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South Yorkshire Fire & Rescue

Barnsley Fire Station
Broadway
Barnsley
S70 6RA

Phase I Desk Study

P18-00555

Report by:

A Cooper

Professional, Innovative,

Practical Solutions

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1. REVISION RECORD

Report Ref: P18-00555-Met-RP-GE-001					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
1	Initial Issue	09/05/18	AEC	RJS	IFL

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Prepared For:	**Prepared By:**
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2. INTRODUCTION

2.1. GENERAL INTRODUCTION

This Report presents the findings of a Phase I Desk Study of a site at Barnsley Fire Station, Broadway, S70 6RA (Grid Reference: 433201, 405634) for South Yorkshire Fire & Rescue.

The Desk Study (Phase I) comprised obtaining research/archive information from Emapsite, in the form of a GroundSure Report. The GroundSure Report provides the basic background information including Historical Ordnance Survey Plans, British Geological Survey Plans and Environment Agency Report (including Radon). This report presents the findings of this background information as it relates to the proposed end use of the site and considers the potential for contamination of the site. The Groundsure Report is attached as Appendix I.

2.2. OBJECTIVES

This Desk Study was conducted in order to formulate an opinion as to the potential for hazardous substances to exist on, at, or near the vicinity of the site which might affect the future development of the site, appropriate to the proposed end use of the site. It is understood that redevelopment of the site is to comprise the demolition of the existing building and construction of a new fire station. The "vicinity" of the site for the purposes of this Report is defined as being located within an approximate 250m radius of the site.

The objectives of the Desk Study were aimed to determine:-

- The historical site usage, identifying any factors, based on the Archive Ordnance Survey Maps, which might give rise to the potential for hazardous substances to exist on, at, or near the vicinity of the site.

- The general ground conditions at the site, based on published Geological Maps, identifying any significant geotechnical conditions which might affect the future redevelopment of the site.

- Current operations undertaken within the site and in the immediate vicinity, based on the GroundSure database, which might give rise to the potential for hazardous substances to exist on, at, or near the vicinity of the site and which might affect the future redevelopment of the site.

2.3. SCOPE OF WORKS

In order to meet the objectives, Met Engineers obtained research information from Emapsite, which includes data from the following sources: -

- Historical Ordnance Survey Plans
- British Geological Survey Plans and Radon Report
- Environment Agency Report
- Coal Authority Mining Information

This Report presents the findings of the Desk Study as related to the proposed end use of the site. The purpose of the Desk Study is to allow an opinion to be formulated as to the likely Geo Environmental conditions at the site and the potential implications for the end use. This report does not quantify those findings nor provide any recommendations for remedial works, mitigation or risk management.

2.4. LIMITATIONS OF THE REPORT

South Yorkshire Fire & Rescue (the Client) has requested that a Phase I Geo-Environmental Site Assessment be undertaken in order to assess the suitability of the site for redevelopment. The Report is not a comprehensive site characterisation and should not be construed as such.

This Report has been prepared for the sole internal use and reliance of South Yorkshire Fire & Rescue. The Report shall not be relied upon or transferred to any other parties without the express written authority of Met Engineers. If any unauthorised third party comes into possession of the Report, they rely on it at their own risk and the Met Engineers owes them no Duty of Care.

The findings and opinions conveyed via this Report are based on information obtained from a variety of sources as detailed within this Report and which Met Engineers, believes are reliable. Nevertheless, Met Engineers, cannot and does not guarantee the authenticity or reliability of the information it has relied upon. The information contained in this Report is to the best of our knowledge accurate at the date of issue, however, sub-surface conditions, including ground water levels, and may vary over time.

It is possible that the GroundSure Report may not include information from every information source. Assuming such further information sources actually exist, their information has not been considered in the formulation of these findings and opinions; this Report only considers the information contained within the GroundSure Report.

In preparing this Report it has been assumed that all past and present occupants and Third Parties have provided accurate information, especially relating to known or potential hazards. This Report does not identify deficiencies or mistakes in the information provided by the user/owner, or from any other source, except where obvious in the light of other information.

This Report is relevant at the date the report was written and should be read in the light of any subsequent changes in legislation, statutory requirement or industry practices.

The Report represents the technical findings and opinions of Met Engineers, and does not constitute any legal advice. As such, the advice of a Solicitor may also be required.

3. SITE HISTORY AND ENVIRONMENTAL SETTING

A detailed review of the published history, hydrological, geological and available environmental information has been carried out.

The area of land referred to as 'The Site' within this document is indicated in Appendix I.

3.1. SITE DESCRIPTION

Site Address	Barnsley Fire Station, Broadway, Barnsley, S70 6RA
Location	Grid Reference: 433201, 405634
Setting	The site is located approximately 1km south west of Barnsley town centre. The site is rectangular in shape and covers and an area of 0.81 hectares (Ha). It is accessed via an open entrance off Broadway (A6133). The centre of the site is covered by buildings and hardstanding parking areas. The south western area and northern corner of the site are covered by grass and occasional large trees. The western boundary is lined with shrubs. The south western boundary is open on to a public footpath, the north western and north eastern boundaries are formed by metal fences and the south eastern boundary is formed by a brick wall topped with wooden fencing. The grass banking in the south of the site slopes north eastwards towards the centre of the site. The centre of the site is generally flat. The adjacent land uses are residential flats to the south east, residential houses, an allotment and a radio pylon to the north east, a warehouse recorded as a co-op distribution centre to the north west and the A6133 (Broadway to the south west. Photographs from the site walkover are provided in Appendix II.
Development Proposal	It is proposed to demolish the existing fire station building and re-develop the site with a new fire station. A proposed layout has not been provided at this stage.

3.2. SITE HISTORY FROM MAPPING

Year (map scale)	Comment
1850 (1:10,560)	The site is undeveloped agricultural land with 2№ footpaths along the north eastern and south eastern boundaries. The surrounding area is predominantly agricultural with a sandstone quarry approximately 90m south west.
1890-1 (1: 10,560)	No significant change to the site or surrounding area.
1893 (1:2,500)	No significant change to the site. The quarry to the south west of the site is now labelled 'old quarry'.
1929 (1:10,560)	No significant change to the site. An allotment gardens is now show adjacent to the north eastern boundary and a pit is shown approximately 150m south. The residential areas of Barnsley town have expanded to the north east, however the vicinity of the site remains predominantly undeveloped.
1938 (1:10,560)	No significant change to the site. A main road labelled Broadway has now been developed adjacent to the south western boundary of the site.
1948 (1:10,560)	No significant change to the site or surrounding area.
1959 (1:2,500)	6№ buildings and an access roadway have now been developed on the site in their current layout. Embankments are shown adjacent to the north east of the site and the area to the south east is now a playing field. The allotment gardens remain adjacent to the north eastern boundary and Broadway Technical Grammar School has now been developed approximately 20m south west of the site, crossing Broadway. A chimney is labelled on 1№ of the school buildings. It is assumed that the former quarry has been infilled in order to building the Grammar School in this location.
1965-66 (1:10,560)	No significant change to the site or surrounding area.
1969 (1:2,500))	No significant change to the site. Barnsley County Secondary School has now been developed approximately 80m south west and the pit approximately 150m south now appears to have been infilled.

Year (map scale)	Comment
1970-74 (1:1,250)	The site is now labelled as a Fire and Ambulance Headquarters an 1№ of the buildings in the centre of the site is labelled an electricity sub-station. A substation is labelled adjacent to the building with a chimney at Broadway School to the south west. A moulded rubber works is now located approximately 100m north west off the site and a circular tank is shown 100m north.
1973-77 (1:10,560)	No significant change to the site. Barnsley has expanded and residential areas have now been developed to the north west, extending to within approximately 200m of the north western site boundary.
1978-83 (1:1,250)	No significant change to the site. Residential houses have been developed adjacent to the north east and east of the site.
1991 (1:1,250)	No significant change to the site. A radio pylon is now located approximately 20m north east of the site on the site of the former allotment gardens, and the area approximately 100m north east is now a sports ground. A warehouse has now been developed on the site of the former works, extending to within approximately 40m of the north western site boundary. The school buildings to the south west of the site are now labelled 'The Kingstone School'.
2002 (1:10,000)	No significant change to the site. The building adjacent to the south east of the site has now been demolished and replaced by 3№ residential buildings.
2014 (1:10,000)	No significant change to the site or surrounding area.
1854-2014	Those maps not specifically mentioned show no deviation from the observations made above.

3.3. SITE HISTORICAL OVERVIEW

The site comprised undeveloped agricultural land until the existing fire station buildings were developed by 1959. Since 1974, 1№ of the buildings in the centre of the site has been labelled as a substation and the layout of the site has remained the same ever since.

