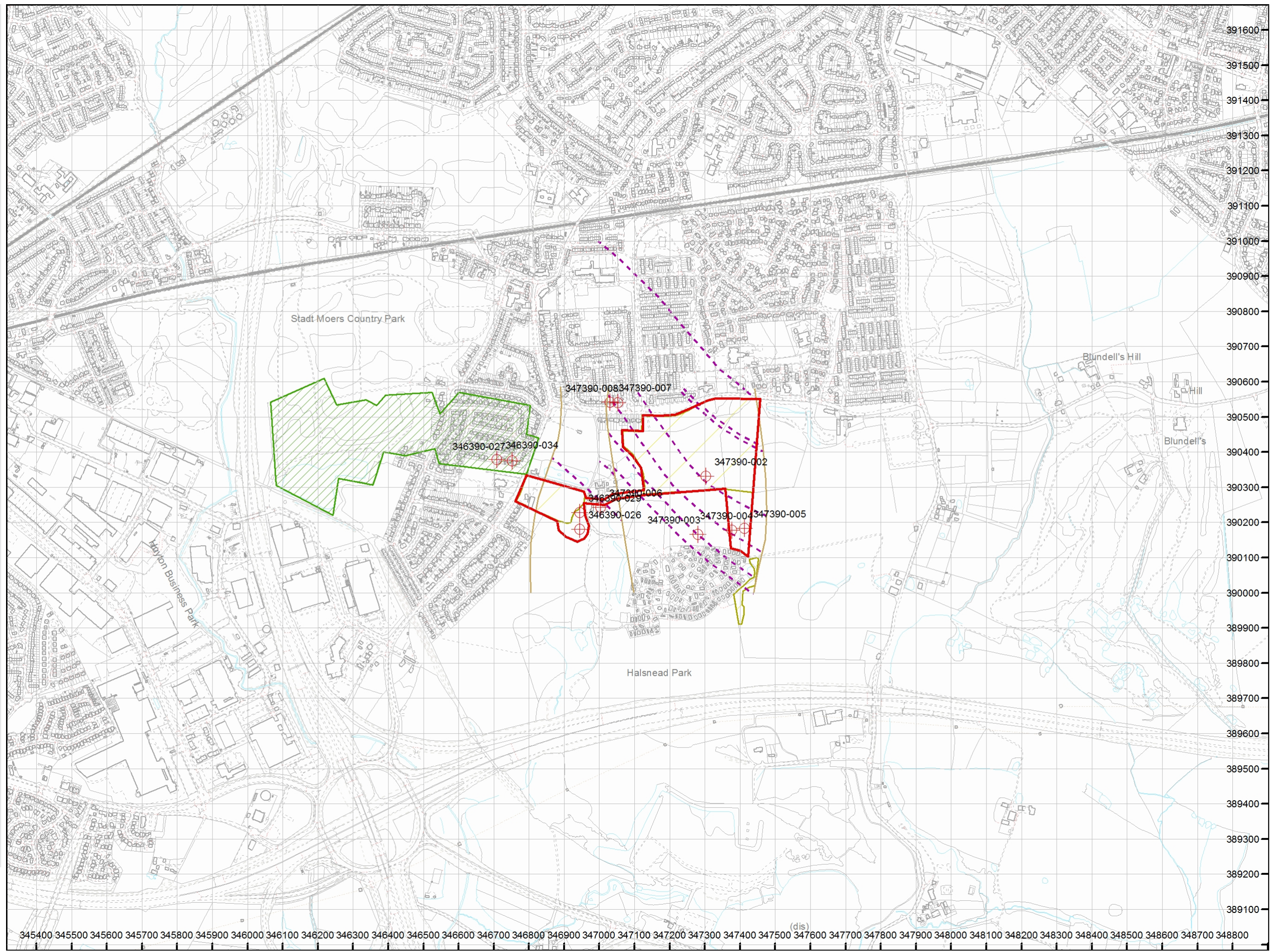
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

- Approximate position of the enquiry boundary shown 
- Disused mine shaft 
- Outcrop (Conjectured) 
- Geological faults 
- Unlicensed opencast site 
- Site investigations 

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com



Appendix D – Coal Mine Abandonment Plans

CARRS COLLIERY.

PRESCOT, LANCASHIRE

MAIN DELF WORKINGS.

Scale 30 Y^{ds} to an Inch.