The surrounding area was predominantly undeveloped with a sandstone quarry located approximately 90m south west by 1850 and disused by 1893. By 1959, schools were developed in this area indicating that the quarry was infilled. A works was located 100m north west from approximately 1970 until it was replaced by the current warehouse by 1991. At this time a radio pylon was also constructed in the location of the former allotments approximately 20m north.

3.4. GEOLOGICAL OVERVIEW

Geology	Artificial Ground – None recorded on site. 3№ areas of Made Ground and 1№ area of infilled ground are recorded within 250m. The nearest is recorded 79m south east. Superficial Deposits – None recorded. Bedrock Geology – Pennine Middle Coal Measures Formation – Sandstone. Faults – 2№ faults recorded, 47m south east and 209m south west. Coal Outcrops – 4№ recorded within 250m. There are located 54m north east, 102m south west, 103m north and 210m west.
Radon	1 – 3 % of properties in the area are above the radon action level. However, radon specific protection measures are not required for new buildings in accordance with BRE publication BR211.
Ground Workings	There are 2№ areas of ground workings shown within 250m of the site. The nearest is an unspecified pit associated with the former sandstone quarry recorded approximately 62m south west. The other is recorded as a refuse heap 137m south.
Mining	The site is within a Coal Mine Reporting Area therefore a Coal Report has been obtained from The Coal Authority, which can be found within Appendix III of this report. The Coal Authority confirm that the site is in the zone of influence of workings in 6№ seams of coal at 140m to 330m depth last worked in 1970. Any movement from these workings should have stopped by now. The site is not affected by any present or planned underground mining however reserves of coal do exist in the area which may be worked at some time in the future. There are no mine entries within 20m of the site. The site is not affected by any past, present or future opencast mining. The Coal Authority have not received a claim for coal mine related subsidence for any property within 50m of the site since 1994. The site is not located within a Development High Risk Area with regards to shallow coal mining, therefore formal Coal Mining Risk Assessment has not been carried out as part of this report.

Natural Ground Subsidence	Shrink-Swell Clay – Very Low Hazard Landslides – Very Low Hazard Soluble Rocks – Negligible Hazard Compressible deposits – Negligible Hazard Collapsible Deposits – Very Low Hazard Running Sands – Negligible Hazard No natural ground subsidence problems are envisaged.
Boreholes	29№ BGS borehole records are held for positions located within 250m of the site. The nearest, (ref SE30NW200, located 40m south west of the site) shows topsoil overlain by Made Ground to 1.13mbgl with clay/ shaley clay to 1.83mbgl. Brown sandy mudstone with sandstone bands was encountered from 1.83mbgl to the based of the borehole at 3.05mbgl.

3.5. ENVIRONMENTAL OVERVIEW

Historical Land Use	There are 9№ potentially contaminative historical land uses shown within 250m of the site. The nearest is the fire and ambulance station on site. Others include a fever hospital recorded on site, a warehouse (10m north west), unspecified pit/ sandstone quarry (62m south west), unspecified tank (90m north west), works (105m north west), refuse heap (142m south), unspecified pump (218m south west) and 2№ substations (on-site and 44m south west).
Current Land Use	There are 6№ potentially contaminative current industrial land uses shown within 250m of the site. The nearest are the current fire station and substation uses on site. Others include a chimney (34m south west), a warehouse (146m north west), an electricity substation (229m south east) and a haulage company (245m north west).
Environmental Permits	There are no environmental permits shown within 250m of the site.
Pollution Incidents	There are no pollution incidents recorded within 250m of the site.
Landfill Sites	There are no current or historical landfills shown within 250m of the site.
Waste Transfer & Processing Stations	There are no waste transfer and processing stations shown within 250m of the site.
Hydrogeology	The bedrock is classed as a Secondary A Aquifer. There are no source protection zones (SPZs) or ground water abstractions within the vicinity of the site.
Hydrology	There are no watercourses shown within 250m of the site.
Flooding	The site is not located within a flood risk area.
Environmental Sensitivity	The site is in a nitrate vulnerable zone. The nearest area of Green Belt land is approximately 236m west.

3.6. PREVIOUS INVESTIGATIONS

Met Engineers Ltd. are not aware of any previous site investigations and no details of any have been provided.

4. POTENTIAL CONTAMINATION

4.1. BACKGROUND

Current Environmental Legislation, in particular Part IIA of the Environmental Protection Act 1990, adopts a risk-based approach to the evaluation of contaminated sites, based on the proposed end use of the site. The commonly accepted approach is to adopt a Source-Pathway-Receptor model where the Source of the contaminant is examined in relation to potential Receptors (i.e. humans, controlled waters etc.) to determine if there is a Pathway (i.e. pollution linkage) connecting them. If any of these elements (i.e. contaminant, pathway or receptor) are absent or removed, then there is no risk.

4.2. DEVELOPMENT PROPOSAL

It is proposed to demolish the existing building and re-develop the site with a new fire station building.

4.3. HISTORICAL LAND USE

The site comprised undeveloped agricultural land until the existing fire station buildings were developed by 1959. Since 1974, 1№ of the buildings in the centre of the site has been labelled as a substation and the layout of the site has remained the same ever since.

4.4. CURRENT LAND USE

The site is currently an active fire station predominantly covered with buildings and areas of hardstanding with an active substation building.

4.5. EXTERNAL ENVIRONMENTAL INFLUENCES

There are a number of potentially contaminative current and historical land uses in the surrounding area. Historical land uses include a rubber works and later warehouse to the north of the site, a sandstone quarry to the south, a tank, a refuse heap, a pump and substations. Current land uses in the surrounding area include a chimney, warehouse, substation and a haulage company. Contaminants from these land uses have the potential to have migrated on to the site through various pathways.

4.6. PRELIMINARY RISK ASSESSMENT

In considering the potential for contamination, the information highlighted in this report has to be assessed utilising the source-pathway-receptor methodology. Should one of the three links be absent, the site cannot be considered contaminated under Part IIA of the Environmental Protection Act.

The risks identified in this report are perceived risks relative to the proposed end use. Actual risks can only be fully assessed after a robust and thorough intrusive investigation of the site. The preliminary conceptual risk assessment model undertaken for the site is detailed as follows:

4.7. SOURCES

Based on the evidence collated, the possible sources of contamination which potentially affect the site include:

	Activities	Contaminant Location On Site	Potential Contaminants	Likelihood of Contaminant being present on site	Comment
Historical Site Usage	Agricultural Land	Surface soil	Land Gas Asbestos Polycyclic Aromatic Hydrocarbons (PAH) Total Petroleum Hydrocarbons (TPH) Heavy Metals	Negligible	Prior to 1959 the site was undeveloped agricultural land. Due to the age and nature of this activity, it is considered unlikely that significant contamination will have resulted or will remain on site from this historical land use.
	Fire Station	Made Ground/ surface soil	Land Gas Asbestos Polycyclic Aromatic Hydrocarbons (PAH) Total Petroleum Hydrocarbons (TPH) Heavy Metals	Low to Moderate	The existing buildings have been on site since 1959 and the site has been labelled as a fire station since 1970. There are no environmental permits or pollution incidents recorded in the vicinity of the site, however there may be unrecorded leaks/ spills on site.
	Substation	Made Ground/ surface soil	Polycyclic Aromatic Hydrocarbons (PAH) Total Petroleum Hydrocarbons (TPH) Polychlorinated Biphenyls (PCBs) Heavy Metals	Moderate	The building in the south of the site was labelled as a substation by 1970. Potential for historical leaks and spills of fuel/ transformer oils which historically contained polychlorinated biphenyls (PCBs).
Current Site Usage	Fire Station	Made Ground/ surface soil	Land Gas Asbestos PAH TPH Heavy Metals	Low to Moderate	The existing buildings have been on site since 1959 and the site has been labelled as a fire station since 1970. There are no environmental permits or pollution incidents recorded in the vicinity of the site, however there may be unrecorded leaks/ spills on site.
	Substation	Made Ground/ surface soil	PAH TPH PCBs Heavy Metals	Low	There is an electricity substation located in the centre of the site. PCB's were used in transformer oils until 2000. Substations are generally well maintained, so the likelihood of current leaking of oils is considered low.

	Activities	Contaminant Location On Site	Potential Contaminants	Likelihood of Contaminant being present on site	Comment
Historical Neighbours	Rubber Works	Made Ground/ Surface Soils/ Aquifer	Land Gas Asbestos PAH TPH PCBs Heavy Metals	Low to Moderate	Rubber works located approximately 100m north west from 1970 to 1991. Potential for contaminants to have migrated on to the site via surface and groundwater pathways.
	Tanks	Made Ground/ Surface Soils/ Aquifer	Asbestos PAH TPH Heavy Metals	Low	Tanks associated with the rubber works approximately 100m north west from 1970 to 1971. No recorded environmental permits or pollution incidents, however there is the potential for unrecorded leaks and spills from former tanks. No record of whether tanks are above or below ground or status of any bunding.
	Pit/ Sandstone Quarry	Surface Soils/ Aquifer	Land Gas PAH TPH Heavy Metals	Low to Moderate	Sandstone quarry recorded 62m south west by 1850. By 1893 the quarry appears to have been disused and by 1959 a school had been developed in the location of the former quarry, indicating that it may have been infilled. The nature of any infill material is unknown, however the potential for migration of soil based contaminants is considered low due to the age and distance from the site. Potential for migration of land gas form infilled ground.
	Refuse heap	Surface Soils/ Aquifer	Land Gas	Very Low	Refuse heap recorded 142m south from historical mapping, however there are no recorded landfills or waste transfer and processing stations within 250m. Likelihood of contaminants being present on site reduced due to distance from site.
	Pump	Surface Soils/ Aquifer	PAH TPH Heavy Metals	Very Low	Pump recorded 218m south from historical mapping. Likelihood of contaminants migrating to site reduced due to distance.
	Substation	Surface Soils/ Aquifer	PAH TPH	Very Low	Substation approximately 44m south west from 1970. Potential for historical leaks and

	Activities	Contaminant Location On Site	Potential Contaminants	Likelihood of Contaminant being present on site	Comment
			PCBs Heavy Metals		spills of fuel/ transformer oils which historically contained polychlorinated biphenyls (PCBs), however likelihood of contamination migrating to the site is considered very low.
Current Neighbours	Warehouse	Surface Soils/ Aquifer	Asbestos PAH TPH Heavy Metals	Very Low	Food storage warehouse from approximately 10m north west. Likelihood of significant contamination migrating to the site considered very low due to the nature of this land use.
	Chimney	Surface Soils/ Aquifer	PAH TPH Heavy Metals Dioxins/ Furans	Very Low	Chimney associated with the school approximately 34m south west. Potential for soil based contamination from this source migrating to the site considered very low. Atmospheric pollutants out with the scope of the desk study.
	Substation	Surface Soils/ Aquifer	PAH TPH PCBs Heavy Metals	Very Low	Substation recorded 229m south east. Potential for contamination reaching the site reduced due to the distance.
	Haulage Company	Surface Soils/ Aquifer	PAH TPH Heavy Metals	Very Low	Haulage company 245m north west Potential for contamination reaching the site reduced due to the distance.

The sources which are considered to have a moderate risk or greater of occurring on site have been assessed further as part of the Conceptual Site Model in Section 4.7 of this report. The list of possible contaminants has been based solely on the information identified by the GroundSure Report and the site walkover and therefore should not be considered exhaustive.

4.8. PATHWAYS

The Potential main pathways specific to the probable future use of the site are:

Pathway	Pathway Present	Comments
Direct Contact with soil/ water	Yes	Potential for contact with soil/ water during future development and landscaping works.
Incidental ingestion	Yes	Potential for ingestion of soils/ water during future development and landscaping works.
Inhalation of soil dust/ asbestos fibres	Yes	Potential for inhalation of soil dust/ asbestos during future development and landscaping works and ground disturbance.
Leaching/ migration of liquids	Yes	Potential for leaching in areas of soft, vegetative cover. Central area of the site is to be developed with buildings and hardstanding, minimising the likelihood of leaching to the aquifer.
Surface water run-off	No	Site will be predominantly covered in buildings and hardstanding providing a barrier between soil based contamination and surface water. In areas covered in vegetation infiltration will be increased, reducing surface water run-off.
Migration/ emission/accumulation inhalation of land gas/ vapours	Yes	Migration and emission of land gas/ vapours possible. Potential for accumulation increased in proposed buildings.
Plant uptake/ plant uptake followed by ingestion	Yes	Plant uptake possible in proposed soft landscaped areas. Proposed commercial land use with no home grown produce.

4.9. RECEPTORS

The following site-specific receptors should be considered:

Receptor	Receptor Present	Comments
Site worker	Yes	Staff involved in construction and demolition works and underground utility works at the site.
Maintenance staff	Yes	Carrying out routine maintenance in the future (assumes workers will visit the site on an infrequent basis and will not carry out intrusive works).
Long term site user	Yes	Long term site users including staff at the fire station.
Off-site resident	Yes	Residential housing within 250m of the site.
Flora & Fauna	Yes	Flora on landscaped areas
Aquifer	Yes	Bedrock is a Secondary A Aquifer, however there are no groundwater abstractions or source protection zones in the vicinity of the site
Surface water	No	No surface water courses shown within 250m of the site.
Buildings & Infrastructure	Yes	Building substructure/ services, drainage etc.

4.10. PRELIMINARY CONCEPTUAL SITE MODEL

Potential Source	Contaminants	Receptor	Pathway	Severity	Likelihood	Potential Risk
Soil based Contaminants (Solid)	Heavy Metals PAH TPH PCBs	Construction Workers Maintenance Workers End user	Direct contact with soil Ingestion of soils Inhalation of soil dust Inhalation of vapours (PAH/ TPH only)	Moderate	Moderate	Moderate
		Off-site resident	Inhalation of soil dust Inhalation of vapours (PAH/ TPH only)	Moderate	Very Low	Low
		Flora & Fauna	Plant uptake	Very Low	Very Low	Very Low
		Buildings & Infrastructure	Direct Contact with soil	Very Low	Very Low	Very Low
Soil based Contaminants (as Leachate)	Heavy Metals PAH TPH PCBs	Flora & Fauna	Plant uptake	Very Low	Very Low	Very Low
		Aquifer	Leaching/ migration via groundwater	Low	Very Low	Low
Asbestos within building fabric	Asbestos Fibres	Construction Workers	Inhalation of asbestos fibres	High	High	High
Asbestos within Made Ground	Asbestos Fibres	Construction Workers Maintenance Workers End user	Inhalation of asbestos fibres	High	Low	Moderate
Land Gas		Construction Workers Maintenance Workers End user	Inhalation of gases	High	Low	Moderate

Please see Appendix IV for the matrix used to determine Risk.
Please note, the risks to off- site receptors from off-site sources (e.g. Off-site landfill impacting off-site surface water stream) have not been assessed as part of this study.

5. RECOMMENDATIONS

5.1. ENVIRONMENTAL

A number of potential pollution linkages could exist within the site. An intrusive site investigation is recommended to confirm this potential.

The site investigation should cover the full site, as well as specifically targeting the area of the proposed buildings. A general range of contaminants should be tested for including Heavy Metals, Poly-aromatic Hydrocarbons, Total Petroleum Hydrocarbons, PCBs, Asbestos and Land Gas.

Following the site investigation, options for remediation, if required, can be evaluated. Any remedial measures undertaken will inevitably reduce the environmental risk to future ownership.

5.2. GEOTECHNICAL

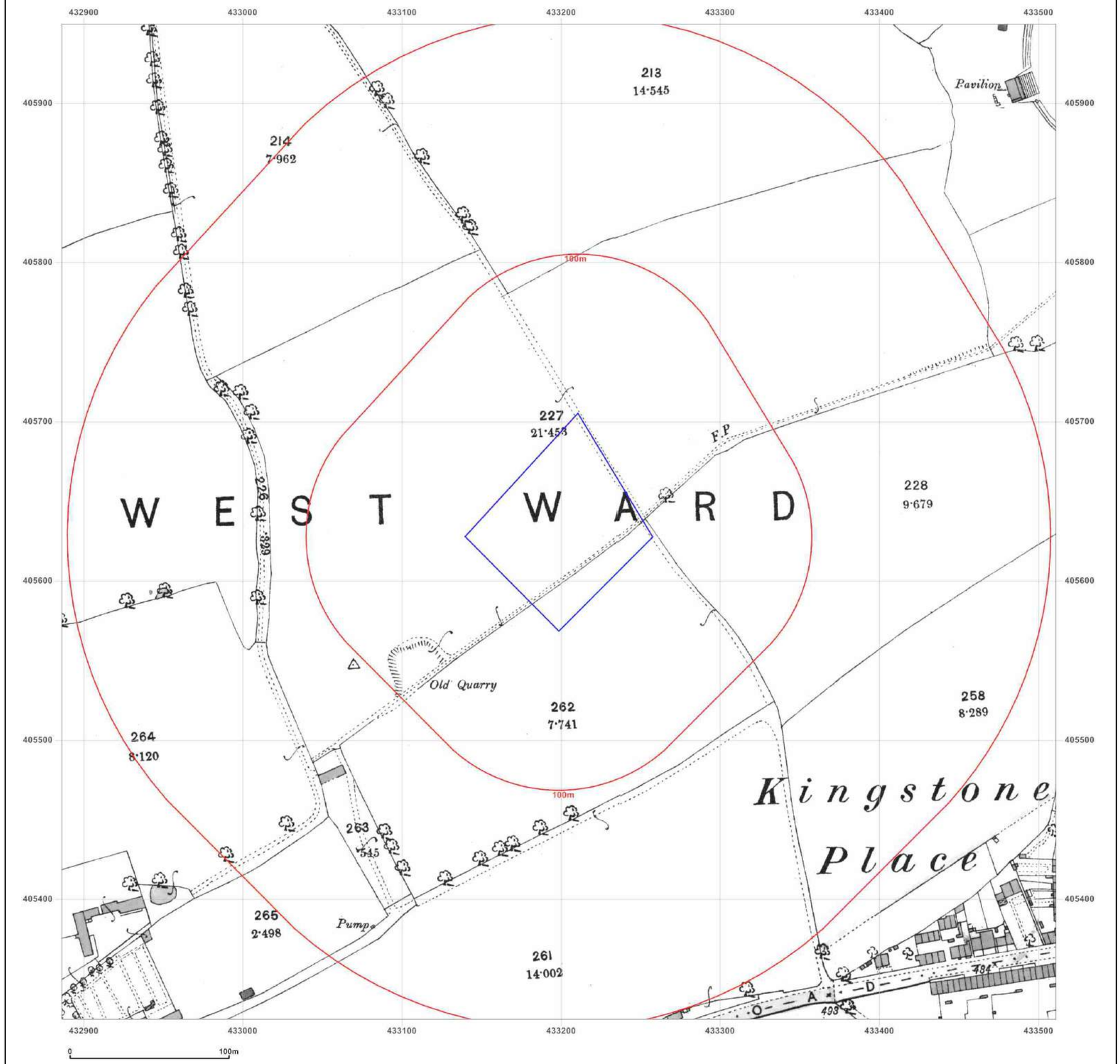
It is likely that there will be nominal amounts of Made Ground present at the surface of the site associated with the development of the existing car parks and buildings. Based on geological records there is expected to be residual soils on top of sandstone bedrock.