5378



Section of No 1 Pit

Section of Main Delf Seam



Top Coal	2 0
Hard Coal	2 6 1/2
Medium Coal	3 3 1/2
Soft Coal	1 4
Bottom Coal	5 6

Scale 20 Y^{ds} to an Inch

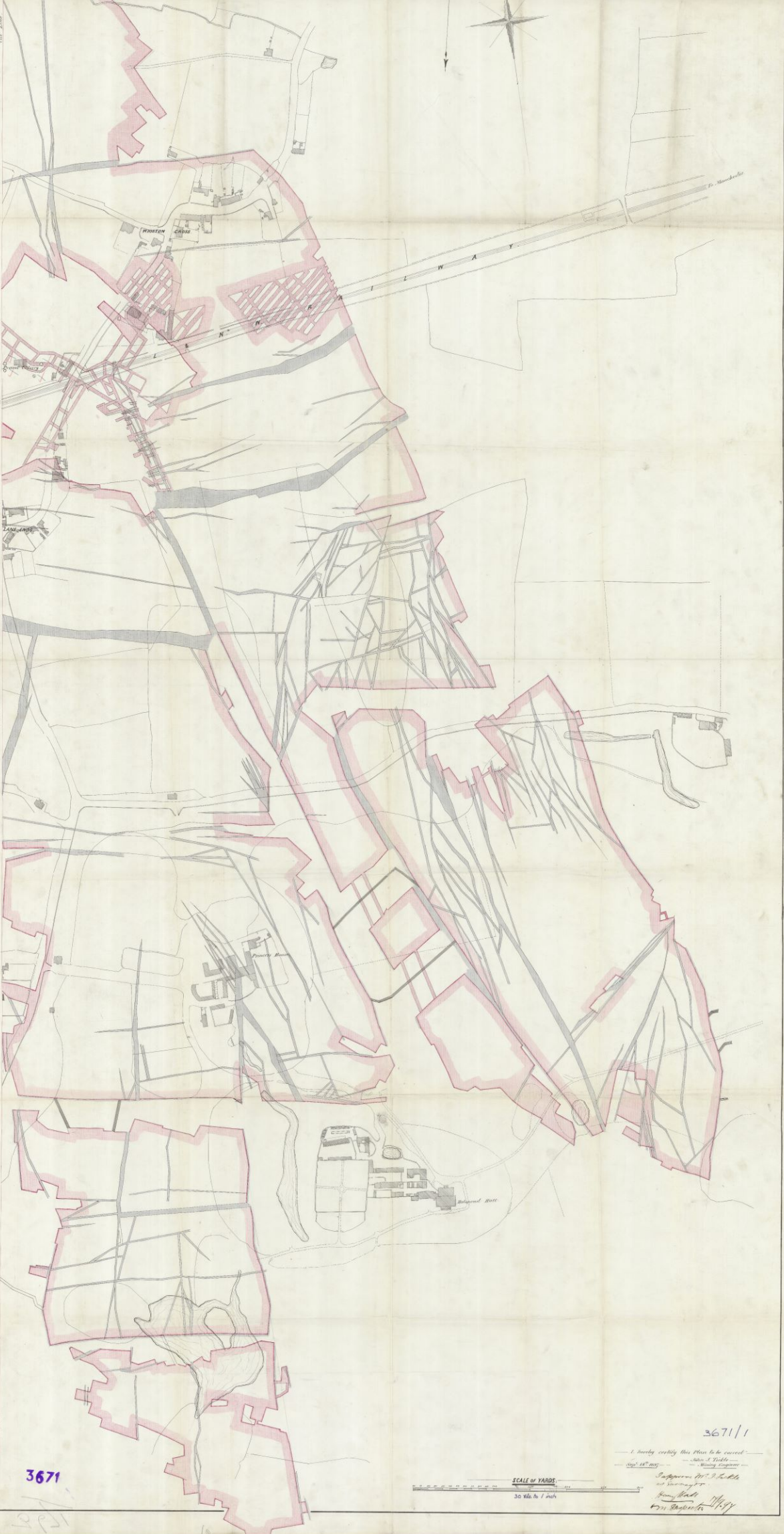
Scale 1/2 in of an Inch to a Yard

2378

ARK MINE
TRIPS CO. LTD.

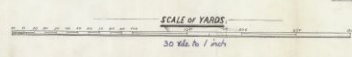
SHEET 1.