The intrusive investigation should confirm the immediate sub-surface soil conditions such that foundation recommendations can be made. A series of boreholes and/or trial pits should be undertaken to allow an assessment of the underlying strata. Suitable *in-situ* and laboratory geotechnical tests should be performed as part of the investigation.

The site is not within a development high risk area with regards to shallow depth coal mining, and as such a formal coal mining risk assessment is not required. Based on the information presented within this report, it is considered that the risk from shallow depth mining works is negligible and no further works relating to this matter are deemed necessary.

APPENDIX I

Groundsure Report



emapsite™

Site Details:

Barnsley Fire Station,Broadway,S70 6RA

Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

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W E
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Revised 1893
Edition N/A
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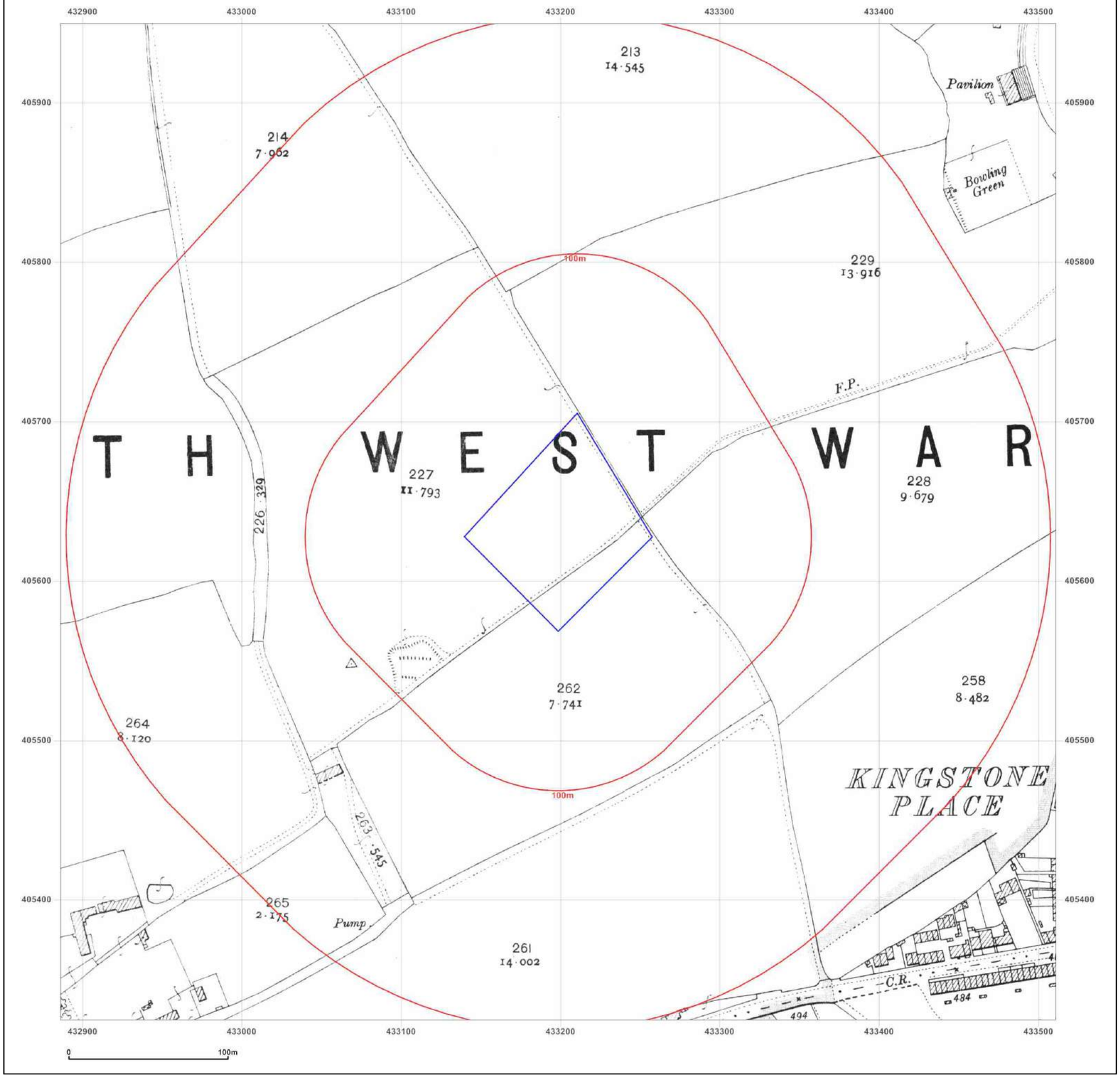
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Site Details:

Barnsley Fire Station,Broadway,S70 6RA

Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1906**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1906
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

Barnsley Fire Station,Broadway,S70 6RA

Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1959**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1959
Revised 1959
Edition 1961
Copyright 1961
Levelled 1930

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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1959-1960**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959 Revised 1959 Edition N/A Copyright 1960 Levelled 1930	Surveyed 1959 Revised 1959 Edition N/A Copyright 1960 Levelled 1930
Surveyed 1959 Revised 1959 Edition N/A Copyright 1960 Levelled 1930	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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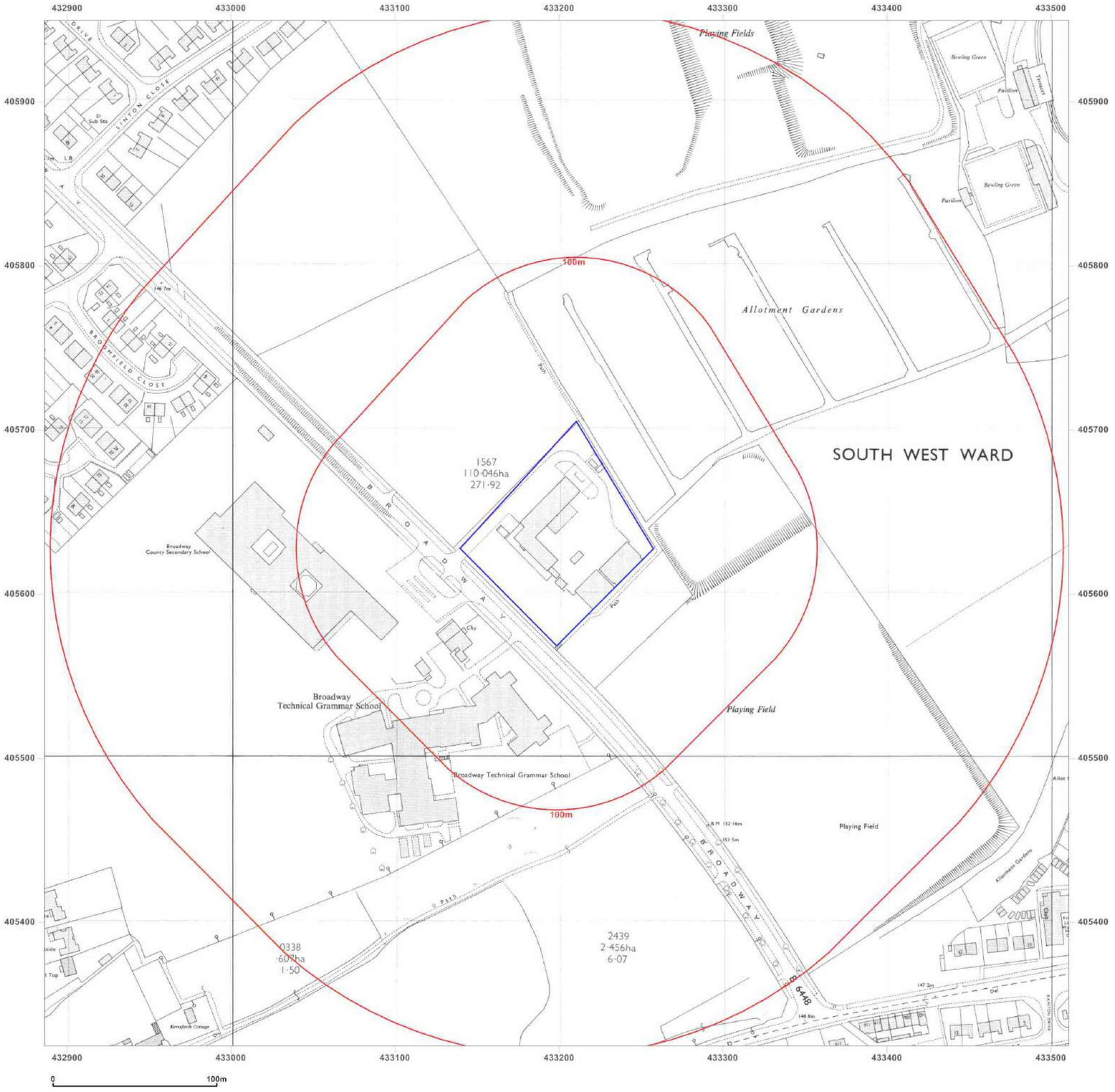
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1969**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1959
Revised 1969
Edition N/A
Copyright 1971
Levelled 1963

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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1970-1974**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959 Revised 1969 Edition N/A Copyright 1970 Levelled 1963	Surveyed 1959 Revised 1974 Edition N/A Copyright 1974 Levelled 1963
Surveyed 1959 Revised 1969 Edition N/A Copyright 1970 Levelled 1963	Surveyed 1959 Revised 1969 Edition N/A Copyright 1970 Levelled 1963

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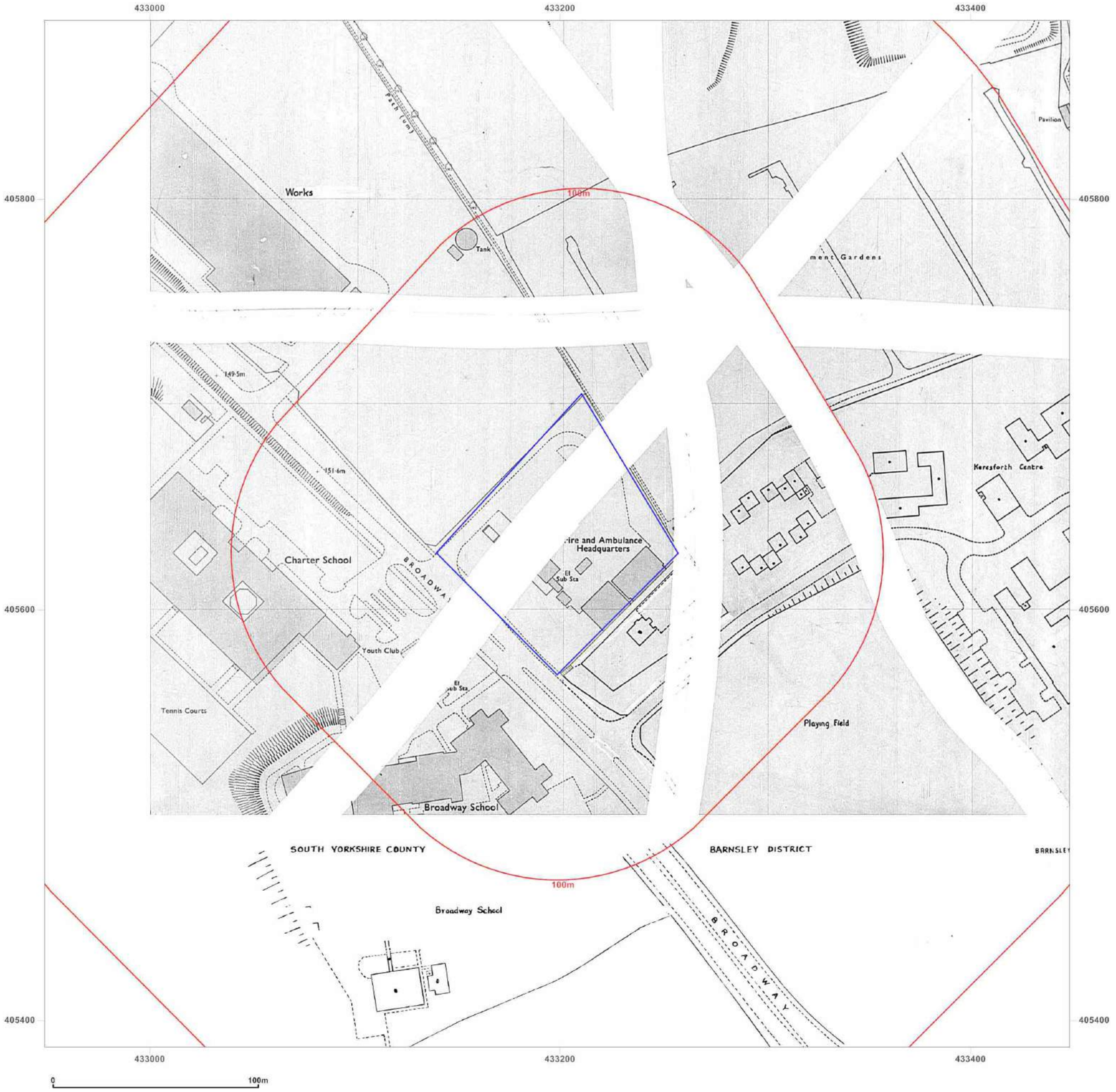
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1978-1983**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1983
Levelled N/A

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

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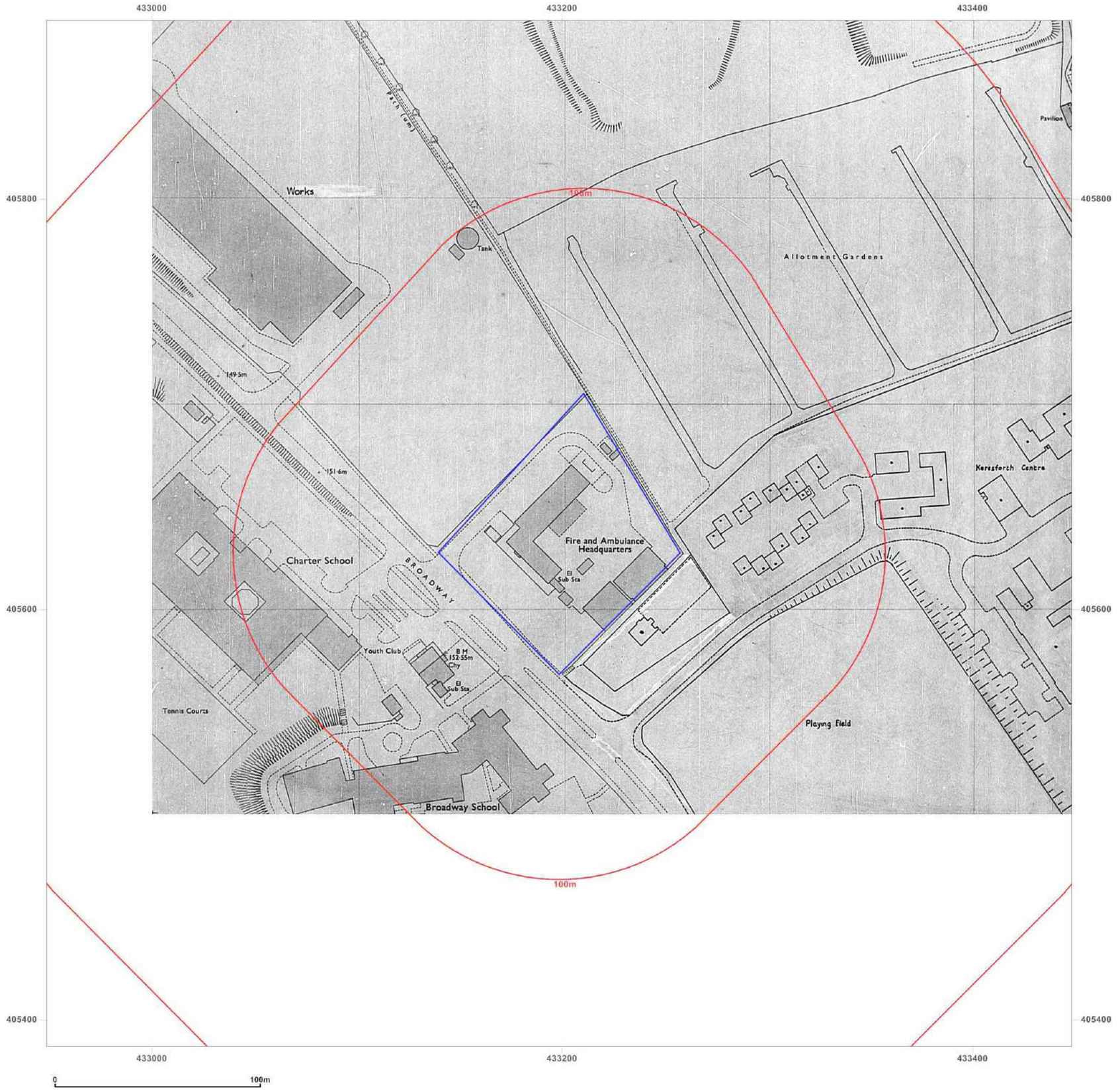
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1983**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1963
Revised 1983
Edition N/A
Copyright 1983
Levelled 1963