3671
[1905]
Plan No. 3671



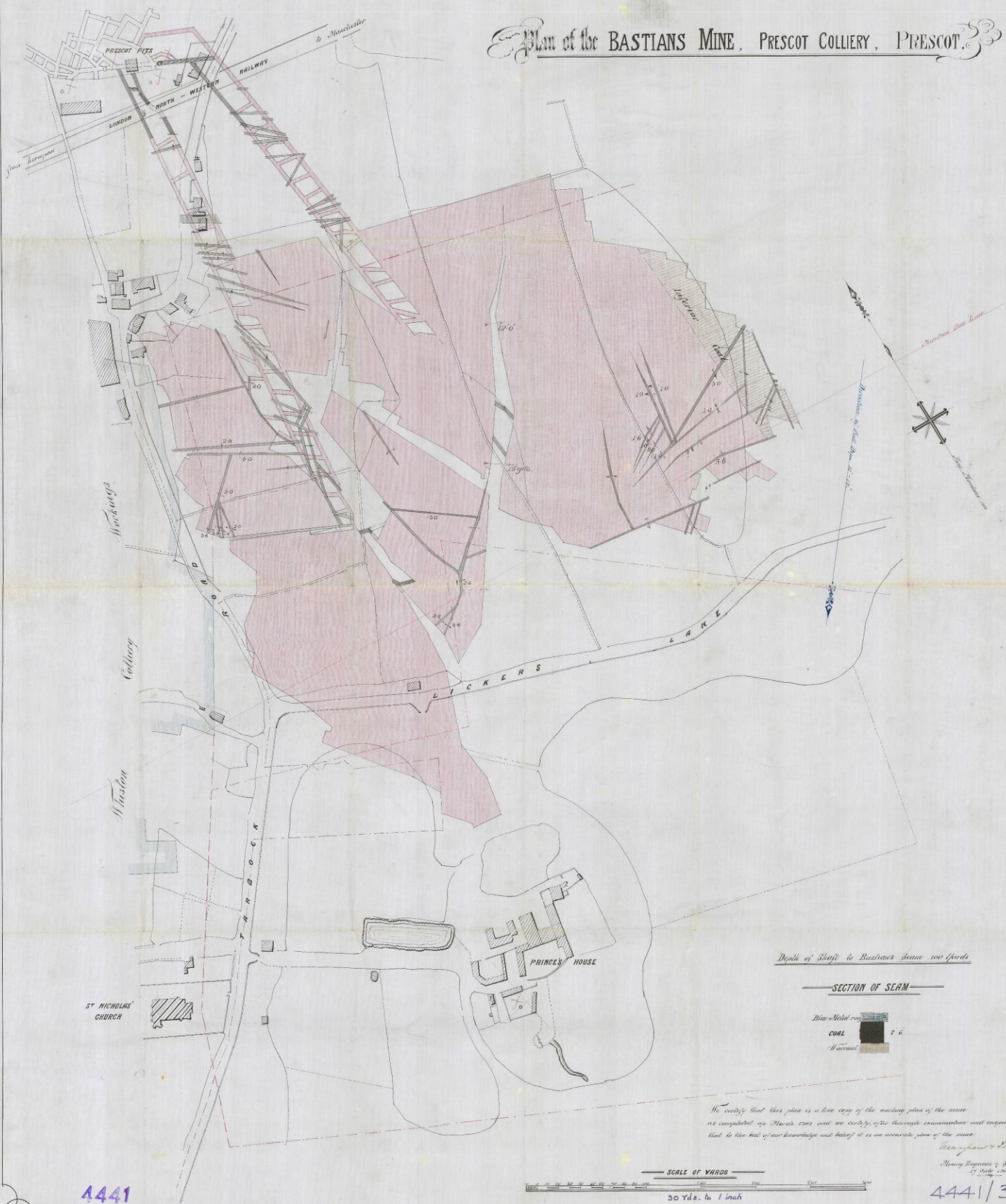
3671

3671/1



I hereby certify this plan to be correct
— John A. Tisdale
— Mining Engineer
Supervisor W. J. Smith
from plans
Wm. Roberts

Plan of the BASTIANS MINE, PRESCOT COLLIERY, PRESCOT.



Catalogue No.: 4441 Sheet Info: 3 OF 4

Date: 12/06/2020

Scale: 30 YARDS TO 1 INCH (1 TO 1080)

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Andrea Holmes - The Coal Authority, 200 Lifford Lane, Mansfield, Nottinghamshire NG19 4RG, England

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The Coal
Authority

The Coal Authority, 200 Lifford Lane, Barry Hill, Mansfield, Nottinghamshire NG19 4RG. www.coal.gov.uk

Plan of the TENLANDS MINE, PRESCOT COLLIERY, PRESCOT.



Depth of Shaft to Tenlands House 70 fathoms

SECTION OF SEAM



Note: Top Coal not worked

We certify that this plan is a true copy of the working plan of the mine as completed on the 1st of 1881 and we hereby give thorough examination and enquiry that to the best of our knowledge and belief it is an accurate plan of the mine.

Witness our hands and seals this 1st day of 1881.

James Thompson & Son, Surveyors

Catalogue No. 4441 Sheet Info: 1 OF 4

Date: 12/06/2020

Scale: 30 YARDS TO 1 INCH (1 TO 1080)

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The Coal Authority