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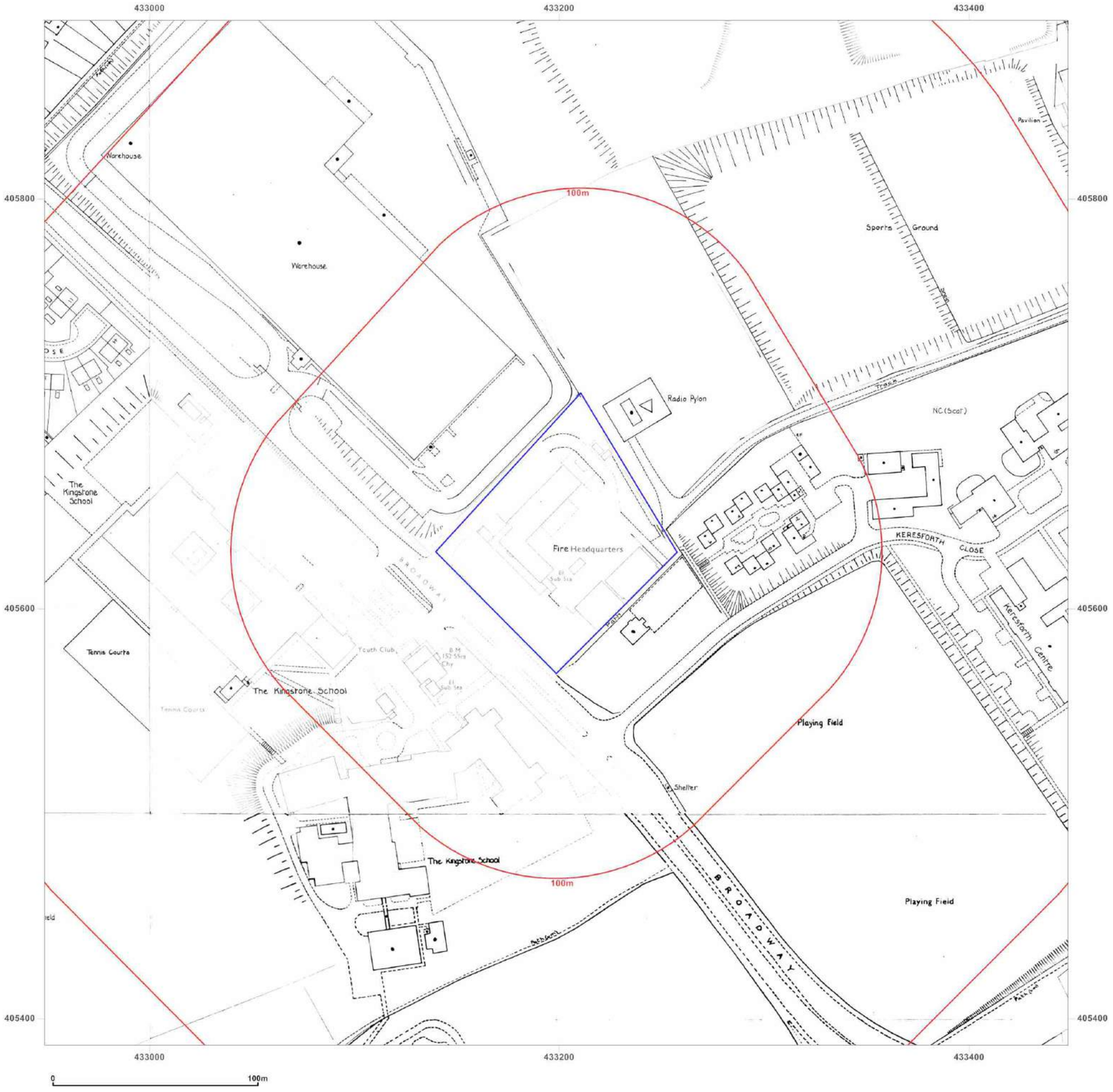
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid
Map date: **1991**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1963 Revised 1991 Edition N/A Copyright 1991 Levelled 1963		Surveyed 1963 Revised 1991 Edition N/A Copyright 1991 Levelled 1963
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: National Grid

Map date: **1991-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1963 Revised 1991 Edition N/A Copyright 1991 Levelled 1963		Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright 1991 Levelled 1963

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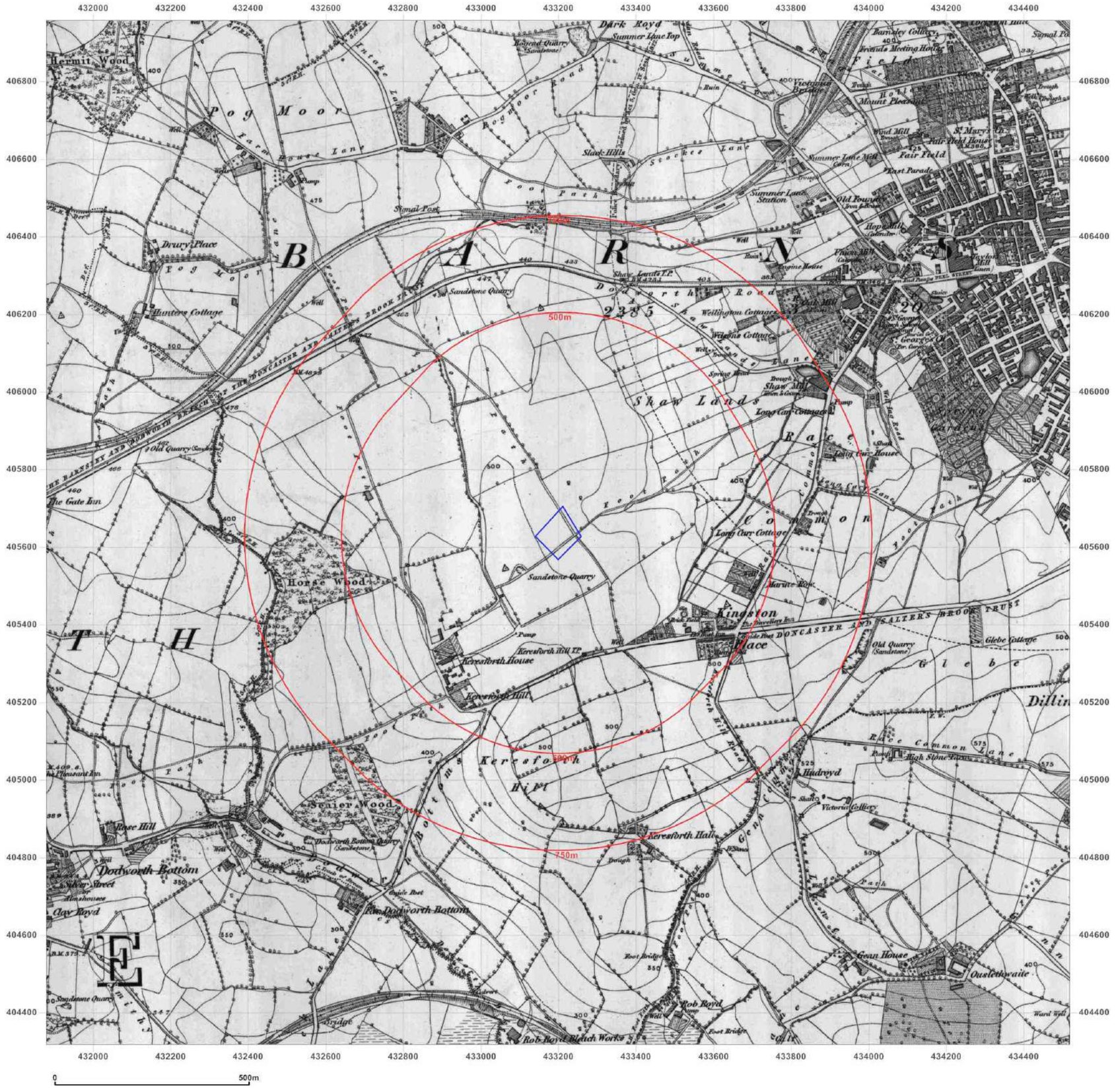
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Site Details:

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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1850**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1851
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

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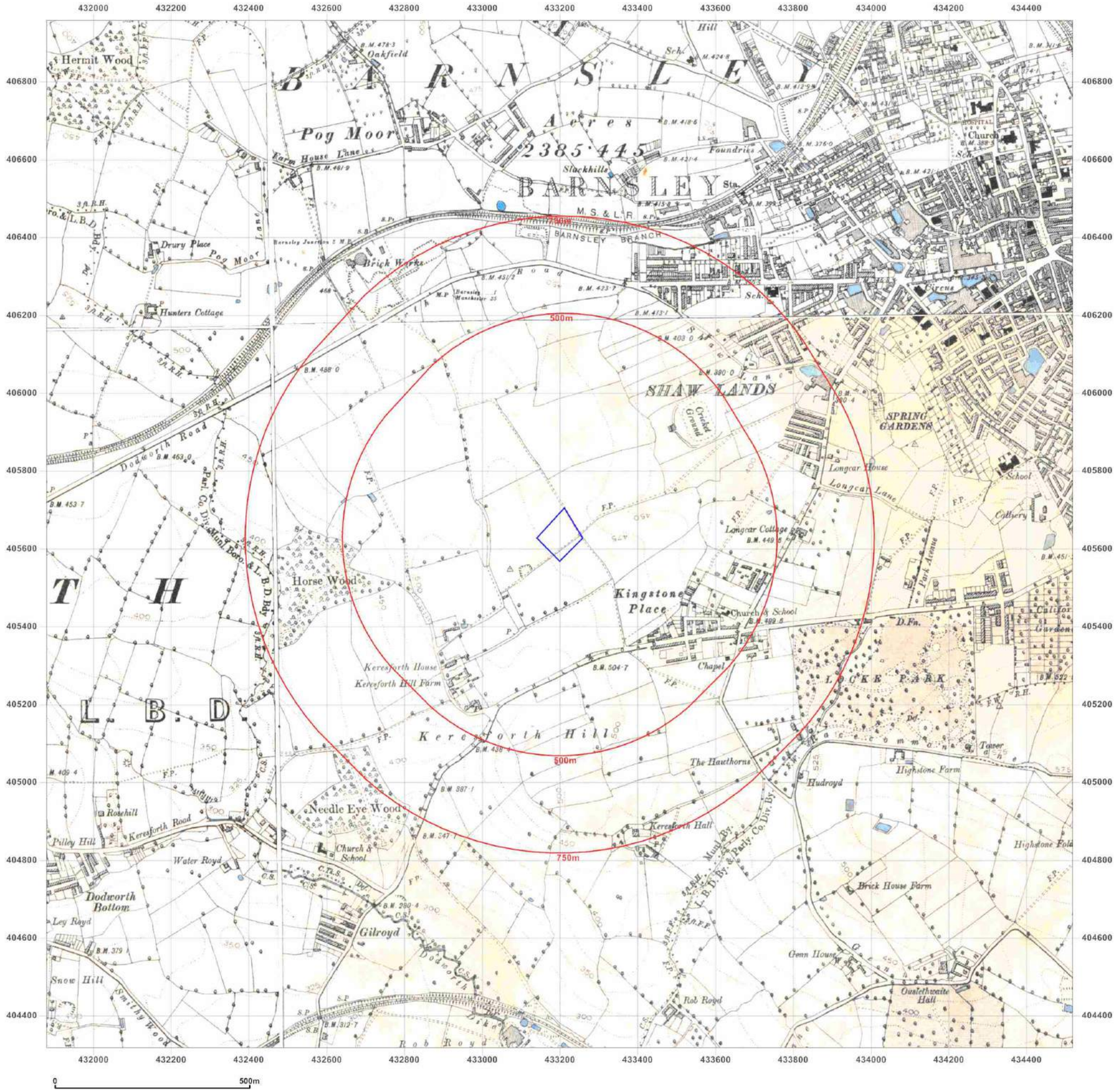
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1890-1891**

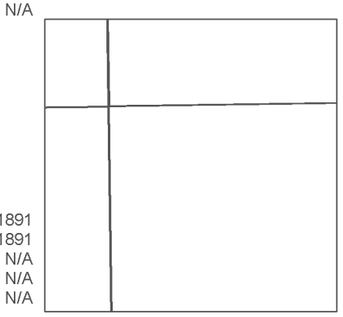
Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1890
Revised 1890
Edition 1890
Copyright N/A
Levelled N/A



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

Surveyed 1890
Revised 1890
Edition 1890
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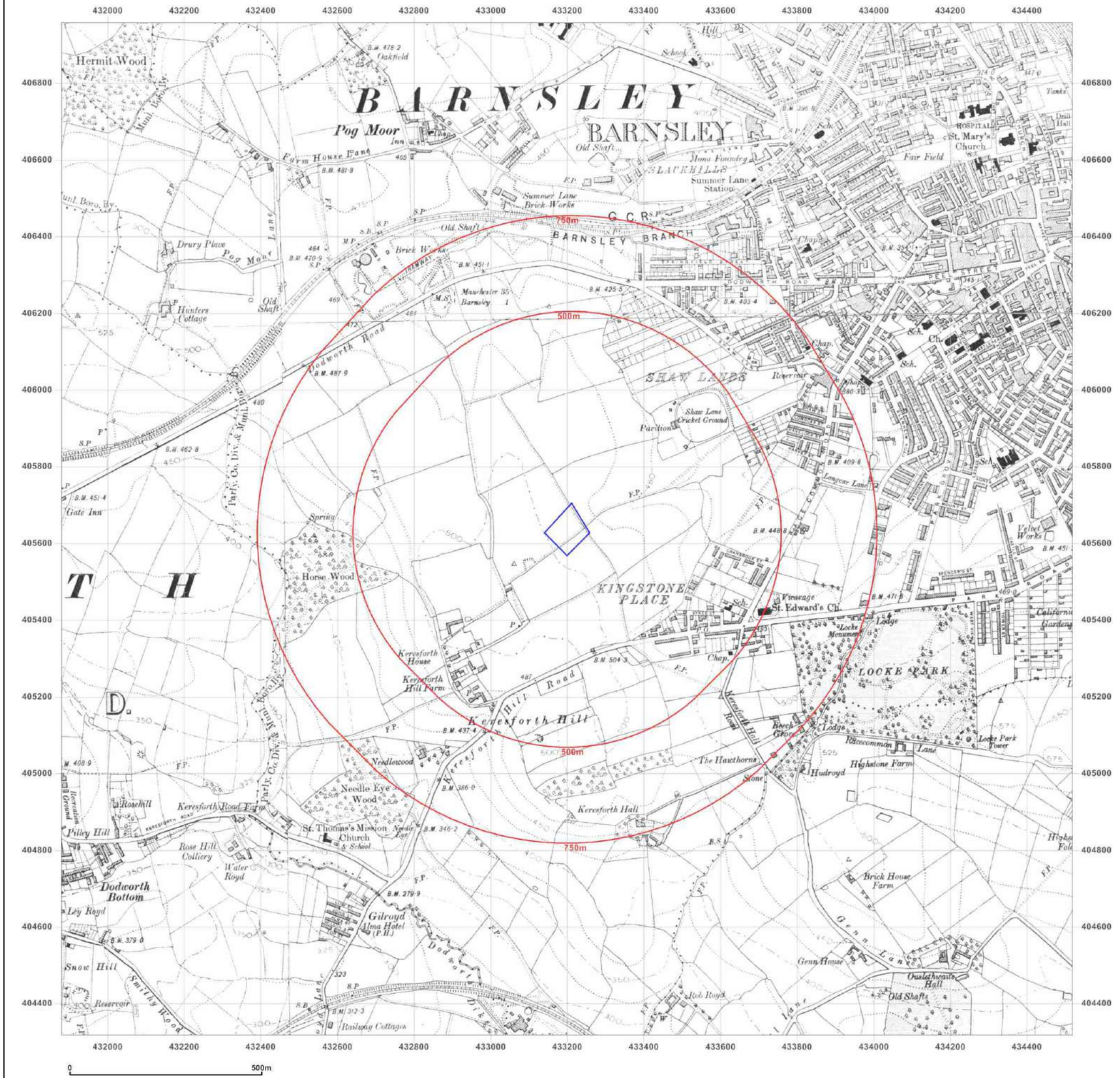
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1904**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1891
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1904
Edition 1904
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1890
Revised 1904
Edition 1904
Copyright N/A
Levelled N/A

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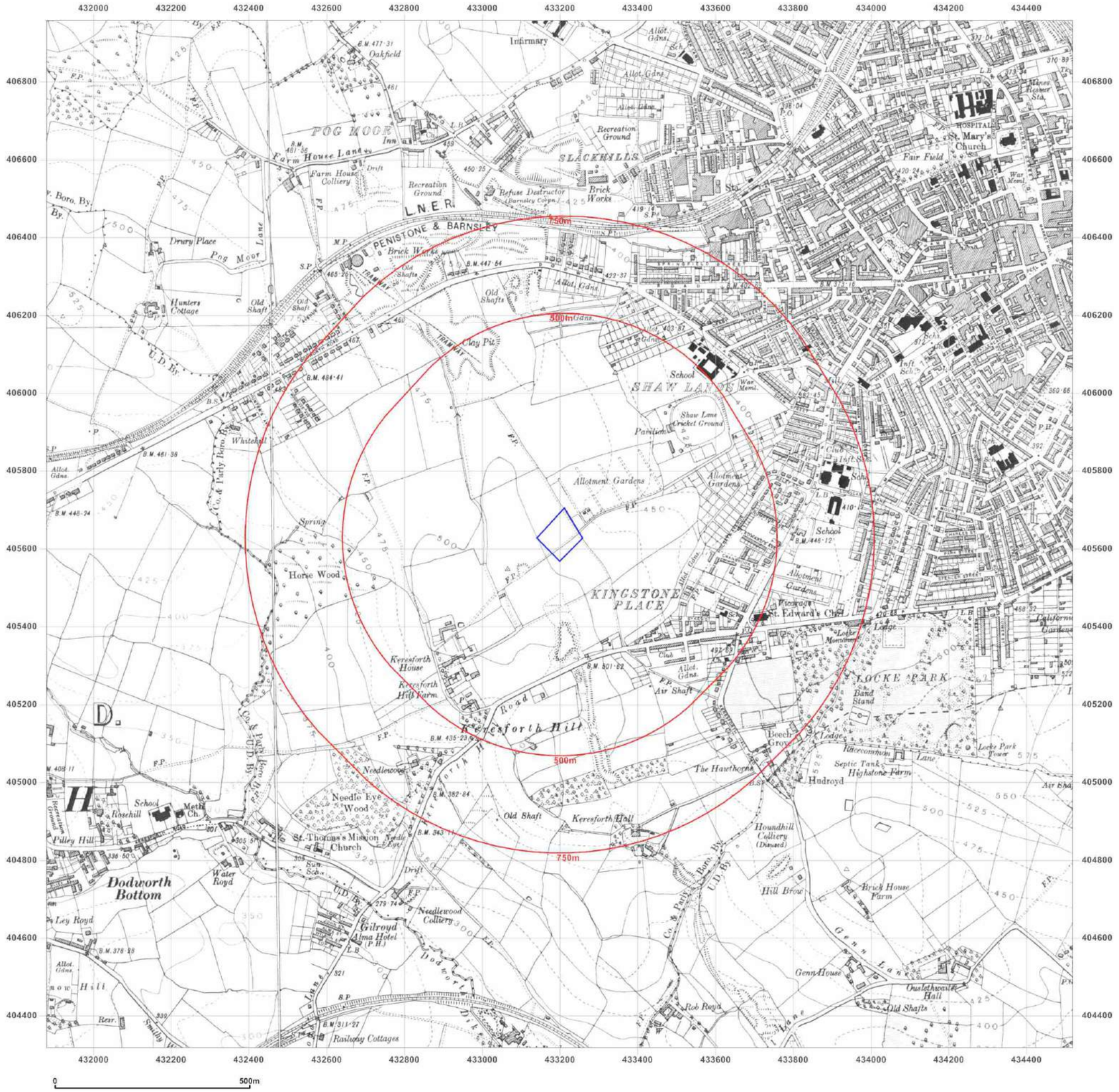
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1929**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1851
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1929
Edition 1929
Copyright N/A
Levelled 1915

Surveyed 1851
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1929
Edition 1929
Copyright N/A
Levelled 1915

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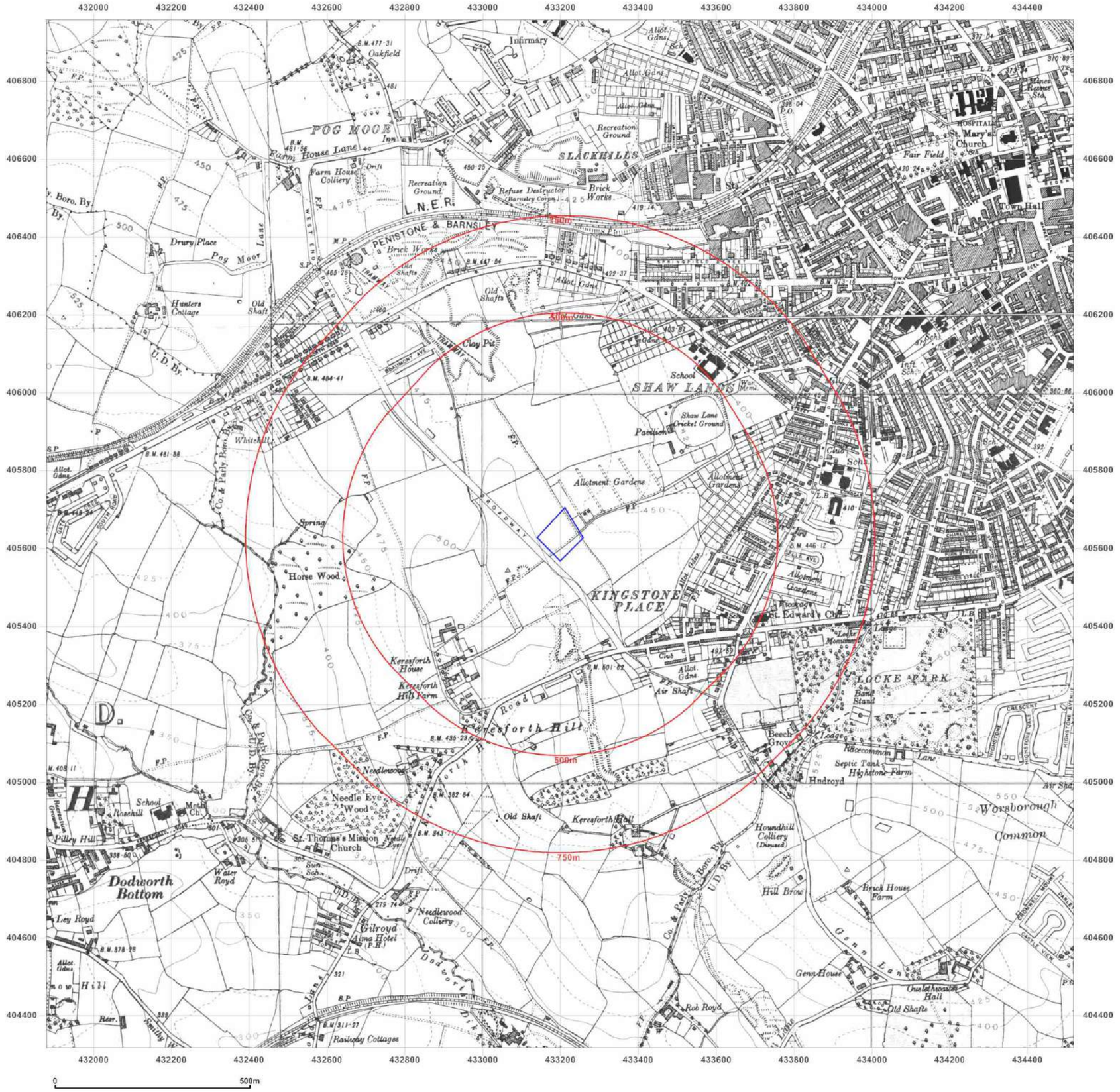
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Client Ref: EMS_475045_638284
Report Ref: EMS-475045_638284
Grid Ref: 433198, 405637

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1851
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1938
Edition 1938
Copyright N/A
Levelled 1929

Surveyed 1851
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1938
Edition 1938
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